



## List of abbreviations

AIHW	Australian Institute for Health and Welfare
AHMAC	Australian Health Ministers' Advisory Council
AHS	Australian Hearing Services
AusAID	Commonwealth Government's international aid agency
CARHTU	Central Australian Remote Health Training Unit
CARPA	Central Australian Rural Practitioners Association
CGRDG	Commonwealth Government Research and Development Grants
CHATA	Community Health and Anti-Tuberculosis Association
CRCATH	Cooperative Research Centre for Aboriginal and Tropical Health
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DETYA	Department of Employment, Training and Youth Affairs
DHCS	Northern Territory Department of Health and Community Services
DIPE	Northern Territory Department of Infrastructure, Planning and the Environment
DRUID	Diabetes and related disorders in urban Indigenous people in the Darwin region
FATSIS	Faculty of Aboriginal and Torres Strait Islander Studies, NTU
FMC	Flinders Medical Centre
FMIS	Financial management information system
ICT	Information, communications and technology
IMVS	Institute of Medical and Veterinary Science
MCS	Murrupurtiyanuwu Catholic School
NGO	Non-government organisations
NHF	National Heart Foundation
NHMRC	National Health and Medical Research Council
NIH	National Institutes of Health, USA
NTCS	Flinders University Northern Territory Clinical School
NTHS	Northern Territory Hearing Services
NTU	Northern Territory University
OAH HDWA	Office of Aboriginal Health, Health Department Western Australia
OATSIH	Office of Aboriginal and Torres Strait Islander Health
PNG	Papua New Guinea
PNGIMR	Papua New Guinea Institute of Medical Research
PRIORITI	Prevenar Immunisations for Otitis Media Reductions in the Tiwi Islands
QIMR	Queensland Institute of Medical Research
RCH	Royal Children's Hospital
RDH	Royal Darwin Hospital
RHSET	Rural Health Support, Education and Training
THB	Tiwi Health Board
TNF	Tumor Necrosis Factor
UNSW	University of New South Wales
UNTAET	United Nations Transitional Administration in East Timor
UQ	University of Queensland
WHO	World Health Organization

# menzies school of health research

JULY 2001–DECEMBER 2002 annual report

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## Mission statement

To help improve the health of the people of northern and central Australia, and regions to the near north, through multidisciplinary research and education.

## Aims and objectives

The Menzies School of Health Research carries out health research and education of relevance to northern and central Australia, and nearby regions. The School is committed to:

- • • excellence in research to advance health knowledge
- • • excellence in scholarship and teaching about health
- • • the equitable use of knowledge and resources to improve health

# Foreword

Richard Ryan AO



A change to a calendar-year financial reporting cycle has resulted in this annual report covering a period of 18 months. Over this time considerable organisational change has been implemented and MSHR has moved from strength to strength. As such, many notable achievements will be highlighted throughout this report.

In June 2002 the MSHR Governing Board formally adopted our new strategic plan for the period 2002–06. Under the driving force of this plan, MSHR will be a leading participant in focusing on the health issues of Indigenous people and others living in tropical and remote environments. In relation to this I would like to pass on my congratulation to the Governing Board of the Cooperative Research Centre for Aboriginal and Tropical Health for their success in obtaining funding for a further seven years. I look forward to maintaining the close relationship that has developed between the two organisations. Together we can focus national and international attention on improving Indigenous Australians' health outcomes.

Professor Stephen Leeder joined the MSHR Governing Board in March 2002 as the representative of the Vice-Chancellor of the University of Sydney, replacing Professor Paul Gatenby. Paul Bartholomew, a nominee of the Northern Territory Minister of Health and Community Services, resigned, as did Mr Ken Borda, the Chief Executive of Deutsche Bank Australia and New Zealand. I congratulate Professor Leeder on his appointment and thank Professor Gatenby, Mr Bartholomew

and Mr Borda for their efforts whilst members of the Governing Board. In December 2001 Ms Gabby Falls attended her last Governing Board meeting as the MSHR staff representative. I would like to personally thank her for the commitment and professionalism she demonstrated in ensuring that the interests of MSHR staff were always represented.

Under the leadership of Professor Kerin O'Dea the organisational changes that have occurred throughout MSHR have been rewarded by increased levels of financial support from competitive funding agencies. The number of new research projects continues to grow, with new funding being awarded both nationally and internationally. The Northern Territory Government increased operational funding and I acknowledge and thank the Hon Mrs Jane Aagaard MLA and the Hon Mr Steve Dunham MLA for the support they have given as Health Ministers with their respective governments. I would also like to acknowledge the continuing support of the Menzies Foundation.

Finally, I would like to thank my fellow Governing Board members, Professor Kerin O'Dea, and all MSHR staff and students for their enthusiastic support throughout this period of immense change. Without your commitment these changes would not have been successfully implemented and MSHR would not have recorded the achievements that have occurred.

# Director's report

Professor Kerin O'Dea



**T**his report covers an exciting 18-month period during which MSHR made major strides in reforming the administrative and support structures for researchers, and establishing a firmer infrastructure funding base from the Northern Territory Government. This has led to enhanced productivity and successful leverage of further funding across a broad spectrum of research programs.

Our program to reform MSHR's IT systems has developed intensively during this period, with the implementation of electronic financial systems, an electronic research administration system, and good progression towards a standard operating environment.

The organisational development continued with the development of the MSHR Strategic Plan 2002–2006 under the excellent guidance of Associate Professor Ross Bailie. The plan provides direction for the coming years and successfully sets the context for multidisciplinary research and education programs which:

- • • **PROMOTE** a broad understanding of health that reflects underlying socio-economic, environmental, health system and biological factors as determinants of health and disease.
- • • **CONDUCT** high-quality multidisciplinary research, research training and public health education with a focus on Indigenous, remote and tropical health.
- • • **ADVANCE** the local, national and international application of research findings to improve health.

- • • **ADVOCATE** for research that will contribute to better health for people of the region.

- • • **BUILD** strong partnerships with community groups, service providers, policy-makers, and other academic organisations.

MSHR has been very productive from July 2001 to December 2002:

The public health education program is going from strength to strength, with 60 students enrolled across all programs in 2002, including seven full-fee-paying international students. This meant that the MSHR public health education program was well positioned to attract new funding from the Public Health Education and Research Program, Innovations Program of the Commonwealth Department of Health and Ageing. Innovations funded were the development of a national course in public health nutrition and the development of a curriculum and educational materials to support the Chronic Disease workforce in the Northern Territory and Northern Queensland.

As the centre agent for the Cooperative Research Centre for Aboriginal and Tropical Health (CRCATH), MSHR has been very involved in the process of the CRCATH's fifth-year review and preparation of a successful submission for \$23 million over seven years for a new CRC: the Cooperative Research Centre for Aboriginal Health (CRCAH). The new CRCAH will extend our linkages with six additional core partners from major interstate research centres, universities and the Federal Government.

## Success in research grants

Early grant success came with two projects funded, out of eleven nationally, under the Australian Health Ministers Priority Driven Research Program. The first project seeks to evaluate the impact of Aboriginal diabetes prevention programs through psycho-social indicators of perceived control and well being. The second project aims to evaluate the impact of community health centre organisational systems on the quality of care for the prevention and management of chronic disease.

During 2002, NHMRC made the commitment to increase the funding of Indigenous health research to 5% of its total budget. MSHR had seven projects funded — half of the national expenditure on Indigenous health in this funding round. The new research projects will explore diabetes and related disorders in urban Indigenous people, the access Indigenous people have to kidney transplant, the impact of household infrastructure on child health in remote Aboriginal communities, the use of antibiotics for chronic obstructive lung disease in Aboriginal adults, the implications of bacterial load for vaccine efficacy and antibiotic treatment in high-risk populations, pneumococcal surveillance, and the molecular epidemiology of melioidosis in Australia.

## Achievements of staff and students

MSHR is the base for some of Australia's most talented researchers in tropical, remote and Indigenous health. Professor Bart Currie was awarded the prestigious Eric Susman Prize for 2001. This prize was awarded for his work in the fields of tropical infectious diseases and clinical toxicology. Associate Professor Nick Anstey has been awarded a NHRMC practitioner fellowship for five years and was earlier awarded the Robert Street Prize from the University of Western Australia for the best PhD thesis in 2001. Doctoral research students Dr Alan Cass and Dr Russell Gruen were both awarded prestigious Harkness Fellowships to the United States for 12 months' work with leading health policy experts in the USA. Three research students—Dr Louise Maple-Brown, Dr Emma Kowal and Matthew Stevens—were awarded NHMRC PhD scholarships. Julie Brimblecombe was offered PhD scholarships from both NHMRC and the National Heart Foundation and accepted the latter.

At the beginning of 2002 I extended my advocacy role in public health nutrition by accepting an appointment as a board member of Food Standards Australia and New Zealand.

As in previous reports, I use this opportunity to offer tributes to staff, research partners and organisations who assist with and support the research programs. In particular, the Yalumarnggithinyaraw group who are working with the diabetes intervention and related research in a north-east Arnhem Land community.

Our commitment to building capacity of Indigenous people is the focus of a grant from the Victor Fairfax Family Foundation. The grant will support training of Indigenous people in research, clinical care and counselling of diabetic patients as part of a research project investigating the prevalence of diabetes and related conditions, such as renal disease, in an urban Indigenous population.

The major challenge for the year ahead is to maintain our momentum. As Australia's premier institute for Indigenous, tropical and remote health research, our vision is to continue our proud tradition of producing research that has practical application to health service providers and policy-makers. In keeping with this, we will continue to build strong partnerships with local communities, research institutions, governments and funding bodies.

As Australia's premier institute for Indigenous, tropical and remote health research, our vision is to continue our proud tradition of producing research that has practical application to health service providers and policy-makers.

## Governing Board

MEMBERS July 2001–December 2002

### **RICHARD RYAN AO,**

CHAIR (nominee of the Governing Board)



Mr Richard Ryan is a Fellow of the Institute of Chartered Accountants in Australia, and a

Companion of the Institution of Engineers, Australia. He is Chairman of the Governing Board of MSHR, President of the National Heart Foundation, Deputy Chancellor of the Northern Territory University, a Director of Indigenous Business Australia and Chairman of the NT Tourist Commission Board.

### **SIMON MADDOCKS** BAgSc(Hons)

PhD MAIAST CPAg, DEPUTY CHAIR (nominee of the Menzies Foundation)



Professor Simon Maddocks is Chief Scientist at SARDI Livestock Systems at the University of

Adelaide. He is also the Deputy Chief Executive Officer of the Cooperative Research Centre for Pest Animal Control and a member of its Board, President of the Australian Institute of Agricultural Science and Technology (AIAST) (South Australian branch) and a national director of the AIAST, and Director of the Board of the Sir Robert Menzies Memorial Foundation.

### **PETER PLUMMER** BSc GDipMgt GAICD,

TREASURER (nominee of the NT Minister for Health, Family and Children's Services)



Mr Peter Plummer is Chief Executive Officer of the Northern Territory Department of

Education, Employment and Training and was previously Chief Executive Officer of Territory Health Services and Chief Executive Officer of the Department of Mines and Energy.

### **BRUCE K ARMSTRONG**, AM, FAA, B Med Sc (Hons), MB BS (Hons), DPhil (Oxon), FRACP, FAFPHM

(ex-officio representative of the Vice-Chancellor of University of Sydney, from January 2002)



Professor Bruce Armstrong is Associate Dean of the Faculty of Medicine, Head of the School of

Population Health and Health Services Research, and Medical Foundation Fellow at the University of Sydney. He has variously been Professor of Epidemiology and Cancer Research at the University of Western Australia, Commissioner of Health for Western Australia, Deputy Director of the International Agency for Research on Cancer, Director of the Australian Institute of Health and Welfare and Director of Cancer Research and Registers at The Cancer Council of NSW. Professor Armstrong was appointed a Member of the Order of Australia on Australia Day 1998, and elected a Fellow of the Australian Academy of Science in 2000.

**L VALERIE ASCHE** AM MSc PhD FASM  
MAIBiol CBiol  
(nominee of the Governing Board)



Dr Val Asche, a microbiologist, has been a university academic, an industrial

consultant and head of a diagnostic unit. In the Northern Territory she was Head of the Microbiology Unit at the Menzies School of Health Research from 1986–94, a consultant for the Northern Territory Department of Health and Community Services, and is the current editor of *Recent Advances in Microbiology*.

**RON MCKAY** BSC PHD GDIPCOMP  
GDIPBUS FAIM  
(nominee of the NT Minister for Education)



Professor Ron McKay was Vice-Chancellor of the Northern Territory University from 1996–2002,

following a six-year term as Deputy Vice-Chancellor. He is currently Chair of the Northern Territory Research and Development Advisory Council. He is current member of the Centralian College Council, is on the Board of the Darwin Symphony Orchestra, and is a Director of Original IT Investments Pty Ltd and the Northern Territory University Foundation. Professor McKay is a member of the Australian Vice-Chancellor's Committee and of its Standing Committee on Education and Students.

**ROSLYNNE ANNE MORIARTY**

(nominee of His Honour the Administrator, from December 2000)



Ms Ros Moriarty is Managing Director of The Jumbana Group, an Indigenous design and brand

strategy consultancy. Previous career positions include research and administrative posts with the Department of Aboriginal Affairs, The Overseas Service Bureau and Radio Australia. She has held board positions with the National Gallery of Australia, the Australian Academy of Design, and Australian Major Events.

**KERIN O'DEA** BSc PhD

(ex-officio, Director of Menzies School of Health Research)



Professor Kerin O'Dea is the Director of Menzies School of Health

Research and holds the Chair of Robert Menzies Professor of the University of Sydney. She has also appointments as Honorary Professor at the University of Melbourne, the University of Queensland, Monash University, and Flinders University of South Australia.

At a national level, Professor O'Dea is a member of numerous committees, including the Council of the National Health and Medical Research Council (NHMRC), the Food Standards Australia and New Zealand Board, the NHMRC's Aboriginal and Torres Strait Islander Health Research Agenda Working Group, the Diabetes Research Consultative Committee, the National Diabetes Strategy Group, and the Consultative Committee for the National Centre for Epidemiology and Population Health at the Australian National University.

**PAUL BARTHOLOMEW** BPsych

(nominee of the NT Minister for Health, Family and Children's Services, from May 2001 to August 2002)

Mr Paul Bartholomew was Chief Executive Officer of the NT Department of Health and Community Services until August 2002, and prior to that was the Deputy Secretary of that department. Previously, Mr Bartholomew held senior executive positions in various West Australian, Victorian, Commonwealth and Northern Territory health and community services portfolios. Mr Bartholomew resigned from the MSHR Board at the same time he resigned as CEO of the NT Department of Health and Community Services.

**KENNETH C BORDA** BA LLB

(nominee of the Governing Board, from May 2001 to June 2002)

Mr Kenneth Borda was appointed Chief Executive Officer of Deutsche Bank Australia and New Zealand in June 1999. In addition to his Australasian responsibilities, he is a member of the Asia Pacific Board and Executive Committee. Previously Mr Borda was a solicitor in private and corporate legal practice. At Deutsche Bank, he has held the position of Head of Investment Banking Division for Australia and North Asia. Mr Borda is a Director of the Sydney Futures Exchange Limited and the Australian Theatre for Young People. Mr Borda resigned from the MSHR Board when he accepted the position of Regional Chief Executive Officer, Asia Pacific Deutsche Bank.



**PAUL GATENBY** MBBS PhD FRACP  
FRCPA MRACMA  
(ex-officio representative of the Vice-Chancellor of  
University of Sydney, until January 2002)

Professor Paul Gatenby was Associate Dean of the Canberra Clinical School of the University of Sydney, Professor of Medicine and Pathology and Director of ACT Pathology. At a national level he has served on the Life Sciences Panel of the Cooperative Research Centre Australia Program, Department of Industry, Science and Resources, and is a member of the National Pathology Accreditation and Advisory Council of the Department of Health and Ageing. He is a member of the ACT Health and Community Care Service Board. Professor Gatenby resigned from the MSHR Board when he accepted an appointment as the Foundation Dean of the Australian National University Medical School.

**STEPHEN LEEDER** BSc(Med) MBBS  
PhD FRACP FFPHM FAFPHM  
(ex-officio, Dean of Medicine, University of  
Sydney, until December 2002)



Professor Stephen Leeder was Dean of the Faculty of Medicine, Professor of

Public Health and Community Medicine of the University of Sydney and a Fellow of the University Senate. He has been a member of the Western Sydney Area Health Service, chair of its Human Research Ethics Committee and Clinical Policy, Quality and Outcomes Committee. He has also been Foundation Chair of the Board of Censors of the Australasian Faculty of Public Health Medicine 1990–94, and National President of the Public Health Association of Australia. He was also a member of the National Health and Medical

Research Council and Chair of the Health Advisory Committee, 1997–99. Professor Leeder was also appointed Chair of the Health Inequalities Research Collaboration Board and Chair of the HealthInsite (on-line health advice) Editorial Board by the Minister for Health and Ageing in 2000. Professor Leeder resigned from the MSHR Board when he took up a fixed-term appointment with The Earth Institute at Columbia University, New York, USA.

#### OBSERVERS ON THE MSHR BOARD:

SECRETARY TO THE BOARD,  
**Mr Grant Lindsay** (until August 2001)  
then **Mr David Morgan**

CRCATH DIRECTOR,  
**Professor Tony Barnes**

STAFF REPRESENTATIVE,  
**Ms Gabrielle Falls** (until Nov 2001)  
then **Ms Robyn Marsh**  
(Dec 2001–Jan 2003)



*In July 2002 the MSHR Boardroom was named in honour of the late Mr Roy Edwards AM. Mr and Mrs Edwards, formerly of Newcastle Waters Station, north of Tennant Creek in the Northern Territory, have supported MSHR since its inception in 1985. MSHR Director Kerin O'Dea, Mrs Marjory Edwards and MSHR Chairperson Richard Ryan AO celebrated the occasion at an unveiling ceremony held in Adelaide.*

## Patrons and Members

### OFFICIAL PATRON

The Hon Mr John Anictomatis AO  
Administrator of the Northern Territory

### STATE PATRONS

#### Northern Territory

The Hon Austin Asche AC QC  
Mr Gatjil Djerrkura OAM

#### Queensland

Mr Ron Archer AM

#### Victoria

Sir Gustav Nossal AC CBE  
Mr Charles Goode

#### South Australia

The Hon John Dawkins  
Professor Lowitja  
O'Donoghue CBE AM  
Mr William Scammell CBE

#### Tasmania

Dr John Hargrave AO MBE

### MSHR MEDALLION RECIPIENTS †

Dr Valerie Asche  
Miss Margaret Brewster  
Father Frank Flynn MSC AC †  
Mr Harry Giese AM MBE †  
Professor Richard Gye AO  
Dr John Hargrave AO MBE  
Professor David Kemp FAA  
Professor John Mathews AM

Mr Ray Norman AM  
Dr KS Sriprakash

\* Medallion recipients are also  
Members of the School

† Deceased

### LIFE MEMBERS

Dr Keith Fleming  
Dr Ella Stack CBE

### MEMBERS

Dr Phil Alderslade  
Mrs Ann Alderslade  
Dr Ray Anderson  
Mr John Antella  
Professor Bruce Armstrong AM  
Mrs Lucille Arthur  
Dr Ben Bartlett  
Professor Antony Basten  
Dr Barbara Bauert  
Dr Paul Bauert  
Mr Neil Bell  
Dr Rob Berkowicz  
Professor Geoffrey Berry  
Dr Helle Bielefeldt-Ohmann  
Ms Heather Boulden  
Dr Frank Bowden  
Mrs Joyce Bowden  
Mr Hugh Bradley  
Mrs Sue Bradley  
Dr Charles Butcher  
Dr Anthony Capon  
Mr Brad Cassels  
Dr Elizabeth Chalmers  
Mr Bob Collins  
Dr David Cox  
Mr Bill Craig  
Mr Joe Daby  
Mr Don Darben AO  
Mr Kevin Davis  
Dr Brian Devlin  
Mr Kevin Diflo  
Dr Ross Diplock  
Mr Brian Dixon  
Mr Mick Dodson  
Professor William Doe  
Lady Joan Doll  
Sir Richard Doll  
Professor Ken Donald  
The Hon Nick Dondas AM  
Dr Fiona Douglas

Dr Rogan Draper  
Dr Age Dyrting  
Mrs Marjory Edwards  
Dr John Erlich  
Dr Sharyn Errington  
Dr Kerry Eupene  
Dr Kayte Evans  
Mr Paul Everingham AO  
Mrs Lorna Fejo  
Mr Fred Finch  
Mr Joe Fisher JP  
Dr David Fitzpatrick  
Dr Albert Foreman  
Dr Ian Gardner  
Mr Steve Gelding  
Mrs Nan Giese OBE AO  
Professor Michael Good  
Mr Mike Gratten  
Mr John Grootjans  
Dr Steve Guthridge  
Dr Peter Hallsworth  
Dr Jeff Hanna  
Mr Tom Harris  
Mr David Hastings  
Mr Steve Hatton  
Dr Shirley Hendy  
Mr John Hicks  
Mrs Beth Hogan  
Mrs Jane Hogan  
Dr John Hopper  
Professor Victor Hopper  
Dr Diane Howard  
Mr Jeffrey Huddleston  
Dr Ian Humphrey  
Mr Amin Islam  
Mrs Barbara Jones  
Professor Ross Kalucy  
Lady Jessica Kearney  
Dr Charles Kilburn  
Mrs Christine King  
Mr Laurie King  
Dr Kerry Kirke AM  
Ms Wendy Kirke  
Dr Vicki Krause  
Professor Marcia Langton AM

Dr Helen Lapsley  
Mrs Jane Large  
Ms Alison Laycock  
Mr John Liddle  
Miss Lorraine Liddle  
Dr Richard Lim MLA  
Mr Jack Little  
Dr David Lo  
Dr Mike MacAvoy  
Mr Ian MacGregor  
Miss Sandra Mackenzie  
Mr Lyal Mackintosh  
Mr Daryl Manzie  
Mr Patrick Markwick-Smith  
The Hon Clare Martin Chief  
Minister of the NT  
Dr Diana Martin  
Dr Fred McConnel  
Dr David McCredie  
Mr Brian McLaughlin  
Professor James McLeod  
Mr Stuart McMillan  
Mr Andy McNeill APM JP  
Professor Don McNicol  
Dr Lorna Melville  
Dr Angela Merianos  
Mr David Moncrieff  
Mrs Fran Morey  
Ms Estrella Munoz  
The Rev Philip Muston  
Professor Malcolm Nairn  
Mr John Neill  
Mrs Lesley Oldfield  
Dr David Parry  
Dr Mahomed Patel  
Mr Greg Paterson  
Professor Hedley Peach  
Mr Marshall Perron  
Ms Elizabeth Phillips  
Dr Aileen Plant  
Professor Robert Porter  
Dr David Pugsley  
Mr Denis Quinn  
Mrs Cheryl Rae

Dr Brian Reid  
Dr Lyn Reid  
Mrs Rose Rhodes  
Professor Field Rickards  
Mrs Jan Robbins  
Dr Alan Ruben  
Mr Tom Rubin  
Ms Kristine Seeleither  
Mrs Margaret Sheridan  
Ms Bernadette Shields  
Dr Anthony Smith  
The Hon Warren Snowdon MP  
Professor DG Soll  
Dr Ross Spark  
Professor Fiona Stanley AC  
Mr Graeme Symons  
Senator Grant Tambling  
Mr Phil Temple  
Professor Yee-Hing Thong  
Dr Peter Thorn  
Mr Robert Tipungwuti  
Dr Paul Torzillo  
Dr Paul Van Buynder  
Sir William Vines AC CMG  
Mr John Vorrath  
Dr Alan Walker AM  
Dr Mike Ward  
Dr Carol Watson  
Mrs Michelle Watts  
Dr Barrie Way  
Assoc Professor Charles Webb  
Dr Agnes Westwater  
Mr Peter Whelan AM  
Mr Robert White AO  
Dr Eric Wigglesworth  
Ms Joan Wilkinson  
Dr Howard Williams AO  
Dr Pauline Wilson AM  
Dr KC Woo  
Dr Marion Woods  
Ms Alison Worrell  
Professor Heddy Zola

## MSHR honorary appointments

Name	Years	Dates	Details	Level
Dr Ivan Bastian	3	Dec 02 – Nov 05	Institute for Medical and Veterinary Science (IMVS) facilities and expertise in research projects in East Timor and Indonesia	SRF
Mr Richard Lumb	3	Dec 02 – Nov 05	Mycobacteriology at IMVS and IMVS laboratories for research in East Timor	RF
Dr Graeme Maguire	3	Dec 02 – Nov 05	Continuing a productive collaboration	RF
Dr Tarun Weeramanthri	3	Dec 02 – Nov 05	Preventable chronic diseases program in the NT	SRF
Dr Sue Sayers	3	Oct 01 – Sept 04	Aboriginal birth cohort study	SRF
Dr Neville White	3	Oct 01 – Sept 04	Research Yolngu people of east Arnhem Land	SRF
Dr Al Yonovitz	3	Mar 01 – Feb 04	Audiology	RF
Assoc Professor Mark Daniel	3	Jun 02 – May 05	Collaborative links on community-based diabetes project	SRF
Dr KS Sriprakash	3	Jun 02 – May 05	Collaborative research in infectious diseases	SRF
Dr Zhiqiang Wang	3	Feb 03 – Jan 06	Collaborative research on epidemiology	SRF
Dr Ric Price	3	Jun 02 – May 05	Collaborative research in international health	SRF
Dr Emiliana Tijtra	3	Mar 02 – Feb 05	Strengthen ties with Indonesia on infectious diseases	SRF
Dr Peter d'Abbs	3	Mar 02 – Feb 05	Collaboration on substance abuse	SRF

## Membership of committees July 2001–December 2002

### SENIOR MANAGEMENT TEAM

Professor Kerin O'Dea (Chair, Director)  
 Assoc Professor Ross Baillie (Head, Research Development)  
 Professor Tony Barnes (Director, CRC for Aboriginal & Tropical Health)  
 Mrs Norma Benger (Interim Head, Indigenous Forum)  
 Assoc Professor Joan Cunningham (Head, Population Health & Chronic Diseases Division)  
 Professor Bart Currie (Head, Infectious Diseases Division)  
 Mrs Susan Hutton (Operations Manager)  
 Dr Paul Kelly (Head, Education & Training Division)  
 Mr David Morgan (Associate Director, Finance & Administration Division)  
 Miss Nicki Crute (Secretary)

### FINANCE COMMITTEE

Mrs Jane Large (Chair)  
 Mrs Sue Bradley  
 Mr Richard Ryan AO  
 Ms Joanne Schilling  
 Professor Kerin O'Dea  
 Mr Peter Plummer  
 Mrs Yolanda Jackson CPA (Secretary, until Aug 2001)

Mr Grant Lindsay (until Aug 2001)  
 Mr David Morgan (Secretary, from Aug 2001)  
 Miss Gabrielle Falls (Staff Representative, until Nov 2001)  
 Ms Robyn Marsh (Staff Representative, from Dec 2001)

### AUDIT COMMITTEE

Mrs Sue Bradley (Chair)  
 Mr Richard Ryan AO  
 Ms Joanne Schilling  
 Professor Kerin O'Dea  
 Mr Peter Plummer  
 Mrs Yolanda Jackson CPA (Secretary, until Aug 2001)  
 Mr Grant Lindsay (until Aug 2001)  
 Mr David Morgan (Secretary, from Aug 2001)  
 Miss Gabrielle Falls (Staff Representative, until Nov 2001)  
 Ms Robyn Marsh (Staff Representative, from Dec 2001)

### DARWIN REGION INSTITUTIONAL BIOSAFETY COMMITTEE

Mrs Sue Hutton (Chair, Microbiologist)  
 Dr Val Asche (Microbiologist)  
 Dr Richard Brettell (Molecular Biologist/Geneticist, until Jun 2002)  
 Dr Karen Gibb (Molecular Biologist)

