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PERSPECTIVE

Last year, in this part of the Annual Report, I congratulated our staff on the positive way they constantly approached the ongoing challenges thrown at us in terms of budgets and increasing clinical activity. The basis of excellent working relationships and mutual respect in the Department of Medicine continues to be a wonderful foundation to tackle and counter these challenges. Our staff have continued to excel in clinical care delivery, teaching and research as highlighted throughout the rest of this report. This ongoing consolidation as a leading academic Department of Medicine recognised nationally and internationally for excellence in clinical service provision, teaching and research has been extended further with the first graduation of students from the Graduate Entry Medical Program, the award of hundreds of thousands of dollars in research funds, the treatment of ever more inpatients and outpatients, and the involvement of our staff at the highest levels in various governmental advisory committees, research organisations, and community service organisations.

Whilst the role of RGH as an acute teaching hospital has been confirmed for the time being, there is ongoing review of this status based on the number of veterans managed through the RGH. Despite this, new services have commenced at RGH including the Bone Densitometry Unit, Falls Clinic and Home Based Rehabilitation Services. These are important new initiatives which reinforce the role of internal medicine in its broadest sense as an academic discipline in the South Australian Health Care System.

Finally, I would like to reiterate my most sincere thanks and show publicly my high respect for the quality, integrity, hard work and sense of humour of all of our staff.

Paddy A Phillips

APPOINTMENTS

Jeffrey Barbara

Graduated from the University of Adelaide in 1985 and completed his basic physician training at the Queen Elizabeth Hospital. This was followed by advanced renal training at the Royal Adelaide Hospital. A PhD addressing cytokines (The mechanism of action of TNF) was undertaken in the Division of Human Immunology at the Hanson Centre for Cancer Research (IMVS) from 1991-1995. More recently, post-doctoral research in the field of transplantation immunology (Don and Lorraine Jacquot Travelling Fellow 1997-1998) was conducted in the Nuffield Department of Surgery, Oxford (UK).

Elizabeth Veitch

Graduated from the University of New South Wales in 1985 and trained in Respiratory and Sleep Medicine in the Repatriation General and Royal Prince Alfred Hospitals in Sydney. Medical education is a particular interest and in 1997 and 1998 she was the Clinical Superintendent in Medicine at the Repatriation General Hospital in Sydney with responsibility for the medical training of undergraduate and postgraduate students.

In 1999, Dr Veitch was appointed as Staff Specialist in Respiratory and Sleep Medicine at the Repatriation General Hospital, Daw Park and Lecturer in Medicine at Flinders University.

Her main clinical interests are interstitial lung diseases, the diagnosis and management of chronic cough and the interaction between sleep disordered breathing and airway function. This latter topic is the focus of her current research.

PROMOTIONS

Alan Crockett – Promotion to Associate Professor.

Alan Crockett is employed by Flinders Medical Centre as Chief Medical Scientist in the Respiratory Unit. Virtually every other similar position in Australia is purely a clinical service position. However, Alan Crockett has an outstanding record as a clinical academic. Not only is he a PBL tutor, but he takes lectures and tutorials for medical and other students. In addition his research is internationally acclaimed, especially in the area of health services research relating to domiciliary oxygen therapy and its clinical value, as well as health economics, quality of life and evidence based medicine. In recognition of this he has been invited to speak in a number of forums and has been elected to the Executive of the International Respiratory Care Society. He is the only non-medical person ever to achieve this. He is an outstanding example to all other hospital medical scientists in the attitude he takes to his every day clinical and administrative duties, but also to his academic activities and teaching research and service to the community. We congratulate him on his promotion.

Executive (FMC):

Professor Paddy PHILLIPS

Professor Jack Alpers

Mr Tony Bakarich

Mr Rick Blood

Dr Stephen Hedger (Chief Resident)

Associate Professor John Knight

Associate Professor Al Vedig

Mr Gary Verstegen

Senior Nursing Staff (FMC):

Ms Fay Hanns

Ms Sally Holding

Ms Glenys Watt

Administrative Staff (FMC):

Ms Sue Copland

Ms Jill Richards

Ms Nicola Westwood

Executive(RGH):

Professor Paddy PHILLIPS

Mr Richard Clark

Mr David Edwards

Professor Paul Finucane

Ms Lesley Jeffers

Ms Imelda Lynch

Dr Jonathan Martin (Chief Resident)

Senior Nursing Staff (RGH):

Ms Jill Mesten

Mr Peter Pogelzang

Belinda Purvis

Administrative Staff (RGH):

Ms Joanne Spatharos

EDUCATIONAL ACTIVITIES

Undergraduate Teaching

1999 was a further successful year for the Year 3 Students of the GEMP. They continued to be a delight to teach, keen to learn, innovative and communicated well. They particularly have appreciated the term structure, the support given by Anne Arthurson in the organisational side and regard the Specialist Tutorials as very informative and relevant.

The PBL Tutors were **Jack Alpers, Ram Seshadri, Phil Popplewell, Karen Latimer, Craig Whitehead, Jeff Bowden Tom Gordon, Alex Gallus**. They continued to be involved in live patients and the ensuing problem formulations and case discussions have been well received.

Paddy Phillips was involved in the Evidence Based Medicine tutorials for the first time and these were highly successful, enabling the students to come to grips with important clinical decisions based on analysis of current science in the area of Internal Medicine. The shift of student experience to include five weeks of General Medicine and regular Takes was also a positive for this year and the Consultants on General Medicine provided excellent teaching in acute patient assessments.

Preparation of the exam paper was organised by **Jack Alpers**, with help from **Phil Popplewell** and **Paul Marks**. A full day was spent with other Disciplines in Year 3 in preparing the exam, looking at standard setting and critical questions. **Craig Whitehead** and **Paddy Phillips** also helped in the preparation of this exam. The end of year OSCE was organised at the last minute by Stephen Hedger who did a great job and needs to be thanked for both the question preparation as well as his involvement in the exam itself. Other examiners were **S Hedger, K Latimer, M Barlow, P Roberts-Thomson, J Barbara, G Ramnath, B Martin**.

Particular mention of staff involved in Undergraduate Teaching:

Paul Finucane continues to be Chairman of the Curriculum Committee. The Curriculum Conference was not held this year as a Strategic Planning Conference for the School of Medicine took priority.

Sharon Morton is the co-Chair of the Year Four Committee. Her role as mentor and counsellor is very much appreciated by staff and students.

David Schultz is the Clinical Skills Coordinator for the GEMP Course and this is a difficult task but judging by the standards of the Year 1 and 2 OSCE's he is to be congratulated on a job well done.

Paddy Phillips, Graeme Young and Liz Veitch were involved in the Professional Behavioural Development portfolio assessment team. Students were allocated to one assessor throughout the whole year and this was a useful change, providing continuity to assess their progress throughout the year. The students feel that the interview process is worthwhile but are a little uncertain about the written portfolio.

Jack Alpers continues as the 3rd Year GEMP Internal Medicine Coordinator, organising through his office the whole program, including the Riverland visits. He is also Chair of the GEMP Professional Behaviour Committee that deals with problem students.

Bill Blessing continues to be the Coordinator of the successful Dean's Hour on Mondays and the combined meeting each month on Thursday. His 1999 program was excellent with great topics explored. Special thanks to him for his continuing efforts.

Steve Judd is co-Convenor of the Endocrine and Reproductive Systems Design Group, **Mike Ahern** the co-Convenor of the Musculo-skeletal Systems Unit Design Group and **John Willoughby** co-Convenor of the Nervous System Psychobehavioural Design Group.

Leonard Arnolda is the co-Convenor of the Cardiovascular System. **Paul Finucane** is co-Convenor of the Multisystems Review. **Andrew Bersten** was Convenor of the Respiratory System.

Mike Ahern was co-Chair of the Year 4 Committee and continues to provide important input into the organisation and support for that group.

The Year 3 Internal Medicine Committee was **Jack Alpers** (Coordinator), **Paddy Phillips**, **Phil Popplewell**, **Rick Burns**, **Craig Whitehead**.

The following members of the Division of Medicine undertook PBL Teaching in Years 1 & 2 during 1999: **Alan Crockett**, **Doug McEvoy**, **Phil Henschke**, **Paul Finucane**, **Malcolm Cochran**, **Ann Kupa**, **Leonard Arnolda**, **John Bradley**, **Stephen Hedger**, **Malcolm Smith**, **Jonathon Martin**, **John Oliver**.

Consultants in Medicine went to the Riverland to provide Specialist Tutorials and Bedside Teaching These were very much appreciated by the Riverland Students and the commitment of the staff to this task and the enjoyment of it was evident. They were **L Barratt**, **S Judd**, **P Roberts-Thomson**, **J Alpers**, **D Coghlan**, **P Popplewell**, **G Young**, **W Heddle**, **D Schultz**.

Jack Alpers

International Institute of Hospice Studies (co-located with Daw House Hospice)

ACADEMIC STAFF

Ms Anne PICKHAVER, RN, RM, BSc(Hons)(UniSurrey), PGCEd(Lond), MpolAdmin(Flinders)

Ms Janet DONNELL, RN, RM, BN(Flinders), Grad Dip(Health Counselling), MPH
Emeritus Professor Ian MADDOCKS, MD, FRACP, FAFPHM, DTM&H

ASSOCIATED ACADEMIC STAFF (EDUCATION AND RESEARCH)

Dr David BRUMLEY (Ballarat Health Service)
Rev Dr Phil CARR (Uniting Church)
Ms Sarah FLEMMING (Women's and Children's Hospital)
Assoc Prof Carol GRBICH (School of Nursing)
Prof Tina KOCH (School of Nursing)
Ms Mabel MITCHELL (Warrnambool Palliative Care Service)
Dr Julie ROBINSON (School of Psychology)

ADMINISTRATIVE STAFF

Ms Cheryl HAMNETT, Clerical Officer
Ms Meredith LEGG, Clerical Officer

INTERNATIONAL INSTITUTE MANAGEMENT COMMITTEE

Dr Greg CRAWFORD, Chairperson
Ms Meredith LEGG
Emeritus Prof IAN MADDOCKS
Ms Deborah PARKER
Ms Anne PICKHAVER

The International Institute of Hospice Studies established in 1995 provides a centre for the exchange of information on practice, teaching and research in palliative care, and to offer supervised clinical experience, recognised University awards and certificate studies for students within Australia and overseas.

University Degree Courses:

A total of 76 students from all Australian States and Territories, New Zealand, Cyprus and Japan were enrolled with the Institute this year in courses for Master of Palliative Care (39), Master of Primary Health Care (3), Master of Science (1) and the Graduate Certificate in Palliative Care (33).

Post-Graduate Courses in Clinical Rehabilitation, offered at Graduate Certificate, Graduate Diploma and Masters levels continue to attract local interest. Twenty students enrolled in 1999. From 2000, these courses will be available externally and much preparatory work to externalise the courses took place in 1999.

Short Courses:

Short Intensive courses were again conducted in Palliative Medicine, Paediatric Palliative Care (with the Women's and Children's Hospital), Palliative Care Nursing, Complementary Care, Bereavement Studies and Volunteer Studies. A total of 121 students completed these courses, 31 through distance education. In addition two Volunteer Studies courses were conducted externally one in Benalla, Victoria and one in Alice Springs, Northern Territory.

Education for General Practitioners:

Continuing education activities were maintained during 1999 in association with the Royal College of General Practitioners. A self-teaching study text was undertaken by 17 GPs. A

further 46 GPs completed a program through the Southern Regional RACGP using the text, seminars and some undertook attachments to Daw House.

International Initiatives:

Doctors and nurses from Hong Kong, Korea, Thailand and Japan attended three day intensive workshops on palliative care at the International Institute of Hospice Studies.

AWARDS, ACHIEVEMENTS AND ACCOLADES

1999 Staff Prize in Medicine

The Staff Prize in Medicine was awarded to **Vanessa Brown** on the basis of the best results in medicine in fifth and sixth year.

Glaxo Wellcome Prize in Medicine

for 1999 was awarded to Dr Stephen Hedger for research into prognostic factors in rheumatoid arthritis. This prize is given annually to the registrar, resident or research fellow from Flinders Medical Centre or the Repatriation General Hospital who is judged to have made the best contribution to clinical research in the broad field of internal medicine. The assessment is made on the basis of papers in refereed journals published in the previous twelve months and of presentations to national and international meetings in this period.

Dr Paula Harvey was awarded her PhD in July 1999 and has taken up her NH&MRC Neil Hamilton Fairley Postdoctoral Fellowship in the Clinical Cardiovascular Physiology Laboratory, Toronto General Hospital, Toronto, Ontario.

Professor Peter Roberts-Thomson was appointed as Chairman of the Department of Immunology, Allergy and Arthritis. **Associate Professor Malcolm Smith** was appointed Head of the Rheumatology Unit.

Dr Shan-ze Wang came to us from Shanghai, on a Flinders University Postgraduate scholarship, in May 1995 and completed his PhD in February 1999. He was co-supervised by Prof Kevin Forsyth, Department of Paediatrics, Prof J Alpers and Dr J Bowden. He worked very hard to complete his thesis on time and produced impressive results and published six manuscripts in excellent journals. The title of his thesis was "The Role of Neutrophils in RSV Infection", and he is to be congratulated on his achievements, given his background. He is now a Post-doctoral Fellow on faculty of the University of New Mexico, Albuquerque, U.S.A.

Tina Lavranos was elected secretary of the Australian Society for Reproductive Biology. Tina also won the Serono Travel Award from the Endocrine Society of Australia.

Ray Rodgers was appointed Editor, Asia Pacific Rim, Molecular and Cellular Endocrinology.

Dr Anne Corbould was awarded her PhD in 1999 and has taken up her RACP Bayer Post-Doctoral Fellowship in the Brigham Women's Hospital in Boston.

FOCUS - CRITICAL CARE SERVICES

FLINDERS MEDICAL CENTRE AND REPATRIATION GENERAL HOSPITAL

CLINICAL STAFF

Associate Professor Alnis VEDIG, MB,BS(Adel), FRACP, FANZCA, FFICANZCA

Associate Professor Andrew BERSTEN, MB,BS(Melb), MD(Flinders), FANZCA, FFICANZCA

Dr Evan EVEREST, BSc, MB, ChB(Otago), FRACP

Dr Andrew HOLT, MB,BS(Melb), FANZCA, FFICANZCA

Dr Lindsay WORTHLEY, MB,BS(Adel), FRACP, FANZCA, FFICANZCA

ADVANCED PHYSICIAN TRAINEES

Dr Stuart BAKER, MB,BS(Adel)

Dr Meher Prasad CHINTHAMUNEEDI, MB, BS, MD, FFARCS

Dr Elizabeth CONNOLLY, MB, BCh, BAO(Galway), FFARCS.I

Dr David DURHAM, MB, BS (Sydney), FRACP

Dr Paul GLOVER, BSc, MB, BCh, BAO(Belfast), MRCP (UK), FRCA

Dr Rajeev HEGDE, MB, BS, MD, EDICM

Dr Catherine MOTHERWAY, MB, BCh, BAO(Ireland), MRCP.I, FFARCS.I, FFICANZCA

Dr Asaif RAZA, MB, BS, FFARCSI

Dr Mark REID, MB, BCh, BAO(Belfast), MRCP(UK), FRCA(Lond)

Dr Neil WIDDICOMBE, MB,BS(Lond), FRCA

POST-GRADUATE STUDENTS

Ms Kate DAVIDSON, BSc(Hons) (Proceeding to PhD)

Dr Carmine DE PASQUALE, MB, BS(Flinders), Proceeding to PhD

Dr Fergal O'DONOGHUE, MB,BS, FRACP (Proceeding to PhD)

SCIENTIFIC AND TECHNICAL STAFF

Dr Albert RUTTEN, BSc(Flinders), PhD(Flinders)

ORGAN DONATION

Ms Glenys HODGEMAN, RN, Transplant Coordinator

ADMINISTRATIVE STAFF

Mrs Marion WALLACE, Secretary

Ms Deborah GRAHAM, Ward Clerk

Mrs Anna MANUAL, Ward Clerk

CLINICAL ACTIVITY

There continues to be a very high level of clinical activity in the Unit. Fourteen hundred and fourteen patients were treated. In-hospital mortality for adult patients, excluding patients having cardiac surgery, was 20.7%. Acuity scores have remained high (average APACHE II score of 18.66) with an average length of stay 4.6 days. Patient outcomes are excellent. A Standard Mortality Ratio of 0.73 (0.68-0.77 CI 99%) was achieved (i.e. 27% better than predicted, allowing for case-mix and severity of illness).

Following difficulty with patient care and overflow into the Recovery Ward occurring in 1998, there has been a reorganisation of patient care, with Ward 3E becoming Critical Care Unit 2. This has still proved unsatisfactory from the point of view of bed area, lighting, electrical safety and air conditioning, but planning of the new 24-bed Critical Care Unit is in the final stages, with likelihood of the turf being turned over some time in September 2000. In conjunction with this planning there has been some re-equipping of the current facility. Major items of equipment have included four new ventilators, two dialysis machines, intraaortic balloon pump, and transport monitor with further acquisitions planned for next year.

Emergency retrieval activity has continued to increase, with 293 patients transported in 1999. Dr. Evan Everest has continued to coordinate the retrieval activities, and continues as the Flinders Medical Centre Director of Trauma. He had a prominent role in the National Disaster Medicine Course held at Mount Macedon, with a similar course being held in Adelaide later in the year. This course was held in response to a request by the Australian Health Ministers Advisory Committee.

The home parenteral nutrition service continues as the busiest in South Australia, with Dr. Andrew Holt, Dr. Lindsay Worthley, and Associate Professor Alnis Vedig being the major contributors to the service.

Consultant clinical support continues for the Intensive Care Unit at the Repatriation General Hospital. The exchange of nurses has commenced, with a number of the nurses from the RGH having spent six months in-service in the Critical Care Unit at Flinders Medical Centre.

Postgraduate training in Critical Care Medicine continues to attract experienced overseas graduates from the UK, Ireland, and New Zealand. Associate Professor Andrew Bersten has continued the task of Supervisor of Training, with Dr. Andrew Holt having taken over this responsibility at the end of 1999.

Dr. Lindsay Worthley has continued to organise the Australian Short Course on Intensive Care Medicine within the rubric of the Australian Academy of Critical Care Medicine which was established in 1998. This year there was a record-high of 35 registrants. The Academy also organised a clinical refresher course at the Royal Brisbane Hospital in August 1999. The first edition of a journal for Critical Care specialists, *Critical Care and Resuscitation* was launched on 21 March 1999. This is published quarterly, and is being well supported by Critical Care specialists.

The Critical Care Unit at Flinders Medical Centre continues active support of organ donation. While the rest of Australia has had a dramatic slump in the rate of organ donation (less than 10 per million population), the consultants and staff of the Critical Care Unit have been active contributors, enabling South Australia to maintain its rate of 20 donors per million population.

In recognition of his valuable and high quality contributions to biomedical research, Associate Professor Andrew Bersten has been nominated by the Institute of Political Sciences for the Young Tall Poppy Award.

RESEARCH

Investigators :

Associate Professor Andrew BERSTEN, MB,BS(Melb), MD(Flinders), FANZCA, FFICANZCA

Dr Elizabeth CONNOLLY, MB, BCh, BAO(Galway), FFARCS.I

Dr Evan EVEREST, BSc, MB, CHB(Otago), FRACP

Dr Paul GLOVER, BSc, MB, BCh, BAO(Belfast), MRCP (UK), FRCA

Dr Andrew HOLT, MB,BS(Melb), FANZCA, FFICANZCA

Dr Albert RUTTEN, BSc(Flinders), PhD(Flinders)

Associate Professor Alnis VEDIG, MB,BS(Adel), FRACP, FANZCA, FFICANZCA

Research Staff:

Ms Tamara HUNT, RN

Clinical and basic science research continues with the major focus being surfactant proteins in acute lung injury, with continued interest in lung mechanics. Valuable clinical studies of outcomes of Elderly Patients admitted to the Critical Care Unit and follow-up of next-of-kin were presented at the Annual Scientific Meeting.

Grants:

National Health and Medical Research Council

IR Doyle, AD Bersten, TE Nicholas

Surfactant dynamics and ventilation modalities in acute lung injury.

Australian and New Zealand College of Anaesthetists

AD Bersten, IR Doyle, TE Nicholas, ME Doyle

The dynamics of surfactant proteins across the alveolocapillary barrier.

AMGEN

AW Holt, AD Bersten

GM-CSF in severe community-acquired pneumonia.

Eli-Lilly

AD Bersten, AW Holt, ER Everest

aPC in patients with septic shock.

Publications:

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2. Davidson KG, Bersten AD, Nicholas TE, Ravenscroft P, Doyle IR. Calibration of lung volume with transthoracic impedance in rats. *J Appl Physiol* 1999; 86: 759-766.
3. Bersten AD. A simple bedside approach to measurement of respiratory mechanics in critically ill patients. *Critical Care Resuscitation* 1999; 1: 74-84.
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8. Worthley LIG. Osmolar disorders. *Critical Care Resuscitation* 1999; 1: 45-54.
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10. Moran J, Worthley LIG. Albumin and resuscitation: a sense of Déjà vu. *Critical Care Resuscitation* 1999; 1: 110-112.
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22. Worthley LIG (Editor). *The Australian short course on intensive care medicine. 1999 Handbook*. Adelaide: The Australasian Academy of Critical Care Medicine, 1999.
23. Worthley LIG. Chapter 1. Cardiac anatomy. In: Worthley LIG (ed.). *The Australian short course on intensive care medicine 1999 handbook*. Adelaide: The Australasian Academy of Critical Care Medicine, 1999: 1-5.
24. Worthley LIG. Chapter 2. Physiology of myocardial contraction. In: Worthley LIG (ed.). *The Australian short course on intensive care medicine 1999 handbook*. Adelaide: The Australasian Academy of Critical Care Medicine, 1999: 7-23.
25. Worthley LIG. Chapter 3. Cardiac output and oxygen delivery. In: Worthley LIG (ed.). *The Australian short course on intensive care medicine 1999 handbook*. Adelaide: The Australasian Academy of Critical Care Medicine, 1999: 24-30.