Mr Lodi Hoeben (Mechanical Engineer)  
 Dr Gary Lum (Clinical Microbiologist)  
 Dr Lorna Melville (Microbiologist/Virologist)  
 Dr Anna Padovan (Molecular Biologist/Geneticist)  
 Ms Pamela Trotman (Layperson, from July 2001)  
 Dr Shelley Walton (Molecular Parasitologist)  
 Miss Gabrielle Falls (Secretary)

#### HUMAN RESEARCH ETHICS COMMITTEE OF DHCS AND MSHR

Dr John Condon (Chair, until Dec 2001)  
 Ms Jill Huck (Chair, from Feb 2002)  
 (Layperson, until Feb 2002)  
 Ms Jenny Abdilla (Non-Medical Practitioner)  
 Dr Nick Anstey (Medical Graduate with research experience)  
 Ms Brydget Barker-Hudson (Lawyer)  
 Prof David Brewster (Medical Graduate with research experience;  
 Chair, Fast Track Committee)

Mr Ian Hillock (Layperson)  
 Mr Jack McTaggart (Layperson)  
 Dr Peter Morris (Medical Graduate with research experience,  
 until Dec 2001)  
 Mr Peter Thomsen (Chair, Aboriginal Ethics Subcommittee)  
 Dr Murray Seiffert (Qualitative Researcher, from Jun 2002)  
 Rev Brian Tunks (Minister of Religion, until Aug 2001)  
 Rev Richard Wallace (Minister of Religion, from Dec 2001)  
 Ms Denise Walsh (Layperson, from Jun 2002)  
 Dr Shelley Walton (Laboratory-based Scientific Advisor)  
 Prof Jenny Watson (Clinical Nurse with social science experience,  
 until Dec 2001)  
 Dr Michael Lowe (Proxy for Nick Anstey whilst on sabbatical,  
 Aug–Dec 2002)

Miss Gabrielle Falls (Secretary)

#### ABORIGINAL ETHICS SUBCOMMITTEE

Mr Peter Thomsen (Chair)  
 Ms Norma Bengler (from Oct 2001)  
 Ms Allison Chamberlain (from Jun 2002)  
 Ms Terry Dunbar  
 Ms Joanne Garngulkpuy (from Aug 2002)  
 Ms Mai Katona (until Jun 2001)  
 Ms Sandra Kitching  
 Ms Marie Munkara (until Jun 2002)  
 Dr Peter Morris (Scientific Advisor, until Dec 2002)

#### POSTGRADUATE STUDIES COMMITTEE

Professor Kerin O'Dea (Chair)  
 Assoc Professor Nick Anstey  
 Assoc Professor Ross Bailie  
 Professor Tony Barnes  
 Dr Alan Cass (Student Representative, until Oct 2001)  
 Assoc Professor Joan Cunningham  
 Professor Bart Currie  
 Dr Paul Kelly (from Mar 2001)  
 Mr Grant Lindsay (until Oct 2001)  
 Dr Dorothy Mackerras  
 Mr David Morgan (from April 2002)  
 Dr Peter Morris  
 Mr Yin Paradies (Student Representative, from April 2002)  
 Assoc Professor Charles Webb  
 Ms Catherine Richardson (Secretary)

#### COURSEWORK MANAGEMENT COMMITTEE

Assoc Professor Ross Bailie (Chair, until Sept 2001)  
 Dr Joan Cunningham  
 Dr Paul Kelly (Chair, from Oct 2001)  
 Mrs Audrey Langlands (Secretary)  
 Dr Dorothy Mackerras  
 Professor Kerin O'Dea  
 Mrs Catherine Richardson  
 Ms Annie Tangey  
 Ms Sam Togni (until April 2002)  
 Ms Bev Turnbull  
 Ms Annie Villaseche

#### RESEARCH TRAINING COMMITTEE (FROM 28/11/2001)

Dr Paul Kelly (Chair, Head Education & Training Division)  
 Assoc Professor Ross Bailie (Head, Research Development)  
 Assoc Professor Joan Cunningham (Head, Population Health &  
 Chronic Diseases Division)  
 Miss Gabrielle Falls (Senior Research Administrator)  
 Professor Kerin O'Dea (Director)  
 Mr Yin Paradies (Student Representative)  
 Dr Shelley Walton (Research Fellow, Infectious Diseases Division)  
 Ms Catherine Richardson (Secretary)

MSHR's international health team, in a collaborative effort, has made a major breakthrough in the fight against malaria.



Members of the MSHR International Health Program, Tjandra Handojo, Nick Anstey and Graeme Maguire. Nick and Graeme both received awards for their research in the past 18 months (see page 12).

## Research highlights

- • • MSHR's 'ear team' produced *The Ear Video*: a complete teaching package that provides health workers in remote Indigenous communities with examples of common ear infections seen in rural and remote communities. The video is linked to the *Recommendations on the management of otitis media in Aboriginal and Torres Strait Islander populations* that was developed by the team for the Office of Aboriginal and Torres Strait Islander Health in 2001.

- • • MSHR's international health team, in a collaborative effort with the University of Utah and Duke University in the USA, the Herbert Kariuki University in Tanzania and the National Institute of Health Research and Development in Indonesia, has made a major breakthrough in the fight against malaria. The research

team has found that arginine, a simple amino acid found in the body and in some simple foods such as nuts and seeds, may have potential as a new treatment for children and adults with the deadliest forms of malaria.

- • • The findings of an MSHR research project, which investigated why fewer procedures are recorded among Indigenous hospital patients, created significant interest from the national media during 2002. A manuscript detailing the findings was published by the *Medical Journal of Australia* in February 2002, accompanied by a commissioned editorial. There was also a very high

level of interest from government and briefings were provided to the NT Health Minister to enable departmental staff to make best use of the results. The study was also discussed as part of an innovative radio seminar for remote health staff across northern and central Australia.

- • • A collaborative effort between MSHR, ATSIC's Housing and Infrastructure Branch, and the CRCATH has seen the production of the *Atlas of health-related infrastructure in discrete Indigenous communities*, a full-colour, graphic representation of existing health-related infrastructure within remote Indigenous communities across Australia. Two thousand copies of the atlas have been distributed to government and non-government agencies throughout Australia. The atlas is a key tool for agencies with a role in planning and service delivery in remote Indigenous communities in the NT and has been warmly received by Indigenous leaders, policy-makers, and planners alike.

- • • The east Arnhem Land community of Galiwin'ku welcomed MSHR researchers into their community to help identify ways of reducing the risk of cardiovascular disease and diabetes in Indigenous Australians. Known as the Galiwin'ku Healthy Lifestyle project, the project is an outstanding model of researchers and community members working together to improve health outcomes for people in remote communities.

- • • Funding was secured for an innovative new study of diabetes and related disorders in urban Indigenous people in the Darwin region, known as the DRUID study. This study is the

first of its kind to concentrate on an urban Indigenous population.

## Education highlights

The public health education program is going from strength to strength, with 60 students enrolled across all programs in 2002, including seven international students.

MSHR Masters of Public Health students, Ms Annie Tangey and Dr Janet Savage, were awarded MSHR's Val Asche Prize for academic excellence.



*MSHR researcher Julie Brimblecombe (pictured above at Galiwin'ku) was awarded a National Heart Foundation scholarship to commence in 2003.*

## Achievements of staff & students

MSHR is a base for some of Australia's most talented researchers in tropical, remote and Indigenous health, with many staff and students being recognised for their contributions to research.

Our talented award recipients include:

- • • Professor Bart Currie was awarded the Royal Australasian College of Physicians 2001 Eric Susman Prize, and the Australasian College of Tropical Medicine's Ashdown Medal in 2002 for his work in the fields of tropical infectious diseases and clinical toxinology.
- • • Associate Professor Nick Anstey has been awarded the 2001 Robert Street Prize, from the University of Western Australia for the best PhD thesis in 2001, and was also awarded a NHMRC Practitioner Fellowship for five years from 2003.
- • • Dr Alan Cass and Dr Russell Gruen, two of MSHR's doctoral research students, were awarded prestigious Harkness Fellowships to work with leading health policy experts in the United States for 12 months.
- • • Dr Karen Koh, a dermatology trainee, was awarded first prize at the 2002 Registrars Forum of the Royal Australasian College of Dermatology Annual Meeting for her research project into tinea.

• • • Dr Craig Boutlis, an infectious diseases scholar, was awarded the American Society of Tropical Medicine and Hygiene's Young Investigator Award in November 2001 for his work on *Plasmodium falciparum* in Papua New Guinea.

• • • Dr Allen Cheng, an infectious diseases scholar, was awarded the Murray Will Fellowship for Rural Physicians by the Royal Australasian College of Physicians in October 2002.

• • • Dr Graeme Maguire was awarded the Ann Woolcock Young Investigator Award by the Thoracic Society of Australia and New Zealand in 2002.

• • • Mr Yin Paradies was Winner of both the Science and Technology Award and the Young Achiever of the Year Award at the Northern Territory 2002 Young Australian of the Year Awards.

• • • Pallave Dasari was awarded the Chancellor's Medal from Northern Territory University for her Bachelor of Science honours thesis, entitled 'Neutrophil response to *Burkholderia pseudomallei*'.

• • • Louise Maple-Brown, Emma Kowal and Matthew Stevens were awarded NHMRC training scholarships to commence in 2003.

• • • MSHR researcher Julie Brimblecombe was awarded a National Heart Foundation scholarship to commence in 2003.

Dr Alan Cass and Dr Russell Gruen, two of MSHR's doctoral research students, were awarded prestigious Harkness Fellowships to work with leading health policy experts in the United States for 12 months.

## Population Health & Chronic Diseases Division

DIVISION LEADER  
Associate Professor Joan Cunningham



The Population Health and Chronic Diseases Division undertakes a broad range of collaborative and interdisciplinary research. Areas of focus include the environmental and social determinants of health; health services research; chronic diseases, especially diabetes, heart and renal disease; maternal and child health; and health information development.

## Environmental & Social Determinants

### *Atlas of health-related infrastructure in remote Indigenous communities*

The *Atlas of health-related infrastructure in discrete Indigenous communities* is the result of a very successful collaboration between the Housing and Infrastructure Branch of ATSI, the CRCATH and MSHR.

The 1999 Community Housing and Infrastructure Needs Survey (CHINS) was conducted by the Australian Bureau of Statistics (ABS) on behalf of ATSI. ATSI subsequently commissioned the atlas project in an effort to disseminate the findings of the 1999 CHINS, and to draw attention to the survey as a tool for policy and planning in discrete Indigenous communities.

The cartographic presentation of the data, with brief commentary on the health relevance of different aspects of infrastructure, has been well received by Indigenous leaders, and by government and non-government agencies with responsibility for a range of services and facilities in Indigenous communities. Two thousand copies of the atlas were printed for dissemination across Australia. Requests for copies have come from a wide spectrum of groups, including some unexpected groups such as the Association of High School Geography Teachers.

### **Analysis of Community Health Infrastructure Needs (CHINS)**

#### **a) 1999 survey data**

The Department of Community Development, Sport and Cultural Affairs, acting as Program Manager for the Indigenous Housing Authority of the Northern Territory (IHANT), commissioned an analysis of the Northern Territory data from the national Community Housing and Infrastructure Needs Survey (CHINS). This survey was conducted by the ABS on behalf of ATSI, and collected data on the status of infrastructure in discrete Indigenous communities across Australia. Our analysis of data for the NT has resulted in three reports: an overall analysis of community infrastructure for the NT, an analysis of need by community and ATSI region, and an analysis of need by health zone.

The reports are supported by two volumes of cartographic presentation of key infrastructure variables and have been very positively received by the government and non-government agencies that have a role in planning and service delivery in remote Indigenous communities in the NT. They have also been promoted as a model for analysis and reporting of the CHINS data in other states.

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Investigators: **Ross Bailie**,  
Frank Siciliano, Geoff Dane, Lee Bevan,  
**Yin Paradies**, Bronwyn Carson

Funding: ATSI

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Investigators: **Ben Hoffman**, **Ross Bailie**

Funding: IHANT; CRCATH

MSHR research will allow better understanding of the relationship between independent housing infrastructure factors in a household environment and health status.

#### b) 2001 survey data

Analysis and reporting of the 1999 CHINS data for the NT was followed by a request from the Department of Community Development, Sport and Cultural Affairs to conduct a similar analysis of the 2001 CHINS data. The research team is currently engaged in a consultation process with users of the 1999 reports regarding refinement of the analysis and reports. These consultations will guide the approach to the analysis of the 2001 CHINS data, and reports are expected to be completed early in 2002.

#### Environment and child health in three Indigenous communities in the Northern Territory: A pilot study

This pilot study will inform the development of a two-year cohort study of children living in remote Aboriginal communities in the Northern Territory. The aim is to test the data collection and consent procedures proposed for use in the cohort study in three communities. Household infrastructure data, interview data from consenting householders and carers of young children, and review of the health centre records of children between the ages of 0–6 years, will allow better understanding of the relationship between independent housing infrastructure factors in a household environment and health status. Fieldwork in three communities has been completed and data analysis has commenced.

#### Fluoridation of water supplies in remote Indigenous communities in the Northern Territory: Requirements, feasibility and cost-effectiveness

This project aims to improve knowledge on the fluoride levels in remote community water supplies in the Northern Territory, the oral health status of children living in these communities, and to assess the feasibility and cost-effectiveness of small-scale remote water-fluoridation plants.

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Investigators: **Ben Hoffman, Ross Bailie**  
Funding: IHANT; CRCATH

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Investigators: **Ross Bailie**, Steven Guthridge, David Brewster, Gary Robinson, **Zhiqiang Wang, Liz McDonald**  
Funding: IHANT

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Investigators: **Ross Bailie**, John Spencer, **Mary Beneforti**  
Funding: NHMRC 219204/ OH047



*Ross Bailie and his team of researchers: from left to right: Damin Si, Harold Ulamari, Matthew Stevens, Michelle Dowden, Chris Edwards, Phil Donohoe, Ross Bailie, Bronwyn Carson and Tracey Burke (who provides research administration support to this group and others). Members of the team not present are Liz McDonald, Allison Stewart, Mary Beneforti, Russell Gruen and Ben Hoffmann.*



### Socio-economic and environmental determinants of health in Indigenous communities in the Northern Territory

This project will utilise administrative and large-scale census and survey data pertaining to Indigenous people living in communities in the Northern Territory to:

- Explore the relationships between a range of socio-economic and environmental factors (including health service access and utilisation), and health outcomes.
- Determine the relative need of communities and regions (including the soon-to-be-rolled-out 21 Indigenous health zones) across the socio-economic, environmental and health outcome dimensions.
- Assess various data sources for their fitness for use in policy and program development.

Preliminary analysis of some of the selected data sources has also been carried out, indicating a relationship between the condition of housing in Indigenous communities with aspects of community administrative functioning, access to health services (e.g. environmental health workers) and overcrowding.

### Mastery and control as important contributors to risk of chronic diseases in Indigenous populations

This project seeks to understand how psycho-social responses to diabetes interventions mediate behavioural and other outcomes. Of relevance to this work is how mastery and perceived control are affected in response to community control and direction in planning and implementing diabetes interventions.

### Placing Aboriginal and Torres Strait Islander mortality in an international context

Using data from the United Nations and national statistical agencies, this project investigated mortality for Indigenous Australians during 1995–97 in comparison to other national and sub-national groups around the world.

The mortality profile of Indigenous Australians differed from that of most other populations, with similar patterns but higher rates of mortality compared to other indigenous populations. The notable exception was the Russian Republic where age-specific mortality rates for males in 1995 were almost identical to those of Indigenous Australian males in 1995–97, with similarities amongst females less pronounced, but still evident. Findings from this study have been published.

### An exploration of social variations in health using an Indigenous birth cohort

‘Classical’ measures of socio-economic status are an attempt to measure social position, material wealth and command over resources. These measures may not adequately describe the social environment in the ‘remote’ Australian Indigenous population which ‘rejects accumulation’ and ‘demand shares’ under relationships of obligation. In cooperation with an Aboriginal council in the Northern Territory, this analysis is an attempt to determine useful markers of advantage and disadvantage in children living in remote communities.

Neither the ‘classical’ or other socio-economic measures were found to be particularly useful at identifying children who fell above or below this mean. More work needs to be undertaken in this area to identify culturally appropriate markers of social difference in this population.

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Investigators: **Ross Baillie, Joan Cunningham**, Steven Guthridge, **John Condon, Matthew Stevens**

Funding: CRCATH; Menzies Foundation Fellowship (Cunningham); NHMRC Scholarship 997509 (Condon)

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Investigators: Mark Daniel, Kevin Rowley, **Julie Brimblecombe, Joe Fitz, Kerin O’Dea**

Funding: NHMRC 124319; Australian Health Ministers’ Advisory Council PDR2001/07

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Investigators: **Yin Paradies, Joan Cunningham**

Funding: CRCATH; Menzies Foundation Fellowship (Cunningham)

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Investigators: **Alison Reid, Susan Sayers, Dorothy Mackerras, Gurmeet Singh, Ingrid Bucens, Kathryn Flynn**

Funding: NHMRC 137203; Colonial Foundation

National values underlying a desire for equity in health also need to be developed and expressed overtly in policy across many government departments.

#### Stress and chronic diseases: A systematic review

This project aims to systematically review the literature relevant to stress in Indigenous peoples as well as people of lower socio-economic status in order to identify:

- The major theoretical domains in which relevant literature is located.
- Any literature specifically relating to stress and the development or management of chronic disease.
- Stress interventions occurring at an individual and/or population level.

#### 'Inequality and health: A North Australian perspective' seminar series Development of a short course on the social determinants of Indigenous health

A ten-part seminar series on 'Inequality and health: A North Australian perspective' was developed during the last half of 2001, and staged at Menzies School of Health Research in April, May and June 2002. The aim of the series was to impart a broad understanding of the impact of the social environment on health, with special attention to Australian Indigenous communities.

Commencing with an international perspective and then examining the Australian situation, series participants were introduced to concepts such as the social context of health behaviours, methods and rationale behind measurements of socio-economic status, structural factors that affect the distribution of income, the multidimensional nature of poverty, social capital, neighbourhoods, unemployment, work environment and their effects on health. The current theories relating to the way the social environment affects physiological systems was also discussed.

The series looked at the implications of the social determinants of health for Indigenous Australians. In several areas the current methods and theories were found to need further development. These included concepts of time and an appreciation of history, the place of Indigenous people in Australian society and the effects of interpersonal and institutional racism, funding problems in Indigenous health, and culturally relevant concepts of work, environment and social capital. Analysis of systems that bring resilience to Indigenous communities were also considered important.

National values underlying a desire for equity in health also need to be developed and expressed overtly in policy across many government departments.

The seminar series will act as a germinal project to development of a short course that will initially be offered at a postgraduate level. Future options include developing the course for broader in-service training purposes and for undergraduate and VET sector students in a variety of health-related disciplines.

#### Health effects of heavy kava use in Aboriginal Australians

Several investigations into the health effects of kava use, particularly heavy kava use, were conducted to look at kava's effects on cardiovascular disease, serious infectious disease and neurological outcomes. Some of kava's social and economic effects and the policy responses implemented to minimise the harms from kava abuse are also described. The investigations have been carried out in Arnhem Land Aboriginal communities since 1998. The results of these unique investigations of kava's effects on Aboriginal people are interpreted in order to try to improve understandings of the health and social effects of kava use generally.

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Investigators: **Joan Cunningham, Yin Paradies**

Funding: CRCATH

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Investigators: **Ross Bailie, Bronwyn Carson**

Funding: PHERP; CRCATH

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Investigators: **Chris Burns, Bart Currie, Paul Maruff, Peter d'Abbs, Paul Spillane, Alan Clough, Sheree Cairney**

Funding: NHMRC 980434

In the Russian Republic age-specific mortality rates for males in 1995 were almost identical to those of Indigenous Australian males from 1995–97.

### Heavy cannabis use in two remote Aboriginal communities in Arnhem Land: Prospects for a population-based intervention

Patterns of cannabis use in 200 Aboriginal men and women aged 13–36 years in two Aboriginal communities are being studied before and after an education intervention designed for local cultural and linguistic needs. Life history data, to model recruitment to and ongoing involvement in patterns of harm and cannabis use, are being collected in order to focus on interactions with the criminal justice and service systems. Participant interviews are being used to assess the intervention's impact and to describe knowledge and attitudes to harm and cannabis use. Concurrence of attitudinal and behavioural models will be tested.

### Vocational education participation by Indigenous youth in remote areas

This project undertook an audit of vocational education participation in eight remote NT communities during the period October to December 2001. The project was undertaken collaboratively with the education sector in order to gain a better understanding of the participation of the 14–19 year old age group in vocational education and had ongoing linkages with program decision-makers. Following completion of this project, the Northern Territory Government announced a new initiative, the Training for Remote Youth program.

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Investigators: **Alan Clough**, Dennis Gray, Robert Parker, Paul Maruff, **Peter d'Abbs**, Bridie O'Reilly, **Sheree Cairney**

Funding: NHMRC and Commonwealth Department of Health and Ageing NIDS042

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Investigators: **Louise Clark**, **Pam Bettison**

Funding: Northern Territory Employment and Training Authority

## Health Services Research

### Katherine West and Tiwi coordinated care trial post-transition evaluations

The research team's previous work on the evaluation of the coordinated care trials in the NT has been extended to assess the longer-term impact of the changed governance, funding, and care coordination processes. A draft report of the post-transition year evaluation in Katherine West has been accepted, and the corresponding report for the Tiwi Islands is under review by the Tiwi Health Board.

### Sustainability of chronic disease management: A follow-up study of the renal treatment program in the Tiwi Islands

The sustainability of initiatives introduced as part of research is a subject of great interest in Indigenous health and elsewhere. This project set out to assess the process and outcomes of chronic disease management prior to, and following, the withdrawal of a largely research driven and managed project aimed at improving the management of renal disease in an Indigenous health centre. The project has involved an audit of health centre records, and review and analysis of data from electronic information systems and research databases. Trends in patterns of service delivery and biochemical and physiological measures have been assessed over a five-year period.

### Audit and Best Practice for Chronic Disease (ABCD)

Audit and Best Practice for Chronic Disease (ABCD) is a joint effort between MSHR, CRCATH, and a range of community health centres and Aboriginal Medical Services across the Top End of the Northern Territory. This four and a half year project will describe and, through a quality improvement process, facilitate the development of organisational systems in a range of government and non-government health centres. The project will assess the impact of the quality improvement process on organisational systems and on the quality of care directed at the prevention and management of chronic disease. Critical success factors and barriers to implementing sustainable services for chronic disease will also be explored.

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Investigators: Gary Robinson, **Ross Bailie**, **Samantha Togni**

Funding: Commonwealth Department of Health and Ageing

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Investigators: Gary Robinson, **Ross Bailie**, **Zhiqiang Wang**, Paul Snelling, Srinivas Kondalsamy

Funding: CRCATH

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Investigators: **Ross Bailie**, Tarun Weeramanthri, Christine Connors, **Joan Cunningham**, Gary Robinson, **Allison Stewart**

Funding: Australian Health Ministers' Advisory Council (PDR2001/06); Menzies Foundation Fellowship (Cunningham)

### Why are fewer procedures recorded among hospital patients identified as Indigenous?

Using data from the National Hospital Morbidity Database, this project examined the disparity in hospital procedures for patients identified as Indigenous compared with other patients. Even after adjusting for a range of patient, episode and hospital characteristics, Indigenous patients were considerably less likely than other patients to have a diagnostic or therapeutic procedure while in hospital. A manuscript detailing the findings was published by the *Medical Journal of Australia* in February 2002, accompanied by a commissioned editorial. There was a very high level of interest from the media, the public, and government departments across Australia. Briefings were provided to the Northern Territory Health Minister at her request, and advice and assistance were provided to her department to enable staff to make best use of the results. The study was also discussed as part of an innovative radio seminar for remote health staff across northern and central Australia.

### Epidemiology, access and outreach: A population study of the delivery of surgical services to remote communities

This is a population-based study of the incidence of surgical disorders over a 10-year period in three remote Aboriginal communities, the barriers to accessing Darwin-based specialist care, and the impact of a specialist outreach service on access and health outcomes. Foundation work was performed using national general practice data to determine the methods of the study. Data collection of 2800 cases has been performed and analysed. This work is currently being prepared for publication. A Cochrane systematic review of specialist outreach in international contexts is also being undertaken.

### Sharing the true stories: Improving communication between Aboriginal patients and health carers

Stage one of this project is completed. The project aimed to identify factors limiting the effectiveness of communication between Aboriginal patients with end-stage renal disease and health-care workers, and to identify strategies for improving communication. A qualitative study was undertaken gathering data through videotaped interactions between patients and staff, and through in-depth interviews with all participants in their first language. The project found that a shared understanding of key concepts was rarely achieved and miscommunication is pervasive. Fundamental change is required for Aboriginal patients to have significant input into the management of their illnesses. Educational resources are needed to facilitate a shared understanding, not only of renal physiology, disease and treatment, but also of the cultural, social and economic dimensions of the illness experiences of Aboriginal people. Stage two of this project, which involves development of strategies identified in stage one, has commenced.



Investigators: **Joan Cunningham**

Funding: CRCATH; Menzies Foundation Fellowship

Investigators: **Russell Gruen, Ross Bailie**

Funding: NHMRC Scholarship & Royal Australasian College of Surgeons Foundation Scholarship (Gruen)

Investigators: Isaac Brown, **Alan Cass**, Michael Christie, Melinda Flack, Anne Lowell, Betty Marrnganyin, Paul Snelling

Funding: CRCATH

*Yalumarnggithinyaraw facilitated interagency collaboration for the Galiwin'ku Healthy Lifestyle Project by preparing a feast of bush foods.*

## Chronic Diseases

### Community-based interventions to reduce the risk of diabetes and cardiovascular disease in Indigenous Australians

#### a) Northern Territory

Following discussions with a number of communities, the east Arnhem Land community of Galiwin'ku expressed interest in participating in this project to identify ways of reducing the risk of cardiovascular disease (CVD) and diabetes in Indigenous Australians. The baseline screening, involving employment of several community members, was completed in April 2002. Analysis of the results indicates that with increasing age there is an increasing prevalence of: overweight with a central deposition of body fat, diabetes, and markers of risk of vascular disease (renal, cardiovascular disease). Although there was a higher prevalence of diabetes than in the Australian population generally, the prevalence was lower than has been reported for other Indigenous populations with a longer exposure to western lifestyle. Extensive individual and community level feedback has been conducted, with much discussion on the types of community-based interventions needed to address these health problems. In collaboration with the store and take-away outlets there has been an initial focus on improving the quality of the food supply, in particular, increasing the availability of fresh fruit and vegetables and reducing the consumption of fat and refined carbohydrate. A household garden project is also planned. Other interventions being discussed include various exercise programs and approaches to reducing the very high prevalence of smoking. This project has been greatly enhanced by the involvement and interest of the Yalu group of women.



Two videos (a men's and a women's version) were produced by Peter Thomsen of the MSHR Audiovisual Unit to explain the survey procedures and tests so that people could make an informed choice. These videos will be able to be adapted for use in similar studies in other communities.

This project has recently been extended to a rural community near Darwin.

#### b) South-Eastern Australia

A partnership has been established between the University of Melbourne Department of Rural Health and Koori community representatives from Cumeragunja, Kerang, Shepparton and Mooroopna, to provide a forum for discussion and a base for planning community interventions. Extensive consultation is being undertaken. A Memorandum of Understanding, which includes evaluation of their Healthy Lifestyle Program, has been signed with Rumbalara Football and Netball Club. A Koori research assistant has conducted a historical review of the Healthy Lifestyle Program. In-depth interviews are being conducted with key stakeholders. The Healthy Lifestyle Program evaluation has included a review of documents, in-depth interviews of key people (football players, community leaders) feedback of qualitative analysis, and a report (completed in 2001) that provides the foundation of future quantitative evaluations and future interventions.

The quantitative phase of the project has commenced with the appointment of a Heart Health Project Worker at Rumbalara Aboriginal Cooperative.

#### c) Far North Queensland

Consultations have taken place with the Torres Strait Health Council, who have invited us to work with them on diabetes-related interventions as part of their Meriba Zageth program. Negotiations are currently under way to identify the exact focus of the project with the Tropical Public Health Unit (Cairns) and the Torres and Northern Peninsular Area District Health Service.

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Investigators: **Kerin O'Dea, Dorothy Mackerras, Julie Brimblecombe, Joseph Fitz, Mark Daniel**

Funding: NHMRC 124319

*Heather Ganalawuru and Steve Djati were employed as community researchers on the Galiwin'ku Healthy Lifestyle Project.*

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Investigators: Kevin Rowley, David Simmons, Ian Anderson, Alicia Jenkins, James Best, **Kerin O'Dea**

Funding: NHMRC 124319; National Heart Foundation R 00M 0007

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Investigators: Robyn McDermott, Dympna Leonard, **Kerin O'Dea**

Funding: NHMRC 124319



*Aboriginal Health Workers Leanne Bundhala and Elizabeth Rrapa have been the first to publish an article about the Galiwin'ku Healthy Lifestyle Project (J Aust Indig Issues, Dec 2002: 22–5).*

### Complications of diabetes in Aborigines

As a follow-up to the baseline survey of diabetes and CVD risk factors in the east Arnhem Land community of Galiwin'ku, detailed clinical assessment of complications has been conducted on all diabetic subjects. The following parameters were assessed: peripheral neuropathy, albuminuria, retinopathy, peripheral vascular disease, ischaemic heart disease, cerebrovascular disease. Similar clinical studies are planned for other Indigenous populations.

### How serious a cardiovascular disease risk factor is type 2 diabetes for Indigenous Australians?

Type 2 diabetes increases the risk of CVD. However, the relationship can differ between populations depending on the background risk of CVD and the pattern of other risk factors. High rates of smoking and infectious disease, and poor quality diet contribute to oxidative stress and inflammation. When superimposed on this adverse background, type 2 diabetes could greatly increase the risk of CVD and thus be a major contributor to CVD mortality. The project is examining a wide range of markers of CVD risk (including classical risk factors, dietary antioxidants, and inflammatory cytokines) in order to shed light on the relative importance of these risk factors and their interactions.

### Biochemical markers of dietary intake and links to risk of chronic diseases

Self-reported food intake is now recognised as being unreliable, with people generally under reporting foods and beverages perceived to be negative (fat, sugar, alcohol) and over reporting those perceived to be positive (fruit and vegetables). It is, therefore, essential to develop objective markers of diet wherever possible. We measure plasma carotenoids as markers of a range of vegetable and fruit intakes, essential fatty acids as markers of dietary fat, homocysteine as an indicator of folate intake, all of which predict cardiovascular outcomes. The goal is to develop a simple questionnaire which, when combined with the plasma markers, will provide an index of dietary quality, and to link this with risk of a range of common chronic diseases.

### Predicting cardiovascular outcomes in Australian populations

Equations based on the standard coronary heart disease risk factors of cholesterol, hypertension and smoking have been developed to predict cardiovascular outcomes. It is not known whether these equations are applicable to Australian population groups, especially among some Aboriginal populations where high cholesterol and hypertension are not common. We aim to test the predictive ability of standard risk assessment equations in Indigenous and non-Indigenous Australian cohorts, and to produce alternatives where necessary.

### Novel risk factors for cardiovascular disease

Abnormalities of lipid metabolism and clotting factors associated with the metabolic syndrome are common in Aboriginal and Torres Strait Islander people. Characteristics of circulating lipids which make them more likely to cause atherosclerosis, such as lipid particle size and composition, are being examined. Formation of blood clots in the coronary arteries is the final step leading to heart attack, and the role of clotting factors in contributing to the excess CVD risk of Indigenous Australians is also under study. The effectiveness of interventions to improve these risk factors forms part of the evaluation of community-based programs to reduce CVD risk.

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Investigators: **Louise Maple-Brown**, **Kerin O'Dea**, Donald Chisholm, David Celemajer

Funding: NHMRC 124319, RACP Scholarship (Maple-Brown)

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Investigators: **Kerin O'Dea**, Kevin Rowley, Alicia Jenkins, **Tomer Shemesh**, **David Fraser**

Funding: NHMRC 124319

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Investigators: Kevin Rowley, Catherine Itsiopoulos, **Kerin O'Dea**

Funding: NHMRC 124317 and 124319

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Investigators: Kevin Rowley, **Kerin O'Dea**, **Zhiqiang Wang**, Graham Giles

Funding: NHMRC 124319 and 124317

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Investigators: **Kerin O'Dea**, Kevin Rowley, James Best, Alicia Jenkins,

Funding: NHMRC 124319; National Heart Foundation R 00M 0007

### **Predictors of cardiovascular disease mortality in the Melbourne Collaborative Cohort Study (MCCS)**

The Melbourne Collaborative Cohort Study (MCCS) is a prospective study of the role of diet and other lifestyle factors in the development of chronic disease among over 40,000 Melbourne residents. The cohort includes a large number of southern European migrants, a population group with relatively low CVD mortality despite high prevalence of the conventional risk factors. This study aims to examine the associations of CVD mortality with markers of dietary intake, inflammation, vascular dysfunction and hormones. It is testing the hypotheses that protection from CVD is provided by high intakes of folate and antioxidants from plant foods, olive oil as the major dietary fat, and relatively high intakes of n-3 polyunsaturated fatty acids. It also examines the role of abdominal adiposity as a CVD risk factor in men and women, through its association with sex hormones and insulin resistance.

### **What is the healthy body mass index range for Aborigines and Torres Strait Islanders?**

It is likely that the body mass index (BMI) 'norms' that have been developed for populations of European origin are not appropriate for all other populations. Available evidence indicates that when Aboriginal people lived traditionally as hunter-gatherers they were extremely lean (BMI < 20kg/m<sup>2</sup>) and did not gain weight with age in adulthood. For a given BMI, Aborigines have more body fat than Australians of European descent. In contrast, Torres Strait Islanders, of mainly Melanesian descent, appear to have less body fat for a given BMI than Australians of European descent. We are establishing the ranges of BMI associated with minimal risk of type 2 diabetes, cardiovascular disease and their common risk markers (dyslipidemia, hypertension etc.) in Aboriginal and Torres Strait Islander people.

### **Body mass index and mortality in Aboriginal Australians in Northern Territory: A cohort study**

The aims of this study are to assess: the association between body mass index (BMI) and the risk of all-cause and cause-specific mortalities using a 10-year follow-up data set; and the association between BMI and hospital morbidity. The ultimate goal is to provide evidence for defining a healthy weight range for Aboriginal people. Associations between BMI and mortality rates have been examined. The underweight individuals experienced a higher risk of total mortality and non-cardiovascular mortality. The excess risk of death related to low BMI is of great public health concern, given that a large proportion of people in remote communities are underweight. This finding emphasises the importance of identifying pre-existing diseases and undernourished individuals to prevent premature deaths in the community. With the assistance from Ms Deby Taylor-Thompson, hospital morbidity data is being collected.

### **Renal disease mortality in Australia, 1997–99**

This project estimated the burden of renal disease mortality in Australia by: examining the underlying and associated causes of death recorded for all deaths in Australia in 1997–99; and comparing the cause(s) of death recorded on the death certificate with that recorded in a national disease registry of end-stage renal disease patients (ANZDATA). Overall, the study found the contribution of renal disease to Australian mortality has been underestimated due to historical reliance on a single (underlying) cause of death and because the coding of many renal deaths (such as diabetic renal failure) places them outside the category typically included as renal in official mortality statistics. Death certificates and ANZDATA records provided different descriptions of cause of death for Australian ESRD patients, and information from these two sources was not directly comparable. Neither data set provided a complete picture of renal disease as a cause of death in Australia.

The project was being undertaken in collaboration with the NT Department of Health and Community Services.

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Investigators: **Kerin O'Dea**,  
Graham Giles, Alison Hodge,  
Andrew Sinclair, Kevin Rowley

Funding: NHMRC 124317

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Investigators: **Sunil Piers**,  
**Zhiqiang Wang**, **Kerin O'Dea**,  
**Tomer Shemesh**, Kevin Rowley

Funding: NHMRC 124319

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Investigators: **Zhiqiang Wang**,  
Wendy Hoy, **Geoffrey Angeles**,  
**Kerin O'Dea**

Funding: NHMRC 193316

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Investigators: **Shu Qin Li**,  
**Joan Cunningham**, **Alan Cass**

Funding: Menzies Foundation Fellowship  
(Cunningham); Colonial Foundation (Cass)

### The DRUID study: Diabetes and Related disorders in Urban Indigenous people in the Darwin region

Indigenous Australians suffer a high burden of ill health from diabetes and related conditions but very little is known about the burden of diabetes and its complications, specifically among Indigenous people in urban areas, and how to reduce it. The DRUID study is a partnership between researchers, health service providers, and an Indigenous steering group whose members come from the Darwin Indigenous community. In this study, we will: a) examine the health of Indigenous adults aged 15 and over; b) refer people with disease to appropriate health care and related services; c) assess the presence of complications among people with diabetes, both those previously diagnosed and those newly diagnosed; d) follow people over time to collect information on the state of their health and their use of health services; and e) test the effectiveness of a program to improve dietary quality, increase physical activity and reduce tobacco smoking among those at highest risk for diabetes.

Funding was secured in late 2002, and preparations are now well underway for this major project. Recruitment of participants will begin in mid-2003.

Investigators: **Joan Cunningham**, Terry Dunbar, **Kerin O'Dea**, Pat Anderson, Tarun Weeramanthri, Paul Zimmet

Funding: NHMRC 236207; Vincent Fairfax Family Foundation; CRCATH; Menzies Foundation Fellowship (Cunningham)

## Maternal & Child Health

### Aboriginal birth cohort study

In 1987 an Aboriginal birth cohort of 686 Aboriginal babies was recruited. The cohort included urban/rural and high risk/routine subsets and, within it, there were 122 low birth weight, 63 pre-term and 167 small for gestational age babies. The initial aims were to examine the influences of perinatal outcomes on child growth and morbidity, and these were later expanded to include the potential markers of adult disease in childhood. Fourteen years later, the vital status was determined for 95% of participants, and 86% of living children were examined.

Work is currently directed towards descriptive studies of the cross-sectional data collected during the second phase at a mean age of 11.5 years. Analytical studies are examining the interrelationships of childhood outcomes and markers of chronic disease, current size and birth size and gestational age. Individual investigators have taken primary responsibility for specific aspects of the study.

### Prevalence of markers of chronic and infectious disease in Aboriginal children in the Darwin health region

This study has compared the prevalence of selected markers of growth, chronic and infectious diseases in the subgroup of children in the Aboriginal Birth Cohort Study who live in the Darwin urban and rural health regions. Urban children had average height and weight on the median of the international growth reference. Compared to urban children, remote children were shorter, lighter, less fat and had a lower haemoglobin level. The prevalence of visible infections was also higher in remote than urban children. Some potential markers of adult chronic disease were higher in urban than remote children: systolic blood pressure, total cholesterol, HDL cholesterol and insulin. Diastolic blood pressure, folate, glucose, LDL cholesterol and urinary albumin/creatinine ratio did not differ by urban-rural location. Surveys undertaken in remote areas cannot be generalised to urban Aboriginal populations.

### Relationship of placenta weight to blood pressure in childhood

It is hypothesised that inter-uterine factors predict chronic disease in later life. A number of earlier studies investigating this hypothesis have suffered from high losses in follow-up and have failed to adjust for important potential confounding factors such as smoking. This MPH treatise is using data from the 11-year follow-up of children in the Aboriginal Birth Cohort Study. The outcome being assessed is blood pressure at follow-up, both systolic and diastolic. The predictive factors of interest are placental weight, birthweight, placental weight-to-birthweight ratio, child height and weight. These will be adjusted for a range of potential confounding factors.

Investigators: **Susan Sayers**, **Dorothy Mackerras**, **Gurmeet Singh**, Ingrid Bucens, **Alison Reid**, **Kathryn Flynn**

Funding: NHMRC 137203; Colonial Foundation; Channel 7 Children's Research Foundation of South Australia

Investigators: **Dorothy Mackerras**, **Alison Reid**, **Susan Sayers**, **Gurmeet Singh**, Ingrid Bucens, **Kathryn Flynn**

Funding: NHMRC 137203; Colonial Foundation

Investigators: **Annie Tangey**, Peter O'Rourke, **Dorothy Mackerras**, **Susan Sayers**

Funding: CRCATH Scholarship (Tangey)



### Haematocrit levels and anaemia in Australian children aged 1–4 years

Haematocrit levels were measured as part of the 1995 National Survey of Lead in Children and can be used as the basis of defining anaemia. The project analysed these data to examine whether certain characteristics were predictive of haematocrit levels and to describe the prevalence of anaemia in children aged 1–4 years. Mean haematocrit level was 38.8% (95% CI: 38.6–39.1%) and varied with age of child, State/Territory of residence, and according to whether the child was taking supplements. It did not vary by sex, Aboriginal identification, maternal birthplace, whether the child ate meat, or any other selected characteristic. The prevalence of anaemia was 2.0% (95% CI: 1.3–3.1%) based on the WHO criteria.

### Comparison of definitions of anaemia

Anaemia can be defined using either haemoglobin or haematocrit. Data was used from the Aboriginal Birth Cohort Study to compare the prevalence of anaemia in children aged 9–13 years when four different definitions of anaemia are used. There are the WHO cutoffs based on haemoglobin (Hb) and haematocrit (Hct) and the US cutoffs based on haemoglobin and haematocrit. It was found that the prevalence based on the US criteria was much higher for both measures. The WHO criteria found the prevalence of anaemia based on Hb was more than double the prevalence based on Hct. These results suggest the prevalence of anaemia cannot be compared between locations using differing WHO indices, even though these are presented as being interchangeable.

### Quality audit of growth assessment and action information

This audit, on behalf of the NT Department of Health and Community Services, commenced in late 2002. The audit will look at quality improvement of the Growth, Action and Assessment (GAA) surveillance system. GAA is core information about the assessment of growth of Indigenous children aged 0–5 years and actions taken when growth appears to be faltering. Information is stored in paper-based individual health records, with summary information from those records entered into an electronic database. The electronic information is collected every six months and collated into an individual community report, then returned to each participating community. The information is also used for measurement of health outcomes from health programs and for planning future health-care needs.

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Investigators: **Dorothy Mackerras, Susan Hutton**, Philip Anderson

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Investigators: **Dorothy Mackerras, Gurmeet Singh**

Funding: NHMRC 137203, Colonial Foundation

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Investigators: **Dorothy Mackerras, Louise Clark**

Funding: NT Department of Health and Community Services

## Health Information Development

### Northern Territory Environmental Health Survey

#### a) Year two evaluation

This project, undertaken early in 2002, involved evaluating the second round of the Northern Territory Environmental Health Survey. This included presentation of data for communities, ATSI regions and the Northern Territory, on the condition of housing infrastructure in Indigenous community-owned and managed dwellings. It also included reporting of information arising from interviews with key personnel associated with the management, implementation and reporting of the survey.

A report presenting the results of this evaluation and recommendations on how to improve the survey, both in data quality and management, was produced under the Indigenous Housing Authority of the Northern Territory and co-published by Menzies School of Health Research and the Cooperative Research Centre for Aboriginal and Tropical Health.

A supplementary report was also produced in which a housing functionality index, based on healthy living practices, was developed, and results were presented for communities where sufficient sampling of dwellings was carried out.

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Investigators: **Ross Baillie, Matthew Stevens, Naomi Main**

Funding: IHANT

## b) Year three evaluation

This project, undertaken in the second half of 2002, involved evaluating the third round of the Northern Territory Environmental Health Survey. The report was limited to the reporting of community level data, as insufficient dwellings were sampled to obtain reliable regional level results. As a result of the poor survey coverage, extensive, but not prescriptive, recommendations were made on how the survey might be developed incorporating aspects of community development and health promotion.

Community level data included the percentage of dwellings functioning with regard to a set of five healthy living practices and score for the housing functionality index (developed for the year two evaluation reports).

### Investigating indicators for Indigenous sport and recreation programs

The project involved a review of national and international literature, visits to three Indigenous communities in the Northern Territory and discussions with various stakeholders to identify specific indicators that could be relevant to monitoring the impact of sport and recreation programs in Indigenous communities.

A set of indicators reflecting program viability and sustainability, community participation, and health and social outcomes was subsequently developed. Consultation with a project management group, a reference group, and other interested parties helped determine the usefulness and appropriateness of these indicators.

### Indigenous home ownership study: Stage one, assessment of data quality

The Indigenous Home Ownership Study was designed to describe the characteristics of loan recipients from ATSIC's Home Ownership Program and to determine trends in the program, such as transition to home ownership by Indigenous people. The project commenced in March 2002 with Stage One (Part A) being an assessment of the quality of loans data. Due to the poor quality of documentation accompanying the data and the difficulties in obtaining clarification from ATSIC's Home Loans Unit, it was not possible to complete Stage One (Part A) to the project specifications. Instead, a report presenting findings to date and recommendations for future directions was produced. The report recommended the writing of documentation such as a data dictionary and a manual, and the training of permanently employed, key personnel within ATSIC to manage the data collection. The project has now been finalised.

### A feasibility study for the development of a supplementary behavioural risk factor monitoring and surveillance system for particular population groups and/or regions:

#### 1 Aboriginal and Torres Strait Islander peoples; 2 Remote regions

This project was undertaken as part of a larger consultancy funded by the Commonwealth Department of Health and Ageing. The larger program was managed by a group at LaTrobe University and involved an audit of existing and proposed data collections and an analysis of the feasibility of establishing and maintaining a nationwide monitoring and surveillance system.

The project examined issues relating to monitoring and surveillance of chronic disease risk factors in special populations, specifically the Indigenous population and the non-Indigenous population living in remote areas.

A final report was prepared and submitted to the Commonwealth Health Department in March 2002. The report identified key challenges, highlighted recent information development activities; described the major existing and proposed collections of relevance; indicated areas of and strategies for improving these collections; and proposed a number of new collections. It also included a series of recommendations for working towards a viable and useful supplementary system for both Indigenous and non-Indigenous populations. It is expected the final report will be published by the Commonwealth Department of Health and Ageing, along with reports for other parts of the program.

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Investigators: **Ross Bailie, Matthew Stevens, Allison Stewart, Harold Ulamari**

Funding: IHANT

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Investigators: **Joan Cunningham, Mary Beneforti**

Funding: Australian Sports Commission; CRCATH

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Investigators: **Joan Cunningham, Mary Beneforti**

Funding: ATSIC; Australian Housing and Urban Research Institute; CRCATH

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Investigators: **Joan Cunningham, John Condon, Yin Paradies, Tony Barnes, Kerin O'Dea**

Funding: Commonwealth Department of Health and Ageing (via LaTrobe University); Menzies Foundation Fellowship (Cunningham); CRCATH in-kind

### Studies of food frequency questionnaires

A number of different food frequency questionnaires were used in the cohort of Wittenoom workers and miners over the last 10 years. In the first study, the results of a comparison of the CSIRO food frequency questionnaire (Questan) to 28 days of diet records kept by 78 people were analysed. Ten years after the first study, the same individuals were approached to fill in the Victorian Anti-Cancer Council food frequency questionnaire as a recall of what they had been eating at the time of the original diet records.

### Comparison of food frequency reports in the 1995 National Nutrition Survey and the 1999 AusDiab Survey

Different food frequency questionnaires have been used in various national surveys to describe population intakes of various foods. The questionnaires have never been formally tested against each other. As there was little apparent change in overall availability of fruit and vegetables between the 1995 National Nutrition Survey and the 1999–2000 Australian Diabetes, Obesity and Lifestyle Study, the responses for these items were compared. In the absence of formal comparisons across surveys, this study provides a rough guide to the reliability of the questions and, therefore, to the level of difference to be observed between surveys before it could be concluded that a real change in population intake had occurred.

### Feasibility study of a health economic analysis of the impact of nutritional interventions on chronic disease in remote communities

The study assessed the feasibility of doing a health economic analysis of the impact of improving nutritional intake in remote communities, focusing on chronic diseases such as heart disease and diabetes. Researchers examined the link between improved nutritional status and a reduction in chronic disease; the availability of data concerning the incidence and prevalence of relevant primary and secondary chronic diseases and the availability of data concerning the current dietary intakes or food availability in remote communities; the magnitude of change achieved in intervention studies conducted in Aboriginal communities and the costs associated with these interventions; and the range of interventions that should be costed for the cost-benefit health economic evaluation analysis.

### Advanced study and training in public health nutrition

The Menzies School of Health Research and the Department of Public Health at Flinders University of South Australia obtained seed funding from the Department of Health and Ageing under its Innovations Program to start developing advanced study and training in public health nutrition. In July 2001, a workshop was held to explore the dimensions of advanced level of study in public health nutrition. A range of stakeholders, including members of university departments involved in public health training or dietetics/nutrition training, members of SIGNAL and other identified individuals, attended.

In 2002 collaboration was expanded to include the University of Queensland, the University of Canberra, Deakin University, Monash University and Griffith University. A bid was then submitted to the second round of PHERP Innovations to expand the pilot study. This bid was successful and will proceed in 2003. The main work during 2002 occurred at Flinders University where a unit in Food Policy was developed for delivery in 2003.

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Investigators: Gina Ambrosini,  
**Dorothy Mackerras**, Bill Musk,  
Nick de Klerk, Lin Fritschi

Funding: Health Department of WA and  
NHMRC to University of Western Australia

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Investigators: **Dorothy Mackerras**

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Investigators: **Dorothy Mackerras**,  
Carrie Turner, Cheryl Rae, Kannan Chinna  
Funding: National Heart Foundation

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Investigators: **Dorothy Mackerras**,  
John Coveney, **Kerin O'Dea**, Fran Baum  
Funding: PHERP

## Population Health and Chronic Diseases Division's collaboration partners

Aboriginal and Torres Strait Islander Commission (ATSIC)	National Aboriginal Community-Controlled Health Organisations (NACCHO)
Aboriginal Medical Services Alliance of the Northern Territory (AMSANT)	National Heart Foundation (Northern Territory)
Adelaide University	Nelson Mandela School of Medicine, Department of Community Medicine, Durban, South Africa
Australian Institute of Health and Welfare	Ngalkanbuy Health
Australian Sports Commission	Northern Territory Aboriginal Health Forum
Batchelor College	Northern Territory Department of Community Development, Sport and Cultural Affairs
Belyuen Community Council	Northern Territory Department of Education (now amalgamated as part of the Department of Employment, Education and Training)
Belyuen Community Health Centre	Northern Territory Department of Fire and Emergency Services
Centre for Remote Health, Alice Springs	Northern Territory Department of Health and Community Services
Commonwealth Department of Science Education and Training	Northern Territory Employment and Training Authority (NTETA)
Cooperative Research Centre for Aboriginal and Tropical Health (CRCATH)	Northern Territory independent and Catholic school representatives
Cooyah Pty Ltd	Northern Territory University
Curtin University of Technology, National Drug Research Institute	Office of Aboriginal and Torres Strait Islander Health
Danila Dilba Health Service	Power and Water Corporation, Northern Territory
Deakin University	Queensland Health
Diabetes Australia (NT)	Sir Charles Gairdner Hospital
Enterprise and Career Education Foundation	Tiwi Health Board
Flinders University of South Australia	Top End Division of General Practice
Flinders University Northern Territory Clinical School (NTCS)	TVW-7 Telethon Institute for Child Health Research
Galiwin'ku Community Incorporated	University of Canberra
Griffith University	University of Melbourne
Indigenous Housing Authority of the Northern Territory (IHANT)	University of Montreal
Indigenous Psychological Services	University of New South Wales
International Diabetes Institute	University of Queensland
James Cook University, North Queensland Tropical Public Health Unit	University of Sydney
Katherine West Health Board	University of Western Australia
Larrakia Nation	Yalumarnggithinyaraw
LaTrobe University	
Ludwig Maximilians University, Institute of Statistics, Munich	
Lumbu Indigenous Community Foundation	
Miwatj Health	
Monash University	

# Infectious Diseases Division

DIVISION LEADER  
Professor Bart Currie



Menzies School of Health Research aims for seamless collaborations across disciplines, and professional and cultural boundaries.

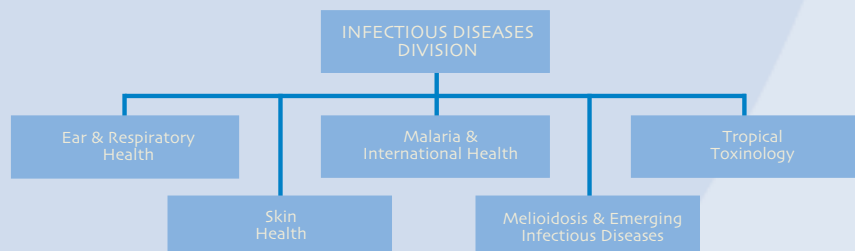
The emphasis for the division is on collaboration with both local health colleagues and experts outside the NT to address health issues important for the region. Studies are targeted at improving prevention and treatment of specific illnesses, usually through a better understanding of the underlying disease processes.

**EPIDEMIOLOGY, CLINICAL** observations and basic laboratory work are all involved, and an evidence-based approach is undertaken wherever possible. Many of the division's long-term projects on various infectious diseases and toxinology have continued to be productive, facilitated by the close links with the Flinders University Northern Territory Clinical School at Royal Darwin Hospital. The division is divided into five programs as seen in the diagram below.

We aim for seamless collaborations across disciplines, and professional and cultural boundaries. To facilitate this, the scabies and streptococcal projects have been combined in a program, as have the ear and respiratory health projects.

A highlight for 2002 was the presence of Dr Dan Sexton from Duke University Medical Centre as Visiting Professor at MSHR during his three months' sabbatical. Dan is an internationally renowned Infectious Diseases physician whose enthusiasm in undertaking consultant clinical work at Royal Darwin Hospital and in teaching at the Northern Territory Clinical School and MSHR was greatly valued. The collaboration with Duke University continues, with Nick Anstey undertaking a sabbatical there later in

2002 to continue his malaria research. Heidi Smith-Vaughan will return from maternity leave to become Principal Investigator on two newly awarded NHMRC Project Grants — so she hits the deck running (with baby Charlotte) in 2003. Katherine Gibney received the University of Melbourne Medical Society 2000 for the best Honours thesis for her Bachelor of Medical Science thesis entitled 'Acute otitis media in rural and remote Aboriginal children'. Pallave Dasari was also awarded The Northern Territory University's Chancellor's Medal in May 2002 for her BSc(Hons) thesis 'Neutrophil response to *Burkholderia pseudomallei*'. Mark Mayo completed his two-year CRCATH-Rio Tinto Indigenous Research Fellowship and now takes up the position of manager of the melioidosis program, with another new NHMRC project grant to commence in 2003. Craig Boutlis and Graeme Maguire leave MSHR after completing their very productive respective PhDs in malaria and chronic lung disease. Peter Fagan has been recruited to MSHR by CRCATH to run the group A streptococcus laboratory program. There have been major improvements in efficiency in the division since we successfully recruited Jill Albion from Royal Darwin Hospital for the new position of Research Administration Officer.



## Skin Health

### Integrated skin care feasibility study and healthy skin program

Following successful programs in several other communities, a remote Top End community wanted to conduct a scabies eradication program and have the program evaluated to assess the effectiveness of the program. A scabies eradication day encouraged the whole community to treat themselves with topical 5% permethrin and clean up around their houses.