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CARDIAC SERVICES

FLINDERS MEDICAL CENTRE AND REPATRIATION GENERAL HOSPITAL

CLINICAL STAFF

Associate Professor Philip AYLWARD, MA, BM, BCh(Oxon), PhD(Flinders), FRCP(UK), FRACP
Dr Allan CALVERT, MB, BS(Syd), FRACP
Associate Professor John KNIGHT, MB, BS(Adel), FRACS, FRCSC, FACS
Dr Justin ARDILL, BPharm(SAIT), MB,BS(Adel), FRACP
Associate Professor Leonard ARNOLDA, MB, BS(Monash), PhD(Monash), FRACP
Dr Bronte AYRES, MB, BS(Adel), FRACP
Dr Malcolm BARLOW, MB, BS(Sydney), FRACP
Dr Genevieve GABB, MB, BS(Hons)(Adel), FRACP, GradDipClinEpid(Univ Newcastle)
Dr Jo HARRIS, BM, BS (Flinders), FRACP
Dr William HEDDLE, MB, BS(Adel), MD(Flinders), Dip Obs(Lond), RCOG, FRACP
Associate Professor Robert McRITCHIE, MB, BS(Syd), PhD(Syd), FRACP
Dr Robert MINSON, MB, BS(Adel), FRACP, PhD
Dr Anthony MYLIUS, BM, BS(Flinders), FRACP
Dr Iain ROSS, MB, BS(Syd), FRCS(Eng), FRACS
Dr Andrew RUSSELL, MB, BS (Adel), FRACP
Dr Mark SHEPPARD, MB, BS(Adel), FRACP
Dr Phil TIDEMAN, MB, BS(Adel), FRACP
Dr Peter WADDY, BM, BS (Flinders), FRACP
Dr Leon ZIMMET, MB, BS(Adel), FRACP

ADVANCED PHYSICIAN TRAINEES

Dr Jayme BENNETTS
Dr Padmanabhan CHANDRASEKAR
Dr Carmine DE PASQUALE
Dr Andrew HAMILTON
Dr Madhukar VARMA

POST GRADUATE STUDENTS

Ms Marie ANDREW, BA(Hons) (Proceeding to PhD)
Dr Craig JURISEVIC, MB BS(Adel), (Proceeding to Master of Surgery)
Dr Hui WANG, MB, BS (Teijin), MSc (Teijin), (Proceeding to PhD)

SCIENTIFIC AND TECHNICAL STAFF

Dr Robert BAKER, BMedSci(Hons)(Adel), PhD(Flinders)
Mr Richard BLOOD, Dip Elect Eng(RMIT), BA, Dip Ed(Monash), Hospital Scientist
Ms Alana CLARKE, Technical Officer
Mr Brian DUNN, Chief Cardiac Technologist
Mr Sam ETTORE, EN, Technical Officer
Ms Alice FOSTER, EN, ECG Recordist
Ms Natasha GRAHAM, EN, ECG Recordist
Ms Rhonda HASSAM, BSc(Adel), Senior Hospital Scientist
Ms Tracy HECKER, RN, Technical Officer
Ms Alison KEENE, Technical Officer
Ms Hari KOUTSOUNIS, BSc(Adel), Hospital Scientist
Ms Sasha KOVARICEK, BA(NSW), Elect Tech Cert(Czech), Technical Officer
Ms Sharon MACKINTOSH, MPPM, Technical Officer/Cardiology Research Assistant
Mr Richard NEWLAND, BSc(Adel), Clinical Perfusionist
Ms Louise PIGOT, RN, Research Nurse
Ms Jo SPRY, Technical Officer
Dr Ting Ting WANG, Research Officer
Ms Kelly WHITE, RN, Heart Failure Nurse

ADMINISTRATIVE STAFF

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Ms Marie DANIEL, Secretary, RGH
Mr Damien BYRNE, Cert Comp. Main., IT Trainee, FMC
Ms Robyn BROCK, Secretary, RGH
Ms Cathy GREENWELL, Ward Clerk CICU
Ms Tanya IZDEBSKI, Personal Assistant, FMC
Ms Julie-Anne LARSEN-SMITH, Ward Clerk 6D
Ms Michelle LITTLEJOHNS, Administrative Assistant, FMC
Ms Ruth ONLEY, Administrative Assistant, FMC
Ms Jan ROESLER, Bookings Clerk/Secretary, FMC
Ms Heather SOUTAR, BA(Hons)(Flinders), Administrative Assistant
Ms Gloria TURL, Administrative Assistant, FMC

The service in cardiovascular medicine continued to grow during 1999. The developing relationship with the Northern Territory has meant a cardiologist consulting in Darwin on rotation most of the year. This has increased the number of patients coming for invasive investigation, intervention and cardiac surgery. Clinics also commenced in the South East and services expanded at Noarlunga and Victor Harbor.

At the Flinders campus the opening of the cardiac catheterisation laboratories in the Flinders Private Hospital in January 1999 provided two state of the art facilities for both public and private patients. These replaced the 11 year old single laboratory and has allowed for further improvement in interventional cardiology. The Cardiac Intensive Care Unit, Cardiac Short Stay ward and Chest Pain Assessment Unit are now all located in 3G adjacent to the Emergency Department. This allows better triage and treatment of patients with acute coronary syndromes and is conveniently placed for both the Emergency Department and the Cardiac Catheter Laboratories.

We still await the development of the non-invasive cardiology, cardiac research and office facilities on level 6 of the Private Hospital. The complete renovations of 3G including the chest pain triage area and the refurbishment of the cardiology ward 6D.

RESEARCH: Cardiac Surgery

Investigators:

Dr Robert BAKER, BMedSci(Hons)(Adel), PhD(Flinders)
Associate Professor John KNIGHT, MB, BS(Adel), FRACS, FRCSC, FACS
Dr Iain ROSS, MB, BS(Syd), FRCS(Eng), FRACS

Research Staff:

Ms Marie ANDREW, BA(Hons)(Flinders)
Dr Jayme BENNETTS
Mr Damien BYRNE, Cert Comp. Main., IT Trainee, FMC
Dr Craig JURISEVIC, MB, BS(Adel)
Dr William LYON
Mr Richard NEWLAND, BSc(Adel), Clinical Perfusionist
Ms Louise PIGOT, RN, Research Nurse
Ms Heather SOUTAR, BA(Hons)(Flinders), Administrative Assistant

During 1999 the Cardiac Surgery Research Group has continued strongly with its dedication to the combination of integrated clinical research, combined with laboratory based research activity.

This year saw the initiation of an exciting new clinical trial evaluating the role of a new surgical approach to performing bypass graft surgery in which the mainstay of coronary artery surgery, the heart lung machine, has been replaced by an elaborate stabilising device "the Octopus II" system. Our ongoing work looking at troponin T and neuropsychological sequelae of cardiopulmonary bypass surgery enabled us to be well positioned to compete internationally to receive support for this important trial.

In addition utilising the cumulative resource of the Cardiac Surgery Database we have been able to evaluate and present many facets of our clinical experience during the year. This has resulted in 11 national and international presentations from many members of the group, culminating in Dr William Lyon being awarded the prestigious TAG Trainee Research Prize at the 14th Inter ASC in Noosa in October. Furthermore the Perfusion Unit was the inaugural winner of the Australasian Perfusion Unit of the year award designed to recognise both clinical and research contributions to perfusion in Australia and New Zealand awarded at the National Scientific Conference in Sydney in October.

Grants:

Medtronic Australasia

RA Baker, JL Knight, IK Ross
The role of Octopus 2TM stabilising system in coronary artery bypass surgery

National Heart Foundation

RA Baker
Travel Grant

National Developmental Hospital Project

J Knight
Project Grant

Publications:

1. Knight JL. Mechanical circulatory support devices in the treatment of heart failure. Aust NZ J Med 1999;29:410-417.
2. Kneebone AC, Andrew MJ, Baker RA and Knight JL. Defining neuropsychological deterioration after cardiac surgery. Ann Thorac Surg 1999;67:297-8.

RESEARCH: Cardiovascular Medicine

Investigators:

Dr Justin ARDILL, BPharm(SAIT), MB,BS(Adel), FRACP
Associate Professor Leonard ARNOLDA, MB, BS(Monash), PhD(Monash), FRACP
Associate Professor Philip AYLWARD, MA, BM, BCh(Oxon), PhD(Flinders), MRCP(UK), FRACP
Dr Bronte AYRES, MB, BS(Adel), FRACP
Dr Malcolm BARLOW, MB, BS(Sydney), FRACP
Dr William HEDDLE, MB, BS(Adel), MD(Flinders), Dip Obs(Lond), RCOG, FRACP
Associate Professor Robert McRITCHIE, MB, BS(Syd), PhD(Syd), FRACP
Dr Robert MINSON, MB, BS(Adel), FRACP, PhD
Dr Anthony MYLIUS, BM, BS(Flinders), FRACP
Dr Andrew RUSSELL, MB, BS (Adel), FRACP
Dr Mark SHEPPARD, MB, BS(Adel), FRACP
Ms Wendy SIEBERT, BPharm, Pharmacist
Dr Phil TIDEMAN, MB, BS(Adel), FRACP
Dr Peter WADDY, BM, BS(Flinders), FRACP
Dr Leon ZIMMET, MB, BS(Adel), FRACP

Research Staff:

Ms Carolyn ASTLEY, RN, Clinical Trial Coordinator
Ms Mary-Anne AUSTIN, RN, Clinical Trial Coordinator
Ms Gloria BUTERIN, BSc, Clinical Trial Coordinator
Ms Vicki DAY, RN, Valiant Project Lead/Monitor
Ms Sandra DOLAN, BPharm, Flinders Clinical Trials Pharmacy Operations Manager
Ms Bonnie HANSEN, RN, Clinical Trial Coordinator
Ms Melissa SCHOFIELD, BPharm(Adel), Clinical Trial Monitor
Ms Caroline THOMAS, Clinical Trial Operations Manager
Ms Fiona WATERS, RN, Clinical Trial Coordinator
Mr Tony WHITEHEAD, BSc, Clinical Trial Coordinator

Administrative Staff:

Ms Robyn BOBRIDGE
Ms Lisa EVANS
Ms Merridy HARRLAND
Ms Maria KAY
Ms Suzi ROBINS

The Cardiovascular Clinical Trials Group has been very active in:

- (a) Performing clinical trials at Flinders Medical Centre
- (b) Co-ordinating trials throughout Australia and more recently the Asia/Pacific region.

The Clinical Trials Group at Flinders works in close collaboration with the NHMRC Clinical Trials Centre in Sydney as an integrated co-ordinating centre for cardiovascular clinical trials. Flinders is responsible for clinical cardiology, pharmacy and site management of large scale cardiovascular trials. In the immediate region we work in close collaboration with the Greenlane Trials Unit in New Zealand.

Clinical trials conducted during 1999 included:

- (a) Management of acute coronary syndromes (12 trials were conducted)
- (b) Management of acute myocardial infarction (5 trials were conducted)
- (c) Heart failure studies (4 trials were conducted)
- (d) Risk factor management (3 trials were conducted)
- (e) Coronary intervention trials (4 trials were conducted)
- (f) Anti-arrhythmic studies (1 trial was conducted)
- (g) Electrophysiology trials (1 trial was conducted)

Grants:

National Heart Foundation

P Aylward, R Minson, R McRitchie, W Heddle, J Harris, A Hamilton, P Tideman
LIPID, LIPID Cohort

Cleveland Clinic Foundation/Boehringer Mannheim

P Aylward, C Thomas, S Dolan
GUSTO IV, ACS, AMI

VIGOR Organisation

P Aylward, P Tideman, C Thomas, S Dolan
SYMPHONY

L Arnolda, P Aylward, C Thomas, V Day
VALIANT

Astra Zeneca

L Arnolda, P Aylward

The Medicines Company

P Aylward and P Tideman
HERO

RESEARCH: Cardiovascular Neuroscience

Investigators:

Associate Professor L ARNOLDA, MB, BS(Monash), PhD(Monash), FRACP
Associate Professor Ida LLEWELLYN-SMITH, AB(Bryn Mawr), PhD(Syd)
Dr Douglas McKITRICK, BSc(Univ Western Ontario), PhD(Univ Western Ontario)
Associate Professor R McRITCHIE, MB, BS(Syd), PhD(Syd), FRACP
Dr Jane MINSON, BSc(Adel), PhD(Adel)
Dr Hui WANG, MB, BS (Teijin), MSc (Teijin)

Research staff:

Ms Caroline MARTIN, BAppSci(Univ SA), NH & MRC Research Assistant
Ms Claire NICHOLLS, NHF Technical Assistant
Ms Anne SHEPHARD, BSc(Adel), NH & MRC Research Assistant
Ms Natalie WOOLLEY, NH & MRC Technical Assistant

The Group's interests lie in the central nervous mechanisms that control cardiovascular function and regulate blood pressure. A particular focus of investigation is the rostral brainstem, the area containing the nerves that are the key source of sympathetic drive to the cardiovascular system. The brainstem nerves project to the spinal cord, innervating nerves that, in turn, project peripherally to the heart and blood vessels. In anatomical studies the Group is seeking to establish the chemistry and connections of these central cardiovascular nerves. By applying this knowledge in physiological studies, the Group aims to identify the role of these chemically-identified nerves in the reflex control of blood pressure. In studies in normotensive animals the central nerve circuits that control blood pressure in the normal, healthy subject are identified and characterised. This control of the heart and circulation is compared with that identified in genetically hypertensive animals, in animals with heart failure and in animals with spinal cord injury. Studies in these animal models of pathology focus on the single cell level, where changes might contribute to altered cardiovascular function. The Group employs a variety of techniques in their studies, including blood flow measurements, nerve recording, single cell electrophysiology and light and electron microscopy.

Grants:

National Health and Medical Research Council

I Llewellyn-Smith (Fellowship Grant 1998-2002)

Central cardiovascular synapses: neurotransmitters, receptors and target specificity

J Minson and L Arnolda (JM Fellowship Grant 1998-2001)

Medullary cardiovascular control pathways - neurochemistry and function.

Australian Research Council

I J Llewellyn-Smith (Project Grant 1998-2000 – deferred to commence 1999)

The 100% Hypothesis: An amino acid neurotransmitter in every central synapse

National Heart Foundation of Australia

IJ Llewellyn-Smith (Project Grant 1999-2001)

Spinal interneurons that innervate sympathetic preganglionic neurons: neurochemistry and connections

National Heart Foundation of Australia (SA Branch)

D McKittrick, L Arnolda and J Minson
Equipment Grant.

Flinders University Infrastructure Block Grant

D McKittrick, L Arnolda, J Minson, I Llewellyn-Smith (1999)
Extracellular recording and juxtacellular labelling system

Flinders Medical Research Foundation

DJ McKittrick, LF Arnolda (1999-2000)
Haemodynamic responses to haemorrhage in genetically hypertensive rats

Publications:

1. Solomon S, Llewellyn-Smith I J, Minson J, Arnolda L, Chalmers J and Pilowsky P. Neurokinin-1 receptors and spinal cord control of blood pressure in spontaneously hypertensive rats. *Brain Res* 1999;815:116-120.
2. Llewellyn-Smith I J, Martin C L, Arnolda L F and Minson J B. Retrogradely transported CTB-saporin kills sympathetic preganglionic neurons. *NeuroReport* 1999;10:307-312.
3. Arnolda L F, Llewellyn-Smith I J and Minson J B. Animal models of heart failure. *ANZ J Med* 1999;29:403-409.
4. Ang K K, McRitchie R J, Minson J B, Llewellyn-Smith I J, Pilowsky P M, Chalmers J P and Arnolda L F. Activation of spinal μ -opioid receptors contributes to hypotension during hemorrhage in conscious rats. *Am J Physiol* 1999;76:H1552-1558.
5. Gatti P J, Sun Q-J, Llewellyn-Smith I J, Chalmers J B and Pilowsky P M. Substance P-immunoreactive boutons closely appose inspiratory protruder hypoglossal motoneurons in the cat. *Brain Res* 1999;834:155-159.
6. S Adamopoulos S, Kemp G J, Thompson C H, Arnolda L F, Brunotte F, Stratton J R, Kremastinos D T, Radda G K, Rajagopalan B and Coats A J S. The time course of haemodynamic, autonomic and skeletal muscle metabolic abnormalities following first extensive myocardial infarction in man. *J Mol Cell Cardiol* 1999;31:1913-26

RESEARCH: Cardiovascular Physiology

Investigators:

Professor Paddy PHILLIPS, MB, BS(Adel), DPhil(Oxford), FRACP, MA(Oxford), FACP

Research Staff:

Ms Hilde de SMET, NH & MRC Laboratory Assistant

Ms Kate BARBER, Technical Assistant

The research in the Cardiovascular Physiology laboratory headed by Professor Paddy Phillips is aimed at determining the neuroendocrine factors involved in the physiology and pathophysiology of cardiac homeostasis and diseases such as high blood pressure and congestive heart failure. Through understanding the interactions between various hormones and other factors and the way they impact on cardiac structure and function we can gain a better understanding of targets for interventions that will improve these diseases in humans.

Grants:

Clive and Vera Ramaciotti Foundation

P Phillips

Hormones and the heart: roles of endothelin, vasopressin and angiotensin II and cardiovascular hypertrophy.

National Heart Foundation

P Phillips

Interaction between endothelin and angiotensin II.

Publications:

- Phillips PA, Kelly S and Best J. Implementation and sustaining evidence based clinical practice in Australia: the Evidence Based Clinical Practice Initiative. *J Evaluation Clin Practice* 1999;5:163-168.
2. Segasothy M and Phillips PA. Vegetarian diet: panacea for modern lifestyle diseases. *Quart J Med* 1999;92:531-544.
3. Scott IA and Phillips PA. Hospitals and hospitalists: an alternative view. *Med J Aust* 1999;171:312-314.

DERMATOLOGY GROUP

CLINICAL STAFF

Dr Gillian MARSHMAN, BM, BS(Flinders), FACD

Dr Christopher DUGUID, MB, BS(Adel), DObsRACOG, FACD

Dr Lynette GORDON, MB, BS(Adel), FACD

Dr Yu-Chuan LEE, MB,BS(Adel), FACD

ADVANCED TRAINEE

Dr Harji KAUR, MB, BS(Delhi)

Dr Sally BALL, BM,BS (Flinders)

RESEARCH STAFF

Ms Michelle GRIMBALDESTON, BA, BTh(Hons) (Proceeding to PhD)

The core activity of the Dermatology Unit remains one of clinical service with very busy general outpatient sessions and specialised clinics now on a regular basis. Combined clinics with Immunology and Paediatrics are well established and very successful.

The role of the intern in managing patients in the outpatient setting has been further consolidated and has proved a popular and instructional time for those junior staff involved. It is gratifying that many students who undertake the elective in dermatology return to do the intern job with obvious enjoyment.

The Dermatology Day unit plays an important role in patient care and education and nursing further education. The Psoriasis Support Group meets periodically in this venue.

GP up-skilling places have been over-subscribed during 1999 and many GP's gained better understanding of dermatological diseases and their treatment through this program. The ongoing GP symposia held with the Southern Division again have been very well attended and accredited.

Patch testing facilities and expertise have been consolidated and the contact dermatitis clinic is well established.

RESEARCH

The Unit collaborated in a multi-centre blinded randomised trial comparing the efficacy of 2 potent topical steroids in the treatment of psoriasis. This provided further recognition of FMC Dermatology as a centre of excellence for the running of such trials and has led to our early involvement in future studies.

Collaboration with the Flinders University photo-biology basic science team is continuing with the study of the predictive value of cutaneous mast cell numbers and function in BCC development. A second study on suppression of the cutaneous immune system in psoriasis is underway.

The photo-dermatoses clinic will commence early in 2000, with mono-chromator testing, providing only the second such facility in Australia.

Publications:

1. Gordon LA. Compositae dermatitis. Australasian J Dermatology 1999;40:123-130.
2. Lee Y-C, Gordon LA and Gordon DL. Epoxy resin allergy from microscopy immersion oil. Australasian J Dermatology 1999;40:228-229.

ENDOCRINOLOGY GROUP

FLINDERS MEDICAL CENTRE AND REPATRIATION GENERAL HOSPITAL

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Associate Professor Stephen JUDD, MB, BS(Adel), MD(Adel), FRACP

Dr Stephen STRANKS, MB, BS(Adel), FRACP

Dr Wilton BRAUND, MB, BS(Monash), FRACP

Dr George TALLIS (*Department of Clinical Biochemistry*), MB, BS(Adel), FRACP, FRCPA

Dr Amanda TERRY, BM, BS(Flinders), FRACP

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Dr Colette GEORGE

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Ms Lisa DE CANDIA, BSc(Hons) (Proceeding to PhD)

Dr Ash HANFY, MB,BCh(Cairo) (Proceeding to MD)

STUDENT:

Ms Felicity BAILLIE, BBiotech (Proceeding to Honours)

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Ms Margaret MENADUE, BSc(Adel), Technical Officer

Ms Lily MICHAILOV, BSc(USSR), RN(Adel), Technical Officer

Dr John OLIVER, Dip App Chem(RMIT), BSc(Melb), PhD(Lond)

Dr Ray RODGERS, MAgSci(Melb), PhD(Melb)

Ms Jill SEAMANN, RN, Research Nurse, RGH

Ms Pam TAYLOR, RN, Research Nurse, RGH

ADMINISTRATIVE STAFF

Ms Krissy DRAWS, Ward Clerk, Ward 1

Ms Jenni GRAY, Ward Clerk, 6A

Ms Wendy KING, Administrative Assistant, FMC

Ms Sandra MIFSUD, Ward Clerk 6A

During 1999 the Diabetes Centre consolidated its move to the 6F area. This has improved communication within the Unit and with the referral area. We anticipate further improvements in the clinical service as the 6F area is developed to include consulting rooms in which we can see patients. The Diabetes service continues to be very busy and our aim for next year will be to reduce the waiting time for non-urgent referrals. We have well established links with the Southern Division of General Practice which includes a training scheme to update skills of general practitioners in the Diabetes Clinics. This is an important component of our strategy to develop a large network of skilled family doctors who are involved in the Southern Division's Diabetes Management program.

The endocrine service has well developed liaisons with the Endocrine and Neurosurgeons which optimises the treatment of pituitary disorders and thyroid cancer. The unit had developed protocols for follow-up of patients with acromegaly and thyroid cancer following major reviews of these areas during the year.

RESEARCH: FMC

Investigators:

Dr Anne CORBOULD, BMedSci(Tas), MB, BS(Tas), FRACP

Ms Lisa de CANDIA, BSc(Flinders)

Ms Helen IRVING-RODGERS, B Appl Sc(RMIT)

Associate Professor Stephen JUDD, MB, BS(Adel), MD(Adel), FRACP

Dr Tina LAVRANOS, B Sc(Hons)(Flinders), PhD(Flinders)

Dr Ray RODGERS, MAgSci(Melb), PhD(Melb)

Follicular Development

Our research into ovarian follicles has led to a number of very new ideas on how follicles grow and develop. The ovary has many primordial follicles each composed of an oocyte surrounded by a layer of granulosa cells, in turn surrounded by a basal lamina or basement membrane. The follicles take months to grow to sufficient size capable of ovulating mature oocytes. Many follicles do not reach full size and become atretic and regress. The focus has been to understand how follicles grow. Key evidence has been obtained that granulosa cells arise from a population of stem cells, transit through an amplifying population, then specialise into at least two different cell types, mural granulosa cells and cumulus cells. On atresia of follicles granulosa cells die. Apoptosis had been recognised as the method by which the cells die. However it was discovered that cells die by this mechanism or by terminal differentiation, like in skin, depending on their location in the layers of granulosa cells. The follicular basal lamina has also been an intense area of investigation for the laboratory. For the first time it has been shown that the basal lamina changes dramatically in structure and in composition as follicles grow and mature. Based on four observations, two phenotypes of follicles have been discovered, where the literature assumed all follicles were equal. The studies of these two types could help explain much of the variation of oocytes derived from follicles for IVF, and explain variation between women in their ovarian response to hormones which stimulate follicle growth. The coming year will attempt to understand the causes of the two phenotypes of follicles, and see these studies extended into human polycystic ovaries.