In September 2001 the community clinic screened children three years old and under for scabies, finding a prevalence rate of 33%. The study conducted regular skin screenings over the following year. The first post-eradication day screening was undertaken in November 2001, with the prevalence 7%, followed by screenings in April and May 2002 (13%), August 2002 (3.8%) and November 2002 (3.8%). With the positive outcomes seen at this community, other communities are now looking at conducting similar programs. The study developed guidelines for control of skin diseases in remote communities and for healthy skin programs.

### Antigens, allergens and immune responses to normal and crusted scabies

*Sarcoptes scabiei* (itch mite) causes scabies, a disease of considerable human and veterinary significance. Isolation and characterisation of scabies-specific antigens responsible for immune responses in infested hosts is necessary to facilitate further studies towards the understanding of immune responses to infestation. There has been little work at the molecular level because of the difficulty of obtaining mites. We have utilised mites in skin from the bedding of crusted scabies patients for the construction of two cDNA libraries from *S. scabiei* var. *hominis* cloned in the vectors pGEX4T-2 and  $\lambda$ ZAP express. Twelve *S. scabiei* homologues to 16 of the known house dust mite allergens have now been identified. One dominant house dust mite allergen is the M-177 molecule, a haemolymph apolipoprotein. The scabies homologue to the M-177 molecule, Ssag 1, is one of the most abundant sequences in the expression library and, thus, has potential as an immunodiagnostic molecule. Immunohistochemistry revealed that Ssag1 is located around the internal organs and cuticle of the mite as well as in eggs. While an expressed purified recombinant fragment of Ssag1 was not found to be protective in a challenge trial using rabbits infested with dog mites, the rabbits did not exhibit typical crust characteristics. This work, undertaken in collaboration with colleagues at QIMR and in the USA, demonstrates that it is now possible to conduct such challenge trials with cloned scabies antigens.

### Prevention and control of scabies in children: Monitoring for emerging resistance to current treatments in endemic communities in northern Australia

Documentation of resistance to medications used to treat parasites is increasing. Evidence of permethrin resistance in head lice, in conjunction with documented *Sarcoptes scabiei* treatment failures with lindane, crotamiton and benzyl benzoate, as well as apparent emerging resistance to 5% permethrin and oral ivermectin, are of concern and advocate for the identification and development of new scabies treatments. Our recent studies analysing the acaricidal activity of *Melaleuca alternifolia* (tea-tree) oil, and some of its individual active components on the itch mite *Sarcoptes scabiei* var. *hominis* suggest tea-tree oil has a potential role as a new topical acaricide, and confirm terpinen-4-ol as the primary active component. Genetic markers consisting of 15 nuclear simple sequence repeats (microsatellites) have been developed and are currently being used to genotype and analyse 60 individual *Sarcoptes scabiei* mites obtained from sequential infestations in two crusted scabies patients, demonstrating both clinical and laboratory evidence of ivermectin resistance. The research will look first for a reduction in heterogeneity between sequential populations of mites to estimate the effect of any change due to drug sensitivity within or between populations.

Investigators: Christine Connors, **Norma Bengler, Loyla Leysley, Melita McKinnon, Maria Scarlett, Bart Currie**

Funding: CRCATH; NHMRC Centre for Clinical Excellence

Investigators: David Kemp, **Shelley Walton, Bart Currie, Pearly Harumal, Deborah Holt, Katja Fischer, Edwina Williams, Annette Dougall, George Allen**

Funding: NHMRC 137205; CRCATH

Investigators: **Shelley Walton, Bart Currie, Susan Pizzutto, Melita McKinnon**

Funding: Channel 7 Children's Research Foundation of SA; CRCATH; NHMRC Centre for Clinical Excellence

### Scabies gene discovery project

The Scabies Gene Discovery Project was established in May 2001. It is a collaborative research project between the Queensland Institute of Medical Research, Australian Genome Research Facility, and Menzies School of Health Research, funded over three years. The project aims to significantly advance the negligible amount of molecular information available about the scabies mite, providing many starting points for proposals directed at understanding the pathology of the 'itch' mite and discovering control measures. To date 40,000 *Sarcoptes scabiei* cDNA clones have been sequenced from an intended total of 50,000.

Molecules of interest identified to date include *S. scabiei* homologues to known house dust mite allergens, potential vaccine candidates, genes associated with the study of parasite variability, genes associated with drug resistance and potential drug targets in therapeutic studies.

### Genetic variation and host-parasite interactions of *Sarcoptes scabiei*

To further understand the taxonomic relationship between host-associated populations of *Sarcoptes scabiei*, genetic markers have been developed to provide insights into strain status, transmission and epidemiology of the ectoparasite, *S. scabiei*. These markers will be important in the control of the disease and for monitoring emerging resistance to current treatments.

The mitochondrial Cytochrome Oxidase subunit 1 and 16S rRNA genes, and 15 nuclear simple sequence repeats (microsatellites) were studied in 24 individual *S. scabiei* mites obtained from multiple hosts and geographical regions. Phylogenetic analysis identified three major groups with significant relationships recognised between MtDNA haplotypes, host species and geographical location. Population analysis based on a 15 loci microsatellite marker system identified additional evidence for the separation of populations by host species. This work confirms previous evidence of rare/limited interbreeding between overlapping populations of *S. scabiei* obtained from dog and human hosts.



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Investigators: David Kemp, **Shelley Walton, Bart Currie**, Terry Speed, Deborah Holt, Katja Fisher  
Funding: NHMRC Medical Genomics Program (to QIMR)

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Investigators: **Shelley Walton**, David Kemp, **Bart Currie**, Deborah Holt, **Annette Dougall, Susan Pizzutto**  
Funding: NHMRC 137206; CRCATH

*Annette Dougall and Susan Pizzutto undertaking molecular scabies research in the MSHR laboratories.*

### Use of terbinafine for tinea in the Top End

From July 2001 to January 2002, 40 people with tinea were recruited from several different communities for a prospective study. The extent of their tinea was documented and fungal scrapings/clippings were taken. Participants were given oral or topical terbinafine based on the extent of tinea involvement and existence of contraindications to oral therapy. Of the reviewed participants, 92% clinically improved following terbinafine therapy.

From March 2002 to December 2002, 54 people with both tinea corporis and unguium (nail tinea) were recruited for a prospective study. Participants were given oral terbinafine as a pulse therapy (one week of treatment per month) to improve compliance. Follow-up of participants and evaluation of the data are currently in progress.

Management protocols for tinea are being revised on the basis of these studies.

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Investigators: **Dorota Long, Karen Koh**, Colin Parker, David Ellis, **Bart Currie**  
Funding: Department of Health & Ageing Workforce Education & Training Section; The Australian Dermatology Research & Education Fund

### Group A streptococci in the Northern Territory: A broad-scale study

From our collection of over 4,000 streptococcal isolates, 100 strains are being characterised in terms of genotype, associated disease, the presence of genes encoding known virulence factors, the ability to bind human proteins and the ability to adhere to, or invade, human tissues. Preliminary analysis of these results has revealed several distinct patterns of protein binding which may be involved in tissue tropism and, hence, presentation of disease. However, correlation of bacterial virulence factors with severity of disease has not been clearly established.

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Investigators: **KS Sriprakash**, **Peter Fagan, Rebecca Towers**, **Armando Del Vecchio**, **Mandy Edwards, Bart Currie**  
Funding: CRCATH

Streptococcal infections are endemic in Aboriginal communities of the Top End of Australia and rates of acute rheumatic fever and rheumatic heart disease are amongst the highest in the world.

#### **Molecular epidemiology of Top End *Streptococcus pyogenes* isolates: Acute post-streptococcal glomerulonephritis isolates**

Acute post-streptococcal glomerulonephritis (APSGN) is an important sequela of *Streptococcus pyogenes* infection. The research has found 25 definite APSGN *S. pyogenes* isolates from cases reported to DHCS's Communicable Disease Centre with a further 16 possible APSGN isolates, as well as large community screenings collected during glomerulonephritis outbreaks. Molecular techniques were used to determine similarities between the causal isolates. Results indicate that either the same or closely related *S. pyogenes* strains cause outbreaks in different communities at the same time.

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Investigators: **Peter Fagan, Rebecca Towers, Mandy Edwards, Bart Currie**

Funding: CRCATH

#### **Characterisation of streptococcal fibronectin-binding proteins SfbI and serum opacity factor (SOF) in NT isolates of group A streptococcus**

Streptococcal infection is endemic in Australian Aboriginal communities. This project involves the characterisation of the fibronectin-binding proteins SfbI and serum opacity factor (SOF), which are two major adhesions of group A streptococci involved in the initial bacterial colonisation event. Aboriginal people mount a significantly higher immune response to both proteins than non-Aboriginal people. Genetic analysis indicates that the genes encoding SfbI and SOF exhibit considerable variation and that, in the case of SfbI, this has arisen through horizontal genetic transfer not only between group A streptococcal strains, but also between groups A and G streptococcal species. The implications of such genetic transfer include a potential increase in virulence in streptococci.

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Investigators: **Rebecca Towers, Peter Fagan, KS Sriprakash, Bart Currie**  
Funding: CRCATH/University of Wollongong

#### **The role of bacterial superantigen toxins in rheumatic fever**

Acute rheumatic fever (ARF) is a sequela of *Streptococcus pyogenes* (group A streptococcal — GAS) infection, however, not all GAS produce ARF. This research is attempting to determine whether streptococcal superantigens play a role in causing rheumatic fever. Work is currently underway testing for the expression of B cell receptors known to be stimulated by streptococcal superantigens. B cells have been isolated from approximately 100 people who fall into one of four categories: those diagnosed with ARF or associated manifestation; those with rheumatic heart disease and/or a history of acute rheumatic fever; their family members; and unrelated persons. In addition, throat swabs have been collected and all beta-haemolytic streptococci have been isolated. These are being analysed for their ability to stimulate cell proliferation and for the expression of superantigens.

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Investigators: Nigel Curtis, Jonathan Carapetis, **Rebecca Towers, Bart Currie**

Funding: NHMRC 251690 (to University of Melbourne)

#### **Screening of a human heart cDNA library using sera from a patient with rheumatic fever**

Streptococcal infections are endemic in Aboriginal communities of the Top End of Australia and rates of ARF and rheumatic heart disease (RHD) are amongst the highest in the world. It is accepted that repeated GAS pharyngitis episodes are the trigger resulting in cross-reactive autoimmune responses that ultimately do irreversible damage to the heart. In the Top End, however, GAS throat carriage and pharyngitis in Aboriginal communities are uncommon. By contrast, carriage of groups C and G streptococcus (GCS and GGS) in the throat is observed more frequently. We have a unique patient sera set from before, during and after the initial ARF episode and have repeatedly isolated a GGS, which we consider to be the causal agent.

A human heart cDNA library has been screened using the patient ARF sera and 64 positive cross-reactive epitopes have been identified. Work is continuing to identify these heart gene sequences.

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Investigators: **Peter Fagan, Maike Bolme, Rebecca Towers, KS Sriprakash, Bart Currie**

Funding: Channel 7 Children's Research Foundation of SA



## Towards a diagnostic test for rheumatic fever

Acute rheumatic fever is frequently misdiagnosed and, as a consequence, the actual incidence is underestimated. People with ARF express higher levels of a cell alloantigen called D8/17. This study is working towards the development of a definitive diagnostic test by measuring levels of this marker. At present, B cells have been isolated from 75 people living in a remote Aboriginal community. These individuals fall into three categories: those with rheumatic heart disease and/or a history of acute rheumatic fever; their family members; and unrelated persons. In addition, B cells have been collected from 26 patients presenting at Royal Darwin Hospital with ARF or similar clinical illnesses such as polyarthritis. Measurement of D8/17 expression and preliminary analysis are presently underway.

Investigators: **Zinta Harrington, Rebecca Towers, Bart Currie,** Jonathan Carapetis, Nigel Curtis

Funding: CRCATH Scholarship (Harrington); National Heart Foundation G 00M 0671

## Ear & Respiratory Health

### Chronic Otitis Media Intervention Trials (COMIT)

#### a) Aetiology treatment and prevention of chronic otitis media in Aboriginal infants: A randomised controlled trial (COMIT 1)

This study confirmed that early and prolonged antibiotic treatment could reduce chronic and severe otitis media in Aboriginal infants. Nonetheless, rates of acute otitis media with perforation and otitis media with effusion remain high and persistent disease still commences in early life. The project's findings strongly recommend that families with infants at risk of eardrum perforation are offered the opportunity to receive long-term antibiotic treatment.

Investigators: **Amanda Leach,** John Mathews, **Peter Morris,** Al Yonovitz, **Heidi Smith-Vaughan,** Bev Hayhurst, **Liz Stubbs,** Yvonne Wood, **Robyn Liddle, Una Pilakui,** Marius Puruntatameri, Harold Koops, **Melita McKinnon, Sylvester Black, Carla Kerinauia, Rhonda Kerinauia, Vicky Punguatji, Camilla Tipiloura, Seija Leach**

Funding: NHMRC 980435; NHMRC Fellowship 997027 (Morris)

#### b) Antibiotics for persistent nasal discharge in Aboriginal children: A randomised controlled trial (COMIT 3)

This study investigated whether antibiotics were indicated for Aboriginal children with persistent runny nose. Children who have excessive nasal discharge (rhinosinusitis) for at least 10 days were randomly assigned to receive amoxicillin or a placebo for a period of two to four weeks. The primary outcome measure was resolution of nasal discharge at two weeks. Further microbiological and clinical analysis and comparison with nasal carriage data from MSHR's Improved Measures for Children Attending Child-Care project has shown that children with a runny nose are more likely to have bacterial carriage than children without a runny nose.

Investigators: **Peter Morris,** Bev Hayhurst, **Christine Lienert, Amanda Leach, Ross Baillie,** John Mathews, Al Yonovitz, **Heidi Smith-Vaughan, Liz Stubbs,** Yvonne Wood, **Cate Wilson, Robyn Liddle, Una Pilakui, Marius Puruntatameri, Camilla Tipiloura, Carla Kerinauia, Rhonda Kerinauia, Vicky Punguatji, Elizabeth Tipiloura**

Funding: NHMRC 100010; NHMRC Fellowship 997027 (Morris)

#### c) Antibiotics for chronic suppurative otitis media in Aboriginal children: A randomised controlled trial (COMIT 4)

The second phase of this study is now completed. A randomised controlled trial of ciprofloxacin drops versus dexamethasone-framycetin-gramicidin (Sofradex®) drops in children who have persistent discharge despite standard treatment. A marked reduction in the amount of discharge was documented, with one third of children achieving dry ears during the course of the study. Data cleaning, assessor blinded diagnostic validation, and hearing tests have been completed. No significant differences were noted between the treatment groups. Microbiological analyses are ongoing. We assessed the impact of topical treatments on ear discharge by total bacterial counts, including *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Candida albicans* and fungi. Resistance to ciprofloxacin is also being assessed.

Investigators: Yvonne Wood, **Christine Lienert, Edna Gadil,** Mark Bazely, **Una Pilakui, Amanda Leach, Peter Morris,** Al Yonovitz, Bev Hayhurst, Mary Lou Tipungwuti, Ricko Tipuamantumerri, Leontina Kerinauia

Funding: NHMRC/ OATSIH 033824; NHMRC Fellowship 997027 (Morris)



*The ear team ladies, left to right: (standing) Jemima Beissbarth, Kim Hare, Brooke Harrington, Kalinda Griffiths, Liz Stubbs and Glenn Wells; (sitting) Amanda Leach and Seija Leach.*

### East Arnhem Runny Ears Study (EARES)

This study investigated the role of syringing with betadine plus insufflation of antibiotic drops compared with the standard topical treatment in four east Arnhem Land communities. Researchers were extremely pleased to be able to take part in their first collaborative research study (and their first visit to east Arnhem Land) for many years. A total of 51 children were randomised. Despite apparent short-term improvements in both groups, the preliminary analysis did not document any difference in clinical outcomes two months after the intervention. Hearing status was also similar in both groups and there were no adverse events documented.

### Improved hygiene measures for children attending child-care: A randomised controlled trial (CHIPS)

This study investigated the benefits of additional training and support for currently recommended hygiene practices. Twenty child-care centres and around 450 Darwin and Palmerston families participated in the study over an intensive six-month period. There was a statistically significant increase in level of compliance with recommended hand-washing and nose-blowing practices. However, the rates of cross infection among the children were not significantly reduced in the intervention centres. Researchers thank Damin Si for his contribution to the analysis of these data throughout 2002. Presentation and discussion sessions with centre directors and their staff, and senior NT Government public servants in Children's Services and Disease Control, will continue as additional analyses are completed.

### The Ear Video: Improving the diagnosis and treatment of otitis media in young Aboriginal children

This project is linked to the *Recommendations for guidelines on the management of otitis media in Aboriginal and Torres Strait Islander populations* that MSHR developed for the Office of Aboriginal and Torres Strait Islander Health in 2001. Emphasis this year has been on the dissemination of these guidelines. To support this process, researchers have produced *The Ear Video*, a complete teaching package that provides health staff with a series of examples of common ear infections seen in rural and remote Aboriginal communities. The package will also be suitable for use in other populations with high rates of severe infections.

### Prevention of Otitis Media with Prevenar and Training (PROMPT)

This study reported the high prevalence of tympanic membrane perforation in Aboriginal children aged between six months and 2.5 years in 29 NT communities. Overall, 25% of children examined had perforated eardrums. **Only 7% had bilaterally normal middle ear status.** The new 7-valent pneumococcal conjugate vaccine (7vPCV, Prevenar,) introduced in June 2001 may significantly reduce these high rates of severe disease. In 2003, a follow-up survey in an immunised cohort of the same age will estimate the impact of this vaccine and improve medical services. The long-term goal is to reduce perforation rates to less than 4% and preferably below 1%. (According to the World Health Organization, populations with chronic perforations in 4% of children have a massive public health problem).

Investigators: Peter Carter, Joe Daby, **Glenn Wells**, Ray Godwin, Emma Keene, Patsy McCann, **Christine Wigger**, **Peter Silberberg**, Yvonne Wood, **Peter Morris**

Funding: The Colonial Foundation; NHMRC Fellowship 997027 (Morris)

Investigators: **Cate Wilson**, **Karin Dunne**, **Christine Wigger**, **Edna Gadil**, **Christine Lienert**, **Liz Stubbs**, **Dianne Kirk**, **Kim Hare**, **Jemima Beissbarth**, **Brooke Harrington**, **Ross Bailie**, **Karen Edmond**, **Amanda Leach**, **Peter Morris**, **Heidi Smith-Vaughan**, **Robyn Little**, **Zhiqiang Wang**, John Mathews, Coralie Mathews, Sue Skull, Leslee Roberts

Funding: NHMRC 100009; NHMRC Fellowship 997027 (Morris)

Investigators: **Gabrielle Mellon**, **Cate Wilson**, **Peter Thomsen**, **Geoffrey Angeles**, **Amanda Leach**, **Peter Morris**

Funding: CRCATH; NHMRC Fellowship 997027 (Morris); Wyeth Lederle

Investigators: **Gabrielle Mellon**, **Cate Wilson**, **Peter Silberberg**, **Marie Munkara**, **Elizabeth Hamilton**, **Peter Morris**, **Amanda Leach**

Funding: Wyeth-Lederle; CRCATH; NHMRC Fellowship 997027 (Morris)

## **PRevenar Immunisations for Otitis Media Reductions in the Tiwi Islands (PRIORITI)**

This study investigates the impact of the new 7-valent conjugate pneumococcal vaccine (Prevenar) on bacterial colonisation of the nasopharynx and the clinical course of severe otitis media in Tiwi infants. Using an identical protocol to previous studies (the original longitudinal study and COMIT 1), researchers collected video-otoscopy images and nasopharyngeal swabs every two to four weeks. Interim analyses show that vaccinated babies are colonised by fewer of the vaccine-targeted pneumococci. Since the invasive (vaccine-targeted) pneumococci also tend to have higher rates of resistance to antibiotics, these changes are likely to improve the effectiveness of antibiotic treatment. The clinical implications of these shifts in the pneumococcal population will continue to be assessed in the coming year. In a complementary project, Dr Grant Mackenzie is examining the herd immunity effect of the vaccine in older children and adults.

### **Systematic review program**

This project aims to improve the quality of MSHR clinical trials and enhance our capacity to conduct systematic reviews. Additional funding to support these activities is continually sought. A protocol for 'Antibiotics for prevention of acute otitis media' has been accepted by the Cochrane Acute Respiratory Infections Group. Working with a co-reviewer, Roberto Castano from Columbia University, USA, researchers aim to submit a full meta-analysis in 2003. Other new protocols for Cochrane Reviews include: 'Antibiotics for chronic suppurative lung disease in children', 'Decongestants and antihistamines for persistent nasal discharge (rhinosinusitis)'. The Cochrane Review on 'Antibiotics for persistent nasal discharge (rhinosinusitis)' has been updated.

### **Ear health training workshops**

The Ear and Respiratory Health Program collaborates with the Aboriginal Hearing Program of NT Hearing Services, and Australian Hearing Services in the provision of ear health training. This year workshops have targeted Aboriginal Health Workers and both remote and community nurses. Workshops used the Recommendations for Clinical Care Guidelines (see *The Ear Video* project) as the primary information source. Staff are optimistic that changes in the preferred outcomes of Aboriginal health research will mean increased funding opportunities for dissemination activities in the future.

## **Azithromycin versus Amoxycillin for the Treatment of Acute otitis media in Aboriginal Children (AATAAC)**

This project's primary research question is whether, among Northern Territory Aboriginal children with a diagnosis of acute otitis media, a single dose of azithromycin (compared to standard-dose amoxycillin) results in a reduction in the proportion of children with signs of persistent disease after six to 10 days. This will be the first clinical trial in which community-based investigators will have full investigator status and be required to attend training and feedback meetings in Darwin over the two-year intervention period. Secondary aims are:

- To describe the clinical course of acute otitis media in a range of Aboriginal children using a standardised otoscopic assessment.
- To improve the diagnostic skills and awareness of acute otitis media among health professionals (including Aboriginal Health Workers).
- To quantify the short-term impact on higher dosages of antibiotics on nasopharyngeal colonisation and antibiotic resistance.

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Investigators: **Christine Wigger, Grant Mackenzie, Priscilla Tipakalippa, Peter Silberberg, Edna Gadil, Liz Stubbs, Kim Hare, Jemima Beissbarth, Brooke Harrington, Seija Leach, Amanda Leach, Peter Morris**

Funding: Wyeth-Lederle; CRCATH; NHMRC Fellowship 997027 (Morris)

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Investigators: **Peter Morris, Amanda Leach, Anne Chang**

Funding: Ear Health and Education Unit; NHMRC Fellowship 997027 (Morris)

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Investigators: **Peter Morris, Amanda Leach, Liz Stubbs, Jemima Beissbarth, Heidi Smith-Vaughan, Kim Hare, Brooke Harrington, Cate Wilson, Gabrielle Mellon, Christine Wigger, Edna Gadil**

Funding: Ear Health and Education Unit; NHMRC Fellowship 997027 (Morris)

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Investigators: **Peter Morris, Amanda Leach, Cate Wilson, Gabrielle Mellon, Katrina Hodson, JR Gadil**

Funding: NHMRC 193306; NHMRC Fellowship 997027 (Morris)

A hand-swabbing method has been developed that will be a useful marker when evaluating the efficacy of hygiene interventions in the future.

### Microbiological outcome measures for evaluating the impact of hygiene interventions on Aboriginal child health

Researchers have been able to develop novel methods for measuring respiratory bacterial carriage in children, and environmental contamination. For some children, nose swabs are not well tolerated. The project has found that facial tissues can be used to obtain respiratory secretions from children who are able to blow their nose, or who have a runny nose that can be wiped with the tissue. A hand-swabbing method has also been developed that will be a useful marker when evaluating the efficacy of hygiene interventions in the future. A PCR assay was implemented to detect pneumococcal-specific DNA which may assist in identifying potential routes of pneumococcal transmission.

Investigators: **Amanda Leach, Peter Morris, Heidi Smith-Vaughan, Liz Stubbs, Kim Hare, Jemima Beissbarth, Brooke Harrington**

Funding: CHATA; NHMRC Fellowship 997027 (Morris)

### Optimising chronic lung disease care for Indigenous Australians

The aim of this research program was to improve the understanding and management of chronic respiratory disease and, particularly, chronic obstructive pulmonary disease in remote Indigenous communities in the NT. This year's work has built on earlier research investigating the burden of disease, risk factors in its development, identification and process of care for chronic obstructive pulmonary disease (COPD). It has also investigated factors important in achieving optimal maximal lung function and respiratory reserve. A prospective study of a cohort of Indigenous Australians with COPD has been completed to determine the role of bacterial infection in disease activity, associated disability and airway inflammation.

Using these findings a randomised controlled trial to investigate the efficacy of long-term antibiotics to address the burden of respiratory bacterial infection has been funded by NHMRC. This trial will aid the development of improved treatment for this significant cause of disability and premature mortality for Indigenous Australians.

Investigators: **Graeme Maguire, Bart Currie, Ross Bailie, Norma Bengler**

Funding: NHMRC Scholarship 987576 (Maguire), CHATA, AMA-APMA, Ramaciotti, Flinders University NT Clinical School, CRCATH

### Systematic review of G-CSF in pneumonia

As part of background work toward a trial of Granulocyte-Colony Stimulating Factor (G-CSF, which stimulates production and activity of white cells) in septic shock, researchers have performed a systematic review and meta-analysis of G-CSF in non-neutropaenic patients with pneumonia. This has involved extensive searches of literature and clinical trials databases, and correspondence with authors and sponsors of existing trials. A protocol has been submitted for peer review to the Acute Respiratory Infections Group of the Cochrane collaboration. Preliminary results show that G-CSF may be associated with a non-significant benefit in mortality.

Investigators: **Allen Cheng, Bart Currie**

Funding: NHMRC Scholarship 193324 (Cheng)

### Understanding severe *Acinetobacter* pneumonia and carriage of *Acinetobacter* in a tropical environment

*Acinetobacter* species are a major cause of severe community-acquired pneumonia in tropical northern Australia, accounting for 10% of cases and 20% of deaths from bacteremic community-acquired pneumonia. In collaboration with Harald Seifert in Germany, researchers have identified the species of *Acinetobacter* that cause severe and fatal pneumonia. Ongoing studies are assessing seasonal variation in *Acinetobacter* infections, and determining the extent of community throat carriage of *Acinetobacter* in tropical Australia, particularly in 'at-risk' people. The study is also evaluating to what extent protocols for early treatment of severe community-acquired *Acinetobacter* pneumonia have reduced mortality.

Investigators: **Nick Anstey, Susan Jacups, Bart Currie, Robyn Marsh, Didier Palmer, Jacqui Davidson, Harald Seifert**

Funding: NHMRC Centre for Clinical Excellence

## Melioidosis & Emerging Infectious Diseases

### Melioidosis and polymorph function

This project investigates the uptake and killing of *Burkholderia pseudomallei* by human polymorphs (white blood cells). While *B. pseudomallei* survives in human sera, uptake and killing of the bacteria by polymorphs does occur. Killing was not increased by the addition of the polymorph stimulant G-GSF, which is used as therapy for melioidosis septic shock. Interestingly, crocodile sera were able to kill *Burkholderia pseudomallei*.

### Clinical aspects of severe melioidosis

In preparation for a clinical trial of G-CSF in severe melioidosis, researchers are currently reviewing the use of G-CSF at the Royal Darwin Hospital to compare with a historical control. In addition, a predictive rule has been developed for melioidosis patients in Darwin, formed from clinical and laboratory parameters on admission to hospital. Work to validate this is underway in a Thai population with melioidosis. It is hoped that these studies will help clinicians to identify patients with melioidosis at higher risk of adverse outcomes.