Endocrinology of Fat

Obese women are sometimes infertile and tend to have increased levels of androgens, often leading to increased hairiness. We discovered that fat tissues in women express the same enzyme that the testis does for converting a weak androgen, androstenedione, into a strong androgen, testosterone. It was also shown that it is the stromal cells in adipose tissue that express this enzyme, and that when cultured these cells convert androstenedione into testosterone. We recently measured the mRNA levels of this enzyme in intra-abdominal fat, relative to that of another enzyme that competes for androstenedione. There was a clear positive correlation with obesity in women, suggesting that the more obese a woman is the more testosterone a woman makes in her intra-abdominal fat. Current studies are investigating the relationship between the levels of these enzymes and the effect on androstenedione metabolism.

Grants:

National Health and Medical Research Council

R J Rodgers

Division and differentiation of granulosa cells.

RJ Rodgers

The ovarian follicular basal lamina.

Flinders Medical Centre Foundation

RJ Rodgers, SJ Judd, MJ Bawden, AM Corbould, TC Lavranos

Androgen production by adipose tissue.

Novo Nordisk Regional Diabetes Support Scheme

SJ Judd, AM Corbould, RJ Rodgers

Insulin resistance, hyperandrogenism and central obesity.

Merck Sharp & Dohme

RJ Rodgers

Androgen production by human adipose tissue.

Astra Pharmaceuticals

GA Tallis, SJ Judd, WJ Braund

CALM Study. Comparison between candesartan cilexetil 16mg and lisinopril 20mg and their combination in patients with Type II diabetes.

Publications:

1. Rodgers RJ, van Wezel IL, Rodgers HF, Lavranos TC, Irvine CM and Krupa M. Roles of extracellular matrix in follicular development. *J Reprod Fertil Suppl* 1999;54:343-352.
2. van Wezel IL, Rodgers HF, Sado YI, Ninomiya Y and Rodgers RJ. Ultrastructure and composition of Call Exner bodies in bovine follicles. *Cell Tissue Res* 1999;296:385-394.
3. Rodgers RJ, Lavranos TC, van Wezel IL and Irving-Rodgers HF. Development of the ovarian follicular epithelium. *Molec Cell Endocr* 1999;151:171-179.
4. van Wezel IL, Dharmarajan AM, Lavranos TC and Rodgers RJ. Evidence for alternative pathways of granulosa cell death in healthy and slightly atretic bovine antral follicles. *Endocrinology* 1999;140:260-2612.
5. Lavranos TC, Mathis JM, Latham SE, Kalionis B, Shay JW and Rodgers RJ. Evidence for ovarian granulosa stem cells: Telomerase activity and localisation of the telomerase RNA component in bovine ovarian follicles. *Biol Reprod* 1999;61:358-366.
6. van Wezel IL, Krupa M and Rodgers RJ. Development of the membrana granulosa of bovine antral follicles: Structure, location of mitosis and pyknosis, and immunolocalization of involucrin and vimentin. *Reprod Fert Devel* 1999;11:37-48.

RESEARCH: RGH

Investigators:

Dr Wilton BRAUND, MB, BS(Monash), FRACP

Dr Stephen STRANKS, MB, BS(Adel), FRACP

Dr George TALLIS (*Department of Clinical Biochemistry*), MB, BS, FRACP, FRCPA

Dr Amanda TERRY, BM, BS(Flinders), FRACP

Research Staff:

Ms Jill SEAMANN, RN, Research Nurse

Ms Pam TAYLOR, RN, Research Nurse

The Diabetic and Endocrinology Unit at Repat Hospital has continued three major multi-centre studies in the last twelve months. All involve the novel oral hypoglycaemic agent, Troglitazone. The Unit has two part-time research nurses involved in these projects. We will soon be commencing studies on a new insulin-stimulating drug and continue in the Osteoporosis Treatment Gap Project.

GASTROENTEROLOGY GROUP

FLINDERS MEDICAL CENTRE AND REPATRIATION GENERAL HOSPITAL

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Dr Peter BAMPTON, MB, BS(Adel), FRACP
Dr Sam HALL, MB, BS(Adel), FRACP
Dr Hugh HARLEY, MB, BS(Adel), FRACP
Dr Geoff HEBBARD, BMedSc(Melb), MB, BS(Melb), PhD(Adel), FRACP
Dr Richard HEDDLE, MB, BS(Adel), FRACP, FMGEMS, MD(Flinders)
Professor Malcolm MACKINNON, MB, BS(Melb), MD(Adel), FRACP
Dr Darren MOUNKLEY, MB, BS (Melb), FRACP
Dr Satha SATHANANTHAN, MB, BS(Sri Lanka), FRACP, AMEC
Dr Derwin WILLIAMS, MB, BS(Melb), FRACP
Dr Peter WILSON, MB, BS, FRACP, MRCP

ADVANCED PHYSICIAN TRAINEES

Dr Alan WIGG
Dr Stephen DING

POST-GRADUATE STUDENTS

Mr Stephen COLE, MSc (Proceeding to MPH)
Dr Fugui CHAI, BM(Shanghai), (Proceeding to PhD)
Dr Ying HU, BMed(China), MMed(China) (Proceeding to PhD)
Ms Monica KWIA TEK, (Proceeding to PhD)
Mr Richard LE LEU, BSc(Adel), (Proceeding to PhD)
Dr Jonathon MARTIN, MB, BS(Adel), FRACP (Proceeding to PhD)
Ms Joylene MORCOM, RN (Proceeding to Masters of Nursing)

SCIENTIFIC AND TECHNICAL STAFF

Dr Robert JAMES, BAppSci(Melb), PhD (Washington Univ), Chief Hospital Scientist
Dr Michael MICHAEL, BSc(Hons)(Melb), PhD(Melb), Molecular Biologist

SENIOR NURSING STAFF

Ms Jackie SINCOCK, RN, NUM, Endoscopy Suite, FMC
Ms Joylene MORCOM, RN, CGC, Senior Technical Officer, IPU, RGH

ADMINISTRATIVE STAFF

Ms Fiona BERTRAND, Administrative Assistant, FMC
Ms Jo BRINE, Ward Clerk, Endoscopy FMC
Ms Olga TUCCIA, Ward Clerk IPU, RGH

This has been another active year for Gastroenterology & Hepatology in the areas of clinical care and academia. The final steps in planning for the launch on Feb 25 2000 of the Flinders Centre for Digestive Health have been made.

As part of the process of integration and cross-boundary cooperation inherent in the concept of the Centre, we have further developed patient care plans with the view of integrating staff and facilities to streamline care processes and improve services to the general practitioners and the community. National funding from NDHP has been secured to facilitate this and so comprehensive planning with GPs and community carers has been established for percutaneous endoscopic gastrostomy (PEG) support plan and the bowel cancer risk-management program (SCOOP, Southern Cooperative Program for the Prevention of Colorectal Cancer). Two nurses, Kerry Dollard and Jayne Sandford have been pivotal in these

programs. Educational material has been developed with the Southern Division of GP and is to be promulgated in January. We have also trained a nurse, Joylene Morcom, as a nurse endoscopist and she has commenced performing unsupervised screening flexible sigmoidoscopy.

In keeping with a regional perspective to soon be incorporated into the Centre, there have been further developments at RGH Daw Park as well (see below also). The Motility Service has fully established itself as the regional service, under the direction of Geoff Hebbard, who is now the Director of IPU at RGH. Plans for a new building are complete but funding has not yet been finalised.

To further the concept for a regional GI Diagnostic Service, in keeping with the concept outlined in "Better Health Care in the South", negotiations with Noarlunga Health Service are underway. To strengthen the integration of endoscopy units between hospitals, Jackie Sincok, RN, has been appointed as Nurse Unit Manager of the combined FMC and RGH endoscopy areas.

The outpatient service has improved with Jenny Troake now coordinating bookings, resulting in better management of patients through the clinical pathways. The Familial Bowel Cancer Clinic has expanded and is one of our busiest activities, with the Research Coordinator, Janet Bennett, RN, providing an important role in linking research and clinical services.

At RGHDP, achievements for the year include: a) purchase and commissioning of Argon Plasma Coagulation Device, b) redevelopment of Endoscope reprocessing room (purchase of 3 new machines) and comprehensive review of infection control practices in endoscopy, c) purchase of narrow calibre upper GI endoscope and increased number of unsedated upper GI endoscopies, d) introduction of software for tracking of endoscopes/accessories and audit of endoscopic procedures, e) introduction of formalised Haematemesis and Melaena Service, f) introduction of Swallowing Disorders clinic, and g) use of combined imaging and manometry in 'difficult' dysphagia.

In the area of leadership, Prof Young has chaired several national committees related to research and bowel cancer.

RESEARCH

Investigators:

Mr Stephen COLE, BSc(Hons)Adel, MSc(Adel)

Dr Robert JAMES, BAppSci(Melb), PhD(Washington Univ), Chief Hospital Scientist

Professor Graeme YOUNG, MB, BS(Melb), MD(Melb), FRACP

Research Staff:

Ms Janet BENNETT, RN, Research Coordinator

Ms Heather BEY, RN, Research Nurse

Dr Lawrence EDDIE, BSc(Manitoba), MSc(Melb), PhD(Melb), Research Officer

Ms Jan KAZENWADEL, BSc(Melb), Research Assistant

Mr James HIGHAM, BBioEng(Flinders), Research Assistant

Ms Julianne HENRY, BAppSc, BSc(Hons), PhD, Research Officer

Dr Ying HU, BMed(China), MMed(China), PhD Student

Ms Anne McPHERSON, BSc(Hons), Research Assistant

Ms Helen MAGAREY, RN, Research Nurse

Dr Michael MICHAEL, BSc(Hons)Melb, PhD(Melb), Molecular Biologist

Dr Sue O'CONNOR, BSc (Hons), PhD, Research Officer

Ms Olga PENINO, Technical Officer

Dr Nick VAN HOLST, BSc(Hons), PhD, Research Officer

There have been two pivotal achievements for the year. The first has been the signing of a contract between FMC, Flinders Technology and Enterix Australia, for \$3.8 million dollars of funding over 3 years to support two projects: a pharmacogenomic project directed towards the identification of potential drug-target sites in colorectal adenomas and a molecular project aimed at identifying differentially displayed genes in colorectal adenomas. Dr Robert James and Professor Young are the key personnel involved.

The second has been the success of Dr Geoffrey Hebbard in obtaining his first NHMRC grant.

Prof Young was appointed chair of one of the Discipline Panels for NHMRC (Gastroenterology, Respiratory and Renal diseases).

Grants:

Lederle Wyeth

M Mackinnon and GP Young

Three treatment study comparing efficacy and tolerability of low dose Lansoprazole, Omeprazole and Ranitidine as acute healing in long term maintenance treatment for reflux disease.

M Mackinnon and GP Young

Lansoprazole 5yr maintenance treatment in patients with reflux oesophagitis.

Astra Pharmaceuticals Pty Ltd

M Mackinnon and GP Young

Compassionate use of Omeprazole in patients with peptic ulcer disease or severe reflux disease not responding to treatment with histamine H2 receptor antagonist and who are ineligible for surgical treatment.

Grains Research Development Corporation

G Young

Effect of dietary omega-3 fatty acids on colorectal epithelium.

Anti-Cancer Foundation of SA

G Young

Apoptosis in colorectal cancer.

Beckman Coulter Primary Care Diagnostics

G Young

Participation in colorectal cancer screening.

Bushell Foundation

G Young

Colorectal cancer screening registry.

National Health and Medical Research Council

G Young and A Sinclair

Plant-derived omega-3 fatty acids and NSAIDs in colorectal cancer.

G Hebbard

Mechanics of normal and disordered gastric emptying

Enterix Australia

G Young

Evaluation of a new faecal occult blood test

R James

Drug target identification for colorectal cancer

R James and G Young

Identification of novel colonic adenoma markers

Lederle

G Young, G Hebbard, J Ring

Suppression of H pylori breath tests by acid suppressing drugs

Publications:

1. Dinning PG, Bampton PA, Kennedy ML, Kajimoto T, Lubowski DZ, deCarle DJ, Cook IJ. Basal pressure patterns and reflexive motor responses in the human ileocolonic junction. *Am J Physiol* 1999; 276: G331-G340.
2. Dinning PG, Bampton PA, Kennedy ML, Cook IJ. Relationship between terminal ileal pressure waves and propagating proximal colonic pressure waves. *Am J Physiol* 1999;277:G983-992.
3. Andrews JM, Nathan H, Malbert CH, Verhagen MA, Gabb M, Hebbard GS, Kilpatrick D, MacDonald S, Rayner CK, Doran S, Omari T, O'Young E, Frisby C, Fraser RJ, Schoeman M, Horowitz M and Dent J. Validation of a novel luminal flow velocimeter with video fluoroscopy and manometry in the human esophagus. *American Journal of Physiology* 1999;276(4 Pt 1):G886-94.
4. Verhagen MA, Rayner CK, Andrews JM, Hebbard GS, Doran SM, Samsom M and Horowitz M. Physiological changes in blood glucose do not affect gastric compliance and perception in normal subjects. *American Journal of Physiology* 1999;276(3 Pt 1):G761-6.
5. Lingenfelser T, Sun W, Hebbard GS, Dent J and Horowitz M. Effects of duodenal

distension on antropyloroduodenal pressures and perception are modified by hyperglycemia. *American Journal of Physiology* 1999;276(3 Pt 1):G711-8.

6. Young GP. Approach to the Patient With Occult Gastrointestinal Bleeding. *In* Textbook of Gastroenterology (3rd edition), Eds Yamada T, Alpers D, Laine L, Owyang C, Powell D. Lippincott Williams and Wilkins, Philadelphia, 1999, pp 714-742.
7. Young GP and Weller D. Registries and the prevention of colorectal cancer. *Italian Journal of Gastroenterology* 1999;31:19-22.
8. Young GP. Confusion about secondary prevention for colorectal cancer – resolving issues at the front line. *Medical Journal of Australia* 1999;170:102-103.
9. Macrae FA and Young GP. Neoplastic and non-neoplastic polyps of the colon and rectum. *In* Textbook of Gastroenterology (3rd edition), Eds Yamada T, Alpers D, Laine L, Owyang C, Powell D. Lippincott Williams and Wilkins, Philadelphia, 1999, pp 1965-1994.
10. Hebbard GS, and Young GP. Diet and irritable bowel syndrome. *Current Therapeutics*, 1999;40:63-69.
11. Truswell S, Baghurst K, Baghurst P, Binns C, Giles G, Hill M, MacLennan R, Paton L, Roberts-Thomson I, Roediger B, Thomson B and Young GP. Is meat intake linked to risk of colorectal cancer? *Meat and Livestock, Australia*, 1999, 4 pages.
12. Young GP. Approach to the Patient With Occult Gastrointestinal Bleeding. *In* Atlas of Gastroenterology (2nd edition), Eds Yamada T, Alpers D, Laine L, Owyang C, Powell D. Lippincott Williams and Wilkins, Philadelphia, 1999, pp 11-21.
13. Macrae FA, Young GP. Colorectal polyps: benign and premalignant. *In* Atlas of Gastroenterology (2nd edition) , Eds Yamada T, Alpers D, Laine L, Owyang C, Powell D. Lippincott Williams and Wilkins, Philadelphia, 1999, pp 376-394.
14. Gibson PR, Nov R, Fielding M, McIntyre A, Finch CF, Rosella O, Mariadason JM, Barkla DH and Young GP. The relationship of hydrolase activities to epithelial cell turnover in distal colonic mucosa of normal rats. *Journal of Gastroenterology and Hepatology* 1999;14:866-72.
15. Gibson PR, Birchall I, Rosella O, Albert V, Finch CF, Barkla DH and Young GP. Urokinase and the intestinal mucosa: evidence for a role in epithelial cell turnover. *Gut* 1998;43:656-63.
16. Le Leu RK, McIntosh GH and Young GP. Ability of endogenous folate from soy protein isolate to maintain plasma homocysteine and hepatic DNA methylation during methyl group depletion in rats. *Journal of Nutritional Science and Vitaminology* 1998;44:457-464.
17. Rickard KL, Gibson PR, Young GP and Phillips WA. Activation of protein kinase C augments butyrate-induced differentiation and turnover in human colonic epithelial cells in vitro. *Carcinogenesis* 1999;20:977-984.
18. Sinatra M, St John DJB and Young GP. Interference of plant peroxidases with guaiac-based fecal occult blood tests is avoidable. *Clinical Chemistry* 1999;45:123-126.
19. Young GP, Fugui Chai and Zalewski P. Polysaccharide fermentation, butyrate and apoptosis in the colonic epithelium. *Asia Pacific Journal of Clinical Nutrition* 1999;8:S27-31.

20. Young GP. Australian trends in colorectal cancer incidence and Australian guidelines for prevention. *European Journal of Cancer Prevention* 1999;8:179-181.

HYPERTENSION CLINICAL RESEARCH UNIT

Investigators:

Dr Leonard ARNOLDA, MB, BS(Monash), PhD(Monash), FRACP

Dr Genevieve GABB, MB, BS(Hons)(Adel), FRACP, GradDipClinEpid(Univ Newcastle)

Professor Lindon WING, MB, BS(Syd), FRACP

Research Staff:

Ms Sue COOK, RN, Research Nurse

Ms Danni MOLLOY, Technical Officer

Ms Jane UPTON, RN, Research Nurse

Post-Graduate Student:

Dr Paula HARVEY, BM, BS (Flinders) FRACP, (Proceeding to PhD)

The Hypertension Clinical Research Unit is currently working in the following areas:

Drug treatment of hypertension. The Unit has a well established ongoing program of the evaluation of combination antihypertensive therapy by the use of placebo-controlled crossover designs in which individual agents are compared separately and in combination. Studies have been conducted separately in patients with diastolic hypertension and in older patients with isolated systolic hypertension.

Hormone replacement therapy and cardiovascular risk. A recent program has been focussing on the effect of various hormone replacement regimens in postmenopausal women on cardiovascular risk factors such as blood pressure and plasma lipids.

Blood pressure measurement. The unit has a long-standing interest in blood pressure measurement. There is currently an ongoing program of evaluation of commercially available devices for self-measurement of blood pressure.

Outcome trials in hypertension. Professor Wing is Chairman, Management Committee of the 2nd Australian National Blood Pressure Study. This is a comparative outcome study of ACE-inhibitor and diuretic-based therapy in 6083 older hypertensives in Australian General Practices.

Grants:

National Health and Medical Research Council of Australia

Merck Sharp and Dohme (Australia) Pty Ltd

Department of Health and Family Services

Space Labs Australia

LMH Wing, CM Reid and Management Committee

2nd Australian National Blood Pressure Study

Astra Pharmaceuticals Pty Ltd (AstraZeneca)

LMH Wing

Candesartan, cilxetile and hydrochlorothiazde in systolic hypertension, a placebo-controlled double-blind study.

Bristol Myers Squibb

LMH Wing

A randomised, double-blind, amlodipine and losartan controlled study of omapatrilat in subjects with mild to moderate hypertension.

Publications:

1. Wing LMH, Arnolda LF, Harvey PH, Upton J, Molloy D, Gabb GM, Bune AJC and Chalmers JP. Diuretics and dietary sodium restriction in essential hypertensive patients resistant to treatment with an ACE inhibitor. *Blood Pressure* 1998;Vol 7:299:307.
2. Harvey PJ, Wing LMH, Savage J, Molloy D. The effects of different types and doses of oestrogen replacement therapy on clinic and ambulatory blood pressures and the renin angiotensin system in normotensive postmenopausal women. *J Hypertension* 1999;17:405-411.
3. Steven ID and Wing L. Control and cardiovascular risk factors of hypertension. *Australian Family Physician* 1999;28:45-48.
4. Wing LMH. Is there a place for thiazide diuretics in the management of hypertension? *Aust Prescriber* 1999;22:102-103.
5. Roberts GW, Druskeit T, Jorgensen L, Wing LMH, Gallus AS, Miller C, Cosh D and Eaton VS. Comparison of an age adjusted warfarin loading protocol with empirical dosing and Fennerty's protocol. *Aust NZ J Med* 1999;29:731-736.

NEUROLOGY GROUP

CLINICAL STAFF

Associate Professor Richard BURNS, MB, BS(Adel), FRACP, FRCP(Lond)

Professor William BLESSING, BA, MB, BS(Syd), PhD(Flinders), FRACP

Dr David SCHULTZ, BM, BS(Flinders), FRACP

Professor John WILLOUGHBY, MB, BS(Adel), PhD(McGill), FRACP

SCIENTIFIC AND TECHNICAL STAFF

Ms Rachel CALE

Ms Carmel MITCHELL, EEG Recordist

ADVANCED PHYSICIAN TRAINEE

Dr Belinda WELLER

POST-GRADUATE STUDENTS

Ms Lorraine MACKENZIE, BSc (Flinders), (Proceeding to PhD)

SENIOR NURSING STAFF

Ms Anne HOBBS, RN

ADMINISTRATIVE STAFF

Ms Veronica CAUST, Assistant Secretary

Ms Vicky FRANGOULIS, Administrative Assistant

The Department of Neurology continues to provide a broad clinical and teaching service as well as undertaking basic and clinical research.

In addition to in-patient and out-patient convulsing services at Flinders Medical Centre and Repatriation General Hospital there is a visiting service to the Northern Territory and Julia Farr Centre. Community organisations are represented. There is vigorous involvement in undergraduate and postgraduate teaching; a video library of neurological disorders is being compiled and there is representation across many areas of Flinders Medical Centre and the University including the Centre for Neuroscience. We continue to have strong links with neurosurgery and neuroradiology especially and we would like to acknowledge the role of Professor Peter Blumbergs and Dr Grace Scott in the Department of Neuropathology, I.M.V.S.

RESEARCH: Clinical

Investigators:

Associate Professor Richard BURNS, MB, BS(Adel), FRACP, FRCP(Lond)
Dr David SCHULTZ, BM, BS(Flinders), FRACP

Research Staff:

Ms Sara LAUBSCHER, RN, Research Nurse

Trials conducted:

A multicentre dose titration study to assess the safety, toleration and efficacy of eletriptan for longterm treatment of migraine (with and without aura).