### Epidemiology of melioidosis in Australia

In conjunction with colleagues in Western Australia and Queensland, MSHR researchers are reviewing the epidemiology of melioidosis cases in northern Australia during 2001–02. Geographical Information Systems (GIS) and spatial analysis are used to determine potential environmental factors associated with case-clusters in the Northern Territory. Cluster analysis will include clinical and strain-type distribution.

MSHR research has found that crocodile sera kill *Burkholderia pseudomallei*, the bacteria that causes melioidosis.



Investigators: **Pallave Dasari, Mark Mayo, Daniel Gal, Allen Cheng, Susan Jacups, Melita McKinnon, Bart Currie**

Funding: CRCATH

Investigators: **Allen Cheng, Bart Currie, Susan Jacups, Nick Anstey, Dale Fisher, Sarah Huffam, Dianne Stephens, Bart De Keulenaer**

Funding: NHMRC Scholarship 193324 (Cheng); NHMRC Centre for Clinical Excellence

Investigators: **Tim Inglis, Robert Norton, Allen Cheng, Bart Currie, Susan Jacups, Mark Mayo, Daniel Gal, Nick Anstey**

Funding: NHMRC 139052 (to UWA); NHMRC Centre for Clinical Excellence; NHMRC Scholarship 193324 (Cheng)

*Multitalented MSHR research student Pallave Dasari undertook studies in melioidosis and trained crocodiles in her spare time!*

### Environmental aspects of melioidosis

This project is a collaborative effort involving three institutes based across Australia: in Perth, Townsville and Darwin. The project aims to collect environmental samples (water and soil) from different sites throughout the Top End of Australia. Once the samples are collected, they will be tested for the presence of *Burkholderia pseudomallei*, the bacterium that causes melioidosis. The results of these studies will enable the environmental aspects of melioidosis to be studied. Aspects to be looked at are: in what soil types are the bacteria found? in what sources of water are the bacteria found? what types of vegetation favour the bacteria? The study will provide a better understanding of melioidosis in the Top End environment.

Over the last two years, 60 sites have been tested and several of these sites have been found to have the bacteria *Burkholderia pseudomallei*. Both water and soil samples have been found to be positive. The project aims to find out why *Burkholderia pseudomallei* is found in these locations. The positive samples are currently undergoing molecular testing and computer analysis to determine whether environmental and clinical samples can be related by area, clinical illness, risk factors and time.

### Differential susceptibility of mouse strains to melioidosis

In collaboration with colleagues in Melbourne, researchers are investigating the susceptibility of C57B/6, Balb/c and G-CSF gene knockout mouse strains to *Burkholderia pseudomallei*, the organism responsible for melioidosis.

By quantifying their responses to this disease and potential treatment strategies, the study hopes to provide a model for such treatment strategies in humans with severe melioidosis.

Investigators: **Mark Mayo, Bart Currie, Daniel Gal, Susan Jacups, Melita McKinnon, Pallave Dasari, Robert Norton, Kellie Powell, Kay Howard, Niki Foster, Tim Inglis, KS Sriprakash**

Funding: NHMRC 139052 (to UWA); NHMRC Centre for Clinical Excellence

Investigators: **Allen Cheng, Glenn Browning, Grant Morahan, Bart Currie**

Funding: NHMRC Scholarship 193324 (Cheng)

## Tropical Toxinology

### Observing the seasonal patterns of *Chironex fleckeri* and *Chiropsalmus* sp.

With the assistance of Gove Surf Life Saving Club and Royal Darwin Hospital Emergency Department, the study has been monitoring the occurrence and type of box jellyfish in the waters off the Top End of the Northern Territory.

It has been well documented that *Chironex fleckeri* are present during the months from October to May. Recently it has been found that another box jellyfish, *Chiropsalmus* sp., is present in the waters off the beaches of Gove Peninsula during the months from May to October. This has implications for public health warnings.

Investigators: **Bart Currie, Melita McKinnon**

Funding: NHMRC Centre for Clinical Excellence

### The Top End snakebite study



*Bart Currie showing off his snake collection to a group of prospective scientists.*

This study continues to document all snakebite envenomings in the Top End and update its collection of snakes. Syndromes of envenoming from the western brown snake, mulga snake and death adder have been characterised, as well as bites from less venomous Australasian elapids. The 'brown snake paradox' (lack of clinical neurotoxicity despite the venom containing a potent neurotoxin) has been described and explained.

Investigators: **Bart Currie, Melita McKinnon**

Funding: NHMRC Centre for Clinical Excellence

## Malaria & International Health

### Improving the treatment of malaria in eastern Indonesia

Dr Emiliana Tjitra from the National Institute of Health Research and Development (NIHRD) in Jakarta successfully completed her PhD with MSHR's International Health Program in 2001 and has returned to a senior malaria research position with the Ministry of Health in Jakarta. The clinical case definitions and diagnostic algorithms she developed as part of her PhD and the results of the combination treatment studies she undertook in Sumba and Papua, continue to contribute to the Ministry of Health's efforts towards the better diagnosis and treatment of malaria in eastern Indonesia. In collaboration with the Ministry of Health at a national and district level, and local malaria control authorities, MSHR's researchers are now developing studies to evaluate the efficacy of artemisinin-derivative combination therapies for multidrug-resistant *Plasmodium falciparum* and *Plasmodium vivax*, and at a population level the potential impact of widespread deployment for reducing malaria transmission and morbidity in southern Papua.

### Do nitric oxide and related molecules protect against severe malaria?

This study is extending previous work into the role of nitric oxide (NO) and other important molecules produced by the immune system in protecting against life-threatening malaria. In collaboration with the Indonesian Ministry of Health and Jayapura and Timika Hospitals in Papua, Indonesia, researchers have recruited over 250 patients with and without severe malaria. Investigations have shown that white cell production of NO and other molecules, such as prostaglandins, in these predominantly non-immune people are highest in well people and lowest in those with severe malaria. These molecules reduce the stickiness of the lining of blood vessels and dampen down the excessive inflammation found in severe malaria. Measures to increase NO production or delivery may have important therapeutic implications in the management and prevention of severe malaria.

### Genes protecting from severe malaria

It is not known why some people infected with the malaria parasite get life-threatening or fatal malaria and why others just get a febrile illness. MSHR researchers have been collaborating with colleagues at the Walter and Eliza Hall Institute, Melbourne, Duke University and University of Utah, USA, to examine whether novel genetic variations protect against, or predispose to, the development of severe and cerebral malaria. Investigations have found that an IL-12 promoter variant predisposes to severe malaria; and a new nitric oxide synthase 2 gene variant increases NO production and protects children from severe malaria. Genetic studies such as these are important in understanding mechanisms of protection from severe disease, the design of vaccines, and in informing prophylactic and treatment strategies to prevent death from malaria.



Investigators: **Emiliana Tjitra, Nick Anstey, Ric Price, Bart Currie, Peter Morris, Ruth Boveington, Sri Suprianto**

Funding: Mark Nicholson and Alice Hill, Tudor Foundation

Investigators: **Nick Anstey, Craig Boutlis, Emiliana Tjitra, Tjandra Handojo, Helena Maniboey, Robyn Marsh, Estelle Gray, Jodie Ridings, Ating Solihin, Pak Ferri, Maurine Hobbs, Don Granger, Brice Weinberg**

Funding: National Institutes of Health RO1 AI41764; NHMRC Scholarship 008120 (Boutlis)

Investigators: Maurine Hobbs, **Grant Morahan, Craig Boutlis, Robyn Marsh, Don Granger, Mark Levesque, Emiliana Tjitra, Jocelyn Saunders, Jodie Ridings, Helena Maniboey, Tjandra Handojo, Brice Weinberg, Nick Anstey**

Funding: NIH RO1 AI41764; NHMRC Scholarship 008120 (Boutlis)

*MSHR International Health team's researchers and Indonesian partners in the field at Timika, Papua, Indonesia. Left to right: Graeme Maguire, Tjandra Handojo, Nick Anstey, Emiliana Tjitra (NIHRD), Helena Picarema (visitor), Paul Kelly and Ric Price.*

MSHR field studies are important in understanding the potential role of nitric oxide-related molecules in protection against disease and may have therapeutic implications.

### Collaborative activities to improve malaria control in our region

MSHR has continued to provide tropical infectious disease advice to health personnel in Australia and East Timor, and the Commonwealth Department of Health and Ageing. This has included advice on malaria prevention for asylum seekers detained in Papua New Guinea, and combination treatment protocols. MSHR has contributed to the development of the research agenda for preventing morbidity from *P. vivax* malaria for the Multilateral Initiative for Malaria (MIM). Ongoing collaborative malaria studies with Dr Emiliana Tjitra and the Indonesian Ministry of Health in Papua include studies in development phase for evaluating the effectiveness of combination antimalarial therapy to reduce malaria transmission. MSHR continues to contribute to Northern Territory and national guidelines for the diagnosis, treatment and prevention of malaria.

### Do nitric oxide donors stop malaria parasites from sticking to blood vessels?

Researchers have examined whether nitric oxide (NO), an important molecule made by the body, prevents processes linked to the pathogenesis of severe and cerebral malaria. Work has shown that NO makes cells lining blood vessels less sticky, despite being stimulated by molecules that are known to make them very sticky in severe malaria. It also prevents malaria-infected red cells from sticking to these cells. These and related field studies are important in understanding the potential role of NO-related molecules in protection against disease and may have therapeutic implications.

### The role of nitric oxide, antibodies to GPI parasite, and other antitoxic molecules in clinical immunity to malaria

Children and adults living in regions with malaria tolerate the presence of malaria parasites in their bloodstream much of the time, without illness. Work on this project has shown that residents of Irian Jaya, Indonesia and Madang, Papua New Guinea, produce high levels of nitric oxide, a small molecule that has previously been implicated in inhibiting disease responses. MSHR researchers have demonstrated that adults from Madang produce antibodies to a potentially important malaria parasite toxin, GPI. However, small children (a group most at risk of severe malaria) have difficulty in mounting an antibody response to GPI. Moreover, in both groups, antibody responses are short-lived. This work will better inform attempts to produce vaccines or drugs aimed at minimising an individual's disease response to malaria. If GPI antibodies prove to protect against severe malaria, a GPI vaccine will have to improve on the body's immune response to naturally-acquired infection.

### The role of antibodies to clag protein in clinical immunity to malaria

Malaria parasites cause severe disease by sticking to the lining of blood vessels and blocking blood supply to vital organs like the brain. Recent work suggests that the clag protein of parasites is important in allowing malaria parasites to stick to the lining of blood vessels. MSHR researchers are working with colleagues at QIMR to determine whether PNG adults and children exposed to intense malaria transmission produce antibodies that recognise clag protein and, if so, how long these antibodies last. This work will better inform attempts to produce vaccines or drugs aimed at minimising the ability of parasites to block blood vessels.

Investigators: **Nick Anstey, Ric Price, Bart Currie, Emiliana Tjitra, Paul Kelly,** and regional Malaria Control colleagues

Funding: Tudor Foundation

Investigators: **Nick Anstey, Estelle Gray, Jocelyn Saunders,** Katharine Trenholme

Funding: NHMRC 980437

Investigators: **Craig Boutlis, Nick Anstey, Robyn Marsh, Jodie Ridings, Graeme Maguire, Peter Fagan,** Charles Mgone, Moses Bockarie, Moses Lagog, Channe Gowda

Funding: Tudor Foundation, Mark Nicholson and Alice Hill, NHMRC Scholarship 008120 (Boutlis), NIH RO1 AI41764, and logistical support from the Papua New Guinea Institute of Medical Research

Investigators: **Craig Boutlis, Nick Anstey,** Don Gardiner, David Kemp, Charles Mgone, Moses Bockarie, Moses Lagog, Katharine Trenholme

Funding: Tudor Foundation, Mark Nicholson and Alice Hill, NHMRC Scholarship 008120 (Boutlis), NHMRC (to QIMR), NIH RO1 AI41764, and logistical support from the Papua New Guinea Institute of Medical Research



### Does arginine deficiency contribute to severe malaria?

MSHR researchers have recently found that children and adults with severe malaria have a profound deficiency of L-arginine, a naturally produced amino acid that is the critical substrate for the production of nitric oxide. In children, low arginine levels are the strongest predictor of death in cerebral malaria. When the body has insufficient arginine, NOS2, the nitric oxide-producing enzyme, produces toxic molecules, like superoxide instead of protective molecules like nitric oxide. L-arginine, a natural product, is inexpensive and has minimal toxicity when used in other human diseases. The study is examining the reasons for low arginine in severe malaria with a view to future intervention studies examining the safety, turnover and efficacy of arginine supplementation in people sick with malaria.

### The pfmdr1 gene and multidrug resistance in *Plasmodium falciparum*

This project applies novel molecular techniques to assess genetic changes in malaria isolates gathered from the Thailand–Burma border and correlates these with the laboratory responses of the parasite to mefloquine therapy and the declining efficacy in mefloquine over the last decade. Since polymorphisms in pfmdr1 do not explain all cases of mefloquine resistance, studies will also be conducted to test the hypothesis that up-regulation of pfmdr1 expression can occur in the absence of gene amplification. The eventual goal is to develop a useful tool to track emerging drug resistance.

### Does the clinical presentation of *Plasmodium vivax* malaria in small children overlap with acute respiratory infection?

Acute respiratory infection (ARI) is a major cause of death and illness in small children presenting to rural primary health care centres in developing countries. Over the last decade it has become clear from African research that the presenting clinical features of acute *P. falciparum* malaria overlap with ARI in small children, and WHO clinical algorithms require treatment for both ARI and *P. falciparum* malaria in areas where both overlap. However, it is not known whether *P. vivax* malaria causes a similar overlap. This is important for regions such as South-East Asia where *P. vivax* malaria is common, and for areas where *P. vivax* predominates. Emiliana Tjitra's recent studies in Eastern Indonesia suggest that *P. vivax* malaria does overlap with ARI.

### Understanding how malaria damages the lungs

Of the tens of thousands of adults that die of severe malaria each year, a large proportion die as a result of malaria making their lungs leaky, causing them to fill with fluid. There is no specific treatment available for this grave complication. How and why this happens is not well understood. Until this is understood, it will be difficult to design specific treatments. In studies of patients at Royal Darwin Hospital and Darwin Private Hospital, MSHR research has shown that even in uncomplicated malaria, there is a significant increase in white cell activity in the lungs, and a significant reduction in airflow and in transfer of gas from the lungs to the blood. This occurs in both *P. falciparum* and *P. vivax* malaria, suggesting common underlying inflammatory mechanisms. With Indonesian colleagues, studies have been extended to Papua to investigate the pathophysiology of lung injury in adults with severe malaria.



*Dr Tjandra Handojo explains the pulmonary lung function test to a research participant*

Investigators: Bert Lopansri, **Nick Anstey**, **Emiliana Tjitra**, Esther Mwaikambo, Brice Weinberg, Don Granger

Funding: Thrasher Foundation, NIH RO1 AI41764

Investigators: **Ric Price**, Sanjeev Krishna, Francois Nosten

Funding: Wellcome Trust

Investigators: **Emiliana Tjitra**, Sri Suprianto, **Paul Kelly**, **Bart Currie**, **Nick Anstey**

Funding: Tudor Foundation

Investigators: **Graeme Maguire**, **Tjandra Handojo**, **Emiliana Tjitra**, **Susan Jacups**, **Ric Price**, Tim Cain, Travis Pearson, Patrick Ziesing, Dale Fisher, **Bart Currie**, Paul Marks, **Nick Anstey**

Funding: Tudor Foundation, Perrett's Medical Imaging, NHMRC Centre Clinical Excellence, NIH RO1 AI41764.

### Nitric oxide and gut damage in diarrhoeal disease

This research team is collaborating with David Brewster's team at the Flinders University Northern Territory Clinical School (NTCS) on their studies of gut damage in gastroenteritis and tropical enteropathy, both major problems in Top End Aboriginal children. Results show extremely high levels of NO production in gastroenteritis, which is strongly associated with leakiness of the gut, underlying the malnutrition and potassium depletion found in the sickest children. NO was particularly high in *Cryptosporidium* infection, a major cause of gut damage. While NO probably protects against gut damage in gastroenteritis, this may be at the expense of causing the increased gut leakiness found in diarrhoeal disease. As part of NTCS trials of interventions to hasten recovery of gut damage and inflammation, the project is continuing these studies to help understand the mechanisms underlying improved outcomes.

### The ability of blood mononuclear cell iNOS activity to predict response to interferon treatment of hepatitis C

Standard treatment for patients in Darwin with hepatitis C is interferon-alpha and ribavirin for up to 12 months. However, only 10–30% of patients have a sustained response to interferon alone, less than 5% to ribavirin alone and 30–60% to this combination drug treatment. This means that 40–70% of people receive therapy for hepatitis C without success, involving expensive thrice-weekly interferon injections, with flu-like side effects, for up to 12 months. In collaboration with Royal Darwin Hospital and Darwin Private Hospital liver clinic staff, and NTCS, researchers are examining whether peripheral blood mononuclear cell inducible nitric oxide synthase (iNOS) activity after one month of interferon treatment can predict those who will have a sustained response to treatment. Early identification of those who won't respond means savings on unnecessary and expensive treatment, and side effects.

### Collaborations to improve tuberculosis control in the region

MSHR has been involved in projects to support tuberculosis (TB) control in its region since 1998. In the second half of 2001, activities were concentrated in East Timor, with support for staff training, the upgrade of X-ray facilities in Dili and a report to the Minister for Health on drug resistant TB in East Timor. The major finding is that multiple drug resistant TB is present in East Timor, but that the prevalence appears to be low. Recommendations on treatment have been given to the Ministry of Health. In January 2002, the AusAID-funded project led by the NT Department of Health and Community Services (DHCS) came to an end. Dr Paul Kelly has continued to provide technical assistance to colleagues in the National TB Control Program in Dili during 2002. Specific logistic support for X-ray facilities in Dili and an ongoing survey of TB drug resistance have been two activities coordinated by MSHR, the former in association with the DHCS and the latter in association with colleagues at the Institute for Medical and Veterinary Science in Adelaide. Funding has been offered for a study of pulmonary function in TB patients in Timika, Papua, to commence in 2003 (through the Community Health and Anti-Tuberculosis Association) and is currently being sought (from Wellcome Trust/NHMRC) for several related operational research studies in East Timor.

### International health professional training and education

There have been several exciting developments in this area in 2001–02. Dr Emiliana Tjitra from Indonesia was awarded her PhD from Northern Territory University. International students from East Timor, Zambia, Philippines, Indonesia, India and Bangladesh continue to study in the public health coursework program, with several students due to complete their degrees in 2002. MSHR staff, together with colleagues in Dili and Darwin, developed and delivered an innovative, competency based training package for District Tuberculosis staff in East Timor. An East Timorese PhD student will join MSHR in 2003 to work with the tuberculosis wing of the International Health Program.

Investigators: David Brewster, Brett Ritchie, Renata Kukorozovic, **Robyn Marsh**, **Estelle Gray**, Yvette McNeil, **Nick Anstey**

Funding: NHMRC Centre of Clinical Excellence, NHMRC 980437

Investigators: **Nick Anstey**, Dale Fisher, **Susan Jacups**, **Melita McKinnon**, **Estelle Gray**, Heather Hall, **Robyn Marsh**

Funding: NHMRC Centre of Clinical Excellence

Investigators: **Paul Kelly**, **Nick Anstey**, **Graeme Maguire**

Funding: AusAID

Investigators: **Paul Kelly**, **Nick Anstey**

## Infectious Diseases Division's collaboration partners

AusAID	Northern Territory Department of Business, Industry and Resource Development
Australian Genome Research Facility (AGRF)	Northern Territory Department of Health and Community Services
Bureau of Meteorology	Northern Territory Imaging
Caritas & National TB Control Program, Dili, East Timor	Northern Territory University
Cooperative Research Centre for Aboriginal and Tropical Health (CRCATH)	Papua New Guinea Institute of Medical Research, Papua New Guinea
Crocodylus Park, Darwin	Pennsylvania State University, USA
Darwin Private Hospital	Power and Water Corporation, Northern Territory
Duke University Medical Center, Durham, USA	Queensland Health, Tropical Public Health Unit
Flinders University Medical Centre	Queensland Institute of Medical Research
Flinders University Northern Territory Clinical School (NTCS)	Royal Children's Hospital, Melbourne
Gove Peninsula Surf Life Saving Club, Nhulunbuy, Northern Territory	St Georges Hospital Medical School, London, UK
Graeme Gow, consultant herpetologist, Northern Territory	Suppasitprasong Hospital, Ubon Ratchathani Province, Thailand
Herbert Kairuki Memorial University, Dar es Salaam, Tanzania	Timika Community Hospital (Rumah Sakit Mitra Masyarakat), Papua, Indonesia
Indonesian Ministry of Health, Indonesia	Timika Malaria Control and Public Health, Papua, Indonesia
Institute for Medical and Veterinary Science (IMVS)	Tiwi Health Board
James Cook University	Townsville General Hospital
Malaria Research Unit, Mae Sod, Thailand	University of Cologne, Germany
Murrupurttitanuwu Catholic School, Tiwi Islands, Northern Territory	University of Melbourne
Museum and Art Gallery of the Northern Territory	University of Queensland
National Centre for Biotechnology, Braunschweig, Germany	University of Utah, Salt Lake City, USA
National Institute of Health Research and Development, Jakarta, Indonesia	University of Western Australia
National Tuberculosis Register, Oslo, Norway	University of Wollongong
Nguiu Community	US NAMRU-2 Laboratory, Jayapura, Papua, Indonesia
	Walter and Eliza Hall Institute
	Wellcome Oxford-Mahidol University Program, Bangkok, Thailand
	Wright State University, USA
	Xavier Catholic Education Centre, Tiwi Islands, Northern Territory

## Research Support

The Research Support group was formed following a review of the MSHR internal structure in mid-2001. The group provides administrative, data and multimedia support to the researchers of the organisation.

MSHR had a 44% success rate in project grant applications to the National Health and Medical Research Council in 2002.

ADMINISTRATIVE SUPPORT was enhanced in October 2001 with the appointments of Jill Albion and Tracey Burke (former MSHR Receptionist) as Research Administration Officers. Their roles are to assist researchers with funding submissions and ethics applications, meeting reporting requirements, formatting publications for submission to journals, and maintaining grants and publications data. The impact of these appointments became obvious in November 2002 with the announcement that MSHR had a 44% success rate in project grant applications to the National Health and Medical Research Council. Tracey also maintains responsibility for the MSHR/RDH/NTCS and Health Services and Research Seminar Series, and Jill, in November 2002, represented the interests of MSHR at the Callista Conference held in Tasmania.

Robyn Liddle provided data development, maintenance and management advice to research staff whilst participating in several development and managerial projects for the School as a whole. These included an Oracle upgrade and forms development project, and the purchase of Callista Research Management Software.

In-house multimedia capacity was reduced in early 2002 with the departure of graphic artist Jeni Wie. Jeni played a key role in the development of conference posters, powerpoint and slide presentations, and design and layout of feedback and education booklets.

Peter Thomsen continued to work with research staff developing audiovisual materials for research projects in areas of education, training, community feedback, and for archival purposes. The major productions for the year were: the diabetes videos, *The Ear Video* and *Yalu Stories*. Peter was also involved in the CRCATH

fifth-year review, producing a small well-received video to introduce the Education and Training Function of the CRCATH to the review panel. In December 2002, Peter participated in The Public Communication of Science and Technology Conference in Cape Town, South Africa, where he co-presented a paper, 'Learning to Share Stories in Indigenous Communities', with CRCATH's Michael Duffy. During 2002 Peter co-chaired a workshop, 'Indigenous Communications', as part of the CRCATH Dissemination and Information program. Peter also continued his role as Chair of the Aboriginal Ethics Subcommittee, participating in several AHEC/ NHMRC initiatives, including the ATSI Research Guidelines workshop held in Ballarat and the AHEC National Application Form Steering Committee.

Gabrielle Falls, Senior Research Administrator and Head of the Research Support Group, took a more 'hands-off' approach to grant applications in 2002 after many years of being the School's sole research administrator. Gabby remains actively involved in training and mentoring Jill and Tracey in their RAO capacities, and continues to liaise with funding bodies and provides input into the development of funding applications. During 2002 she completed preparation of the first MSHR Intellectual Property Policy, endorsed by the Governing Board in December 2002. As Secretary to the Human Research Ethics Committee, she revised the HREC application form, presented a talk to the RDH Clinical Ethics Workshop on privacy in research, and is a Member of the AHEC National Application Form Steering Committee. She was also responsible for ensuring the organisations supported by Darwin Region Institutional Biosafety Committee addressed and became compliant with the newly introduced *Gene Technology Act 2001*.

## Education and Training Division

2001 (semester 2)–2002

The Education and Training Division provides postgraduate education and training opportunities to health professionals. In common with the research divisions, the division has expertise in Aboriginal, remote and tropical health, and these strengths are reflected in the education and training which is offered by, or supported through, the division. The division reports to the Postgraduate Studies Committee which is chaired by the Director of MSHR.

The division has three main functions:

- • • **CO-ORDINATION** of the public health coursework program (Graduate Certificate, Graduate Diploma and Masters)
- • • **OVERSIGHT** of postgraduate research students studying at MSHR
- • • **ORGANISATION** of short courses at MSHR

### Public Health Coursework Program



*Dr Paul Kelly, Head of the Education and Training Division*

The Public Health Coursework Program is accredited through the Northern Territory University (NTU). The program has grown significantly in recent years. Between Semester 1 2001 and Semester 2 2002, the total full-time equivalent (FTE) student enrolments grew from 11.5 to 28.5. The majority of the growth was at the Masters level. There was a healthy growth in the international (full-fee-paying) student numbers during the period covered by this report. The number of graduates grew from five in Semester 1 2001 to 21 in semester 2 2002 (35 total graduates). The coursework program continues to attract high-quality public health practitioners to the Territory from other parts of Australia and internationally. However, the majority of our students are Territorians. Fifty percent of our students are employed by the Northern Territory Department of Health and Community Services (DHCS), and the Education and Training Division, therefore, fulfils a significant professional development role for the Department and other health service providers in the Northern Territory. In addition, there is a significant atmosphere of collaboration engendered by involvement in the coursework teaching program and this is shared by students and teachers. Over 20 lecturers are involved in the coursework program and are employed by MSHR, Department of Health and Community Services, Northern Territory University, University of Queensland, Flinders University of South

Australia and the University of New South Wales. Visiting coursework program lecturers add to the research strength of MSHR and their input is funded by the Education and Training Division.

Whilst MSHR is predominantly a research institution, the Education and Training Division provides an important support function by:

- • • providing specific skills training to postgraduate research students
- • • organising short courses for the benefit of MSHR staff (an important staff recruitment, professional development and retention function) and the wider health community
- • • bringing Commonwealth funding (Department of Education Science and Training) for coursework and postgraduate students to MSHR. In 2002, this was \$287,000

The first Indigenous student graduated from the Public Health Coursework Program with another due to graduate next semester. The support mechanisms for Indigenous students continue to strengthen through existing relationships with the Cooperative Research Centre for Aboriginal and Tropical Health (CRCATH) and the Northern Territory University. The CRCATH scholarship and cadetship programs are available to assist the articulation from vocational training through undergraduate study and onto

*Catherine Richardson, Audrey Langlands, Paul Kelly and Richard Chenhall of MSHR's Education and Training Division.*



the public health coursework program. As a core partner of the CRCATH, MSHR is now well placed to attract Indigenous students.

#### APPOINTMENT OF NEW STAFF

Two new part-time appointments were made to the Education and Training Division in the area of curriculum development in mid-2001: **Mrs Margaret Stewart** and **Dr Lauren Arnold**. **Dr Bridie O'Reilly** was appointed as the Liaison Officer with the Faculty of Science, Information Technology and Education, NTU. **Dr Richard Chenhall** is an anthropologist with a strong background in on-line teaching and curriculum development and research interests in alcohol and drug misuse in Indigenous health. He will be involved with the coordination of a number of coursework units. **Dr David Thomas**, a recent MSHR PhD graduate and employee of the CRCATH, was also appointed on a part-time basis at the end of August 2002 to re-write one of the program's core units.