Vitatops - A multicentre randomised, double-blind, placebo-controlled clinical trial examining the efficacy and safety of multi-vitamin therapy in secondary stroke prevention.

A multi-centre, multi-national study to assess safety, tolerability, pharmacokinetics and pharmacodynamics of a single dose of UK-279,276 in acute stroke patients.

Grants:

Pfizer

R Burns

A multi-centre dose titration study to assess the safety, toleration and efficacy of eletriptan for long term treatment of migraine (with and without aura).

Publications:

1. M Kiley, F Voyvodic and R Burns. An unusual case of hemifacial spasm. *Journal of Clinical Neuroscience* 1999;6(4):349-351.
2. M A Kiley, M King and R J Burns. Central pontine myelinolysis. *Journal of Clinical Neuroscience* 1999;6(2);155-157.
3. R Burns. Parkinson's Disease. Consider the Options. In *End Stage Clinical Care for Chronic Degenerative Disorders*. Eds. M Paris & A McLeod, Hyde Park Press, 1999,77-81.
4. Schultz, D.W. Behavioural disturbance and visual hallucinations in a 78 year old man: Clinicopathological Case Conference. *Journal of Neurology, Neurosurgery & Psychiatry* 1998;65(6):933-938.

RESEARCH: The Epilepsy Laboratory

Investigators:

Dr Jenny HISCOCK, BSc(Flinders), PhD(Flinders), NH & MRC Research Officer

Ms Lorraine MACKENZIE, BSc (Hons)(Flinders)

Dr Andrei MEDVEDEV, BSc(Moscow), PhD(Moscow), NH & MRC Research Officer

Professor John WILLOUGHBY, MB, BS(Adel), PhD(McGill), FRACP

Research Staff:

Ms Rachel CALE, NH&MRC Junior Biomedical Laboratory Assistant

The Epilepsy Laboratory examines generalised convulsive epilepsy using either of two animal models: (i) diminished inhibitory activity induced by the gaba_A receptor-chloride channel blocker picrotoxin or (ii) excessive excitability induced by the glutamate-akinatate/AMPA receptor agonist kainic acid, infused intravenously. The distribution of regions involved in single seizures induced by these agents is determined by comprehensive mathematical analysis of epileptic discharge wave-forms. In addition, we examine the anatomical characteristics of regions shown to be important in seizure generation.

Electroencephalography of regions participating in convulsive seizures.

In studies of picrotoxin-induced seizures, electrophysiological analysis previously revealed that the frontal forelimb or hindlimb motor cortex is earliest to generate fast frequency waveforms during the convulsive seizure. We have now shown that discharges are generated intensely in neocortex, while in other structures seizure discharges are little different from pre-ictal EEG spindles.

In studies of kainic acid-induced seizures, we have now established that the fast oscillations driven by the hippocampus are in fact gamma oscillations, having no time delay between different brain regions, and that they are located throughout the neocortex and hippocampus.

Connectivity of regions in relation to their participation in convulsive seizures.

We also undertake studies to determine mechanisms that might underlie involvement of various structures in epileptic convulsions. Previously we showed that inputs to frontal cortex (a generator of fast frequencies in one model) arise from other cortical regions or from the thalamus. Preliminary results in another cortical region (cingulate cortex) reveal that there may be one third fewer inputs to this region compared to frontal cortex. This may contribute to frontal cortex having a leading role in the generation of some components of the epileptic discharges.

Anatomical correlates with seizure type.

We have investigated the amount of inhibitory inputs into brain regions involved in seizures caused by either picrotoxin or kainic acid using the immunohistochemical detection of GAD in synaptophysin identified vesicular profiles. In seizures caused by kainic acid (increased excitation), involved brain regions have low proportions of GABA inhibitory terminals, high total nerve terminal area, and by deduction, high proportions of excitatory inputs. In seizures caused by picrotoxin, involved brain regions did not correlate with amount of inhibitory inputs suggesting that in this seizure type, connectivity with region of seizure generation may be more important for seizure propagation.

Grants:

National Health and Medical Research Council

J Willoughby, J Hiscock, A Medvedev and L Mackenzie

EEG rhythms and subcortical structures contributing to generalised seizures

University Research Budget

J Willoughby

EEG rhythms and subcortical structures contributing to generalised seizures

Flinders Medical Centre Foundation

J Hiscock

The effects of electroshock on the brain

Parke Davis, Glaxo Wellcome

Epilepsy Laboratory

Support to attend Annual Scientific Meeting of the American Epilepsy Society, 1999

Publications:

1. Medvedev A and Willoughby JO Autoregressive modelling of the E.E.G. in systemic kainic acid-induced epileptogenesis. *International Journal of Neuroscience*, 1999;97:149-167.
2. Willoughby JO, Mackenzie L, Medvedev A and Hiscock JJ. Generalised convulsive epilepsy: possible mechanisms. *Journal of Clinical Neuroscience* 199;6:189-194.
3. Willoughby JO and Mackenzie L. Picrotoxin-, kainic acid- and seizure-induced Fos in brainstem, with special reference to catecholamine cell groups. *Neuroscience Research* 1999;33(3):163-169.
4. Willoughby JO. Epileptogenesis: electrophysiology. In: Eadie, M and Vajda, FJE (eds), "Antiepileptic Drugs II". *Handbook of Experimental Pharmacology*. Springer-Verlag, Heidelberg, pp 63-85, 1999.

RESEARCH: The Neurology Laboratory

Investigators:

Professor William BLESSING, BA, MB, BS(Syd), PhD(Flinders), FRACP

Dr Weiping GAI, BM, MSc(Hunan), PhD(Flinders)

Mr Joseph GARCIA, DVM(Philippines), MScVS(Syd), Research Associate

Dr Eugene NALIVAICO, MD, PhD(Bogomeletz), Research Officer

Dr Ying Hui YU, BM (Shanghai), PhD(Flinders)

Research Staff:

Ms Robyn FLOOK, Technical Officer

Ms Sara KENNEDY, Laboratory Assistant

Mr Nigel PEDERSEN, BSc(Flinders), Technical Assistant

The Neurology Laboratory has conducted research into the manner in which the brain differentially regulates blood flow to different vascular beds.

Raphe nuclei and control of ear blood flow in the rabbit.

In anaesthetized rabbits we have demonstrated that a selective ear pinna bed vasoconstriction is elicited by a normally painful stimulus. We have demonstrated that inhibition of the raphe-parapyramidal region in the medulla oblongata prevents this ear pinna vasoconstriction. This evidence strongly suggests that bulbospinal presympathetic neurons in the raphe-parapyramidal region are responsible for regulating skin blood flow changes in response to a painful stimulus. Electrical stimulation in the region of the amygdala also selectively reduces skin blood flow, and it appears that the message from the amygdala reaches the sympathetic preganglionic neurons in the spinal cord by way of the raphe-parapyramidal descending projection.

We have shown that excitation or inhibition of neuronal function in the inhibitory vasomotor area in the caudal ventrolateral medulla (CVLM) causes the expected alterations to blood flow in the mesenteric bed. However the CVLM inhibitory vasomotor neurons do not affect cutaneous blood flow in a similar manner. This is further evidence that blood flow to the skin is regulated by separate neural circuits in the brain.

Transneuronal virus tracing using Pseudorabies virus.

These experiments were performed in collaboration with colleagues at Semmelweis University in Budapest, Hungary. Pseudorabies virus modified to contain the gene for beta-galactosidase was injected into one ear pinna in rabbits. Animals survived for 3-4 days and then the animal was anesthetized and fixed by vascular perfusion. The spinal cord and brain were sectioned and examined immunohistochemically for the presence of beta-galactosidase as a marker of virus-containing cells. Neurons were found in all regions of the brainstem and hypothalamus known to contain presympathetic neurons, but it was notable that many more neurons were observed in the raphe-parapyramidal region than observed after comparable injections of virus into the kidney. The results supply anatomical evidence for our hypothesis that raphe-parapyramidal neurons regulate cutaneous blood vessels.

Grants:

National Health and Medical Research Council

WW Blessing

Brain pathways mediating cutaneous vasoconstriction during alerting responses.

SA Brain Bank

Network for brain research into mental disorders

National Heart Foundation

WW Blessing, E Nalivaiko

Characterisation of vasodepressor neurons in caudal ventrolateral medulla

Flinders Medical Centre Research Foundation

W W Blessing
Equipment grant

WW Blessing

Raphe nuclei and cutaneous vasoconstriction in response to noxious stimulation

University Research Budget

WW Blessing
Brain pathways mediating cutaneous vasoconstriction during alerting responses

Neurosurgical Research Foundation

WW Blessing
Brain pathways mediating cutaneous vasoconstriction in response to trigeminal stimulation

Publications:

1. Blessing, W.W., Yu, Y.-H. and Nalivaiko, E. Medullary projections of rabbit carotid sinus nerve *Brain Research*, 816 405-410, 1999.
2. Yu, Y.-H. and Blessing, W.W. Amygdala coordinates sudden falls in ear pinna blood flow in response to unconditioned salient stimuli in conscious rabbits. *Neuroscience*, 93 (1) 135-141, 1999.
3. Morris, J.L. Zhu, B.-S., Gibbins, I.L., and Blessing, W.W. Subpopulations of sympathetic neurons project to specific vascular targets in the pinna of the rabbit ear. *The Journal of Comparative Neurology*, 412 147-160, 1999.
4. Blessing W.W., Yu, Y.-H. and Nalivaiko, E. Raphe pallidus and parapyramidal neurons regulate ear pinna vascular conductance in the rabbit. *Neuroscience Letters*, 270 33-36, 1999.
5. Thompson, K.A., Blessing, W.W. and Wesselingh, S.L. Herpes simplex replication and dissemination is not increased by corticosteroid treatment in a rat model of focal herpes encephalitis. *Journal of Neurovirology*, in press.
6. Nalivaiko, E. and Blessing, W.W. Synchronous changes in ear and tail blood flow following salient and noxious stimuli in rabbits. *Brain Research*, 847 343-346, 1999.

NURSING AND PATIENT CARE SERVICES

FLINDERS MEDICAL CENTRE

MANAGEMENT

Deputy Director: *Mr Anthony BAKARICH*, RN, RM, BN, MHA, AFACHSE, FRCNA

Nurse Managers

Ms Fay HANNS, RN, RM, DipAppSc(Nsg), BN

Ms Sally HOLDING, RN, DipAppSc(Nsg), Renal Cert, BN, GradDip SocSc

Ms Glenys WATT, RN, RM, BN, DipAppSc(Nsg)

Project Nurses

Ms Janet CALDWELL, RN, SCM

Ms Danielle GRAHAM, DipAppSc(Nsg), BN, Renal Cert, MHSM

CLINICAL STAFF:

6A	CNC CN CN CN	<i>Ms Julie BUCKMAN</i> , RN, BN <i>Ms Donna COWAN</i> , RN, BN <i>Ms Julie PUCKRIDGE</i> , RN, RM <i>Ms Sally TREMBATH</i> , RN, BN, GradDip Gerontology
6B	CNC CN	<i>Ms Clare MACGOWAN</i> , DipAppSc(Nsg), BN, Cert Gerontics <i>Ms Inara GORBUNOV</i> , RN, Cert Geriatrics and Rehab, BN
6C	CNC CN CN	<i>Ms Myra STARICK</i> , RN, DipAppSc(Nsg), BN <i>Mr Gary ANDERSON</i> , RN, BN <i>Ms Georgia BANKS</i> , RN
6D	CNC CN CN	<i>Ms Julie PICK</i> , BN, Critical Care Cert <i>Mr Dean BAKER</i> , RN, BN <i>Ms Sandra BUTTON</i> , BN, Cert Cardiovascular Nsg
6G	CNC CN	<i>Ms Tracey HERRIOTT</i> , BN, Renal Cert <i>Ms Monique BORLACE</i> , BN, BN (Nephrology)
Dialysis	CNC	<i>Ms Sue ROBERTS</i> , RN, DipAppSc(Nsg), BN, Renal Cert
CIC	CNC CN CN	<i>Ms Sharon BURNS</i> , RN, BN, Critical Care Cert, MN(AdvPractice) <i>Ms Celeste BETTESS</i> , BN, Cert Cardiovascular Nsg <i>Ms Anita LUMN</i> , RN, Cert Cardiovascular Nsg
Cardiac Services	CNC CNC CN CN	<i>Mr James DUNN</i> , RN, Cardio Thoracic Nursing Certificate, GradDip Acute Care Nursing(Cardio Thoracic), GradDip Health Services <i>Ms Kaye SUTTON</i> , RN, NASPEXAM <i>Ms Tracey HECKER</i> , RN, DipAppSc(Nsg) <i>Ms Kelly WHITE</i> , BN, Cert Cardiovascular Nsg

CCMU	CNC	<i>Mr Kim BURY</i> , DipAppSc, BN, Critical Care Cert
	CN	<i>Ms Petra BIERER</i> , BN, Critical Care Cert, MN
	CN	<i>Ms Karen MILTON</i> , DipAppSc, RN, Critical Care Cert
	CN	<i>Ms Kerry PASCOE</i> , RN, Critical Care Cert
	CN	<i>Ms Natasha REID</i> , DipAppSc, RN, Critical Care Cert
	CN	<i>Ms Michelle STUART</i> , BN, Critical Care Cert
	CN (Acting)	<i>Ms Susan TAYLOR</i> , RN, RM, BN, Critical Care Cert
	CN (Acting)	<i>Mr Alan WALES</i> , RN, GradDip(Intensive Care Nsg)
Trauma Services	Nursing Trauma Co-ord	<i>Ms Deb WOOD</i> , RN, BN, Certificate in Emergency Nursing
Diabetes Services	CNC	<i>Ms Collette GEEKIE</i> , RN, BN, National Accredited Diab Ed
Palliative Care	CNC	<i>Mr Kevin BURRETT</i> , RPN, RN, DipAppSc(Community Health Nursing)
	CN	<i>Mr Patrick COX</i> , RN, BN, MN(Hospice Care)
	CN	<i>Ms Robyn JEZEWSKI</i> , RN
Staff Development		<i>Ms Susan BASSETT</i> , RN, RCNT, DN[London], Grad.DipHealth Counselling
		<i>Ms Wendy BATES</i> , RN, RM, DipAppSc, BAppSc(Nsg studies), MEd (Human Resource Studies)
		<i>Ms Annie LIWU</i> , RN, DipT, BEd, MN
		<i>Mr Mark WHITINGTON</i> , RN, Critical Care Cert, DipT, BEd(Adults), Master of Professional Education & Training (Open & Distance Education)

The Division of Medicine, Cardiac and Critical Care Services has 270 FTE nursing staff providing a wide range of clinical nursing expertise. There are 38 FTE Patient Services Assistants providing clinical support and cleaning services to all wards and units in the Division. Nine Ward Clerks provide clerical and administrative support for staff and patients.

MAJOR CHANGES

Cardiac Intensive Care relocated to level 3 in February and incorporated the Chest Pain Assessment Unit and Cardiac Short Stay. There was extensive renovation of the 3G area including installation of new monitoring equipment.

The existing staff from ward 3G were relocated to ward 6B and received an orientation and education program which enabled them to become proficient in their new specialty, Endocrinology. The staff made a successful transition to their new area but unfortunately due to budget constraints the difficult decision was taken to close ward 6B in August. The staff have been incorporated into other positions throughout the hospital.

EDUCATION

The Division provides and supports a number of postgraduate initiatives to maintain and improve nursing competence.

Courses run in conjunction with the Flinders University of Adelaide, Australia include:

Graduate Certificate/ Master Cardiovascular nursing

Graduate Certificate/ Master Critical Care

Courses run by Flinders Medical Centre Staff Development in conjunction with the Division include:

Acute Medical/ Surgical Program

Acute Aged Care Program

Courses run externally and supported by the Division include:
Graduate Certificate in Renal Nursing

We provide clinical education and support to approximately 3-4 graduate nurses per unit/ward per year.

SERVICE IMPROVEMENT

Sequential Development program

This program was developed by the Clinical Nurse Consultants of the Division of Medicine, Cardiac and Critical Care Services. The program is sequential in nature and has three major steps; grade A, grade B and grade C. Each step constitutes a higher, more independent level of clinical practice.

The program consists of a series of self directed work-books which aim to develop the minimum knowledge required by a Registered Nurse to function as independently as possible for that level of practice. There are two main workbooks for each grade. One focuses on management skills and knowledge and the other on clinical skills.

Improving patient assessment

The nursing staff in the division have been working towards the development of a number of tools and processes to improve patient assessment. These include:

The Cognitive Assessment Tool produced in conjunction with Dr Craig Whitehead. This tool is to be used as the standard screening tool for all patients 70 and over admitted to Flinders Medical Centre. Within the next twelve months it is planned to conduct an audit on a) staff compliance in completing the form and b) whether a positive diagnosis has been followed up by medical assessment and/or treatment.

Tools for assessment of urinary continence and mobility are in the process of being trialled in the wards

End of life decision making

The primary goal of this project was to encourage FMC clinicians to assist patients and their surrogate decision makers with making practical and informed end of life treatment decisions on a more regular basis. An extensive staff survey was conducted and a group of experienced clinicians evaluated the results. The report has indicated that the challenge for FMC is to develop policies, procedures and programs that will support and encourage all clinical staff to improve their communication with patients on this very important patient care issue.

Occupational Health and Safety

The Division has been pro-active in the area of Occupational Health and Safety. A program of safer manual handling is being introduced in conjunction with the Occupational Health and Safety Staff. There have been a number of initiatives implemented with the aim of reducing injuries to nurses. These include the purchase of equipment – slide sheets, patient lifters, gzunda bed pushers and modification of bathroom areas to reduce the height of the lip on the shower.

Sally Holding, Nurse Manager, completed an overseas study tour to examine the issues involved in implementing a “Minimal Lifting Policy”. This was funded by an award from the Department of Human Services, Premier’s Nursing Scholarship.

A small grant from WorkCover allowed a joint project to be conducted with Repatriation General Hospital and the Clinical Epidemiology Unit investigating manual handling injuries to

nurses. An observational study of the manual handling duties of nurses was performed and the results of this study should be available in 2000.

Ward 6D Facilitated Admission and Discharge Strategy (FADS)

This is part of the National Demonstration Hospital Project, Phase 3. Associate Professor John Knight is Project Leader and Ms Robyn Popplewell is Project Manager. One four bed bay in 6D was modified for the trial and an overnight room for medical staff was made available close to the bay. One of the aims of the project is to transfer cardiac surgery patients from Critical Care Medicine Unit to the ward earlier than at present to facilitate early mobilisation and discharge. Julie Pick, CNC Ward 6D, has been Project Nurse on the group and has done an immense amount of work to ensure the progress of the project.

In 2000 it is planned to have 5 patients per week having care in the fast tracking bay.

Enrolled Nurse Role

A pilot project was introduced on ward 6D to advance the role of the Enrolled Nurse. An evaluation of this project will be carried out in 2000.

PAPUA NEW GUINEA PROJECT

Medical Officer, Nursing and Allied Health Science Training Project (MONAHP) is a Commonwealth Government program and is sponsored by AusAID. A number of staff from the Division have visited PNG to provide clinical expertise and education.

- Mr Anthony Bakarich - Education on Nursing Management
- Mr Kim Bury - Development of Intensive Care Units and Emergency Care
- Ms Sharon Burns - Education on Cardiology

Tony Bakarich

REPATRIATION GENERAL HOSPITAL

DIRECTOR OF NURSING – MEDICAL AND RELATED SERVICES

Mr David Edwards RN, Dip. App. Sci (Nsg.), BHA, MRCNA

CLINICAL STAFF:

Ward 1

Rheumatology/Oncology

UNM

Ms. Lois Cooke

RN, Cert. Oncology,
Gerontics, Palliative Care Nursing
RN, Cert. Palliative Care

CN

Ms. Judy Robinson

Ward 2

Respiratory/Gastroenterology

UNM

CN

Ms. Angela Milne

Ms. Francis Zboril

RN, BN, Cert. Oncology Nursing
RN, Cert. Oncology Nursing

Ward 5

Cardiology/Endocrinology

UNM

CN

CN

Mr. Stephen Basso

Mr. Michael Nietz

Ms. Velma Ernst

RN, Dip. App. Sci., BN (Admin),
Critical Care Cert.
RN
RN, MN

AARU

Admissions and Acute

Referral Unit

UNM

CN

Ms. Lesley Jeffers

Ms. Rita Wyatt

RN, BA, MRCNA
RN, Cert. Emergency Nursing

Ward 17

Psychiatry

UNM

CN

Ms. Vicki Hutchinson

Ms. Kathy Thomas

RN, RPN, BN
RN, RPN, Grad. Dip. Health
Counselling
RN, RPN, RMDN, Grad. Dip. Health
Counselling
RN, RPN, BN
RN, RPN, BN

CN

Mr. Paul Beasley

CN

Ms. Abbie Holtham

PTSD Coordinator

Ms. Judith Fuller

Southern Mental Health

Services for Older People

CN

CN

CN

CN

Carolyn Batalha

Jennie Meagher

Duncan McIntosh

Marian Thrussell

RN, RPN

RN, RPN

RN, RPN

RPN

Ward 19 & 20

Neurological & Orthopaedic

Rehabilitation

UNM

Ms. Audrey Maloney

RN, B.A (Soc. Science), Grad.
Cert. Health (Clin.Rehab) MRCNA
RN, Dip. App. Sci. (Nsg.)
RN, Cert. Rehab. Nursing

CN

Ms. Julie Harding

CN

Mr. John Stanfield

Daw House Hospice

UNM

Ms. Alison McLeod

RN

A/UNM	Ms. Heather Broadbent	RN
CN	Ms. Rose Osborne	RN
CN	Ms. Karen Workman	RN
Community Palliative Team		
UNM	Ms. Karen Glaetzer	RN, BN, Cert. Bioethics, Grad. Cert. Palliative Care
CN	Mr. David Stephenson	RN, BN, Master of Palliative Care, MRCNA
Rehabilitation Assessment Nurse for Southern Region		
UNM	Ms. Margaret Koukourou	RN, BN, MRCNA
Dept. Respiratory Nursing		
UNM	Mr. Quentin Deverson	RN, Dip. App. Sci., Dip. T Nsg., BEd
CN	Ms. Marianne Green	RN, RM, Cert. Gerontics Nursing
Diabetes Nursing		
A/UNM	Ms. Christine Roach	RN, Grad. Dip. Health Counselling, Cert. Gerontic Nursing
CN	Ms. Pamela Taylor	RN
CN	Ms. Jillian Seaman	RN
CN	Ms. Sue McCullough	RN

The Division of Medical and Related Services at the Repatriation General Hospital comprises 169 inpatient beds and provides comprehensive inpatient and outreach nursing services with a major focus on the provision of services to the Veteran community.

EDUCATION

During the past 12 months a number of significant educational initiatives have been undertaken. These have been aimed at better preparing nurses to provide high quality care to patients at Repatriation General Hospital consistent with our vision of being the “Best Hospital in Australia for Older People.”