Particular achievements in 2001–02 include:

- • • delivery of new and restructured units by distance education
- • • successful submission to Northern Territory University for the accreditation of all courses for 2003
- • • inclusion of generic skills sessions in communications (media skills) and database searching during the residential teaching week in September 2002

• • • participation in a trial of on-line delivery of population health education: the Population Health Education for Clinicians project

**PRIZES** Dr Val Asche agreed to sponsor a prize which bears her name. Ms Annie Tangey, who completed her coursework for the Master of Public Health (Coursework and Treatise) in semester two 2001 was awarded the inaugural Val Asche Prize for academic excellence; Dr Janet Savage was the recipient for 2002.

**IPHERP FUNDING** Menzies School of Health Research is a member of the Australian Network of Academic Public Health Institutions (ANAPHI), a national organisation of 19 universities and public health institutes delivering public health coursework programs. Dr Paul Kelly, Head of the Education and Training Division, was elected to the Executive of ANAPHI in November 2001. The School has received \$1.37 million in the past three years from the Public Health Education and Research Program (IPHERP). In addition to the support for innovation and flexible delivery of the public health coursework program, three collaborative projects were funded in the second funding round of PHERP's Innovations project:

• • • Public Health Workforce Development in Chronic Diseases (with James Cook University and the University of Queensland) to improve workforce capacity in practice and evaluation of the Chronic Disease Strategy

• • • Public Health Nutrition (with FUSA, Monash, Griffith, Canberra and Queensland universities) building on a previously successful seeding grant (with FUSA);

• • • development of a short course on social determinants of health with the Cooperative Research Centre for Aboriginal and Tropical Health

#### CONTRIBUTIONS TO NATIONAL PUBLIC HEALTH TEACHING PROJECTS

• • • Development of an infectious diseases module for Population Health Education for Clinicians. The final modules (in paper and CD-ROM) were completed and on-line versions were made available with a trial of the modules commencing by the end of 2001.

• • • National Curriculum Project: Discussions to formulate new national standards for public health teaching. Dr Paul Kelly reported the experience of using the Public Health Education Framework to restructure public health education at MSHR to Australian Network of Academic Public Health Institutions (ANAPHI) and the Commonwealth Department of Health and Ageing. This method has now been adopted as a template by other members of ANAPHI.

## Master of Public Health by research treatise

MSHR offers both coursework and coursework plus treatise options for the Master of Public Health.

### Continuing Master of Public Health treatise students, 2001–02

Name	Supervisor(s)	Title
Kate Armstrong (withdrew in Sem 2)	Dan Ewald & John Wakerman	Prevalence of hypothyroidism in a remote central Australian community
Srinivas Kondalsamy	Gary Robinson & Ross Bailie	A follow-up study of Tiwi coordinated care trial renal treatment outcomes
Mark Lutschini	Ian Anderson & Jeannie Devitt	Analysis of the representation of the holistic approach to primary health care within national Aboriginal health strategies
Annie Tangey	Dorothy Mackerras & Sue Sayers	The relationship between placenta weights and birth weights along with associated maternal factors that affect this relationship in a cohort of Aboriginal babies born at Royal Darwin Hospital between 1987–90
Clif Van Der Oest	Paul Kelly, Richard Chenhall & Dell Hood	An examination of the epidemiology and control of tuberculosis in the Waikato province of New Zealand

### Graduating Master of Public Health with treatise students, 2001–02

Name	Supervisor(s)	Title
Robyn Glynn (Uni of Sydney)	Edouard d'Espaignet, Dorothy Mackerras & Peter O'Rourke	Lower limb amputation in the Northern Territory, 1993–99
Pam Gollow	Ross Bailie	Evaluation of a performance monitoring system for the Preventable Chronic Disease Strategy
Janice Jessen (Uni of Sydney)	Sharon McCallum & Kay Roberts	Women's perceptions of the factors that influenced their decision to seek treatment and their experiences of drug treatment services
Shuqin Li	Joan Cunningham	Mortality data: does it reliably estimate the number of people dying with renal disease in Australia?
Angela Melder (Uni of Sydney)	Peter d'Abbs & Kim Humphery	A search for meaning? A qualitative study examining the meaning of compliance from the perspective of researchers and research participants of a cross-culturally set randomised control trial
Moira Stronach (Uni of Sydney)	Dorothy Mackerras & Bev Hayhurst	A process evaluation of implementing the store book in a cross-cultural setting
Margaret Tyrrell	Dorothy Mackerras, John Wakerman & John Grundy	Evaluation of Central Australian remote area diabetes/nutrition

Ms Annie Tangey, who completed her coursework for the Master of Public Health (Coursework and Treatise) in semester two 2001 was awarded the inaugural Val Asche Prize for academic excellence; Dr Janet Savage was the recipient for 2002.

## Research training

Postgraduate research students are supervised by senior staff at Menzies School of Health Research, in collaboration with researchers at other institutions when appropriate. In 2002, 25 students were enrolled in Masters and Doctorate level studies through five universities. Students research topics span the wide research interests of MSHR, from molecular biology to population health and health services research. In 2002, two of our PhD students (Dr Alan Cass and Dr Russell Gruen) were awarded prestigious Harkness Fellowships to pursue their research in the United States of America

in 2002–03. There were 12 graduates (six PhD) in 2001–02.

The Postgraduate Studies (PGS) Committee established a working committee to consider and address issues to improve the environment for research students at MSHR. The new Research Training Committee worked hard in 2002 to improve enrolment procedures, facilitate scholarship support, ensure high-quality supervision of research students, provide education and training courses where required and improve liaison with universities of enrolment.

### Postgraduate research students graduating 2001–02

Name	Supervisor(s)	Title
<i>Doctor of Philosophy</i>		
Mary Dorling P/t University of Sydney	Prof John Mathews; Dr Kathy Robinson	All the prostitutes come from Java: Structure, organisation and diversity in the sex industry in Kupang, Nusa Tenggara, Timor, and risk for HIV and other sexually transmitted diseases
Pearly Harumal F/t NTU	Prof David Kemp (QIMR); Prof Bart Currie (MSHR)	Antigens, allergens and immune responses in normal and crusted scabies
Tai (Daniel) Lam P/t University of Sydney	Dr Peter d'Abbs (Qld Health)	A study of the effects of land migration on the health of the water people in Hong Kong, and implications for clinical practice
David Thomas F/t NTU	Dr Komla Tsey (UQ); Dr Peter D'abbs (Qld Health)	Reading doctors' writing: Race, politics and power in Indigenous health research, 1870–1970
Emiliana Tjitra F/t NTU	Assoc Prof Nick Anstey (MSHR); Prof Bart Currie (MSHR)	Improving the diagnosis and treatment of malaria in eastern Indonesia
Richard Weir P/t University of Sydney	Dr A Hyatt (CSIRO); Prof David Kemp (QIMR)	Classification and identification of viruses isolated from mosquitoes in the Northern Territory, 1982–92, using several serological techniques
<i>Master of Public Health (Research)</i>		
Kath Kemp F/t University of Sydney	Dr Peter d'Abbs (Qld Health); Professor Jenny Watson (NTCS/NTU)	Cross-cultural interaction and the Northern Territory intensive care experience: dismantling the wall?
<i>Master of Philosophy in Public Health</i>		
Ofra Fried P/t University of Sydney	Dr Komla Tsey (UQ); Prof Ian Maddox (FUSA)	Cross-cultural issues in the medical management and nursing care of terminally ill Aboriginal people in Central Australia
<i>Master of Science</i>		
Robyn Marsh F/t NTU	Dr KS Sriprakash (MSHR)	Study towards a simple and rapid test to detect group B streptococcus in labour
Judy You F/t NTU	Dr Wendy Hoy (MSHR); Ms Carol Beaver (DHCS)	Health economic evaluation: cost analysis of dialysis treatments to patients with end-stage renal diseases in the Top End
<i>Bachelor of Science (Honours)</i>		
Pallave Dasari F/t NTU	Prof Bart Currie (MSHR)	Neutrophil response to <i>Burkholderia pseudomallei</i>
James Ponds F/t NTU	Prof David Brewster (NTCS); Ms Sue Hutton (MSHR)	Probiotic treatment of Aboriginal children with diarrhoeal disease: use of <i>E. coli</i> probes on stool

Students were enrolled through the Northern Territory University (seven) and the University of Sydney (five).



## Postgraduate research students continuing 2001-02

Name	Supervisor(s)	Title
<i>Doctor of Philosophy</i>		
Jillian Barclay (Newlands) P/t, University of Sydney	Dr Komla Tsey (UQ); Dr Barry Eley (Uni SA)	Royal Flying Doctor Service: The nurses' story
Craig Boutlis F/t, NTU	A/Prof Nicholas Anstey (MSHR/NTCS/RDH); Prof Bart Currie (MSHR/NTCS/RDH)	An investigation of mechanisms proposed to mediate anti-toxic immunity to malaria
Alan Cass F/t, University of Sydney	A/Prof Joan Cunningham (MSHR); Prof Wendy Hoy (MSHR/UQ);	Social determinants of end-stage renal disease
Allen Cheng F/t FUSA	Prof Bart Currie (MSHR/NTCS/RDH); A/Prof Nicholas Anstey (MSHR/NTCS/RDH)	Melioidosis and severe sepsis: epidemiology, pathophysiology and management
Alan Clough P/t, NTU	A/Prof Ross Bailie (MSHR/NTCS); Prof Bart Currie (MSHR/NTCS/RDH)	Health effects of heavy use of kava and alcohol in eastern Arnhem Land
John Condon F/t, NTU	Prof Tony Barnes (NTU/CRCATH); Prof Bruce Armstrong (Uni Sydney)	Health services and other factors affecting survival of Aboriginal people with cancer
Russell Gruen F/t, FUSA	A/Prof Ross Bailie (MSHR/NTCS); A/Prof Ian O'Rourke (RDH/NTCS); Dr Peter d'Abbs (MSHR/Queensland Health); Prof Jim Toouli (FMC)	Epidemiology, access and outreach: A population study of the delivery of surgical services to remote communities
Rowena Ivers F/t, NTU	A/Prof Ross Bailie (MSHR/NTCS); Dr Peter d'Abbs (MSHR/Queensland Health); Dr Robyn Richmond (UNSW)	Assessing the evidence for tobacco interventions for Indigenous people in the Northern Territory
Grant Mackenzie F/t FUSA	Dr Peter Morris (MSHR); Dr Amanda Leach (MSHR); Dr Jonathan Carapetis (RCH, Melbourne)	Impact of the conjugate pneumococcal vaccine on carriage, otitis media and herd immunity
Graeme Maguire F/t, University of Sydney	Prof Bart Currie (MSHR/NTCS/RDH); A/Prof Ross Bailie (MSHR/NTCS)	Optimising chronic lung disease care for Indigenous Australians
Elizabeth McDonald F/t, NTU	A/Prof Ross Bailie (MSHR/NTCS); Prof David Brewster (NTCS); Dr Gary Robinson (NTU)	The household: the key to the production of good health for Aboriginal children living in remote communities in the Top End of the Northern Territory
Stephen McDonald F/t, FUSA	Prof Wendy Hoy (MSHR/UQ); Prof Lindon Wing (FUSA)	Cardiovascular and renal disease in Aboriginal communities
Yin Paradies F/t, University of Melbourne	A/Prof Joan Cunningham (MSHR); Dr Jeannie Devitt (CRCATH); A/Prof Ian Anderson (Uni Melb)	Discrimination, stress and the health of Indigenous Australians
Gurmeet Singh F/t, University of Sydney	Prof Wendy Hoy (MSHR/UQ); Dr John Knight (Uni Sydney); Prof Kerin O'Dea (MSHR)	Early antecedents of renal disease in Aboriginal children
Danielle Smith F/t, FUSA	Dr Colin MacDougall (FUSA); Dr Jeannie Devitt (CRCATH); Prof Fran Baum (FUSA)	Community development and Indigenous health: A critical analysis of practice in remote Australia
Matthew Stevens F/t, NTU	A/Prof Ross Bailie (MSHR/NTCS); A/Prof Joan Cunningham (MSHR); A/Prof Gail Williams (UQ)	Socioeconomic and environmental determinants of health in Indigenous communities in the Northern Territory
Andrew White P/t, FUSA	Dr Wendy Hoy (MSHR/UQ); Dr John Knight (AKF)	Antecedents of renal and cardiovascular disease in Aboriginal children
<i>Master of Medicine (Research)</i>		
Louise Maple-Brown F/t, UNSW	Prof Kerin O'Dea (MSHR); Prof Don Chisholm (Garvan/UNSW)	Non-invasive assessment of vascular function: Impact of diabetes and dyslipidaemia
<i>Master of Public Health (Research)</i>		
Sreedevi Aithal P/t University of Sydney	Dr Al Yonovitz (MSHR/AHS); Dr Peter Morris (MSHR)	Otitis media and speech perception in cross-language context
Ventakesh Aithal P/t University of Sydney	Dr Al Yonovitz (MSHR/AHS); Dr Peter Morris (MSHR)	Binaural hearing in Aboriginal children

Students were enrolled through the Northern Territory University (nine), Flinders University of South Australia (seven), The University of Sydney (six), The University of New South Wales (one) and the University of Melbourne (one).

Postgraduate research students continuing 2001–02 *continued*

Name	Supervisor(s)	Title
<i>Master of Science</i>		
Armando Del Vecchio F/t NTU	Dr KS Sriprakash (MSHR/QIMR); Prof Bart Currie (MSHR/NTCS/RDH)	Molecular epidemiology of GAS virulence factors in invasive disease in the Northern Territory and south-west Sydney
Mandy Edwards F/t NTU	Dr KS Sriprakash (MSHR/QIMR); Prof Bart Currie (MSHR/NTCS/RDH); Dr Peter Fagan (MSHR/CRCATH); Prof David Gordon (FUSA)	Anti-attachment peptides: A novel therapeutic strategy to control group A streptococcal infection
Zinta Harrington F/t FUSA	Prof Bart Currie (MSHR/NTCS/RDH); Dr Jonathan Carapetis (RCH, Melbourne); Dr David Thomas (CRCATH)	Towards a diagnostic test for rheumatic heart disease
Jodie Low Choy P/t NTU	Prof Bart Currie (MSHR/NTCS/RDH); Dr Anton Janmaat (DIPE)	Veterinary aspects of melioidosis in the Northern Territory

Through an agreement with the University of Melbourne, MSHR was also involved in supervising the research training components of three advanced medical science students:

Name	Supervisor(s)	Title
Danielle Allen	Dr Andrew Bell (KWHB); A/Prof Ross Bailie (MSHR/NTCS)	Health status reports for Katherine West communities
Michael Fonda	Prof Kerin O'Dea (MSHR)	Physical activity in community-driven interventions
Matthew O'Brien	Prof Bart Currie (MSHR/NTCS/RDH)	Analysis of melioidosis serology over time

Further information on research training projects can be obtained from the MSHR website:  
<http://www.menzies.edu.au>

## Short courses

The organisation and delivery of short courses continues to be streamlined and improved. Three very successful and well attended short courses were offered during 2002:

### 1 Evidence-based health care (June 2002)

This was a collaboration between MSHR and the University of Queensland (Professor Paul Glasziou), Centre for Remote Health, Cooperative Research Centre for Aboriginal and Tropical Health, Northern Territory Department of Health and Community Services, and the Flinders University Northern Territory Clinical School. There were 24 participants.

### 2 Applied biostatistics with STATA (September 2002)

This was a collaboration between the Menzies School of Health Research (Dr Zhiqiang Wang) and the University of Queensland (Associate Professor Peter O'Rourke). There were 16 participants.

### 3 Aboriginal health economics (November 2002)

This was a collaboration between the Menzies School of Health Research and the Curtin University of Technology (Professor Gavin Mooney and Barbara Henry). There were 20 participants.

## Coursework teaching staff

**Prof Anthony Barnes**, Director, CRCATH.  
BSc Hons II (Birmingham), MSc (London).

**Assoc Prof Ross Baillie**, Associate Professor of Public Health, Menzies School of Health Research and Flinders University Northern Territory Clinical School.  
MBChB, MPhil (MCH), MD, MRNZCGP, FCCH (SA), FAFPHM.

**Ms Carol Beaver**, Director Health Economics Branch, NTDHCS.  
MSc Health Economics (York Uni UK), BEcon (NTU), GradDipMan (CIAE), DipAppSc Community Nursing.

**Ms Elaine Beller**, Director of Biostatistics, Queensland Clinical Trials Centre, University of Queensland.  
BSc, MAppStat.

**Prof David Brewster**, Director Maternal and Child Health, Royal Darwin Hospital, Clinical Dean, Flinders University Northern Territory Clinical School.  
BA Hons, MD, FRACP, MPH, PhD.

**Ms Louise Clark**, Senior Research Officer, MSHR, and Senior Policy Officer NTDHCS.  
RN, RM, BA, GradDipNurseEd, MTH (Qld).

**Dr John Condon**, NHMRC Scholar, MSHR.  
MBBS (Monash), MPH (Harvard), DTMH (London), Cert Health Economics (Monash), FAFPHM.

**Dr Christine Connors**, DMO, Public Health Coordinator, Darwin Rural Services, NTDHCS.  
MBBS (Monash), RACOG, CertFamilyPlanning, MPH (UNSW), FAFPHM.

**Dr Joan Cunningham**, Menzies Fellow, MSHR.  
AB Hons (Harvard), ALM (Harvard), ScD Epidemiology (Harvard), CertHealthEconomics (Monash).

**Dr Peter d'Abbs**, Northern Zone Management Unit, Qld Health, Senior Research Fellow, MSHR.  
BA Hons (Melb), MA (Exeter), PhD (Melb).

**Dr Kayte Evans**, Senior Lecturer, GP Education Research Unit, Flinders University Northern Territory Clinical School.  
MBBS, FRACGP, FASPHM, MPH (Sydney), MMedSci Clin Epi (Newcastle).

**Ms Beverley Hayhurst**, Health Promotion, NTDHCS.  
AdvDipTeaching, BEd, MPH, GradCertCommDev.

**Dr Fay Johnston**, Public Health Physician, Co-Lecturer MSHR.  
BMBS (Flinders), DipRACOG, DA (UK), MAppEpi (ANU), FACRRM, FAFPHM.

**Dr Paul Kelly**, Senior Research Fellow, MSHR and TB/Leprosy Medical Officer, NTDHCS and Coursework Program Coordinator.  
MBBS (West Aust), DA (UK), DTM&H (London), PhD (Sydney), FAFPHM.

**Dr Peter Markey**, Head, Surveillance Section, Centre for Disease Control, NT Dept of Health and Community Services and Honorary Senior Lecturer, Faculty of Medicine, Monash University, Melbourne.  
BMBS (Flinders), DA (UK), DTM&H (London), DRCOG (UK), MPH (Adelaide), FAFPHM.

**Mr Colin MacDougall**, Senior Lecturer and Course Coordinator, Master of Primary Health Care, Flinders University SA.  
BA Hons (Flinders), MA (Flinders).

**Dr Dorothy Mackerras**, Senior Lecturer, MSHR.  
BSc (Flinders), Dip ND (Flinders), MPH (Texas), PhD (Texas).

**Assoc Prof Peter O'Rourke**, Reader in Biostatistics, University of Qld.  
BSc Hons, BA Hons, PhD, GCED.

**Dr Bridie O'Reilly**, Public Health Coordinator/Senior Lecturer, Faculty of SITE, Northern Territory University.  
BBSoc Hons, PhD.

**Mr Yin Paradies**, PhD student, MSHR.  
BSc (NTU), MMedStats (Newcastle).

**Ms Sandi Pirozzo**, Senior Lecturer Epidemiology, University of Qld.  
BSc, MPH (UQ).

**Dr Gary Robinson**, Senior Lecturer, Department of Sociology, Northern Territory University.  
BA Hons (UNSW), PhD (UNSW).

**Ms Samantha Togni**, Senior Research Officer, MSHR.  
BA Hons, MA (UMelb).

**Dr Ram Vemuri**, Assoc Dean, School of Tourism and Hospitality, Senior Lecturer Economics, Northern Territory University.  
BEcs (UWA), MEcs (Bombay), PhD (Birmingham).

**Dr Zhiqiang Wang**, Senior Research Officer, Biostatistics, MSHR.  
PhD.

**Ms Carol Watson**, Co-Lecturer Consultant Planning and Evaluation Services.  
BSc, PhD.

**Dr Tarun Weeramanthri**, Community Physician, NTDHCS.  
MBBS (UWA), DTMH (London), FRACP, PhD (Syd), FAFPHM.

**Ms Robyn Williams**, Lecturer FATSIS, Northern Territory University and Centre for Remote Health.  
BA Hons Aboriginal Studies, RN, GradDipEd, MPRET.

## Indigenous Forum

The Indigenous Forum is part of a leading corporate strategy that promotes greater participation and collaboration with Indigenous people throughout the research process. The aim is to have optimal involvement in the design, conduct and participation in the research process. Indigenous employees, particularly in the research role, and strong linkages with the Indigenous community are part of what makes MSHR a unique research organisation.

Over the past 18 months forum members have continued to work on their respective MSHR and CRCATH projects, with some projects changing location. The build-up to the wet season also provides a challenge for workers to stay sane in the heat at remote locations.

Members have been involved in developing grant proposals with Aboriginal and Torres Strait Islander initiatives, with some successful grant proposals to be funded in 2003.

### PROJECT OFFICERS

**Norma Benger**, Interim Convenor  
Indigenous Forum, BA, CertHealthPromotions,  
Current studies: EME.

Norma is involved as a Project Officer on the CRCATH-funded Healthy Skin Project. The healthy skin scabies evaluation program in Kunbarllanjnja community ended in November 2002. The program has now moved to the Naiyu Nambiyu community in the Daly River region, to evaluate their healthy skin program, beginning in 2003.

As Interim Convenor, Norma is also an active member of MSHR's senior management team and of the Aboriginal Ethics Subcommittee.

**Loyla Leysley**, Aboriginal Health Worker,  
Bachelor Indigenous Primary Health Care.

Loyla Leysley has been working as a Research Assistant on the Healthy Skin Project with Christine Connors, Norma Benger and Melita McKinnon over the past 18 months. During her employment with the project, Loyla has done a lot of work on the scabies project at Oenpelli and was very involved with the BoBo Scabies Day, a one-off treatment day

involving the whole community. Loyla has built strong relationships, working with both the people and organisations within the community.

The acute rheumatic fever/heart disease project has been linked with the Healthy Skin Project, and Loyla has acted as a liaison officer for medical staff and patients from remote areas. Loyla was involved in patient follow-up throughout the Top End of the Northern Territory and Far North Queensland over a two-year period. She designed an educational tool — a storyboard with felt characters for patients aged from 6–12 years — to compliment the MSHR-produced educational booklets for acute rheumatic fever/rheumatic heart disease aimed at patients from the age of 13 to 20 years. This storyboard has been presented at health workshops, conferences and in-services throughout the Northern Territory.

**Melita McKinnon**, Project Officer,  
Healthy Skin Project; Technical Officer,  
Scabies Program

Melita is involved in laboratory-based scabies, melioidosis, snakes and jellyfish research. She has been working with the

Infectious Diseases Division of MSHR across a wide range of projects. Most recently she has been working for Dr Shelley Walton and Professor Bart Currie as a laboratory technician with the skin health and melioidosis programs, and has acquired skills in various immunology and molecular biology techniques. This work included the development and maintenance of a database for the scabies program.

Over the last year Melita has become increasingly involved in hospital and community liaison, and feedback with the Healthy Skin Project. In this role she has been responsible for educating people in the treatment and prevention of scabies, and obtaining informed consent from research participants. Melita is now taking a collaborative leadership role with Norma Benger in the community consultations for this program. Melita is also responsible for maintaining the snake and jellyfish collections for Bart Currie; this involves looking for nematocysts in skin taken from people who have been stung to identify the type of jellyfish responsible.

**Harold Ulamari**, Project Officer

Harold is working with Associate Professor Ross Ballie's research team on a variety of research projects. These include the Audit and Best Practice for Chronic Disease project (ABCD), the Housing Improvement and Child Health Study, and the third Environmental Health Survey (1999–2001). Most recently, Harold has been assisting Mary Beneforti to undertake the community consultation related to the water fluoridation project.

**Yin Paradies**, PhD Student (CRCATH), BSc MMedStats.

Yin's PhD is being conducted at MSHR through the University of Melbourne and is investigating the relationship between racism and the health for Indigenous Australians from a social and epidemiological perspective. Yin is also a member of the DRUID steering committee, the Australian Institute of Health and Welfare's child and youth health and well being information advisory group. He is the MSHR postgraduate student representative, and teaches in the public health coursework program. In addition, Yin is co-authoring the health chapter of the 'Macquire Atlas of Indigenous Australia' with Dr Maggie Brady.

**Skei Batton**, Project Officer, DRUID; CRCATH performance indicators

Skei joined the CRCATH as a project officer in November 2001 to work on the start up and implementation phase of the DRUID project. The submission for funding was unsuccessful in that year and so Skei was committed to various CRCATH projects, including preparation of a report to the Commonwealth on the incontinence project, in-kind financial reporting, qualitative and quantitative performance indicator reports and Management Data Questionnaire reporting. Each of these comprehensive sets of data were used as evidence of CRCATH outcomes for the successful CRAH resubmission. During this time Skei maintained her role as the DRUID project officer working on the establishment of the project and advocating for the appropriate levels of Indigenous employment on, and control of, the project. The DRUID resubmission for funding to the NHMRC in 2002 and an approach to the Vincent Fairfax Family



*Members of the Indigenous Forum, left to right: (standing) Mark Mayo, Yin Paradies and Joe Fitz; (seated) Geoffrey Angeles, Harold Ulamari, Norma Benger and Melita McKinnon (absent: Loyla Leysley and Katrina Hodson).*

Foundation were both successful, with the project set to commence recruitment early in 2003. Skei concluded her employment in December 2002.

**Geoffrey Angeles**, Research Assistant, BAppSc, short course in Aboriginal Health Economics (Nov 2002); Australian Indigenous Leadership Program (Dec 2002).

Geoffrey has been asked to join a team of Indigenous men to incorporate a Darwin Indigenous Male Health Reference Group for Darwin, the Top End and surrounding areas. This is a collaborative initiative by interested bodies and different (male) age groups, as a means of getting men's health on the agenda — much in line with women's health. The 'collaborators' are Indigenous men from: Menzies School of Health Research; National Heart Foundation; NT Department of Health and Community Services; Danila Dilba Health Service; ATSIC; Family Law and Children Services; FORWAARD; YWCA; Tamarind Centre; and others. Support has also been gained from men's groups in Alice Springs and MLAs John AhKit and Mathew Bonson. Geoffrey also assisted MSHR's ear team by narrating a training video on improved diagnostic and treatment procedures.

**Katrina Hodson**, Research Officer

Katrina is working with MSHR's ear team on their AATAAC project: Azithromycin Versus Amoxycillin in the Treatment of Acute Otitis Media in Aboriginal Children. The AATAAC project is due to begin in February 2003 and will be trialled at other communities in the future. The first AATAAC workshop was held in September 2002, and eager workers are looking forward to the project starting in their communities. Katrina has been developing a wall chart and flip chart to be used in clinics and a poster promoting the AATAAC project. In addition to her work on the AATAAC project, Katrina has been visiting the Tiwi Islands on a regular basis with the PRIORITI team. On these visits, she has been learning some clinical skills, including weighing babies, taking nose swabs, and examining ears.