RGH Certificate in Rehabilitation Nursing

This program was successfully trialled last year with five participants. The program was undertaken in two parts. The Introduction to Rehabilitation practice was accessed through FUSA with the second topic based at RGH utilising a range of speakers covering nursing based topics. Funding is available for a further ten nurses to undertake the program in 2000.

Graduate Certificate in Health - Respiratory Nursing

As the Repatriation General Hospital has a significant role in the provision of nursing care to people with respiratory disease, a flexible program has been developed that allows nurses to undertake two 9 Unit topics. On completion of the first topic, a hospital certificate is issued with completion of both topics making the nurse eligible for a Graduate Certificate in Respiratory Nursing Studies through FUSA. Status is also available in the Master of Clinical Nursing through FUSA.

Ten nurses completed Topic 1 in 1999 with a further ten commencing the program in 2000.

Graduate Diploma in Clinical Rehabilitation

Through the generosity of Foundation Daw Park, two \$5000 scholarships were awarded to a nurse and an allied health professional to undertake the Graduate Diploma in Clinical Rehabilitation through FUSA.

Both staff members have successfully completed the first year of this two-year program in 1999.

NURSING RESEARCH

Two significant pieces of nursing research were completed within the Division in 1999.

Sue Kelman a Registered Nurse in Ward 5 (Cardiology) completed a thesis titled " An exploration of the role of weight changes in the evenings as a predictor of acute pulmonary oedema" as part of her Master of Clinical Nursing studies in 1999. Sue gained a high distinction for this work which showed that monitoring the weight of a patient with Congestive Cardiac Failure was a more effective predictor than maintaining fluid balance charts.

Maurine Redden completed the integrated Graduate Nurse Program / Honours Degree and was awarded first class Honours for her thesis 'Registered Nurses Knowledge of Third Space Fluid Shift'

Both nurses are to be congratulated for the significant contribution they have made to the body of nursing knowledge as a result of their work.

ROLE AND FUNCTION PROJECT

Level 3 nursing staff within the Division have been involved in a major review and change to their role and function over the past 12 months.

This has resulted in the implementation of a Unit Nurse Manager role that broadens the responsibilities of the position to all aspects of nursing management within the Unit. This includes responsibility for budget management, staff rostering, quality initiatives, OHS&W issues and increased control over the employment of staff within the area.

As a result of this change, the Nurse Manager role has been abolished providing a more efficient and responsive senior nursing structure. The implementation of this role change has been thoroughly evaluated and has shown increased satisfaction by all incumbents.

The next phase of the project will focus on the Clinical Nurse role and aims to make changes which will ensure that the Unit Nurse Managers have appropriate support structures in place at a Unit level.

STAFF AND PATIENT SAFETY INITIATIVES

Nurses have been involved in a number of key initiatives that are aimed at ensuring a safer environment for patients and staff.

Manual Handling Project

A \$20,000 grant from WorkCover has enabled a thorough investigation of the causes of manual handling injuries to nurses. This project is being conducted jointly with the Division of Medicine at FMC and will conclude on 30 June 2000.

Falls Project

A multi-disciplinary investigation into the causes of inpatient falls has commenced at the Repatriation General Hospital.

Patient falls are by far the most common incident involving patients and are of even greater significance due to the higher average age of the patient population. The project aims to prospectively investigate and collect data on 100 patient falls. Once the data is analysed, the project team will identify the common causes affecting falls for our patient population and then develop and implement specific risk minimisation strategies.

REHABILITATION FOLLOWING ACUTE CARE - WORKING TOGETHER

The provision of rehabilitation is a significant part of the core business at the Repatriation General Hospital. This focus will be strengthened with the opening of the new purpose built rehabilitation facility in mid 2000.

A strong relationship exists between FMC and RGH with regard to the provision of rehabilitation services. In addition to the provision of six Extended Rehabilitation beds for FMC the Flinders Medical Centre is also our major referral source for patients requiring rehabilitation services.

This is facilitated by: -

- A Rehabilitation Assessment Nurse being available to facilitate the referral process and discharge planning of patients accepted for rehabilitation from the FMC wards;
- The Rehabilitation Assessment Nurse attending weekly discharge planning meetings on ward 5G and other medical wards as required;
- Constant liaison with FMC Ward CNC's;
- Immediacy and speed in response to referrals received from wards at FMC;
- Collaborative assessment with medical, nursing and allied health staff at FMC;
- Liaison with family in informing them of content of the rehabilitation program and in identifying realistic goals to achieve in rehabilitation;
- Involvement with FMC School of Nursing in presenting a 2 hour segment on Rehabilitation Nursing within the Acute Aged Care Course and Acute Orthopaedic Course for Nurses;
- Providing feedback to staff at FMC as requested regarding outcomes of rehabilitation, e.g., length of stay, and successful discharges to community.

PSYCHIATRY

The nursing staff have been active in networking and establishing links between other psychiatric services during the past year. Staff have enjoyed exchange rotations particularly with Southern Mental Health Services for Older People (SMHSFOP). This has enabled them to broaden their skills to the ultimate benefit of the patient\client.

Ward 17 is a specialist treatment service for Veterans and includes the Post Traumatic Stress Disorders Unit (PTSD), Psychiatric Outpatients, Inpatients, and the Day Program. The PTSD unit and the Day Program have shown a 400% increase in Veteran attendances over the past year.

In order that staff are able to provide appropriate support to these programs, staff development activities have focussed in areas such as, Community Mental Health Nursing, Alcohol Detoxification and Rehabilitation, PTSD and Personality Disorders.

The multidisciplinary team is a very positive motivated group, supportive of new ideas and committed to ensuring the delivery of high quality care to this growing service.

ADMISSIONS AND ACUTE REFERRAL UNIT

Since the review of the Casualty service and implementation of the recommended changes in April 1998, there have remained a number of significant problems. Many of these related to confusion over the hours of operation and the level of service provided.

Patient satisfaction was poor and the South Australian Ambulance Service (SAAS) crews did not have clear guidelines regarding the categories of patients accepted by the RGH.

Following the establishment of a management group, Ms. Lesley Jeffers was appointed as the Director of the AARU. Since that time, Lesley has worked tirelessly with Veteran groups, GP's and SAAS to improve communication. The results have been very encouraging with attendances rising to previous levels, improved after hours access to the hospital for readmissions, and importantly a marked increase in patient satisfaction demonstrated by a significant reduction in the number of complaints.

AMALGAMATION OF THE COMMUNITY PALLIATIVE CARE TEAMS

In early April 2000, the two Community Palliative Teams originally based at both RGH and FMC were amalgamated and are now managed by the Repatriation General Hospital.

A service agreement has been developed between the Flinders Medical Centre, Repatriation General Hospital and Noarlunga Hospitals to ensure that the levels of service to each site are maintained at agreed levels.

The perceived benefits of the amalgamation are: -

- An improved ability to meet the growing demand for services;
 - Enhanced professional support;
 - Better access to educational opportunities;
 - Promotes a more harmonious team environment;
 - Enable the provision of seamless service delivery between Daw House and the Community setting;
 - Improved ability to provide leave relief;
 - Improved case management including record management;
 - A more effective relationship with Daw House Hospice.

There have been a number of challenges for nurses within the Division over the past year. I would like to thank all staff for their support and contribution to the provision of a quality nursing service at the Repatriation General Hospital.

David Edwards

PALLIATIVE CARE GROUP

CLINICAL STAFF

Dr Roger HUNT, BM, BS(Flinders), Grad Dip PH

Mr Kevin BURRETT, RN, DipAppSc (Community Health), Certs – Psych, Paed, Management

Mr Patrick COX, RN, MNG(Hospice Care)

Dr Greg CRAWFORD, BM BS(Adel), DipRACOG, MPHC, FRACGP

Ms Karen GLAETZER, RN, BN, PBOnc, Cert Bioethics, Grad Cert PC

Ms Robyn JEZEWSKI, RN

Ms Alison McLEOD, RN, BBus, PBOnc, Grad Cert Health, MRCNA

Ms Rose OSBORNE, RN, MPHC, DipAppSci (Nursing), Dip Massage & Aromatherapy

Ms Sharrone PRICE, BA, BSoc Admin, Grad Cert Health

Mr David ROACH, BASW, MSW

Ms Kathy SANDOW, BSocSci (Community Service)

Ms Anne SMITH, RN, DipAppSci (Nursing), Grad Dip Health Counselling

Mr David STEPHENSON, RN, BN MPC (Palliative Care)

Ms Karen WORKMAN, RN, Grad Cert PC

POST-GRADUATE STUDENTS

Ms Katrina BREADEN, RN, BappSci, MN, MRCNA (Proceeding to PhD)

Ms Kim DEVERY, RN, BSocSci(Hons), (Proceeding to PhD)

Dr Ofra FRIED, MB, BS, BA, Dip Obst, (Proceeding to PhD)

Dr Tuku Tau TAUFA, Dip Med Surg, Dip Obs, MTH, (Proceeding to MD)

ADMINISTRATIVE STAFF

Ms Maree GRAHAM, Ward Clerk, Daw House Hospice

Ms Heidi Kliche, Executive Officer

Ms Evonne SMITH, Community Program Coordinator

Ms Jill SEAGLE, Clerical Officer – Bereavement Service

Involvement in patient care in the clinical program based at Daw House Hospice (co-located with the Institute) provides teaching staff with authoritative experience and offers practical opportunities for visiting students to observe a wide range of clinical practice. The clinical staff, in addition to maintaining the 15 bed in-patient unit at Daw House, coordinate the Southern Community Hospice Program and supervise care of over 1,000 individuals with advanced and terminal illness referred each year from the southern region of Adelaide. Ancillary support for both patients and carers is offered through day care, bereavement groups and complementary therapy, all conducted from the Daw House complex.

RESEARCH

Investigators:

Emeritus Professor Ian MADDOCKS, MD, FRACP, FAFPHM, DTM&H

Assoc Prof Carol GRBICH, (School of Nursing) BA, PhD

Prof Tina KOCH, (School of Nursing) RN, BA, PhD

Dr Julie ROBINSON, (School of Psychology) PhD

Research Staff:

Ms Deborah PARKER, RN, BA, MsocSc Research Officer

Ms Karen WORKMAN, RN, Research Officer

Mr Peter JENKIN, RN, BN, MRCNA, Nurse Practitioner

Ms Alison McLEOD, BBus, PBOnc, Grad Cert Health, MRCNA, Nurse Practitioner

The palliative care research unit conducts research in three main areas:

Clinical

This encompasses testing the efficacy of drugs for common symptoms associated with terminal illness. In particular those used for the management of pain such as morphine, fentanyl and oxycodone.

Care of dying residents in aged care facilities has also been a focus and an intervention study using palliative care nurse practitioners in these facilities was conducted during 1999.

Social

This research is predominantly community based. Projects have concerned the home care needs required and received by individuals with a diagnosis of terminal cancer and development of a carer information package.

Psychological

This research is conducted in collaboration with Dr Julie Robinson from the Psychology Department. It explores the appropriateness of neuropsychological testing in clinical trials and hope among terminally ill patients and their carers.

Grants:

Australian Rotary Health Research Fund

I Maddocks, C Grbich

Caring for someone with terminal cancer at home: The impact of a home hospice program.

I Maddocks, C Grbich, T Koch

A client information package: Negotiating the maze

NH&MRC

I Maddocks, C Grbich

Caring for someone with terminal cancer at home: The impact of a home hospice program

SA Health Commission and Department of Health and Family Services

I Maddocks, D Parker, T Healey

Nurse practitioners in Aged Care Facilities: A pilot study.

FMC Foundation

J Robinson

Validating a measure of cognitive impairment for use with palliative care patients

K Devery, K Breaden

Travel Grant

Anti-Cancer Foundation Vacation Scholarship

J Robinson, Recipient – Sherrie Hall

Hope among terminally ill patients and their carers

Pharmacia

K Devery, G Crawford

Palliative Care Nurses Travel Grant

COSA

K Breaden

Travel Grant

Publications:

1. Hunt R. Taking responsibility for affecting the time of death. *Palliative Medicine* 1999;13:439-441.
2. Hunt R, Fazekas B, Thorne D and Brooksbank M. A comparison of subcutaneous morphine and fentanyl in hospice patients. *Journal of Pain and Symptom Management* 1999;18:111-119.
3. Parker D and DeBellis A. A profile of dying residents in South Australian nursing homes. *International Journal of Palliative Nursing* 1999;5(4):162-170.
4. Parker D, Maddocks I and Stern L. The role of palliative care in advanced muscular dystrophy and spinal muscular atrophy. *J. Paediatr. Child Health* 1999;35:245-250.
5. Keatinge D, Cadd AD, Henssen M, O'Brien L, Parker D, Rohr Y., Schneider J and Thompson J. Nurses' use of patient notes to chart bowel care management for the palliative care patient. *Australian Journal of Advanced Nursing* 1999;16(4):36-41.
6. Devery K, Lennie I and Cooney N. Health outcomes for people who use palliative care services. *Journal of Palliative Care* 1999;15(2):5-12.
7. Maddocks I, Parker D, McLeod A and Jenkin P. Palliative care nurse practitioners in aged care facilities – Report to the Department of Human Services. Flinders University of S.A, Adelaide, 1999.
8. Maddocks I, Grbich C, Parker D, Sinn A and Andersen K. Caring for someone with cancer at home: the impact of a home based hospice service. Flinders University of S.A, Adelaide, 1999.
9. Devery K. Book review - *Handbook for mortals: guidance for people facing serious illness*. *Progress in Palliative Care* 1999;7,5:279-280.
10. Maddocks I. Continuing education in palliative care – Editorial. *Progress in Palliative Care* 1999;7,2:55.
11. Maddocks I. Palliative care on the margins – Editorial. *Progress in Palliative Care* 1999;7,3:107-108.

12. Maddocks I. Connecting with a terminally ill world – Editorial. Progress in Palliative Care 1999;7,4:169-170.
13. Maddocks I. Medicine and palliative care – shifting the paradigm. Medical Journal of Australia 1999;171:63-64.

REHABILITATION AND AGED CARE

FLINDERS MEDICAL CENTRE AND REPATRIATION GENERAL HOSPITAL

CLINICAL STAFF

Professor Paul FINUCANE, MB, BCh, BAO (Ireland), FRCPI, MRCPI, MSc (Wales), FRACP

Dr Margaret BULLING, MB, BS(Hons)(Adel), FRACP

Dr Maria CROTTY, MB, BS(Newcastle), MPH, PhD, FRACGP, FAFRM, FAFPHM

Dr Josephine HARRIS, BM, BS(Hons), FRACP

Dr Jane HECKER, MB, BS(Hons)(Adel), FRACP

Dr Philip HENSCHKE, MB, BS(Adel), FRACP, FRCP(Can), FACRM

Dr Elizabeth HOBBIN, PSM, MB, BS(Syd), DPH, FRACP

Dr Philip POPPLEWELL, MB, BCh(Wales), PhD(Flinders), FRACP

Professor Dennis SMITH, MB, ChB, PSC, FRCP, FACRM, FRACP, FAFRM

Dr Craig WHITEHEAD, BM,BS(Flinders), FRACP

Dr Adrian WINSOR, MB, BS, FAFRM(RACP), FACRM, Dip Musculo Med (Otago)

ADVANCED PHYSICIAN TRAINEES

Dr Kathryn ANDERSON

Dr Lydia HUANG

Dr Chooi Yean LAM

POST-GRADUATE STUDENTS

Ms Julie HALBERT, MSc (Proceeding to PhD)

ADMINISTRATIVE STAFF

Ms Carol KENNEWELL, Ward Clerk 6C

Ms Charmane LUCAS-CRESWELL, Department Coordinator

Ms Karen HOESCHLE, Secretary, Memory Disorders Unit

Ms Kaelene WHEAR, Secretary

In 1999, the Department continued to provide an extensive range of clinical services to the southern region of Adelaide and to its major public hospitals at FMC, RGH and NHS. It also provided clinical services at Strathalbyn Hospital. A particular focus in 1999 was the extension of its community-based stroke rehabilitation programs to include patients with a femoral neck fracture. Work finally began on the new Rehabilitation Unit at RGH and this will be completed in mid-2000. The Memory Disorders Studies Unit continued to expand its clinical services for people with dementia.

Drs Josephine Harris and Margaret Bulling joined the Department in January 1999 and are employed at 0.6FTE and 0.5FTE respectively. In addition to providing a broad range of both hospital and community based clinical services, Dr Harris is helping to develop geriatric cardiology services in the southern region and Dr Bulling is helping to expand dementia care.

RESEARCH:

Investigators:

Dr Margaret BULLING, MB, BS(Hons)(Adel), FRACP
Dr Michael CLARK, PhD, Senior Research Officer
Dr Maria CROTTY, MB, BS(Newcastle), MPH, PhD, FRACGP, FAFRM, FAFPHM
Professor Paul FINUCANE, MB, BCh, BAO (Ireland), FRCPI, MRCPI, MSc (Wales), FRACP
Dr Josephine HARRIS, BM, BS(Hons), FRACP
Dr Jane HECKER, MB, BS(Hons)(Adel), FRACP
Dr Philip HENSCHKE, MB, BS(Adel), FRACP, FRCP(Can), FACRM
Dr Elizabeth HOBBIN, PSM, MB, BS(Syd), DPH, FRACP
Dr Philip POPPLEWELL, MB, BCh(Wales), PhD(Flinders), FRACP
Professor Dennis SMITH, MB, ChB, PSC, FRCP, FACRM, FRACP, FAFRM
Dr Craig WHITEHEAD, BM,BS(Flinders), FRACP
Dr Adrian WINSOR, MB, BS, FAFRM(RACP), FACRM, Dip Musculo Med (Otago)

Research Staff:

Ms Angela BLACK, RN, BAppSci
Ms Marisa BARBARIOLI, BAppSc(OT), GradDip Neurosciences
Ms Sue DREHER, RN, BNsg, Trial Coordinator
Mr Colin FIELD, BSc(Hons)BLitt(Hons), MSc, FAPS
Mr Stephen GRAY, BA(Hons)
Ms Julie HALBERT, MSc
Ms Michelle HALE, BSc(Hons)
Ms Nicki HAYBALL, BAppSc(OT)
Ms Denise HEALY, RN, Trial Coordinator
Ms Brodie HEARNE, RN, Research Nurse
Ms Michelle MILLER, BSc, MNut.Diet, APD
Ms Cathy MURPHY, BA(Psych), Research Assistant
Mr Chris PATERSON, RN, BAppSci(Nsg)
Ms Lyn VERRALL, RN, Trial Coordinator
Ms Vanessa WELLS, BAppSci(Physio)
Ms Rachel WUNDKE, RN, BNsg, Research Nurse

Current research activities focus on:

- Rehabilitation following proximal femoral fractures
- Falls and stroke prevention in residential care
- Clinical trials in dementia

The Memory Disorders Unit continued its involvement in clinical drug trials. An extension study with the cholinesterase inhibitor rivastigmine is ongoing. The extension study with monoaminoxidase inhibitor, lazabemide, was discontinued in October 1999 due to concerns about hepatotoxicity. This was disappointing, as the efficacy analysis suggested a disease-slowing effect. Three new studies were initiated in 1999. These were a twelve-week study with talsaclidine, a muscarinic agonist, and an extension study of this agent and a twelve-week study with neotrophin, a nerve growth factor. Recruitment to a study on the effects of dementia on driving performance began in May. This is being undertaken in collaboration with the Occupational Therapy department of the University of South Australia and aims to assess the relevance of neuropsychological tests to driving performance.

Grants:

Flinders Medical Centre Foundation

MJ Bond and MS Clark

The accuracy of proxy rating of lifestyle activities using the Adelaide Activities Profile

Julia Farr Foundation

A Winsor, A Anastassiadis, M Clark, L Baker

Proposal for the adaptation of the Westmead Post-Traumatic Amnesia Scale for use with indigenous Australians

Novartis Pharmaceuticals

An open-label, twelve month extension of SDZ ENA 713 studies B303 and B304 to prospectively evaluate the long term safety, tolerability and efficacy of 1 through 6mg bid (2/23mg/day) SDZ ENA 713 in outpatients with probable Alzheimer's disease

Federal Office of Road Safety Research

MS Clark, J Hecker

Dementia and driving

Australian Rotary Health Research Fund

MS Clark, S Rubenach, A Winsor

The use of education and counselling to help families adjust to stroke

NH&MRC Evidence Based Medicine Clinical Practice Program

M Crotty, C Whitehead, D Weller, P Finucane

Improving health outcomes in residential care

Quality Use of Medicine Evaluation Program (QUMEP)

M Crotty, C Whitehead, D Weller, H Williams, J Halbert, D Rowett, L Cleland, C Alderman

Multidisciplinary management of medication problems in residential care

Hoffman-LaRoche

J Hecker

Extension of the ongoing Phase III study of the safety, efficacy and tolerability of Lazabemide in patients with probable Alzheimer's disease

Cromedica

J Hecker

A twelve week multicentre evaluation of the safety and efficacy of AIT-082 (neotrophin) in Alzheimer's disease of mild to moderate severity

Boehringer Ingelheim

J Hecker

A twelve week trial and a twelve month open label extension evaluating the efficacy and safety of talsaclidine

Publications:

1. Bulling M. Drug induced dysphagia. Aust NZ J Med 1999;29(5):748.
2. Burns A, Rosser M, Hecker J, Gauthier S, Petit H, Moller H-J. The effects of donepezil in Alzheimer's disease – results from a multinational trial. Dement Geriatr Cogn Disord 1999;10:237-244.
3. Clark MS, Smith DS. Psychological correlates of outcome following rehabilitation from stroke. Clin Rehabil 1999;13:129-140.
4. Clark MS, Smith DS. Changes in family functioning for stroke rehabilitation patients and their families. Int J Rehabil Res 1999;22:171-179.