## Finance and Administration Division

The past 18 months has been a very challenging time for the Finance and Administration Division. The majority of recommendations of the Strategic Advisory Group Review, Information Technology Review and the Michael Martin Administration and Financial Services Review have been implemented, with the remaining recommendations to be fully implemented by June 2003.



*David Morgan, Head of MSHR's Finance and Administration Division.*

THE MAIN FOCUS of the reviews' recommendations for the Finance and Administration Division was the implementation of a new Financial Management Information System (FMIS) and the Information Technology Redevelopment Project. Both projects required considerable effort and commitment on the part of staff involved. I am pleased to say that staff rose to the occasion and I commend every one of them for their dedication to the task of ensuring that the projects would be a success.

I would also like to pass on my special thanks to Mr Grant Lindsay, the Acting Associate Director, Finance and Administration, for the professional way that he managed the first stage of this strategic restructure of the Finance and Administration Division. Mr Lindsay left the employment of MSHR in November 2001 and I wish him well in his future endeavours.

With the near completion of these projects the Finance and Administration Division will now be providing support at a level that gives researchers the ability to better manage their research projects by having 'real time' access to financial information anywhere they have access to a computer and the internet. With over 100 full-time research and support staff operating throughout the Northern Territory, and at times in some South-East Asian countries, support at this level is critical to the operational effectiveness of the organisation.

### Finance and accounting section

With the total restructure of the Finance and Accounting Division over the last 18 months the issues of ensuring transparency and accountability are now firmly embedded in all financial operational activity. Part of this move to providing transparent, meaningful financial reports is reflected in the change to financial reporting policies whereby grant income is recognised as income in the year it is received and any surplus of revenue over expenditure is carried forward to the next year as a surplus. MSHR also changed its financial reporting year from that of 1 July–30 June to 1 January–31 December. A calendar financial year was adopted as most of the major providers of research funding, award funding on a calendar-year basis. Researchers can now obtain financial reports that better reflect income and expenditure patterns.

### Operations section

With the major restructuring process fully completed the operations section has been running smoothly since July 2001. The Operations Manager, Susan Hutton, is responsible for building, vehicle, laboratory, reception, client services and asset management, as well as building security, space and resource allocation.

The laboratory facility no longer has core-funded laboratory support positions and the majority of the tasks previously performed by the laboratory support officer and CRCATH lab-based trainee have been absorbed into our Senior Laboratory Technical Officer's duties. Joanne Bex currently holds the SLTO's position and is to be congratulated for her



*Sue Hutton, Operations Manager, refilling the liquid nitrogen cannisters.*

dedication and motivation. Other duties specific to various areas or equipment in the laboratory are performed by the laboratory staff on roster systems. On-line purchasing of laboratory consumables has been implemented; the major equipment purchase this financial year has been a liquid scintillation counter, part-funded with an NHMRC equipment grant.

Reception and Client Services is always extremely busy but has been capably managed by staff. Alison Frost (aka Ali McShop) and Ratih Sagung, our Junior Accountant, have been a wonderful team in the front office working together to present a happy welcome to visitors and callers. It was with great sadness that we farewelled the ever bubbly and effervescent Alison in early December. Sheree Marshall joined the team as a casual relief receptionist in October and Diane Stall will replace Alison in January 2003.

Asset Management has made the quantum leap from a manual to an electronic database on the Sun System which will no doubt please the auditors. Meeting room and vehicle bookings will now be possible using the newly installed Lotus Notes software. It is anticipated that building repair requests and stationery orders will come on-line in the near future.

## Human resources section

The human resources section has continued to consolidate and expand the range of services provided to MSHR project teams and workforce. A number of new initiatives have been introduced to provide more complete and up-to-date information to those responsible for the management of project teams. This will enhance MSHR's capability to attract, retain and manage key research personnel. Initiatives introduced include revised contract renewal processes, new formats for duty statements, new induction processes, salary packaging arrangements, revised performance review processes, and a reporting process to more effectively monitor contract renewals, salary and classification levels of existing personnel. This has been achieved in a period of continued growth and change of the MSHR workforce. During the year, 29 new contract personnel or scholarship recipients were recruited and inducted, and 29 personnel left MSHR to take up other opportunities. For the 2002 year employment expenses represented 62% of total expenditure.

Project	Objective	% Complete
Server, network and security architecture	Increase capacity, reliability and scalability to support new business and research systems and ensure business continuation	85%
Database strategy	Increase functionality, access and security for research and administration data; allow web-based interactions locally and in the field	90%
Standard desktop environment	Improve delivery of applications to the desktop and reduce support costs: <ul style="list-style-type: none"> <li>• Standard desktop applications and operating system</li> <li>• Standard desktop hardware</li> </ul>	100% 30%
Web services	Improve communication with collaborators using an innovative, interactive and adaptive framework	95%
Policy and governance	Institute formal ICT policies and procedures to advise staff of their responsibilities and protect investment	60%
Financial information management system	Streamline business processes and project reporting	100%
Print management strategy	Provide distributed, supported print, fax, scan and copy functions	100%

## Information technology section

The Information, Communications and Technology (ICT) Redevelopment project was initiated to provide a more effective and efficient computing environment to support research and education at MSHR and the CRCATH. After a full software and hardware audit and a detailed round of user interviews, seven projects (see above) were identified for implementation over two years. The last two of these projects have been discussed above.



*David Arthur, IT Systems Manager.*

The MSHR ICT Committee has been reformed to prioritise and review projects. As at December 2002, most projects have been completed or are nearing completion. In conjunction with the ICT Committee, the ICT section is now evaluating project outcomes and developing a strategic plan for the next three to five years.

The year's largest project was the implementation of a standard desktop environment across the organisation. This included the deployment of thin clients (which run software from a central server), both on-campus and remotely. Applications include a comprehensive messaging, calendaring and diary system and upgrades to research, office and administration products.

The redeveloped MSHR website will be deployed in May 2003. Special thanks go to Kathleen Graham from Keringke Arts for the use of her spectacular artwork.

Projects for the next six months include intranet development, implementation of a research administration system, desktop hardware contract and various software, network and security upgrades.

## Cooperative Research Centre for Aboriginal & Tropical Health



PHOTO: © PALM PHOTOGRAPHICS

Prof Lowitja O'Donoghue presented the MSHR Oration to an audience of 150 people at the Mirambeena Resort on 7 December 2001.

Menzies School of Health Research is a major partner in the Cooperative Research Centre for Aboriginal and Tropical Health, along with Danila Dilba Aboriginal Health Service, Central Australian Aboriginal Congress, the Northern Territory Department of Health and Community Services, Northern Territory University, and Flinders University of South Australia. This is an effective and productive research partnership that will have clear and positive outcomes for Aboriginal people and others living in Australia's tropics.

**THE DIRECTOR** of MSHR, Professor Kerin O'Dea, is a Board Member of the CRCATH and MSHR is the Centre Agent for the CRCATH. These links are strengthened by the collaborative approach of research teams.

Major efforts involving MSHR and the CRCATH include studies of:

- • • **MELIOIDOSIS**, with several academic papers and conference presentations at the World Melioidosis Congress in Perth and which have led to improved hospital practice
- • • **MALARIA**, with studies in Indonesia and Papua New Guinea, leading to improvements in management of the disease
- • • **OTITIS MEDIA**, in which several projects have improved understandings about managing middle ear infection and improving outcomes
- • • **RENAL DISEASE**, with CRCATH scholar Dr Alan Cass being awarded a Harkness Fellowship to continue developing understandings of the social and medical contexts of renal disease among Aboriginal people.
- • • **HEALTH-RELATED HOUSING AND INFRASTRUCTURE IN ABORIGINAL COMMUNITIES IN THE NT**, together with *Atlas of Health-Related Infrastructure in Discrete Indigenous Communities* and analyses of environmental health surveys of Aboriginal housing, has established itself as a powerful tool in the planning and implementation of housing and infrastructure programs.

The CRCATH has also developed substantial bodies of knowledge in other areas of Aboriginal health. Major publications in this period attest to the variety of activity supported by the centre, as well as its innovative nature:

- • • **'FORGETTING COMPLIANCE'**, exploring medical culture to understand why 'compliance' with treatment needs focusing away from the patient.
- • • **'INDIGENOUS AUSTRALIANS AND TOBACCO'**, examining the prospects for successful smoking control programs for Indigenous people.
- • • **EVALUATION OF THE 'CARPA STANDARD TREATMENT MANUAL' THIRD EDITION**, which has informed development of the fourth edition of the manual and promoted the inclusion of research findings from both MSHR and CRCATH projects, particularly in the management of chronic disease.
- • • **THE 'LINKS' MONOGRAPHS**, making a major contribution to the national debate over the relationship between Aboriginal people and the research community and pointing the way to institutional reform that will support Indigenous ownership of research.

The CRCATH's role in promoting the wider dissemination of research findings has helped promote MSHR activities, successfully targeting local, national and international media for news and feature coverage of research projects, as well as exploring new avenues for disseminating publications on research findings and conclusions.



It is also committed to an innovative education and training program that offers pathways to working in Aboriginal health research, from traineeships to postgraduate scholarships, particularly targeting Aboriginal people.

A major focus of activity for much of the past 12 months was the CRCATH's successful fifth-year review. The review presentation, led by CRCATH Director Professor Tony Barnes, Deputy Director Terry Dunbar and Professor Ian Anderson, highlighted the innovative and collaborative approach of the CRCATH.

Professor O'Dea joined other core partner representatives in underlining the success of the collaboration, and senior CRCATH researchers, among them Professor Bart Currie and Associate Professors Joan Cunningham and Ross Bailie, explained the research agenda and its key outcomes.

The review was followed later in the year by an equally successful bid for a further seven years' funding under the Commonwealth Government's Cooperative Research Centres program, which **has attracted more than \$20 million from the Commonwealth alone over the life of the new CRAH.**

The refunding proposal involved negotiating the new roles and research themes of the proposed CRC for Aboriginal Health with existing and prospective core partners and then arguing the case for refunding through a business plan and a further presentation to a specially convened Resubmission Panel.

The CRC for Aboriginal Health will involve the CRCATH's existing core partners with six new core partners in Queensland, Melbourne and Latrobe universities, the Australian Institute of Aboriginal and Torres Strait Islander Studies, the Queensland Institute of Medical Research and the Commonwealth Department of Health and Ageing.

Batchelor Institute of Indigenous Tertiary Education, Northern Territory Department of Employment, Education and Training, Northern Territory Department of Community Development, Sport and Cultural Affairs, the Institute of Child Health Research, the Commonwealth Department of Family and Community Services, and the Aboriginal and Torres Strait Islander Commission will be supporting partners.

The CRC for Aboriginal Health will be national in its scope and will direct a refined focus on the social determinants of ill health among Aboriginal people, as well as health systems research. It offers MSHR the exciting opportunity to continue the collaborative and cross-disciplinary exploration of how to improve health systems and processes, and to investigate the extent to which different solutions may work in Aboriginal contexts.



PHOTO: DAVID HANCOCK

*CRCATH Board (from left to right) are Ms Pat Anderson, Prof Charles Webb, Ms Kez Hall, Prof Tony Barnes, Prof Lowitja O'Donoghue (front) (Chairperson), Ms Terry Dunbar, Mr Charles Tipungwuti, Dr David Ashbridge, Ms Veronica Arbon and Prof Kerin O'Dea.*

## Refereed journal articles

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# Research funding

1 July 2001–31 December 2002

## New research support

Funder	Administering body	Investigator	Title	Years funded	\$pa
Australian Health Ministers' Advisory Council	MSHR	Baillie RS; Weeramanthri TS; Cunningham J; Connors C	Community health centre organisation and quality of care for the prevention and management of chronic disease	1/01/2002–31/12/2006	\$99,000.00 \$100,000.00 \$100,000.00 \$100,000.00
Australian Health Ministers Advisory Council AHMAC PDR 2001/07	MSHR	Daniel M; O'Dea K; Rowley K	Psychosocial impact indicators as effect modifiers of behavioural and biochemical outcomes in Aboriginal diabetes prevention programs	1/01/2002–31/12/2004	\$100,000.00 \$100,000.00 \$100,000.00
Cardio Vascular Lipid (Pfizer)	MSHR	Maple-Brown L	Non-invasive assessment of vascular function in a remote Indigenous community: Impact of diabetes and dyslipidaemia	1/01/2003–31/12/2003	\$49,542.00
Channel 7 Children's Research Foundation (SA)	MSHR	Sriprakash KS	Molecular dissection of a streptococcal attachment protein which may be associated with invasive diseases	1/07/2001–30/06/2002	\$38,000.00
Channel 7 Children's Research Foundation (SA)	MSHR	Sriprakash KS	Molecular dissection of a streptococcal attachment protein which may be associated with invasive diseases (year two)	1/07/2002–30/06/2003	\$40,000.00
Channel 7 Children's Research Foundation (SA)	MSHR	Walton SF; Currie BJ	Prevention and control of scabies in children: Monitoring for emerging resistance to current treatments in endemic communities in northern Australia	1/07/2001–30/06/2002	\$45,000.00
Community Health & Anti-Tuberculosis Association	MSHR	Leach AJ; Smith-Vaughan HC; Baillie RS; Morris PS; Puruntatameri M	Improved hygiene measures for reduced infection in Australian Aboriginal children: A randomised controlled trial	1/01/2002–31/12/2002	\$48,424.00
Community Health & Anti-Tuberculosis Australia	MSHR	Kelly P; Anstey NM; Maguire GP	The Mimika Pulmonary Disability in TB Patients Study	1/01/2003–31/12/2004	\$43,267.00
CRCATH PH-0098	MSHR	Baillie RS	Socio-economic and environmental determinants of health in Indigenous communities in the NT	1/07/2001–30/06/2003	\$67,658.00 \$66,338.00
Diabetes Australia Research Trust	MSHR	Maple-Brown L	Non-invasive assessment of vascular function in urban Indigenous Australians: Impact of diabetes and dyslipidaemia.	1/01/2003–31/12/2003	\$30,000.00
Eli Lilly	MSHR	Maple-Brown L	Non-invasive assessment of vascular function in a rural Indigenous community: Impact of diabetes and dyslipidaemia.	1/01/2003–31/12/2003	\$21,769.00
Indigenous Housing Authority of the NT (IHANT)	MSHR	Baillie RS	Pilot study on the impact of improved infrastructure on child health in remote communities	1/01/2002–31/12/2002	\$20,000.00
Mayne Bequest Fund	QIMR	Good MF; Sriprakash KS; Shannon C; Currie BJ	Development of a group A streptococcus vaccine for the Australian Aboriginal population	1/09/2001–31/08/2002	\$38,000.00
NHMRC	MSHR		<i>Equipment</i>	1/07/2001	\$45,000.00
NHMRC 193303	MSHR	Sriprakash KS; Currie BJ; Walker MJ	prtFII, a <i>Streptococcus pyogenes</i> fibronectin-binding protein, and invasive diseases	1/01/2002–31/12/2004	\$147,500.00 \$148,270.00 \$147,500.00
NHMRC 193306	MSHR	Morris PS; Leach AJ; Smith-Vaughan HC; Puruntatameri M	Judicious use of antibiotics for acute otitis media in Aboriginal children: A multi-centre clinical trial	1/01/2002–31/12/2004	\$220,000.00 \$206,650.00 \$185,000.00
NHMRC 193316	MSHR	Wang Z; Hoy WE	Body mass index and mortality in Aboriginal Australians in Northern Territory: A cohort study	1/01/2002–31/12/2003	\$91,000.00 \$45,110.00
NHMRC 193317	MSHR	d'Abbs PH; Gray DA	The policy response to Indigenous petrol sniffing — and how to improve it	1/01/2002–31/12/2003	\$55,000.00 \$50,330.00
NHMRC 193321	MSHR	Paradies YC	<i>Scholarship</i> : Discrimination, stress and the health of Indigenous Australians	1/01/2002–31/12/2004	\$19,214.00 \$19,214.00 \$19,214.00

Funder	Administering body	Investigator	Title	Years funded	\$pa
NHMRC 193322	FUSA	Mackenzie G	<i>Scholarship</i> : The impact of a conjugate pneumococcal vaccine on pneumococcal carriage, antibiotic resistance, and otitis media in Aboriginal children	1/01/2002–31/12/2004	\$27,793.00 \$27,793.00 \$27,793.00 \$27,793.00
NHMRC 193324	MSHR	Cheng AC	<i>Scholarship</i> : Melioidosis and severe sepsis in the Northern Territory: Epidemiology, pathophysiology and management	1/01/2002–31/12/2004	\$27,793.00 \$27,793.00 \$27,793.00
NHMRC 193325	MSHR	McDonald EL	<i>Scholarship</i> : Preventing scabies and promoting health in Aboriginal communities in Northern and Central Australia	1/01/2002–31/12/2004	\$19,214.00 \$19,214.00 \$19,214.00
NHMRC 193335	MSHR	Koops JA	<i>Scholarship</i> : Diploma of Indigenous Primary Health Care (specialising in nutrition)	1/01/2002–30/06/2003	\$19,214.00
NHMRC 212044	University of WA	Lehmann D; Riley T; Leach AJ	Otitis media in Indigenous and non-Indigenous children: Microbiological and immunological risk factors	1/01/2002–31/12/2004	\$192,500 \$197,500 \$140,000
NHMRC 219204/ OH047	MSHR	Baillie RS; Spencer AJ	Fluoridation of water supplies in remote Indigenous communities in the Northern Territory: Requirements, feasibility and cost-effectiveness	1/06/2002–31/05/2004	\$33,321.00 \$21,744.00 \$17,494.00
NHMRC 219252	MSHR		<i>Equipment</i>	1/06/2002–31/05/2003	\$28,000.00
NHMRC 236204	MSHR	Cass A; Cunningham J; Snelling P; Devitt J; Erris J; Horvath J	IMPAKT: Improving Indigenous Australians' access to kidney transplantation	1/01/2003–31/12/2005	\$94,750.00 \$171,000.00 \$161,000.00
NHMRC 236205	MSHR	Baillie RS; Robinson GW; Brewster DR; Guthridge S; Wang Z	The impact of household infrastructure improvements on child health in remote Aboriginal communities.	1/01/2003–31/12/2005	\$186,500.00 \$176,500.00 \$32,500.00
NHMRC 236207	MSHR	Cunningham J; O'Dea K; Zimmet P; Anderson P; Weeramanthri TS; Dunbar TE	The DRUID Study: Diabetes and related disorders in urban Indigenous people in the Darwin region.	1/01/2003–31/12/2005	\$918,500.00 \$158,750.00 \$196,550.00 \$196,550.00 \$205,900.00
NHMRC 236210	MSHR	Maguire GP	Selective use of long-term antibiotics for chronic lung obstructive disease in Aboriginal adults: A multi-centre trial	1/01/2003–31/12/2005	\$117,500.00 \$191,500.00 \$118,500.00
NHMRC 236211	MSHR	Smith-Vaughan HC; Jacques NA; Leach AJ; Nakarni M; Hunter N	Implications of bacterial load for vaccine efficacy and antibiotic treatment outcomes in high-risk populations	1/01/2003–31/12/2004	\$165,000.00 \$165,000.00
NHMRC 236212	MSHR	Anstey NM	<i>Practitioner Fellowship</i> : Pathophysiology and treatment of malaria and other tropical infectious diseases in our region	1/01/2003–31/12/2007	\$89,425.00 \$89,425.00 \$89,425.00 \$89,425.00
NHMRC 236216	MSHR	Currie BJ; Inglis TJ; Norton R; Mayo MJ; Sriprakash KS	Molecular epidemiology of melioidosis in Australia	1/01/2003–31/12/2005	\$100,000.00 \$125,000.00 \$115,000.00
NHMRC 236218	MSHR	Smith-Vaughan HC; Leach AJ; Kelly P	Pneumococcal surveillance in the Northern Territory: Implications of vaccination and mass treatment programs	1/01/2003–31/12/2005	\$117,500.00 \$180,000.00 \$218,750.00
NHMRC 236227	MSHR	Maple-Brown L	<i>Scholarship</i> : Non-invasive assessment of vascular function in urban, rural and remote-dwelling Indigenous Australians: Impact of diabetes and dyslipidaemia	1/07/2003–30/06/2004	\$28,432.00 \$28,432.00
NHMRC 236228	MSHR	Kowal E	<i>Scholarship</i> : Assessing change in public health research: An ethnography of an Indigenous public health research institution	1/01/2003–31/12/2005	\$28,432.00 \$28,432.00 \$28,432.00
NHMRC 236230	MSHR	Stevens M	<i>Scholarship</i> : Socio-economic and environmental determinants of health in Indigenous communities in the NT	1/01/2003–31/12/2005	\$19,659.00 \$19,659.00
NHMRC 251690	University of Melbourne	Carapetis JR; Currie BJ	Can skin infection with group A streptococcus cause acute rheumatic fever?	1/01/2003–31/12/2005	\$146,500.00 \$146,500.00 \$146,500.00
NHMRC NIDS042	MSHR	Clough A; Gray DA; Parker R; d'Abbs PHN	Heavy cannabis use in two remote Aboriginal communities: Prospects for a population-based intervention	1/07/2001–30/06/2004	\$108,564.00 \$110,564.00 \$82,686.00
National Heart Foundation of Australia	MSHR	Mackerras D; Turner C; Chinna K; O'Dea K; Rae C	<i>Feasibility study</i> : Potential cost saving to the health system in reducing chronic disease in Aboriginal and Torres Strait Islander populations by improving nutritional intake	1/01/2002–31/12/2002	\$15,000.00
National Heart Foundation of Australia PB 02M 0996	MSHR	McDonald M	<i>Scholarship</i> : Towards a new prevention strategy for rheumatic fever: The role of streptococcal skin infection in the pathogenesis of rheumatic heart disease	1/01/2003–31/12/2003	\$27,882
National Heart Foundation of Australia PA 02D 0913	MSHR	Brimblecombe J	<i>Scholarship</i> : A framework for the development, implementation and dissemination of sustainable health interventions for Indigenous Australians	1/01/2003–31/12/2005	\$20,203.00 \$20,203.00 \$20,203.00



Funder	Administering body	Investigator	Title	Years funded	\$pa
National Institutes of Health	MSHR	Anstey NM; Tjitra E; Weinberg JB	Bridging grant: Nitric oxide and severe malaria	1/09/2002–31/8/2003	US \$137,000
NT Dept Health & Community Services	MSHR	Mackerras D; Clark L	Quality audit of the GAA system	1/7/2002–31/06/03	\$88,000.00
Office of Aboriginal & Torres Strait Islander Health (OATSIH)	NTU	Robinson GW; Baillie RS; Togni S	Post-transition year local evaluation, Tiwi Coordinated Care Trial	1/07/2001–30/06/2002	\$53,235.00
Territory Housing	MSHR	Baillie RS	Environmental Health Survey Year 2 Evaluation	1/07/2001–1/03/2002	\$25,000.00
Vincent Fairfax Family Foundation	MSHR	O'Dea K; Cunningham J; Weeramanthri TS; Anderson P; Dunbar TE	Diabetes and related disorders in urban Indigenous people in the Darwin region: Reducing the risk	1/01/2003–31/12/2006	\$96,040.00 \$110,120.00 \$115,500.00 \$87,900.00

## New education support

Funder	Administering body	Investigator	Title	Years funded	\$pa
Commonwealth Dept of Health & Ageing (PHERP)	MSHR	O'Dea K; Kelly P; Baillie RS	Public health education and training in the Northern Territory: A focus on Indigenous and remote health	1/07/2001–30/12/2003	\$187,500.00 \$184,500.00 \$186,000.00
Commonwealth Dept of Health & Ageing (PHERP)	MSHR	O'Dea K; Mackerras D	Advanced study and training in public health nutrition	1/07/2001–31/12/2003	\$53,860.00 \$54,140.00 \$54,000.00
Commonwealth Dept of Health & Ageing (PHERP)	MSHR	Baillie RS; Kelly P; Barnes A	Development of a course on social determinants and Indigenous health	15/10/2002–31/12/2004	\$76,368.00 \$20,196.00 \$20,196.00

## Continuing support

Funder	Administering body	Investigator	Title	Years funded	\$pa
Australasian College of Dermatologists	MSHR	Currie BJ	Networked dermatology training/research position	1/01/2001–25/02/2003	\$45,000.00 \$45,000.00
Australian Brewers' Foundation	MSHR	d'Abbs PH; Togni S	The Northern Territory Living With Alcohol Program 1991–2000: A policy analysis	1/03/2001–31/12/2001	\$37,200.00
Colonial Foundation	MSHR	Hoy WE	Renal research	1/01/2001–31/12/2003	\$300,000.00 \$300,000.00 \$300,000.00
Commonwealth Dept Health & Family Services	NTU	Robinson GW; Baillie RS	Tiwi Coordinated Care Trial transition phase evaluation	1/01/2000–31/12/2001	\$75,000.00 \$75,000.00
Commonwealth Dept Health & Family Services	MSHR	d'Abbs PH; Togni S; Baillie RS	Katherine West Coordinate Care Trial transition phase evaluation	1/01/2000–31/12/2001	\$94,500.00 \$94,500.00
Dept Industry, Science & Resources	University of Wollongong	Walker MJ; Sriprakash KS; Ranson MR; McArthur JD; Currie BJ; Chhatwal GS	Development of novel vaccines and therapies to prevent infection by the flesh-eating bacterium, <i>Streptococcus pyogenes</i>	1/01/2000–1/06/2002	\$13,500.00
NHMRC 008120/22799Y	MSHR	Boutlis C	<i>Scholarship</i> : The role of nitric oxide in clinical immunity to <i>Plasmodium falciparum</i> and <i>Plasmodium vivax</i>	1/01/2000–30/11/2002	\$25,497.00 \$27,255.00 \$13,782.00
NHMRC 008502/11516D	MSHR	Ivers R	<i>Scholarship</i> : Tobacco programs for Indigenous people in the Northern Territory	1/01/2000–31/03/2002	\$25,497.00 \$13,515.00
NHMRC 100009	MSHR	Baillie RS; Edmond K; Leach AJ	Improved hygiene measures for Australian child-care centres: A randomised controlled trial	1/01/2000–31/12/2002	\$63,743.00 \$345,023.00 \$31,807.00
NHMRC 100010	MSHR	Baillie RS; Leach AJ	Amoxycillin for persistent nasal discharge in rural and remote Aboriginal children: A randomised controlled trial	1/01/2000–31/12/2001	\$185,173.00 \$41,565.00
NHMRC 124317	MSHR	O'Dea K; Giles G; Hodge AM; Rowley K; Sinclair AJ	Predictors of cardiovascular disease mortality in the Melbourne Collaborative Cohort Study	1/01/2000–31/12/2002	\$111,619.00 \$116,671.00 \$122,254.00