5. Clark MS. The double ABCX model of family crisis as a representation of family functioning after rehabilitation from stroke. *Psychol Health Med* 1999;4:203-220.
6. Clark MS, Bond MJ, Sanchez L. The effect of sensory impairment on the lifestyle activities of older people. *Aust J Ageing* 1999;18:124-129.
7. Cameron I, Crotty M, Currie C, Finnegan T, Gillespie L, Gillespie W, et al. Geriatric rehabilitation following fractures in older people: a systematic review. *Health Technology Assessment Report*, February 1999
9. Finucane P, Wundke R, Whitehead C, Williamson L, Baggoley CJ. Profile of people referred to an emergency department from residential care. *Aust NZ J Med* 1999;29:494-499.
10. Halbert JA, Silagy CA, Finucane P, Withers RT, Hamdorf PA, Andrews GR. Recruitment of older adults for a randomized controlled trial of exercise advice in a General Practice setting. *J Am Geriatr Soc* 1999; 47:477-81.
11. Hecker J. Alzheimer's disease: the advent of effective therapy. In: *Cholinesterase Inhibitors in Alzheimer's Disease* (Ed: G Mallarkey) Adis Books, 1999
12. Henschke P. Palliative Care and Dementia. In: *End Stage Clinical Care for Chronic Degenerative Disorders* (Eds: M Paris, A McLeod). Hyde Park Press, 1999.
13. Johnson S, Finucane P, Prideaux D. Problem Based Learning: process and practice. *Aust NZ J Med* 1999;29:350-354.
14. Lam P-T, Marlow A, Boeje T, Finucane P. Aged Care Assessment Teams in Australia and their relevance for Hong Kong. *J Hong Kong Geriatr Soc* 1999;9:18-22.
15. Nair BK, Finucane P. Profile of teaching in Geriatric Medicine in Australian Medical Schools. *ANZAME Bulletin*, Jan 1999.
16. Ng D, Cosh DG, Harris J, Whitehead C. Unplanned medication-related admissions to an acute care general teaching hospital. *Aust J Hosp Pharm* 1999;29:84-87.
17. Pearson S, Stewart S, Rubenach S. Is health related quality of life among older chronically ill patients associated with unplanned readmission to hospital? *Aust NZ J Med* 1999;29:701-706
18. Phillips PJ, Tallis GA, Popplewell PY. Never too old for thyroid problems. *Aust Family Phys* 1999;28(2)163-164.
19. Phillips P, Logmans C, Popplewell P, Geekie C. Blood glucose monitoring in diabetes. *New Ethics Journal* 1999.
20. Phillips PJ, Popplewell PY. Checking for diabetes: the case for case finding. *Modern Med Aust* 1999.
21. Phillips PJ, Tallis GA, Popplewell PY. Metabolic problems in the elderly – could this be a drug side effect. *Aust Family Phys* 1999;28(3)269-270.
22. Phillips P, Popplewell P, Aylward P. The deadly duo: diabetes and coronary heart disease. *Mod Med South Africa* 1999.
23. Phillips P, Popplewell PY. Hypertension and diabetes. *Current Therapeutics* 1999.
24. Phillips PJ, Tallis GA, Popplewell PY. Case study in hypercalcaemia. *Aust Family*

Phys 1999;28(4);377-378.

25. Popplewell PY. Diabetes in the elderly. Diabetes and you – the essential guide. Diabetes Australia 1999.

RENAL GROUP

CLINICAL STAFF

Dr Lindsay BARRATT, MB, BS(Adel), FRACP

Dr Jeffrey BARBARA, MB, BS(Adel)d, PhD(Adel), FRACP

Dr Malcolm COCHRAN, MB, ChB(Birm), MRCP(UK), MD(Birm), FRACP

Dr David MILLER, MB, BS(Adel), BMedSci(Adel), FRACP

Dr Kathy PAIZIS, MB, BS(Melb), FRACP

SCIENTIFIC AND TECHNICAL STAFF

Dr Glen ALLEN, B Sc(Adel), PhD(Flinders), Hospital Scientist

Mr David HEARD, RN, OACIS Project Officer

Mr Mark SHEPHARD, BSc(Adel), MSc(Flinders) MRACB, Senior Medical Scientist

Ms Karan LAVENDER

ADMINISTRATIVE STAFF

Ms Lorraine CONDON, Administrative Assistant

Ms Lesley HUGHES, Ward Clerk, 6G

The Unit continues to see increasing patient activity:- the in-centre haemodialysis unit performed 5724 dialyses in 1999 (increase of 5.9 % c.f. 1998). Currently 102 FMC patients are receiving maintenance dialysis (86 haemodialysis, 16 PD). Nine FMC patients were transplanted in 1999 with 88 post renal transplant patients under our care including a few with combined transplants (pancreas/renal or liver/renal).

We continue to provide the renal service to RGH through regular sessions staffed by Drs Kathy Paizis, Jeff Barbara and the Unit Registrar. Lindsay Barratt resigned from RGH during the year after 23 years of service to that organisation and has been replaced by Dr Jeff Barbara.

Our new Telemedicine unit has been used increasingly during 1999 and has allowed us to link with TQEH and RAH for a weekly renal transplant review session, effecting excellent communication and saving much travel time.

During 1999, we have provided a regular bimonthly consulting session in Port Lincoln and will be commencing a similar session in the Riverland from the beginning of 2000. After extensive negotiations between the Renal units of FMC, TQEH and RAH with DHS and the Riverland Regional Health Service, we have overseen the development of a home dialysis service on the campus of the Berri Hospital, due to start operating in January 2000.

The Renal Unit at FMC, along with the units at TQEH and FMC is now heavily computerised with the instillation and extensive use of the Open Architecture Clinical Information System (OACIS). This has greatly facilitated our ability to "keep track" of our patients and their vast quantity of clinical and laboratory data. In addition, our Unit has established its own Website on the Internet providing information on Unit personnel and activities.

Publications:

1. Hara M, Gilot BJ, Jones ND, Van Maurik A, Barbara JAJ, Morris PH and Wood KL. In vivo cytokine production by allospecific CD8+ transgenic T cells after heart transplantation. *Transplantation Proceedings* 1999;31(1-2):91.
2. Barbara JAJ, Gilot BJ, Hara M, Van Maurik A, Jones ND, Turvey SE and Wood KL. The visualisation of T cell responses. *Transplantation* 1999;67(12):1508-1514.
3. Witzke O, Barbara JAJ and Wood KL. Induction of tolerance to alloantigen. *Reviews in Immunogenetics* 1999;1:374-386.

RESEARCH: Umoona Kidney Project

Investigators:

Dr Lindsay BARRATT, MB, BS(Adel), FRACP

Dr Kathy PAIZIS, MB, BS(Melb), FRACP

Mr Mark SHEPHARD, BSc(Adel), MSc(Flinders), MRACB, Senior Hospital Scientist

Research Staff:

Dr Glen ALLEN, BSc(Adel), PhD(Flinders), Hospital Scientist

Mr Michael BATTERHAM

Ms Karan LAVENDER

The Umoona program "Preventing Renal Disease in Aboriginal Australians" described in the 1998 report has continued through 1999 with regular visits to Coober Pedy by members of our team including Mark Shephard (Project Manager), Lindsay Barratt and Kathy Paizis (nephrologists), Jo James and Sally Zeunert (nutritionists), Glen Allen (Information Technology Officer), and Michael Batterham (Medical Student and Research Officer). We are accompanied by a paediatric team from W&CH. Following expressions of strong support from the Umoona and other Aboriginal communities we are seeking funding to extend the program progressively into other communities throughout the state.

Grants:

Commonwealth Department of Health and Family Services, Office of Aboriginal and Torres Strait Islander Health (OATSIH)

M Shephard and L Barratt (in conjunction with the Renal Unit at the Women's & Children's Hospital)

The Umoona Kidney Project

Jannssen-Cilag

M Shephard and L Barratt

Umoona Kidney Project

RESEARCH: National Education, Training and Quality Assurance Program for Aboriginal and Torres Strait Islander Medical Services – Testing for Haemoglobin A1C using the Bayer DCA 2000

Investigators:

Mr Mark SHEPHARD, BSc(Adel), MSc(Flinders), MRACB, Senior Hospital Scientist

Research Staff:

Ms Karan LAVENDER

Across Australia, Aboriginal and Torres Strait Islander people suffer between 12 to 17 times more deaths due to diabetes than non-Indigenous people.

During 1998, the Commonwealth Department of Health and Aged Care learnt of our unit's experience in using the DCA point-of-care-technology in the Umoona Kidney Project. (The DCA machine can also measure haemoglobin A1c, a marker for long term diabetic control, on a finger prick of blood). As a result, Mark Shephard was invited last year by the Commonwealth, through its office for Aboriginal and Torres Strait Islander Health (OATSIH), to develop a national education, training and quality assurance program for Aboriginal and Torres Strait Islander Medical Services (ATSIMS) that implemented DCA 2000 point-of-care testing for diabetic management in Aboriginal communities. Called *A Training Program for Aboriginal and Torres Strait Islander Medical Services – Testing for Haemoglobin A1c on the Bayer DCA 2000*, it involves 48 community-controlled Aboriginal and Torres Strait Islander Medical Services throughout urban, rural and remote Australia.

The program focussed on :

- Developing a culturally appropriate teaching guide and video about how to use the DCA machine and how to test for Haemoglobin A1c (HbA1c). These resources were given to each participating service at the end of training.
- Delivering a formal training session to Aboriginal Health Workers (and allied health professionals) from the 48 participating Medical Services (conducted over a 6-week period from early May to mid June 1999). Training focussed on what diabetes is, complications of diabetes, introducing Haemoglobin A1c, how to test for HbA1c on the DCA, and basic principles and practice of quality assurance.
- Implementing a bi-level quality assurance program to monitor the short-and long- term performance of the DCA machines in the services across Australia.

Firstly, Bayer Australia is providing Quality Control (QC) samples for testing by the Aboriginal Health Workers. On the last day of each month, services fax their Bayer QC results down to the Unit, who manage these results for Bayer Australia.

Secondly, an external quality assurance program was established for participants. This program was devised by Mark Shephard in conjunction with the Royal College of pathologists of Australasia (RCPA) Quality Assurance Program Group Pty Ltd, the premier body responsible for quality assurance of pathology testing by Australasian laboratories. Samples for testing were made by an international expert group and have target values assigned by the World Primary Reference Method for Haemoglobin A1c. Two samples are tested per month by each participant and results faxed to the QAP office on the last day of each month. A Summary Report is sent to each service within two weeks thereafter. This quality assurance program for Aboriginal and Torres Strait Islander Medical Services, codenamed QAAMS (Quality Assurance for Aboriginal Medical Services), is the first ever conducted in the community setting – Aboriginal or non-Aboriginal and **the first of its kind to be developed for Indigenous people anywhere in the world.**

The overall aim of the training and quality assurance program is consistent with the general philosophy of facilitating or empowering Aboriginal control of community health screening and management for chronic lifestyle diseases.

Grants:

Commonwealth Department of Health and Aged Care (Office for Aboriginal and Torres Strait Islander Health [OATSIH])

M Shephard

Training and quality assurance program for the use of the Bayer DVA2000 analyser in Aboriginal Medical Services

Bayer Australia

M Shephard

Management of Quality Control Program for haemoglobin A1C on the Bayer DCA 2000

RESPIRATORY GROUP

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Mr Jeremy MERCER, BA, Senior Sleep Technologist
Ms Ivanka MYKYTYN, R Eg Tech, Chief Sleep Technologist
Mr Michael NUSKE, Sleep Technologist
Ms Robyn DANGERFIELD, RN, Technical Officer
Ms Michelle ROZEE, Med Tech Cert, Technical Officer
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Ms Derelie LAIDLER, Administrative Assistant, Sleep Studies Unit
Ms Kerryne MICHAEL, Administrative Assistant, Sleep Disorders Unit
Ms Sandra MIFSUD, Ward Clerk 6A, FMC
Ms Jane SMALLACOMB, Ward Clerk Ward 2, RGH

REGIONAL RESPIRATORY ACTIVITIES

Ongoing progress has been made in the further development of Regional activities.

- A Respiratory Clinic has now started at Noarlunga on Monday afternoons. This has been popular with patients and general practitioners alike.
- Funds were obtained from salary savings to employ a Project Officer to address the issue of Outpatient Services across the three campuses and significant decisions have been made to rationalise and improve services.
- An Acute Assessment Clinic has been formalised at FMC. Referral patterns for general respiratory patients were identified and specialised clinics have been further supported.
- Laboratory rationalisation is continuing and some areas of standardisation are taking place.
- The Bronchoscopy Service was located at FMC and, despite some difficulties with transfer of patients and their supporting documentation, it generally has proceeded well. While progress has been made on many fronts there is still a lot of work to be done.
- The South Australian Asthma Project was completed with significant outcomes in the area of asthma awareness, schools policy and sustainability of asthma clinics.

RESEARCH: Respiratory Unit FMC

Investigators:

Professor John ALPERS, MB, BS(Adel), FRACP, FRCP, FRCPE, DCH, FCCP

Dr Jeffrey BOWDEN, BM, BS (Flinders), FRACP

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Dr Shan-ze WANG, MB, BS (Shanghai), (Proceeding to PhD)

Research Staff:

Ms Josephine CRANSTON, BSc(Flinders), Research Assistant

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Ms Michelle ROZEE, Med Tech Cert, Technical Officer

The respiratory laboratory at FMC was granted a three year accreditation by NATA. The work on impedance oscillometry continues to receive national and international recognition with Alan Crockett being asked to lead discussions on our clinical data at international forums. Alan has also been conducting training workshops around Australia and he was invited as a guest lecturer to the All-Russia Scientific Society of Pulmonologists International Congress to speak on impedance oscillometry and home oxygen therapy.

The respiratory unit has a broad interest in research in respiratory medicine. The Unit's main areas of research include basic and clinical respiratory physiological techniques, domiciliary oxygen therapy, respiratory drug trials, establishment of normal values for lung function for the Australian population, health economics, resource allocation, survival, quality of life and evidence based medicine. The Unit has attracted grants in most of these areas.

Grants:

National Health and Medical Research Council

AJ Crockett, JM Cranston, JR Moss, JH Alpers

Evidence Based Clinical Practice. Evidence for home oxygen for patients with chronic airflow limitation.

Publications:

1. A Heard, J Alpers, L Pilotto & J Black. A randomised control trial of General Practice Based Asthma Clinics. *Medical Journal of Australia* 1999;171:68-71.
2. Crockett AJ, Rozee MR, Laslett R, Alpers JH. Minimum lung function for breath alcohol testing using the Lion Alcolmeter SD-400. *Science & Justice* 1999;39:173-177.
3. Crockett AJ, Cranston JM. Nonconventional indications of long-term oxygen therapy: oxygen therapy during exercise. *Monaldi Arch Chest Dis.* 1999;54:1:72-74.
4. Crockett AJ, Cranston JM, Moss JR, Alpers JH. Effects of long-term oxygen therapy on quality of life and survival in chronic airflow limitation. *Monaldi Arch Chest Dis.* 1999;54:2:193-196.
5. Crockett AJ, Cranston JM, Moss JR, Scown PW, Mooney GH, Alpers JH. Program Budgeting and Marginal Analysis: A case study in Chronic Airflow Limitation. *Aust Health Review* 1999;3:65-77.
6. Crockett AJ, Moss JR, Cranston JM, Alpers JH. Domiciliary oxygen in chronic obstructive pulmonary disease. (Cochrane Review) in : *The Cochrane Library*, Issue 3, 1999. Oxford: Update Software.
7. Alpers JH. Asthma in the Elderly. *Current Therapeutics* 1999;40 No. 3:33-34.

8. McCaul K, Wakefield M, Roder D, Ruffin R, Alpers J, Heard A, Staugas R. "Trends in hospital re-admission for asthma: has the Australian National Asthma Campaign had an effect?" *The Medical Journal of Australia* 1999;172:2:62-66.

RESEARCH: Respiratory Unit RGH

Investigators:

Dr Peter ALLCROFT, BM, BS(Flinders), FRACP
Mr Paul CAFARELLA, BA(Psych), Rehabilitation Counsellor
Dr Peter FRITH, MB, BS(Adel), FRACP
Dr Sharon MORTON, BM, BS(Flinders), FRACP
Dr Elizabeth VEITCH, MB, BS(NSW), FRACP

Research Staff:

Mr Christopher WALLIS, RN, Research Nurse

The Department of Respiratory Medicine at RGH has a major research interest in guideline development and management of COPD in both hospital and community. It is a participant in SA HealthPlus Coordinated Care Trials and ACCORD COPD Inpatient Management Guidelines. Respiratory Medicine participates in several multi-centre clinical trials investigating the efficacy of long and short acting bronchodilators in COPD, and also oral antibiotics in the treatment of community acquired pneumonia and acute exacerbations of chronic bronchitis.

It also has long term research involvement in pulmonary rehabilitation, quality of life, cognitive impairment, coping with illness and psychological status of patients with chronic lung disease. Specifically this includes projects of:

- Health focus of control, self-efficacy and psychological morbidity amongst COPD patients in respiratory patient support groups.
- The effect of pulmonary rehabilitation on carer strain, psychological morbidity and perception of patient adjustment.
- The effect of pulmonary rehabilitation on patient's health focus of control, self-efficacy and psychological morbidity.
- The development of the DISQ (Dyspnoea Impact and Symptoms Questionnaire) – an Australian based questionnaire measuring quality of life amongst respiratory patients.

Grants:

Commonwealth Department of Health and Family Services (COAG)

PA Frith, J Alpers, P McDonald, M Battersby
SA Health Plus Coordinated Care Trial (Southern Respiratory Project)

South Australian Health Commission Health Outcomes Unit Multi-Centre Grant

J Alpers, R Antic, P Frith, R Ruffin, F Cheok
Outcomes-based discharge management plan (ACCORD)

RESEARCH: Sleep Disorders Unit, RGH

Investigators:

Ms Siau Chien CHIONG, BSc, Honours Student
Ms Amy JORDAN, BSc(Adel), (Proceeding to PhD)
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Research Staff:

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Mr Peter CATCHESIDE, BSc(Adel), Research Assistant
Dr Andrew KENNER, PhD(Adel)
Ms Ivanka MYKYTYN, R Eg Tech, Chief Sleep Technologist

The Sleep Disorders Unit has seven main areas of research interest at present:

The effects of low oxygen levels (ie hypoxia) on respiratory control.

Our hypothesis is that hypoxia depresses and destabilises breathing patterns and arousal responses in sleep, making patients who have a tendency to low oxygen levels (eg patients with chronic bronchitis, or snoring) prone to further breathing disturbances and respiratory failure. These questions are being addressed by making detailed measurements of respiratory control in normal subjects during experimental exposure to low oxygen gas mixtures.

Does non-invasive ventilation at night prolong the life of patients with advanced respiratory failure?

The Unit is coordinating a multicentre randomised controlled trial of positive pressure breathing support via a nose mask at night in patients who have severe chronic respiratory failure. A number of clinical centres in Adelaide, Sydney and Melbourne are participating in the study.

What is the best treatment for mild sleep apnoea?

The Unit is cooperating with the Sleep Unit at the Austin and Repatriation Hospital in Melbourne in a randomised controlled trial of three different treatment strategies in which patient satisfaction, daytime neuropsychological performance and blood pressure are being assessed.

Optimising non-invasive pressure support ventilation.

There is increasing recognition of the usefulness of supporting breathing in patients with advanced respiratory disease both during periods of acute deterioration and more chronically, during sleep. Choosing the ventilator settings to maximise patient comfort and relieve the work of breathing in these patients is difficult. Clinicians do not have access to the sorts of detailed measurements of lung mechanics that have been traditionally available to Intensive Care Physicians when "invasive" ventilatory support is provided. The Unit is developing novel methods of assessing the effectiveness and comfort of non-invasive pressure support ventilation.

Do insomniacs have an underlying abnormality in their ability to perceive that they have been asleep?

Patients who report chronic sleeping difficulties frequently under-report the amount of sleep they have when tested in a sleep laboratory. This has led to the hypothesis that insomniacs may not be able to properly distinguish sleep from wakefulness during the night. Indeed, preliminary studies conducted by Assoc Prof Leon Lack's team in the Unit's laboratory suggest that this may be the case. Further studies are ongoing to better define the nature of

this “sleep misperception” in chronic insomnia and to determine whether it is amenable to cognitive therapy.

Is there a relationship between sleep disturbance and daytime behaviour in Prader Willi syndrome (PWS) patients?

Children with disorders of breathing in sleep can perform poorly at school and be irritable and unruly at home. Selective deprivation of REM sleep is also known to cause behavioural abnormalities. PWS patients are known to have abnormalities of breathing during sleep, disturbances of REM sleep and frequently display marked behavioural problems that can cause significant disruption to family life. In collaboration with the Women’s and Children’s Hospital the Unit is investigating whether the abnormalities of behaviour and intellectual function in a group of PWS patients can be related to their sleep disturbance.

Does obstructive sleep apnoea cause bronchial disease?

The Sleep Unit is investigating the novel hypothesis that OSA may have a causal role in bronchial inflammation and narrowing. If proven this could suggest new treatment options for patients with bronchial disease.

Grants:

NH&MRC

RD McEvoy and NA Saunders

Effects of hypoxia, gender and age on respiratory control in wakefulness and sleep

RJ Pierce, RD McEvoy, NA Saunders and R Fordham

Cardiorespiratory and neuropsychological impairment in mild sleep apnoea

RD McEvoy, RR Grunstein, M Phillips and E Ellis

Effect of home ventilatory support on clinical outcomes for patients on long term home oxygen therapy

Air Liquide

RD McEvoy, RR Grunstein, M Phillips, E Ellis

Equipment grant for research into home ventilatory support in patients on long term oxygen therapy.

RGH Special Purposes Trust Fund

RD McEvoy

Top-up funding

Channel 7 Children’s Research Foundation of South Australia

RD McEvoy, F O’Donoghue, L Lack, D Kennedy, R Couper

An investigation of sleep disturbance and its relationship to daytime behaviour in Prader Willi syndrome patients

FMC Foundation

EM Veitch, RD McEvoy, P Hart

Does obstructive sleep apnoea cause bronchial disease?

Publications:

1. Sajkov D, Wang T, Saunders NA, Bune AJ, Neill AM, McEvoy RD. Daytime pulmonary hemodynamics in obstructive sleep apnoea patients without lung disease. *Am J Resp Crit Care Med* 1999;159:1518-1526.
2. Mykytyn I, Sajkov D, Neill AM, McEvoy RD. Portable computerised polysomnography in attended and unattended settings. *Chest* 1999;115(1):114-122.

RHEUMATOLOGY GROUP

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Ms Michelle BARKER, Administrative Assistant, FMC
Ms Heather BROWN, Administrative Assistant, RGH
Ms Lesley HUGHES, Ward Clerk, 6G, FMC

The Rheumatology Unit have commenced consulting clinics in Port Pirie, Clare and Mt Pleasant. A clinic evaluating acute musculo-skeletal disorders has been commenced at RGH as part of the Commonwealth funded Musculo-Skeletal Initiative. The Rheumatology Unit has joined with the Endocrine and Geriatric Units in setting up a Metabolic Bone Clinic and running the Bone Densitometer Service at RGH.

RESEARCH

The basic research covers two main areas. The first, synovial biopsies, or samples of rheumatoid nodules are examined histologically for the nature of the inflammatory reaction with particular interest in the type of cell, its activation state and the state of the endothelium. Whether cells are undergoing programmed cell death and the effects of various medications are of interest.

The second area of research concerns the immunogenetics of rheumatic diseases and the association with various autoantibodies. This is a collaborative study with the Department of Immunology, Allergy and Arthritis together with Dr M Rischmueller at the Queen Elizabeth Hospital.

In clinical research, the mechanisms of action, the efficacy and toxicity of various drugs used in the management of various rheumatic disease are being studied. There are also further studies in the clinical manifestations of Sjogren's syndrome and scleroderma. Prognostic markers (eg presence of the shared rheumatoid epitope, nailfold capillary abnormalities or certain HLA alleles) are being studied.

Investigators:

Associate Professor Michael AHERN, MB, BS(NSW), FRCP(UK), FRACP, MD

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Ms Mary WETHERALL, RN, Research Nurse

Grants:

National Health and Medical Research Council

MD Smith, M Coleman, MJ Ahern and PJ Roberts-Thomson

Pivotal cytokines and cell adhesion molecules in the response to drug treatment of rheumatoid arthritis.

MD Smith, M Coleman, MJ Ahern and PJ Roberts-Thomson

Role of apoptosis, lymphokines and IL-15 in the response of RA patients to DMARD treatment.

T Gordon and J McCluskey

Spreading of the La/Ro response in experimental and human autoimmunity.

Arthritis Foundation of Australia

PJ Roberts-Thomson and C Bond

South Australian Scleroderma Register.

T Gordon and J McCluskey (Val Provis Award)

Spreading of the La/Ro response in experimental autoimmunity.

MD Smith

Maintenance of a synovial membrane tissue bank to support Australia-wide research into the synovial membrane in a range of inflammatory and non-inflammatory arthritides.

T Gordon

Diversification of autoimmune responses.

JH & JD Gunn Medical Research Foundation

MD Smith

Effect of drug treatment of cytokine and cell adhesion molecules in RA synovial membranes.

PJ Roberts-Thomson, L Cleland and C Bond

South Australia Scleroderma Register

Clive and Vera Ramaciotti Foundation

MD Smith

Effect of drug treatment on RA synovial membranes.

Rebecca L Cooper Medical Foundation

Maintenance of a synovial membrane tissue bank.

Publications:

1. Ahern M, Smith MD, Roberts-Thomson PJ. The teaching of rheumatology in a graduate entry medical school. *J Rheumatol* 1999;26(S55):46-48.
2. Roberts-Thomson RA and Roberts-Thomson PJ. Rheumatic disorders in the Australian Aborigines. *Ann Rheumat. Dis.* 1999;58:266-270.
3. Roberts-Thomson PJ and Roberts-Thomson RA. Rheumatic disease in the indigenous people of Australia, New Zealand and Papua New Guinea. *Synovium.* 1999;10:2-5.
4. DePasquale CG and Roberts-Thomson PJ. Absence of both Raynaud's phenomenon and nailfold capillary abnormalities helps to distinguish generalized morphea from systemic sclerosis. *APLAR J. Rheumat.* 1999;2:237-240.
5. Kinoshita G, Purcell AW, Keech CL, Farris AD, McCluskey J and Gordon T. Molecular Chaperones are targets of autoimmunity in Ro (SS-A) immune mice. *Clinical and Experimental Immunology* 1999;115:268-274.
6. Farris D, Brown L, Reynolds P, Harley JB, James JA, Scofield RH, McCluskey J and Gordon TP. Induction of Autoimmunity by multivalent Immunodominant and Subdominant T Cell Determinants of La (SS-B). *Journal of Immunology* 1999;162:3079-3087.
7. Tan EM, Smolen J, McDougal JS, Butcher BT, Conn D, Dawkins R, Fritzler M, Gordon TP et al. A critical evaluation of enzyme immunoassays for detection of antinuclear autoantibodies of defined specificities. I. Precision, sensitivity and specificity. *Arthritis and Rheumatism* 1999;42:455-464.
8. Coates T, Slavotinek J P, Rischmueller M, Schultz D, Anderson C, Dellamelva M, Sage MR, Gordon TP. Cerebral white matter lesions in primary Sjogren's syndrome: a controlled study. *Journal of Rheumatology* 1999;26:1301-1305.
9. Cavill D, Macardle PJ, Beroukas D, Kinoshita G, Stahl J, McCluskey J, Gordon TP. Generation of a monoclonal antibody against human calreticulin by immunisation with a recombinant calreticulin fusion protein: application in paraffin-embedded sections. *Applied Immunohistochemistry* 1999;7:150-155.
10. Hedger SC, Macardle P, Bond MJ, Ahern MJ, Smith MD and Roberts-Thomson PJ. Shared rheumatoid epitope as a risk factor in determining outcome in rheumatoid arthritis. *Aust. N.Z.J. Med.* 1999;29:234-238.
11. Parker A and Smith MD. Immunohistochemical detection of cytokines and cell

- adhesion molecules in the synovial membrane. *Methods Find. Exp. Clin. Pharmacol.* 1999;21:311-319.
12. Roberts-Thomson PJ, Slavotinek JP, Pile K, Bond C, Cleland L, Smith MD and Ahern MJ. Soft tissue calcification of the hands in scleroderma. *APLAR J. Rheumatol.* 1999;3:318-321.
 13. Smith MD, Parker A, Weedon H, Coleman M, Roberts-Thomson P and Ahern M. Cytokines and cell adhesion molecules in musculoskeletal disorders. *Drugs of Today* 1999;35:127-137.
 14. Smith MD. Assessment of disease activity in rheumatoid arthritis using magnetic resonance imaging: quantification of pannus volume in the hands. *Br. J. Rheumatol.* 1999;38:680.
 15. Shanahan EM, Smith MD and Ahern MJ. Pulse methylprednisolone therapy for arthritis causing muscle weakness. *Ann. Rheum. Dis.* 1999;58:521-522.
 16. Roberts-Thomson P, Ahern M and Smith MD. Proinflammatory cytokine production and cell adhesion molecule expression compared in rheumatoid nodules and synovial membranes: comment on letter by Elewat et al. *Arthritis Rheum.* 1999;42:1068.
 17. Leech M, Metz C, Hall P, Hutchinson P, Gianis K, Smith M, Weedon H, Holdsworth SR, Bucala R and Morand E. Macrophage migration inhibitory factor in rheumatoid arthritis. Evidence of proinflammatory function and regulation by glucocorticoids. *Arthritis Rheum.* 1999;42:1601-1608.
 18. O'Connor D, Kortman B, Smith A, Ahern M, Smith M and Krishnan J. Hand function in rheumatoid arthritis: Correlation between objective and subjective measures. *J. Hand Therapy* 1999;12:323-329.
 19. Shanahan EM and Smith MD. Rheumatoid arthritis, disability and the workplace. *Clin. Rheumatol.* 1999;13:675-688.
 20. Hedger S, Geddes RA, Wheatland L, Macardle P, Smith MD, Ahern MJ and Roberts-Thomson PJ. Clinical utility of the flow cytometric technique for shared rheumatoid epitope. *Rheumatol. Int.* 1999;19:31-34.
 21. Smith MD, Parker A, Roberts-Thomson PJ, Ahern MJ and Coleman M. Production of IL-1 and IL-1 RA in different stages of arthritis. *Rev. Prat.* 1999;48 suppl 17: S16-23.
 22. Crotty M, Finucane P and Ahern MJ. Teaching medical students about disability and rehabilitation: methods and student feedback. *Medical Education*
 23. Roberts-Thomson PJ, Slavotinek JP, Smith MD and Ahern MJ. Soft tissue calcification of the hands in scleroderma. *APLAR J Rheumatoid* 1999;3:318-321.
 24. Smith MD, Parker A, Wikaningrum R and Coleman M. The use of combined immunohistochemical labelling and in situ hybridisation to co-localise mRNA and protein in tissue sections. Chapter in *Methods in Molecular Biology - In situ Hybridization Protocols*. 2nd Edition
 25. Roberts-Thomson P, Ahern M and Smith MD. Proinflammatory cytokine production and cell adhesion molecule expression compared in rheumatoid nodules and synovial membranes: comment on letter by Elewat et al. *Arthritis Rheum.* 1999;42:1068.

HUMAN PHYSIOLOGY

SCHOOL OF MEDICINE, FLINDERS UNIVERSITY
(An affiliated Department of the Department of Medicine)

ENTERIC NERVOUS SYSTEM LABORATORY

RESEARCH:

Investigators:

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Post-Graduate Student:

Mr Grant HENNIG, BSc(Hons), (Proceeding to PhD)

The Enteric Nervous System Laboratory is currently working in the following areas:

Neurogastroenterology. In recent years the interrelation between the functions of the gastrointestinal tract and the nervous system has been increasingly recognised. The gastrointestinal system is innervated by its own intrinsic nervous system, the enteric nervous system, and by its connections with the central nervous system to provide an integrated control.

Functional Anatomy of the Enteric Nervous System. The enteric nervous system is a vast network of nerve cells within the wall of the gut that controls many gastrointestinal functions including movement, blood flow and secretion. Being readily accessible in isolated specimens of gut, it provides an ideal preparation for the detailed study of neuronal circuitry underlying simple behaviour patterns. In many ways it is comparable to the simple nervous systems of invertebrates, but with mammalian features.

Immunohistochemical methods have been widely used to analyse the circuits within the enteric nervous system over the last 20 years. Our laboratory has developed a combination of highly specific tracing techniques with immunohistochemistry to map different functional classes of neurones. This technique makes it possible to identify the neurones that project to a particular target (for example the circular muscle layer of the gut wall) and determine the immunohistochemical markers that a particular functional class of cells contains. Markers include neurotransmitters, neurotransmitter-related enzymes (eg: choline acetyltransferase for cholinergic neurones), neuropeptides, amine transmitters and modulators, calcium binding proteins, structural proteins, receptors, second messengers and related molecules. From these, many insights can be gained into the transmitter systems and patterns of connectivity involved in particular behaviours of the gut.

Physiological Analysis of Simple Behaviours in the Gastrointestinal Tract. Projects are also available analysing the physiology of gut movements. The movements of the gut are essential for the normal processes of digestion. Motility results from the coordinated

contractions and relaxations of the longitudinal and circular smooth muscle layers, which are controlled by neurones that lie entirely within the wall of the gut: the “enteric nervous system” and by the pacemaker cells and muscle that generate spontaneous movements. The apparent complexity of gut movements probably arises from a few simple mechanisms that interact: the aim of our work is to identify these simple underlying mechanisms. Many simple patterns of behaviour are expressed in isolated pieces of gut taken from experimental animals or from humans. These patterns can be studied under highly controlled conditions, using recording systems based on combinations of pressure, force or movement transducers, extracellular recording, intracellular recording and a new method developed by us to analyse movements from video recordings. With a wide range of specific pharmacological tools available, detailed analysis of the mechanisms underlying these movements is possible. In addition, we have developed a number of simple manipulations to allow detailed physiological analysis of the neuronal basis of intestinal movements. We aim to identify the extrinsic nerve pathways that connect the intestine to the central nervous system. We routinely combine our detailed knowledge of neuroanatomy with our physiological experiments, leading to integrated structural and functional studies. A number of projects are available to analyse the cellular mechanisms and circuitry that are responsible for behaviour patterns in isolated gut.

Techniques available include: organ culture, retrograde tracing of neural pathways in vitro, multiple labeling fluorescent immunohistochemistry, confocal microscopy, computer video and image processing, organ bath pharmacology, mechanical and electrophysiological recordings from isolated tissues, computerised data recording and analysis etc. We are currently developing techniques for molecular biological analysis of identified enteric nerves.

Grants:

National Health and Medical Research Council

SJH Brookes SY Yuan and M Costa

Enteric neuronal control of gastrointestinal sphincters

M Costa and SJH Brookes

Mechanisms underlying the propagation of intestinal peristalsis

SJH Brookes and M Costa

Mechanisms underlying the initiation of intestinal peristalsis

ASTRA Hassle Pharmaceuticals

M Costa and SJH Brookes

Morphology and function of sensory nerves to the gastro-intestinal tract

University Research Budget

SJH Brookes

Mechanism underlying the initiation of intestinal peristalsis

D Wattchow

Pathological changes in intestinal neurons in obstructed or inflamed human intestine

Publications:

1. Tassicker BC, Hennig GW, Costa M and Brookes SJH. Rapid anterograde and retrograde tracing from mesenteric nerve trunks to the guinea-pig small intestine in vitro. *Cell Tissue Research* 1999;295:437-452.
2. Hennig GW, Costa M, Chen BN and Brookes SJH. Quantitative analysis of peristalsis in the guinea-pig small intestine using spatio-temporal maps. *Journal of Physiology* 1999;517:575-590.
3. Brookes SJH, Chen BN, Costa M and Humphreys CMS. Initiation of peristalsis by circumferential stretch of flat sheets of guinea-pig ileum. *Journal of Physiology* 1999;516:525-538.
4. Costa M, Hennig GW and Brookes SJH. The localisation, distribution and function of peptides and their receptors in the Enteric Nervous System. In: *Peptidergic G Protein-Coupled Receptors* 1999;307:118-26.
5. Yuan SY and Brookes SJH. Neuronal control of the gastric sling muscle of the guinea pig. *Journal of Comparative Neurology* 1999;412:669-680.
6. Porter, A.J, Wattchow, D.A. Brookes, S.J.H. and Costa, M. Projections of nitric oxide synthase and vasoactive intestinal polypeptide-reactive submucosal neurons in the human colon. *Journal of Gastroenterology and Hepatology* 1999;14:1180-1187.

GROWTH FACTOR LABORATORY

RESEARCH:

Investigators:

Associate Professor Robert RUSH, BSc(Hons(Monash), PhD(Monash)

Dr Ian FERGUSON, BSc(ANU), PhD(ANU), MBA(NSW)

Mr Plinio HURTADO, MBBS(Havana), PhD(Flinders)

Dr Qing XUE, PhD(Adel)

Dr Shuhua ZHANG, BSc, PhD(LaT)

Research Staff:

Ms Melanie VESSEY, BSc(Adelaide), Research Assistant

Ms Cristie WILLIAMS, Laboratory Technician

Mr KJ WONG, B Biotech(Hons)(Flinders), Research Assistant

Post-Graduate Student:

Mr Jianjun LU, MBBS(Nantong), (Proceeding to MSc)

Mr Hiroaki TANI, BSc(Hons)(Adel) (Proceeding to PhD)

Mr Rogan TINSLEY, B Biotech(Hons)(Flinders) (Proceeding to PhD)

The Growth Factor Laboratory is currently researching the actions of the neurotrophin family of neurotrophic factors within the nervous system. In particular, the work of the laboratory is focussed on the role of neurotrophins in the regulation of nerve regeneration. A variety of technical approaches are used and range from histological and immunological analysis of the neurotrophins, in vivo inhibition of biological functions with specific antibodies and methods to transfer neurotrophin genes into damaged neurons in models of neurodegenerative disease and spinal cord trauma.

Grants:

National Health and Medical Research Council

RA Rush

Function of anterogradely transported BDNF in sensory neurons

National Heart Foundation

RA Rush and DT Liu

Interaction between angiotensin II and the sympathetic nervous system in the control of nerve growth factor synthesis.

Spinal Research Fund of Australia

RA Rush and IA Ferguson

The use of neurotrophins in the treatment of spinal cord injuries

University Research Budget

RA Rush

Interaction between angiotensin II and the sympathetic nervous system in the control of nerve growth factor synthesis.

Australian Research Council

X-F Zhou and RA Rush

The molecular mechanisms underlying the sympathetic sprouting in the dorsal root ganglia following sciatic nerve injury

RA Rush

Are BDNF and NT4 endogenous survival factors for motor neurones?

CRC for Tissue Growth and Repair

RA Rush

Publications:

1. Li WP, Xian C, Rush RA and Zhou XF. Upregulation of brain-derived neurotrophic factor and neuropeptide Y in the dorsal ascending sensory pathway following sciatic nerve injury in rat. *Neuroscience Letters* 1999;260:49-52.
2. Zhou X-F, Deng Y-S, Chie E, Xue Q, Zhong J, McLachlan EM, Rush RA and Xian CJ. Satellite-cell-derived nerve growth factor and neurotrophin-3 are involved in noradrenergic sprouting in the dorsal root ganglia following peripheral nerve injury in the rat. *European Journal of Neuroscience* 1999;11:1711-22.
3. Zhou X-F, Chie ET, Deng Y-S, Zhong J-H, Xue Q, Rush RA and Xian CJ. Injured primary sensory neurons switch phenotype for brain-derived neurotrophic factor in the rat. *Neuroscience* 1999;92:841-853.
4. Zhang S-H, Zhou X-F, Deng Y-S and Rush RA. Measurement of neurotrophin 4/5 in rat tissues by a sensitive immunoassay. *Journal of Neuroscience Methods* 1999;89:69-74.
5. Theodosiou M, Rush RA, Zhou XF, Hu D, Walker JS and Tracey DJ. Hyperalgesia due to nerve damage: role of nerve growth factor. *Pain* 1999;81:245-255.
6. Ferguson IA, Lu JJ, Zhou XF and Rush RA. The low affinity neurotrophin receptor, p75: A multifunction molecule with a role in nerve regeneration? *Degeneration and Regeneration in the Nervous System*. 1999;221-237.

LUNG CELL AND MOLECULAR BIOLOGY

RESEARCH:

Investigators:

Dr John POWER, BSc(Hons)(Adel), PhD(Flinders)

Dr Weiping GAI, MBBS(Hunan), MSc(Hunan), PhD(Flinders)

Post-Graduate Student

Ms Endang HARTONO, (Proceeding to PhD)

The cell and molecular biology group is focussed on purifying, identifying, localising and determining the function of specific proteins in the human lung and brain diseases.

Brain. Several neurological disorders are characterised by the appearance of inclusions in neurons and glial cells, which results in loss of function and cell death. Two such conditions are Parkinson's Disease and Multi System Atrophy, which develop inclusions in the neurons and glial cells respectively. Two projects are running concurrently whereby the inclusions have been isolated from the brains of people dying from these conditions and the proteins forming the inclusions are being identified. We are anticipating that if we can determine the composition of the inclusions we may eventually determine the cause of these diseases.

Identification of proteins involved in the formation of lewy bodies within the brains of people dying from Parkinson's disease.

Identification of proteins involved in the formation of glial cell inclusions in the brains of people dying from Multiple System Atrophy (MSA).

Lung. The epithelial lining of the lung is made up of several secretory cell types that contribute to the airway and alveolar lining fluid. The airway lining fluid is the lungs first line of defence and has a protective role. The alveolar lining fluid is also involved in defence, but has an additional major role in reducing surface tension and preventing airway collapse. The current projects are directed at identifying new airway proteins, and the role of a new non selenium glutathione peroxidase in the airways. A better knowledge of these proteins may contribute to our understanding of diseases such as asthma. We also have projects directed at the cell biology of surfactant secretion.

Control and Turnover of Secreted Airway Proteins.

Lipid and Protein sequence analysis of intracellular vesicles involved in the trafficking and storage of surfactant.

Grants:

Australian Research Council

JHT Power and TE Nicholas

Lipid and protein sequence analysis of intracellular vesicles in trafficking and storage of surfactant.

W P Gai

University Research Budget

JHT Power

Production of peptides to human airway protein sequences.

W P Gai

Flinders Medical Centre Foundation

JHT Power

Sequence analysis and localisation of secreted human airway proteins.

W P Gai

National Health and Medical Research Council Fellowship

WP Gai

Publications:

1. Power JHT and Nicholas TE. Immunohistochemical localization and characterization of a rat clara cell 26kD protein (CC26) with similarities to glutathione peroxidase and phospholipase A2. *Experimental Lung Research* 1999 25:379-392.
2. Power JHT, Doyle IR, Davidson K and Nicholas TE. Ultrastructural and protein analysis of surfactant in Australian Lungfish *Neoceratodus Forsteri*: evidence for conservation of composition for 300 million years. *Journal of Experimental Biology* 1999;202:2543-2550.
3. Edwards YS, Sutherland LM, Power JHT, Nicholas TE and Murray AW. Cyclic stretch induces both apoptosis and secretion in rat alveolar type II cells. *FEBS Letters* 1999;448:127-130.
4. Gai WP, Power JHT, Blumbergs PC, Culvenor JG and Jensen PH. Alpha-synuclein immunisolation of glial inclusions from multiple system atrophy brain tissue reveals multiprotein components. *Journal of Neurochemistry* 1999;73:2093-2100.
5. Braak H, Sandmann-Keil D, Gai WP and Braak E. Extensive axonal Lewy neurites in Parkinson's disease: a novel pathological feature revealed by alpha-synuclein immunocytochemistry. *Neuroscience Letters* 1999;265:67-69.

NEUROREGENERATION LABORATORY

RESEARCH

Investigators:

Dr Xin-Fu ZHOU, Msc(Beijing), PhD(Melb)

Research Staff:

Ms Hui WANG, Research Assistant

Ms Jinhua ZHONG, Research Assistant

Post-Graduate Student:

Ms Li LI, (Proceeding to PhD)

Grants:

National Health and Medical Research Council

X-F Zhou

Neurotrophic mechanisms underlying plasticity of primary sensory neurons after injury.

Australian Research Council

X-F Zhou and RA Rush

Mechanisms underlying the sympathetic sprouting in the dorsal root ganglia following sciatic nerve injury.

National Heart Foundation of Australia

X-F Zhou

Regulation of blood pressure by BDNF

Publications:

1. Li WP, Xian C, Rush RA and Zhou XF. Upregulation of brain-derived neurotrophic factor and neuropeptide Y in the dorsal ascending sensory pathway following sciatic nerve injury in rat. *Neuroscience Letters* 1999;260:49-52.
2. Zhou X-F, Deng Y-S, Chie E, Xue Q, Zhong J, McLachlan EM, Rush RA and Xian CJ. Satellite-cell-derived nerve growth factor and neurotrophin-3 are involved in noradrenergic sprouting in the dorsal root ganglia following peripheral nerve injury in the rat. *European Journal of Neuroscience* 1999;11:1711-22.
3. Zhou X-F, Chie ET, Deng Y-S, Zhong J-H, Xue Q, Rush RA and Xian CJ. Injured primary sensory neurons switch phenotype for brain-derived neurotrophic factor in the rat. *Neuroscience* 1999;92:841-853.
4. Zhang S-H, Zhou X-F, Deng Y-S and Rush RA. Measurement of neurotrophin 4/5 in rat tissues by a sensitive immunoassay. *Journal of Neuroscience Methods* 1999;89:69-74.
5. Theodosiou M, Rush RA, Zhou XF, Hu D, Walker JS and Tracey DJ. Hyperalgesia due to nerve damage: role of nerve growth factor. *Pain* 1999;81:245-255.

6. Ferguson IA, Lu JJ, Zhou XF and Rush RA. The low affinity neurotrophin receptor, p75: A multifunction molecule with a role in nerve regeneration? *Degeneration and Regeneration in the Nervous System*. 1999;221-237.
7. Zhou X-F. Peripheral projections of primary sensory neurons immunoreactive for brain-derived neurotrophic factor. *Neuroscience Letters* 1999;261:151-54.
8. Xian CJ and Zhou X-F. Neuronal-glia differential expression of TGF-alpha and its receptor in the dorsal root ganglia in response to sciatic nerve lesion. *Experimental Neurology* 1999;157:317-326.
9. Xian CJ, Huang B-R and Zhou X-F. Distribution of neurturin mRNA and immunoreactivity in the peripheral tissues of adult rats. *Brain Research* 1999;835:247-258.
10. Mu J-S, Li W-P, Yao Z-B and Zhou X-F. Deprivation of endogenous brain-derived neurotrophic factor results in impairment of spatial learning and memory in adult rats. *Brain Research* 1999;835:259-265.

PULMONARY PHYSIOLOGY AND PATHOPHYSIOLOGY LABORATORY

RESEARCH:

Investigators:

Professor Terry NICHOLAS, BSc(Hons)(WAust), PhD(WAust)

Dr Andrew BERSTEN, MB, BS(Melb), MD(Flinders), FANZCA, FFICANZCA

Dr Ian DOYLE, BSc(Hons)(Adel), PhD(Flinders)

Research Staff:

Ms Heather BARR, BSc(Adel), MSc(Adel), Graduate Assistant

Ms Kate DAVIDSON, BSc(Hons)(Adel), Research Assistant

Ms Amanda WHITE, Technical Assistant

Post-Graduate Student:

Ms Xenia IOANNOU, BSc(Hons)(Flinders)(Proceeding to PhD)

Student:

Mr Tim NIELSEN, BSc(Adel), (Proceeding to Honours)

The Pulmonary Physiology and Pathophysiology Laboratory is currently working in the following areas:

Plasma Surfactant Proteins as Predictors of Acute Respiratory Distress Syndrome (ARDS). In a pilot study at the FMC involving 54 patients, we identified plasma Surfactant Protein-B (SP-B) as a highly sensitive and specific predictor for ARDS when the initiating insult is direct (pneumonia, aspiration of gastric contents, pulmonary contusion). At present there is no specific/sensitive indicator of parenchymal lung damage and SP-B appears unique in that it passes down its huge concentration gradient between the alveolar hypophase and plasma in a fashion reflecting alveolo-capillary permeability. Such a predictor would allow early intervention during the "honeymoon" period between the insult and the development of ARDS. This study has now been expanded as a prospective study involving the Intensive Care Units at Sir Charles Gardner Hospital in Perth, Royal North Shore Hospital in Sydney, the Alfred Hospital in Melbourne and the Royal Brisbane Hospital. Inclusion criteria include: sepsis,

aspiration, multiple trauma, pulmonary contusion, multiple transfusion, pancreatitis, pneumonia and burns. The aim is to determine whether surfactant-associated proteins in plasma and other lung antigens are useful predictors of ARDS in critically ill patients (target: 623 patients), and correlate with the 28 day mortality and the 29 day organ failure score.

Plasma Surfactant Proteins as Predictors of Lung Damage in Radio- and Chemotherapy. Lung injury is a common side effect of both radio- and chemotherapy in cancer patients and can be fatal. An ability to detect subclinical lung damage and to be able follow the course of the damage would be of considerable value. Unfortunately current tests are insensitive and non-specific and, in some cases, highly invasive (e.g. bronchoalveolar lavage). We have commenced a collaborative study between the Flinders Private Hospital, Ashford Private Hospital, the Royal Adelaide Hospital and the Peter McCallum Cancer Institute in Melbourne to investigate the utility of SP-B as a marker of lung damage in these patients.

Lung Permeability in Alveolar Proteinosis Patients. Alveolar Proteinosis is a disease of unknown pathogenesis which is characterised by patients having highly elevated levels of SP-A and B in the alveolar compartment, but a normal alveolo-capillary permeability. This study will allow us to separate the effects of permeability changes from those of concentration gradients on the passage of the surfactant-associated proteins (SAP) from the hypophase to the plasma. It is an extension of the existing collaboration between us and the Herman, Bernard group in Belgium. In addition, we are collaborating with Dr. John Pfitzner at the Queen Elizabeth Hospital, and Dr. Keith Payne at Louisiana State University Medical Centre and have shown that the surfactant proteins from these patients differ not only in abundance but also in structure, and that this might contribute to the prevalence of secondary lung infections found in these patients.

We are collaborating with Dr. John Seymour of the Peter McCallum Cancer Centre (Melbourne), Dr. Jeff Presneill, Royal Melbourne Hospital and Dr. Koh Nakata of the Institute of Medical Science Tokyo University in investigating the possible role of auto-antibodies against GM-CSF in the pathogenesis of this condition.

RSV-Induced Bronchiolitis. We are collaborating with Professor Kevin Forsyth and Dr. Shanze Wang at FMC to investigate whether monitoring the levels of SAPs in plasma will allow us to monitor, in turn, the severity of RSV-induced bronchiolitis in children.

Plasma Surfactant Protein Levels in Infants following Corrective Cardiac Surgery. We are collaborating with Drs. Mike South and John Millar of the Department of General Paediatrics, University of Melbourne to investigate whether monitoring plasma surfactant proteins will allow us to monitor, in turn, Pulmonary Capillary Leak Syndrome which frequently occurs following corrective cardiac surgery. This study involves 100 infants.

Meconium Aspiration Syndrome. We are collaborating with Dr. Peter Dargaville, Department of Neonatology, University of Melbourne, to determine the efficacy of using dilute mixtures of surfactant to lavage meconium from the lungs of a porcine model of Meconium Aspiration Syndrome in reducing pulmonary permeability defects and morbidity.

Effect of Volume Recruitment Maneuvers on Surfactant and Cytokine Release and Lung Permeability. Patients with acute lung injury invariably require mechanical ventilation to maintain arterial gases. However, differences in the ventilation strategies can alter surfactant turnover and stimulate cytokine release and can further worsen the damage to the alveolo-capillary membrane which characterises these patients. We are using a rat model to examine the effect of different lung volume recruitment maneuvers (using a programmable ventilator) on fluid balance, compliance and surfactant homeostasis. This includes investigating the changes which occur in experimental models of ARDS (endotoxin, HCl aspiration, oleic acid infusion, oxygen toxicity)

Determination of Plasma SP-A and B in Thoroughbred Racehorses. These horses frequently experience disruption of the alveolo-capillary membrane and haemorrhage into the alveolar compartment as a consequence of heavy exercise, with an accompanying heavy

financial cost. We have commenced a collaboration with Professor Ron Slocombe (Chair, Veterinary Pathology, University of Melbourne) and the Victoria Racing Industry to investigate the utility of plasma SAPs in predicting such incidences of hemorrhaging. We have isolated the equine SAPs and have inoculated the rabbits in order to raise the antibodies.

Do Different Isoforms of SP-A serve Different Physiological Functions? SP-A not only plays a role in the formation of the tubular myelin form of surfactant in the alveolar compartment, but is also thought to be pivotal in the control of surfactant homeostasis, inhibiting surfactant release from the alveolar type II cell while stimulating reuptake. It is also reputed to be an important component of host defence in the lung. The dilemma arises as to how the same molecule could serve these multiple functions.

SP-A is actually a family of isoforms. We have isolated a number of these and are examining their ability to control release and reuptake of radiolabeled phospholipids from isolated alveolar type II cells.

Grants:

National Health and Medical Research Council
IR Doyle, A Bersten and TE Nicholas
Surfactant dynamics and ventilation modalities in acute lung injury

University Research Budget

TE Nicholas, AD Bersten, IR Doyle, JHT Power, Y Edwards, K Davidson and X Ioannou
Measurement of components of pulmonary surfactant in health and disease

Australian Research Council

JHT Power and TE Nicholas
Lipid and protein sequence analysis of intracellular vesicles involved in the trafficking and storage of surfactant.

Autogen Research Pty Ltd

IR Doyle, AD Bersten and TE Nicholas
Circulating surfactant proteins as indicators of Lung Health.

Australia and New Zealand College of Anaesthetists

AD Bersten, IR Doyle, TE Nicholas and ME Jones
The dynamics of surfactant proteins across the alveolocapillary barrier in ARDS

Channel 7

IR Doyle and SZ Wang
The utility of surfactant protein levels as biomarkers of disease severity in respiratory syncytial virus-induced-bronchiolitis: A pilot study

Publications:

1. Power JHT and Nicholas TE. Immunohistochemical localization and characterization of a rat clara cell 26kD protein (CC26) with similarities to glutathione peroxidase and phospholipase A2. *Experimental Lung Research* 1999;25:379-392.
2. Power JHT, Doyle IR, Davidson K and Nicholas TE. Ultrastructural and protein analysis of surfactant in Australian Lungfish *Neoceratodus Forsteri*: evidence for conservation of composition for 300 million years. *Journal of Experimental Biology* 1999;202:2543-2550.
3. Edwards YS, Sutherland LM, Power JHT, Nicholas TE and Murray AW. Cyclic stretch induces both apoptosis and secretion in rat alveolar type II cells. *FEBS Letters* 1999;448:127-130.
4. Wang SZ, Doyle IR, Nicholas TE and Forsyth KD. Plasma surfactant protein-B is elevated in infants with respiratory syncytial virus-induced bronchiolitis. *Pediatric*

Research 1999;46:731-734.

5. Davidson KG, Bersten AD, Nicholas TE, Ravenscroft PR and Doyle IR. Measurement of tidal volume by using transthoracic impedance variations in rats. *Journal of Applied Physiology* 1999;86:759-766.
6. Doyle IR, Nicholas TE and Bersten AD. Partitioning lung and plasma proteins: Circulating surfactant proteins as biomarkers of alveolocapillary permeability. *Clinical & Experimental Pharmacology & Physiology* 1999;26:185-197.

SMOOTH MUSCLE LABORATORY

RESEARCH:

Investigators:

Dr Tim NEILD, BSc(Hons)(Bristol), PhD(Bristol)

Research Staff:

Mr Jason RITCHIE, Technical Assistant

Post-Graduate Student:

Ms Glenis CRANE, MSc(Flinders), (Proceeding to PhD)

The Smooth Muscle Laboratory is currently working in the following areas:

The spread of membrane hyperpolarisation in arteriolar trees, including both mathematical modeling and measurements.

Measurement of skin colour by digital photography, with special reference to burn scars.

Grants:

Australian Research Council

TO Neild

Coordination of vascular activity in the small intestine

University Research Budget

TO Neild

Spread of electrical signals in vascular networks

Flinders Medical Centre Foundation

TO Neild

Assessment of burn scar colour as a predictor of scar hypertrophy

Publications:

1. An equation describing spread of membrane potential changes in a short segment of blood vessel. *Physiology Medicine and Biology* 1999;44:N217-N221.
2. Davey RB, Sprod RT and Neild TO. Computerised colour: a technique for the assessment of burn scar hypertrophy. A preliminary report. *Burns* 1999;25:207-213.

GENERAL MEDICINE GROUP

General Medicine A:

Dr P Popplewell
Dr J Hecker
Professor P Finucane
Dr P Henschke
Dr C Whitehead

General Medicine B:

Professor P Phillips
Dr M Ahern
Dr R Geddes
Dr D Gordon
Dr T Gordon
Dr W Hill
Dr A Kupa
Professor P Roberts-Thomson
Dr M Smith

General Medicine C:

Dr W Braund
Professor J Alpers
Dr J Bowden
Dr S Judd
Dr A Terry
Dr R van den Berg

General Medicine D:

Dr S Morton
Dr S Hedger
Dr R Heddle
Dr S Shakib

Physician Trainees:

Dr Nic Antic
Dr Ulrike Basch
Dr Peter Campbell
Dr L Catley
Dr Kerry Cheong

Dr Sally Cox
Dr Carmine De Pasquale
Dr Cathy Dillon
Dr Steven Ding
Dr Jorge Do Campo
Dr Mylinh Duong
Dr Lloyd Einsiedel
Dr Sam El-Kaissi
Dr Simon Forehan
Dr Ziggy Gieroba
Dr Natalie Giles
Dr Sok Goh
Dr Simone Hagan
Dr Andrew Hamilton
Dr Zinta Harrington
Dr Andrew Henderson
Dr Joanne Hill
Dr Jui Ting Ho
Dr Paul Hoadley
Dr Iwona Jensen
Dr Fiona Kermeen
Dr Bill Mantzioris
Dr Bruno Martin
Dr Cathy Miller
Dr Tiffany Mould
Dr Nam Nguyen
Dr Louise Nott
Dr Gautam Ramnath
Dr Kerry Read
Dr Dimitar Sajkov
Dr Christine Sanderson
Dr Sheryl Sim
Dr Ram Sistla
Dr Mark Slee
Dr Keen Soon
Dr Kamilia Tai
Dr Belinda Weller
Dr Emma Whitham
Dr Alan Wigg
Dr Tim Wootton-Lang
Dr Aeneas Yeo
Dr Bun Chen Yiv

ACTIVITY: Clinical

1998/99 Inpatient Activity - Flinders Medical Centre

Total patients, equisepts and the average length of stay for Units within the Division is summarised in the following table

UNIT	Total 1998/99 Equiseps	Total 1998/99 Patients	Average LOS *
Allergy	86.64	180	1.12
Cardiac	4262.45	3258	3.54
Cardiac Surgery	2635.15	437	11.67
Dermatology	346.11	1027	1.06
Diabetic	.81	1	7.00
Dialysis	1174.20	4857	0.40
Endocrinology	184.96	219	2.99
General Medicine A	1278.60	1164	4.43
General Medicine B	1190.98	1192	4.29
General Medicine C	1122.33	1071	4.43
General Medicine D	1150.12	991	5.16
Geriatrics	1180.88	767	8.30
CCMU	144.49	42	0.71
Infectious Diseases	47.24	35	6.81
Nephrology	844.39	462	6.83
Pharmacology	1.31	2	0.60
Respiratory	1381.78	1084	5.45
Rheumatology	30.29	22	8.95
TOTAL	17062.74	16811	3.36

* Includes same day patients

1998/99 Inpatient Activity *- Repatriation General Hospital

UNIT	Total 1998/99 Equiseps	Total 1998/9 Patients	Average LOS
Cardiology	215.00	713	6.21
Cardiovascular	2.00	2	1.00
Dermatology	334.00	362	1.74
Endocrinology	27.00	259	8.53
Gastroenterology	1434.00	2057	3.62
Geriatric Medicine	40.00	537	10.50
Neurology	1.00	9	6.22
Oncology	553.00	632	1.82
Rehabilitation	6.00	649	23.91
Renal Medicine	40.00	44	1.16
Respiratory	1207.00	1783	3.82
Rheumatology	143.00	636	7.65
Thoracic Medicine	-	2	7.00
TOTAL	4002.00	7685.00	6.35

* Excludes Veteran designated unit activity in Rehabilitation and Geriatric Medicine

Activity Summary - Flinders Medical Centre

	1997/1998	1998/99
<i>Inpatients and Same Day Patients</i>		
Total Discharges	15,745	16,811
Total Equiseps	17,034.77	17,062.74
Total CCMU Hours	121,214	126,515
Total Same Day Patients (SDA)	7,204	8,238
Total Inpatients	8,541	8,573
<i>% Same Day Activity</i>		
	45.8%	49
<i>Average Inpatient Length of Stay (LOS)</i>		
	6.29	6.20
<i>Inpatient Occupied Bed Days (OBD)</i>		
	55,136	52,802
<i>Average Inpatient Age</i>		
	64	64
<i>Outpatients</i>		
Total Level 6 Division Outpatient Attendances	31,414	30,963
<i>Diagnostic Attendances</i>		
Total Level 6 Division Diagnostic Attendances	19,174	22,005

Activity Summary - Repatriation General Hospital

	1997/98	1998/99
<i>Inpatients and Same Day Patients</i>		
Total Discharges	7,161	7,685
Total Equiseps	6,227	4,002
Total Same Day Patients (SDA)	2,527	4,002
Total Inpatients	4,634	3,683
<i>% Same Day Activity</i>		
	55%	52%
<i>Average Inpatient Length of Stay (LOS)</i>		
	6.87	6.35
<i>Inpatient Occupied Bed Days (OBD)</i>		
	49,182	48,816
<i>Average Inpatient Age</i>		
	69.9	69.23
<i>Outpatients</i>		
Total Outpatient Attendances	34,970	37,744

Outpatient Occasions of Service – Flinders Medical Centre

	1997/98	1998/99	% Variance	Mean
				Waiting Time
				(Days)
<i>Consulting Clinics</i>				
Cardiac	1,107	1,134	2.4	39.2
Dermatology	3,402	3,576	5.1	34.8
Diabetic	1,529	1,327	-13.2	40.1
Endocrinology	1,156	1,132	-2.1	48.9
General Medicine	1,606	1,277	-20.5	28.9
Hypertension	1,612	1,286	-20.2	20.0
Immunology	1,912	1,812	-5.2	56.2
Infectious Diseases	319	186	-41.7	27.5
Lipid	234	247	5.6	7.0
Metabolic Bone Clinic	229	199	-13.1	57.4
Renal	1,888	1,873	-0.8	17.9
Respiratory	3,075	3,072	-0.1	43.5
Rheumatology	2,277	2,260	-0.7	55.9
<i>Ward Follow Up</i>				
6A	319	282	-11.6	
Respiratory	103	17	-83.5	
6G	122	117	-4.1	
Cardiac Intensive Care	2,166	1,664	-23.2	
<i>Diagnostic Attendances</i>				
ECG	15,275	18,373	20.3	
Exercise ECG	825	740	-10.3	
Endocrine Function Tests	56	73	30.4	
Holter Monitors	395	441	11.6	
Hypertension Studies	526	550	4.6	
Respiratory Function	1851	1,461	-21.1	
Respiratory Outreach	246	367	49.2	
<i>Other</i>				
Cardiology	5,777	6,247	9.9	
Diabetic Education	496	530	6.9	
Palliative Care/ HIV Liaison	1,012	1,360	34.4	
Palliative Care/ HIV Outreach	753	809	7.4	
Peritoneal Dialysis	320	456	42.5	
TOTAL LEVEL 6 DIVISION	50,588	52,968	4.7	
TOTAL FMC	331,738	336,773	1.5	

Outpatient Occasions of Service – Repatriation General Hospital

	1997/8	1998/99	% Variance	Mean Waiting Time (Days)
Consulting Clinics				
Allergy	240	231	-3.8	15.0
Cardiology	2,457	2,861	16.4	5.2
Cardiographics	6,688	6,767	1.2	-
Dermatology	5,727	7,010	22.4	6.0
Diabetes Nurses	1,095	1,048	-4.3	-
Endocrinology	1,339	1,385	3.4	6.3
Gastroenterology	2,136	2,406	12.6	3.1
Geriatric Medicine	276	379	37.3	3.7
Hypertension	796	551	-30.8	4.0
Nephrology	467	400	-14.3	7.0
Neurology	687	576	-16.2	8.8
Oncology	420	399	-5.0	5.0
Pacemaker Clinic	923	887	-3.9	-
Rehabilitation	207	101	-51.2	8.0
Respiratory	3,802	5,160	35.7	-
RFU	2,889	3,004	4.0	-
Rheumatology	3,923	4,246	8.2	8.1
Sleep Disorders	468	333	-33.1	-
TOTAL	34,570	37,744	9.2	

ACTIVITY: Financial

Flinders Medical Centre

1998/99 Budget Result

Cardiac Services

Cost Centre	Description	Budget	Actual	Variance
6120	OTS – Cardiac Surgery	490,000	775,193	285,193
7087	Cardiac Surgery	582,213	618,953	36,740
7103	Cardiology	1,377,413	1,478,624	101,211
7117	Interventional Cardiology	1,353,699	1,586,511	232,812
7123	Ward 6D	1,697,834	1,770,078	72,244
7126	Cardiac Intensive Care	1,471,562	1,713,481	241,919

Critical Care Services:

Cost Centre	Description	Budget	Actual	Variance
6240	Critical Care Medicine Unit	7,964,120	8,724,322	760,202
6400	Emergency and Critical	56,268	74,782	18,514
6510	Trauma Service	57,292	55,530	-1,762

Renal Services

Cost Centre	Description	Budget	Actual	Variance
7104	Nephrology	1,913,747	2,024,743	110,996
7114	Renal Suite	318,000	378,620	60,621
7124	Ward 6G	1,931,104	2,163,204	232,100
7134	CAPD - Home dialysis	263,904	339,517	75,614

Medical Administration

Cost Centre	Description	Budget	Actual	Variance
7100	Administration	1,688,782	508,566	-1,180,216
7108	Rehabilitation Services	174,300	161,871	-300
7109	Junior Medical Staff	1,938,468	2,082,159	143,691
7140	Palliative Care/HIV	133,464	134,254	790

Respiratory, Endocrinology, Dermatology

Cost Centre	Description	Budget	Actual	Variance
7101	Respiratory	651,680	654,065	2,385
7102	Endocrinology	549,886	572,948	23,062
7107	Dermatology	241,716	272,130	30,414
7112	Diabetes Education Unit	114,870	97,210	-17,660
7121	Ward 6A	2,273,660	2,478,048	204,388
7131	Home Oxygen	357,116	291,242	-65,874
7141	Respiratory Laboratory	182,540	192,406	9,866

General Medicine, Rheumatology and Geriatrics

Cost Centre	Description	Budget	Actual	Variance
7111	Rheumatology	137,782	135,423	-2,359
7115	Geriatrics	292,393	290,151	-2,242
7122	Ward 6C	2,510,393	2,383,725	-126,667
7125	Ward 6B	1,351,323	1,185,843	-165,480
7130	General Medicine	409,793	454,203	44,410

The Division's expenditure for 1998/99 was 4.1% over budget with inpatient activity being 6.3% over target and CCMU activity 24% over target.

Repatriation General Hospital

1998/99 Budget Result

	Description	Budget	Actual	Variance
L100	Cardiovascular	29,104	26,128	-2,976
L500/N430	Respiratory/Outreach	441,693	433,538	-8,155
L530	RFU	187,242	178,837	-8,405
L700	Rheumatology	218,895	226,080	7,185
L800	Medical Admin.	552,048	547,248	-4,800
L850	Medical TMO's	1,284,707	1,336,965	52,258
L600	Sleep Unit	559,142	450,082	-109,060
M100	Allergy	18,291	15,092	-3,199
M200	Dermatology	93,920	114,458	20,538
M300	Neurology	37,930	39,771	1,841
M400	Oncology7	18,111	17,252	-859
M500	Renal	26,177	33,420	7,243
M700	Cardiology	203,288	275,362	72,074
M730	Cardiographics	215,890	230,699	14,809
M800	Endocrinology/Diabetics	203,210	195,638	-7,572
C400	Casualty	800,218	768,442	-31,776
M900	Gastroenterology	412,997	332,500	-80,497
Various	Nursing and Wards	6,889,469	6,712,900	-176,569
N680	IPU	412,997	332,500	-80,497
L300	Rehabilitation	459,716	427,883	-31,833
TOTAL		14,044,312	13,659,412	-384,900