## CONTINUING SUPPORT continued

Funder	Administering body	Investigator	Title	Years funded	\$pa
NHMRC 124319	MSHR	O'Dea K; Rowley K; McDermott R; Lee AJ; Daniel M; Simmons D; Anderson I	Community-based interventions to reduce the risk of diabetes and cardiovascular disease in Indigenous Australians	1/01/2000–31/12/2004	\$346,364.00 \$364,364.00 \$372,380.00 \$405,835.00 \$357,822.00
NHMRC 137203	MSHR	Sayers SM; Wang Z	Analysis of perinatal influences on Aboriginal child health and potential markers of chronic adult disease	1/01/2001–31/12/2003	\$75,000.00 \$76,035.00
NHMRC 137205	MSHR	Kemp DJ; Walton SF; Currie BJ	Antigens, allergens and immune responses to normal and crusted scabies	1/01/2001–31/12/2003	\$100,000.00 \$100,380.00 \$100,828.00
NHMRC 137206	MSHR	Walton SF; Kemp DJ	Genetic variation and host-parasite interactions of <i>Sarcoptes scabiei</i>	1/01/2001–31/12/2003	\$97,500.00 \$98,328.00 \$98,328.00
NHMRC 139052	University of WA	Inglis TJ; Norton R; Currie BJ	An investigation into the importance of potable water as a source of melioidosis in Northern Australia	1/01/2001–31/12/2003	\$120,000.00 \$120,000.00 \$120,000.00
NHMRC 1999/033824	MSHR	Leach AJ; Yonovitz A; Koops H; Mathews JD	Improving medical services for rural and remote Aboriginal children with chronic suppurative otitis media	1/06/2000–30/05/2003	\$90,133.00 \$90,133.00 \$90,133.00
NHMRC 219175	QIMR	Kemp DJ; Walton SF; Speed T; Currie BJ	Gene discovery for the scabies mite <i>Sarcoptes scabiei</i>	1/01/2001–31/12/2003	\$529,100.00 \$519,750.00 \$60,500.00
NHMRC 980435	MSHR	Leach AJ; Yonovitz A; Morris PS; Mathews JD	Aetiology, treatment and prevention of Aboriginal otitis media	1/01/1998–31/12/2001	\$230,322.00 \$224,017.00 \$202,851.00
NHMRC 987576/11990C	MSHR	Maguire GP	<i>Scholarship: Haemophilus influenzae</i> in suppurative lung disease	1/01/1998–30/06/2002	\$25,827.00 \$25,497.00 \$25,913.00 \$13,516.00
NHMRC 990498	Monash University	Bertram J; Hoy WE	Glomerular number and size in Australian Aborigines and African Americans	1/01/1999–31/12/2001	\$74,222.00 \$88,321.00 \$93,301.00
NHMRC 990758	QIMR	Sriprakash KS; Kemp DJ; Bowden FJ	Development of molecular diagnostics for the detection of donovanosis ( <i>Granuloma inguinale</i> )	1/01/1999–31/12/2001	\$58,893.00 \$55,866.00 \$59,268.00
NHMRC 990975	MSHR	Sriprakash KS; Currie BJ; Myers G	Factors influencing the epidemiology and virulence of the agent of melioidosis, <i>Burkholderia pseudomallei</i>	1/01/1999–31/12/2001	\$65,421.00 \$68,783.00 \$72,532.00
NHMRC 9936609	University of Wollongong	Walker MJ; Sriprakash KS; Currie BJ	Development of mucosal anti-adhesive vaccines against group A streptococcus	1/01/1999–31/12/2001	\$93,586.00 \$97,840.00 \$102,350.00
NHMRC 997027/16253K	MSHR	Morris PS	<i>Training Fellowship: Understanding generalisability: How to get the most out of Cochrane reviews on the use of antibiotics in children with respiratory disease in rural and remote Aboriginal communities?</i>	1/07/1999–30/06/2003	\$19,720.00 \$60,632.00 \$63,708.00 \$66,806.00 \$43,193.00
NHMRC 997509/12491K	MSHR	Condon J	<i>Scholarship: Health services and other factors which affect cancer survival in Aboriginal people in the Northern Territory</i>	1/01/1999–1/06/2003	\$25,497.00 \$5,580.00 \$27,255.00 \$20,333.00 \$14,099.00
National Heart Foundation of Australia G 00M 0671	University of Melbourne	Carapetis JR; Robins-Browne RM; Currie BJ	Towards a diagnostic test for rheumatic fever: B cell alloantigens in Aboriginal Australians	1/01/2001–31/12/2002	\$34,200.00 \$34,200.00
National Institutes of Health	MSHR	Anstey NM; Tjitra E; Weinberg JB	Nitric oxide and severe malaria	1/09/1997–31/08/2002	\$136,414.00 \$143,937.00 \$138,651.00 \$144,977.00 \$150,776.00
Ramaciotti Foundations RA024/99	MSHR	Walton SF; Morahan G	Defining the protective immune responses to scabies	1/01/2000–31/12/2001	\$12,000.00 \$0.00
Rio Tinto Aboriginal Foundation	CRCATH	Mayo MJ	<i>Indigenous scientist/Researcher Fellowship</i>	1/03/2001–31/12/2002	\$30,000.00
The Menzies Foundation	MSHR	Cunningham J	<i>Menzies Fellowship</i>	1/07/2000–30/06/2002	\$100,000.00 \$100,000.00
The Wellcome Trust 059475	MSHR	Anstey NM; Sriprakash KS; Leach AJ; Kemp DJ; Mathews JD	<i>Equipment: Enterprise-3500 Server Package</i>	1/01/2000–30/06/2002	\$136,351.00 \$44,975.00 \$47,388.00
Wyeth Australia Pty Ltd	CRCATH	Morris PS; Leach AJ	Impact of conjugated pneumococcal vaccine on perforation rates in a high-risk population: A before and after study	1/03/2001–28/02/2004	\$260,826.00 \$225,619.00 \$231,787.00

## CRCATH support

Project no.	Project leader	Project	Date started	Date due	Funding	Total funding	Status
B012	Bart Currie	Immunology of infectious diseases	1990	1993	CRCATH	\$214,459.30	current
B013	Bart Currie	Simple test for group B streptococcus in labour	1999	2001	CRCATH	\$108,541.70	completed
B145	KS Sriprakash	Molecular dissection of prtF2, a fibronectin-binding protein	Oct 2001	July 2003	in-kind		current
B146	KS Sriprakash	Identification and immunological characterisation of surface proteins from group A streptococci for vaccine purposes	Oct 2001	Dec 2003	in-kind		current
C095	Joan Cunningham	Placing indigenous mortality in an international context	June 2000	Feb 2002	in-kind		completed
C117	Ross Ballie	Atlas of Health-Related Infrastructure in Discrete Aboriginal Communities	Dec 2000	Sept 2002	ATSIC	\$103,800.00	completed
C137	Yin Paradies	Demographic issues presentation to Commonwealth Grants Commission	June 1999	Sept 2001	NT Treasury	\$4,100.00	completed
C185	Nea Harrison	HealthConnect evaluation trial	Nov 2002	Jun 2003	DoHA	\$169,800.00	current
D081	Peter Morris	Acute otitis media in Aboriginal children: A video study	Apr 2000	2003	in-kind		current
D148	Zinta Harrington	B cell antigens as a marker of susceptibility to acute rheumatic fever	Nov 2001	Dec 2003	CRCATH		current
D164	Emma Kowal	Yalu theories of transformation	Apr 2002	2003	CRCATH	\$78,586.00	current
H147	John Condon	Delays in diagnosis			Cancer Council	\$25,000.00	
H175	Dorothy Mackerras	Potential cost saving to the health system in reducing chronic disease in Aboriginal and Torres Strait Islander populations by improving nutritional intake	Aug 2002		National Heart Foundation	\$15,000.00	
P039	Amanda Leach	Antibiotic treatment: Middle ear	Jun 1998	Dec 2001	in-kind		completed
P044	Bart Currie	Adverse health effects of excessive kava and alcohol use in Aboriginal communities	Jun 1998	April 2002	in-kind		completed
P067B	Fiona Russell	Informed consent: A pilot study on the quality of informed consent material given to Aboriginal participants	Jan 2001	Feb 2002	SmithKline Beecham	\$30,000.00	completed
P129	Joan Cunningham	Investigating sports indicators for Indigenous sport and recreation program	May 2001	Jan 2003	Active Australia	\$74,000.00	completed
P136	John Wakerman	Achievements in Aboriginal and Torres Strait Islander health	Dec 2000	Oct 2002	DoHA	\$151,400.00	completed
P140	Joan Cunningham	Indigenous home ownership study	July 2001	Dec 2002	ATSIC	\$29,900.00	completed
P119	Amanda Leach and Peter Morris	The impact of conjugated pneumococcal vaccine on pneumococcal carriage	July 2001	May 2004	Wyeth	\$956,000.00	current
P155	Amanda Leach	Pneumococcal vaccine (PRIORITI)	Dec 2001		Wyeth	\$240,200.00	current

# Staff list

1 July 2001–31 December 2002

## MSHR STAFF LIST

Name	Qualifications	Position	Start	End
ADAMS Amica	-	Casual Project Assistant	6/8/2002	28/8/2002
ALBION Jill	-	Reseach Administration Officer	1/10/2001	-
AMAGULA Mary	-	Casual Project Assistant	-	18/9/2001
ANGELES Geoffrey	BAppSc	Research Assistant	-	-
ANSTEY Nicholas	MBBS(Hons), FRACP, MSc, DTM&H, PhD	Senior Research Fellow	-	-
ARNOLD Lauren	-	Lecturer	12/9/2001	10/7/2002
ARTHUR David	BSc	IT Manager	-	-
BAILIE Ross	MBChB, MPhil(MCH), MD	Assoc Prof: Head Research Development	-	-
BASSETT Margarita	-	Accounts Officer	-	-
BEAVER Carol	-	Casual Lecturer	-	-
BEISSBARTH Jemima	BSc	Technical Officer	-	-
BENEFORTI Mary	BA, BBus, GradDipSecondaryEd	Senior Project Officer	19/11/2001	-
BENGER Daniel	-	Casual Project Assistant	31/10/2001	19/12/2001
BENGER Jasmine	-	Casual Project Assistant	11/12/2001	19/12/2001
BENGER Norma	CertHealthProm	Interim Head Indigenous Forum	-	-
BETTISON Pam	BEd(Sec), DipT(Commerce)	Research Assistant	10/10/2001	9/1/2002
BEX Joanne	-	Laboratory Technical Officer	-	-
BOURCHIER Michael	-	Casual Research Academic	27/3/2002	-
BOVEINGTON Ruth	CertLabTech, CertBasicSecretarial	Administrative Assistant, Malaria/TB	-	-
BRIMBLECOMBE Julie	BSc, DipNutr&Diet, MPH	Project Officer	-	-
BURKE Tracey	-	Research Administration Officer	-	-
CAIRNEY Sheree	BAppSc	Casual Research Assistant	28/9/2001	-
CARSON Bronwyn	-	Research Assistant	5/7/2001	-
CHENHALL Richard	PhD, BA(Hons)	Public Health Educator	5/9/2002	-
CLARK Louise	RN, RM, BA, DipEd, MTH	Senior Research Officer	-	-
CLOUGH Alan	BSc(Hons), MSc, DipEd	Senior Research Officer	-	-
CRUTE Nicole	CertTEFL	Executive Administration Officer	30/7/2001	-
CUNNINGHAM Joan	Scd, ALM, AB, CertHealthEconomics	Assoc Prof: Head Population Health and Chronic Diseases	-	-
CURRIE Bart	MBBS, FRACP, FAFPHM, DTM&H	Professor: Head Infectious Diseases	-	-
D'ABBS Peter	BA(Hons), MA, PhD	Senior Research Fellow	-	30/6/2002
DASARI Pallave	BSc(Med)(Hons)	Research Assistant	3/2/2002	5/7/2002
DEL VECCHIO Armando	AssocDipPodiatry, BSc(Hons)	Technical Officer	-	16/1/2002
DEL VECCHIO Rueben	-	Casual Administration Assistant	24/10/2001	19/12/2001
DOUGALL Annette	Bsc(Hons)	Research Assistant	-	-
DUNNE Karin	Enrolled Nurse	Project Officer	-	-
EDWARDS Mandy	BAppSc(Biotechnology)	Technical Officer	-	-
FALLS Gabrielle	-	Senior Research Administrator	-	-
FERNANDO Sylvester	-	Casual Project Officer	-	30/10/2001
FITZ Joseph	CertProjectOfficer	Project Officer	-	-
FLYNN Kath	BNurs(RN), Commercial Pilot	Project Assistant	29/8/2002	-
FOWLER Penny	-	Executive Secretary	-	27/7/2001
FRASER David	BA(Hons), Msc, PhD	Research Officer	13/9/2001	28/2/2002
FROST Alison	-	Receptionist	17/12/2001	11/12/2002
GADIL Edna	MD	Project Officer	-	-
GAL Daniel	BSc(Hons)	Research Assistant	-	-
GRAY Estelle	BSc(Hons)	Technical Officer	-	21/12/2001
HAMILTON Elizabeth	RN	Project Officer	-	9/11/2002
HARE Kim	BSc(Hons), GradDipEd, DipDatametrics	Technical Officer	-	-
HARRINGTON Brooke	-	Technical Assistant	-	-
HODSON Katrina	-	Indigenous Research Officer	-	-
HOFFMANN Benjamin	PhD	Research Officer	-	11/12/2001
HOUSE Tony	BMath & CompSc	IT Manager	-	24/12/2001
HUCK Jill	BSW, MSocPol	Chairperson, Human Research Ethics Committee	18/2/2002	-
HUTTON Steven	-	Casual Laboratory Assistant	2/7/2002	23/10/2002

Name	Qualifications	Position	Start	End
HUTTON Susan	MSc(Med), MASM	Operations Manager	-	-
JOHNSON Judith	-	Payroll Officer	-	-
KATONA Mai	BA(Sociology/Admin), DipEd	Aboriginal Health Unit Manager	-	31/8/2001
KELLY Angela	BHSC(RN)	Community Coordinator	21/11/2001	19/12/2001
KELLY Paul	MBBS, DTM&H, DA(UK), PhD, FAFPHM	Head Education and Training	-	-
KING Jann	-	Laboratory Support Officer	-	31/10/2001
KIRK Dianne	BSc(Biol), MSc(Biol)	Technical Officer	-	15/10/2001
LALARA Paul	-	Casual Project Assistant	-	10/10/2001
LANGENBERG Herpurbasanti	-	Casual Materials Development Assistant	30/5/2002	-
LANGENBERG William	-	Human Resources Manager	13/8/2001	-
LANGLANDS Audrey	-	MPH Administrative Assistant	-	-
LEACH Amanda	BAGSc(Hons), MAgSc, PhD	Senior Research Officer	-	-
LEACH Seija	-	Project Assistant	-	-
LEE Tara	-	Research Assistant	19/4/2002	-
LEYSLEY Loyla	AHWCert, CertMatHealth, ImmunisCert	Trainee Research Assistant	-	-
LIDDLE Robyn	BBiolSc, GradDipComSc	Database Administrator	-	-
LIENERT Christine	EN	Project Assistant	-	18/1/2002
LINDSAY Grant	MBA, BA(MilStud), GAICD, AIMM	Acting Associate Director Finance and Administration	-	31/10/2001
MACKERRAS Dorothy	BSc, DipNutr&Diet, MPH, PhD	Senior Lecturer (Father Frank Flynn Fellow)	-	-
MARAWILI Gilbert	-	Casual Field Assistant	27/9/2001	22/5/2002
MARSH Robyn	BAppSci(MLS), MSc	Research Assistant	21/1/2002	-
MARSHALL Cherie	-	Casual Receptionist	28/10/2002	-
MAYO Mark	AssocDipAppSc	Senior Research Officer	-	-
MCANELLY Sharon	BSc, MSc(prelim)	IT Project Manager	1/3/2002	-
MCCALLUM Gabrielle	RN	Project Officer	-	-
MCDONALD Patricia	-	Accounts Officer	-	-
MCKINNON Melita	-	Technical Officer	-	-
MCLEAN Sanya	DipIT/NetworkEngineering	IT Support Officer	14/1/2002	-
MOREEN Mary	-	Casual Project Assistant	7/11/2001	19/12/2001
MORGAN David	BComm, CPA	Associate Director Finance and Administration	14/8/2001	-
MORRIS Peter	MBBS, FRACP, PhD	NHMRC Research Fellow	-	-
MUNKARA Marie	-	Project Officer Planning	-	30/11/2001
NASIR Masun	-	Casual Field Assistant	19/7/2001	18/1/2002
O'DEA Kerin	BSc, PhD	Professor: Director	-	-
PEREZ Faith	-	Technical Officer	-	13/2/2002
PIERS Leonard Sunil	MBBS, MD, PhD	Senior Research Officer	-	20/9/2002
PILAKUI Monica	-	Project Assistant	-	23/10/2002
PIZZUTTO Susan	BSc(Hons)	Research Assistant	20/8/2001	-
POND James	-	Casual Project Assistant	7/10/2002	-
PORTAMINNI Cynthia	-	Casual Field Assistant	30/11/2001	2/1/2002
PRESS Khalee	-	Receptionist	-	23/11/2001
PURUNTATAMERI Alberta	-	Casual Project Assistant	5/9/2002	9/10/2002
REID Alison	MSc, BSc(Hons)	Senior Research Officer	-	-
RICHARDSON Catherine	DipBioRes, GradCertMgmtDevEdTrg	Academic Administrator	-	-
RIDINGS Jodie	BSc	Research Assistant	-	8/1/2002
SAGUNG Ratih	BFinance, GradDipBusStudies, MBA	Assistant Accountant	6/2/2002	-
SCARLETT Maria	BSocSci	Project Officer	-	-
SHEMESH Tomer	BSc	Research Assistant	-	31/12/2002
SILBERBERG Peter	MBBS	Research Officer	-	-
SMITH-VAUGHAN Heidi	PhD, BSc	Senior Research Officer	-	-
STEVENS Matthew	BSc(Hons)	Research Officer	17/12/2001	-
STEWART Allison	-	Senior Project Officer	7/6/2002	-
STEWART Margaret	-	Lecturer	20/8/2001	30/6/2002
STUBBS Elizabeth	MPH	Technical Officer	-	-
STULIK Pavel	DCSc, GradDipIT, PhDPhysics, AdCertIT	Systems Administrator	-	9/11/2001
TAYLOR Keith	-	Administration Assistant	-	27/2/2002
THOMSEN Peter	CertComWelf, Cert2Film&VideoProd	Aboriginal Health Educator	-	-
TIPAKALIPPA Priscilla	-	Project Assistant	7/8/2001	-
TIPILOURA Camilla	-	Casual Project Assistant	-	1/8/2001
TIPILOURA Elizabeth	-	Casual Project Assistant	8/11/2001	-
TIPILOURA Eric	-	Casual Project Assistant	6/12/2001	-
TOGNI Samantha	BA(Hons), MA	Project Manager/Research Officer	-	24/5/2002
TOWERS Rebecca	BSc(Hons)	Research Assistant	8/4/2002	-

Name	Qualifications	Position	Start	End
ULAMARI Harold	-	Project Officer	5/6/2002	-
WALSH Matty	-	Casual Project Assistant	16/10/2001	13/3/2002
WALTON Shelley	BappSc(Dist), PhD	Research Fellow	-	-
WANAMBI Dennis	-	Casual Project Assistant	15/7/2002	18/8/2002
WANG Zhiqiang	PhD	Senior Research Officer, Biostatistics	-	31/12/2002
WELLS Glenn	-	Administration Assistant	-	13/12/2002
WIE Jeni	BAppSc	Web Design & Media Support Officer	-	11/2/2002
WIGGER Christine	RN, RM	Project Officer	-	-
WILLIAMS Edwina	BSc(Hons)	Research Assistant	-	-
WILSON Catherine	EN, DegreePsy(Hons)	Project Officer	-	-

#### COOPERATIVE RESEARCH CENTRE FOR ABORIGINAL AND TROPICAL HEALTH

AHMAT Leah		CRC Finance Officer	-	-
AHMAT Michelle		CRC Administration Support Officer	-	-
BARNES Tony	ExecDevProg(GradDip), MSc, Bsc(Hons)	Professor: CRC Director	-	-
BATTON Skei	-	CRC Project Officer	30/11/2001	31/12/2002
CAIRNDUFF Sallie	MTH	CRC Senior Research Officer	-	10/12/2001
COLEMAN Yvonne	DipBus	CRC Research Coordinator/Support Officer	-	-
DAVIS Debra	-	CRC Administration/Executive Officer	-	22/11/2002
DUFFY Michael	-	CRC Research Assistant	16/7/2001	-
DUNBAR Terry	BBBUS	CRC Deputy Director	-	-
FAGAN Peter	PhD, BSc(Biology)	CRC Senior Research Officer	11/3/2002	-
KOWAL Emma	MBBS, BA(Hons)	CRC Research Officer	28/1/2002	-
LATHAM George	MD, MTH	CRC Research Assistant	13/5/2002	31/5/2002
MATTHEWS Sally	-	CRC Deputy Director	-	31/10/2002
THOMAS David	MBBS, DTM&H, MMedSc, PHD, FAFPHM	CRC Senior Research Fellow	19/8/2002	-
WALTON Sarah	-	CRC Trainee Information Technical Officer	-	-

#### INTERNATIONAL HEALTH PROGRAM STAFF

Name	Qualifications	Position	Location
ALBION Roy	BSc	Casual Specialist Microscopist	Darwin
HANDOJO Tjandra	MD	Clinical Research Doctor	Timika, Papua Province, Indonesia
FERRI Pak	-	Laboratory Technologist	Timika, Papua Province, Indonesia
INA Ibu	DipLabTech	Laboratory Technologist	Timika, Papua Province, Indonesia
SERTI Ibu	DipLabTech	Laboratory Technologist	Timika, Papua Province, Indonesia



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## Auditor-General's Report



AUDITOR-GENERAL

**AUDITOR-GENERAL'S REPORT TO THE MINISTER FOR HEALTH AND  
COMMUNITY SERVICES  
MENZIES SCHOOL OF HEALTH RESEARCH  
YEAR ENDED 31 DECEMBER 2002**

**Scope**

I have audited the accompanying financial report of the Menzies School of Health Research for the financial year ended 31 December 2002, comprising Statement by Board of Governors, Statement of Financial Performance, Statement of Financial Position, Statement of Cash Flows and associated Notes to the financial statements. The Director is responsible for the financial report. I have performed an independent audit of the financial report in order to express an opinion upon it to the Minister for Health and Community Services.

My audit has been conducted in accordance with Australian Auditing Standards to provide reasonable assurance as to whether the financial report is free of material misstatement. My procedures included examination, on a test basis, of evidence supporting the amounts and other disclosures in the financial statements and the evaluation of accounting policies and significant accounting estimates. These procedures have been undertaken to form an opinion whether, in all material respects, the financial report is presented fairly in accordance with Accounting Standards and other mandatory professional reporting requirements in Australia and the requirements of the Menzies School of Health Research Act so as to present a view which is consistent with my understanding of the Menzies School of Health Research's financial position, its financial performance and its cash flows.

The audit opinion expressed in this report has been formed on the above basis.

**Audit Opinion**

In my opinion, the financial report presents fairly the financial position of the Menzies School of Health Research as at 31 December 2002, its financial performance and its cash flows for the year ended on that date in accordance with applicable Accounting Standards and other mandatory professional reporting requirements in Australia and the requirements of the Menzies School of Health Research Act.

A handwritten signature in black ink, appearing to read 'H M Blake'.

H M Blake  
Auditor-General for the Northern Territory  
Darwin, Northern Territory  
4 April 2003



Statement on Behalf of the Board of Governors

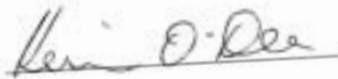
**Menzies School of Health Research**

**Financial Statements for the Year Ended 31 December 2002**

**Statement on Behalf of the Board of Governors**

In our opinion:

- (a) the attached financial statements and notes thereto comply with Accounting Standards;
- (b) the attached financial statements and notes thereto give a true and fair view of the financial position and performance of the Menzies School of Health Research;
- (c) there are reasonable grounds to believe that the Menzies School of Health Research will be able to pay its debts as and when they become due and payable.



Director

21 March 2003



Member  
Board of Governors

31 March 2003

## Statement of financial position as at 31 December 2002

	Note	2002 \$	2001 \$
<b>Current Assets</b>			
Cash	3	5,459,983	3,755,862
Trust Account	4	280,806	1,195,065
Trade Debtors		485,445	1,017,646
Prepaid Expenses	5	152,905	89,773
GST Receivable		80	–
Accrued Revenue	6	162,805	–
<b>Total Current Assets</b>		<b><u>6,542,024</u></b>	<b><u>6,058,346</u></b>
<b>Non-Current Assets</b>			
Investments	8	151,172	3,540
Property, Plant and Equipment	9	610,582	687,744
<b>Total Non-Current Assets</b>		<b><u>761,754</u></b>	<b><u>691,284</u></b>
<b>Total Assets</b>		<b><u>7,303,778</u></b>	<b><u>6,749,630</u></b>
<b>Current Liabilities</b>			
Trust Account	4	280,806	1,195,065
Trade Creditors		290,366	180,482
Accrued Expenses	10	24,000	181,729
GST Payable		–	38,105
Receipts in Advance	11	241,086	200,250
Employee Benefits	7	534,793	528,701
<b>Total Current Liabilities</b>		<b><u>1,371,051</u></b>	<b><u>2,324,332</u></b>
<b>Non-Current Liabilities</b>			
Employee Benefits	7	114,685	131,145
Total Non-Current Liabilities		114,685	131,145
<b>Total Liabilities</b>		<b><u>1,485,736</u></b>	<b><u>2,455,477</u></b>
<b>Net Assets</b>		<b><u>5,818,042</u></b>	<b><u>4,294,153</u></b>
<b>Accumulated Funds</b>			
Retained Earnings	12b	5,467,736	4,294,153
Capital Equipment Reserve	12b	342,674	–
Investment Revaluation Reserve	12b	7,632	–
<b>Total Accumulated Funds</b>		<b><u>5,818,042</u></b>	<b><u>4,294,153</u></b>

To be read in conjunction with Notes to the Financial Statements.

## Statement of financial performance for the financial year ended 31 December 2002

	Note	2002 12 months \$	2001 6 months \$
Revenue from Ordinary Activities		9,941,384	4,573,261
Increase in Accumulated Surplus Due to Changes in Accounting Policy	1c	–	1,543,082
<b>Total Revenue from Ordinary Activities</b>	<b>2</b>	<b>9,941,384</b>	<b>6,116,343</b>
Administration		(863,082)	(402,385)
Depreciation		(303,280)	(194,608)
Employment Expense		(5,470,993)	(3,076,590)
Fieldwork		(108,161)	(135,518)
Information Technology		(134,195)	(76,386)
Laboratory		(183,329)	(160,910)
Operational		(1,033,012)	(309,252)
Travel		(305,482)	(76,230)
Vehicle		(23,593)	(13,564)
<b>Total Expenses from Ordinary Activities</b>		<b>(8,425,127)</b>	<b>(4,445,443)</b>
<b>Net Surplus</b>		<b>1,516,257</b>	<b>1,670,900</b>

To be read in conjunction with Notes to the Financial Statements.

## Statement of cash flows for the financial year ended 31 December 2002

	Note	2002 12 months \$	2001 6 months \$
<b>Cash Flows from Operating Activities</b>			
Receipts from Funding Organisations		9,983,227	3,934,541
Payments to Suppliers and Employees		(8,260,936)	(4,111,467)
Dividends Received		623	366
Interest		227,766	123,940
<b>Net Cash Flows Provided By/(Used in) Operating Activities</b>	3b	<b><u>1,950,680</u></b>	<b><u>( 52,620)</u></b>
<b>Cash Flows from Investing Activities</b>			
Payments for Building Improvements		–	(49,688)
Payments for Purchase of Equipment		(246,559)	(104,992)
<b>Net Cash Flows Used in Investing Activities</b>		<b><u>(246,559)</u></b>	<b><u>(154,680)</u></b>
<b>Net Increase/(Decrease) in Cash Held</b>		1,704,121	(207,300)
<b>Cash at Beginning of Financial Year</b>		3,755,862	3,963,162
<b>Cash at End of Financial Year</b>	3a	<b><u>5,459,983</u></b>	<b><u>3,755,862</u></b>

To be read in conjunction with Notes to the Financial Statements.

# Notes to the financial statements for the financial year ended 31 December 2002

## 1 SUMMARY OF ACCOUNTING POLICIES

The Menzies School of Health Research (MSHR) was established as a body corporate of the Northern Territory Government under the *Menzies School of Health Research Act*, No 60 of 1985. Menzies School of Health Research operates as a medical research institute within the Northern Territory of Australia.

The principal place of business is:

Building 58, Royal Darwin Hospital Campus,  
Rocklands Drive, Tiwi, Northern Territory 0810, Australia  
Telephone Number: +61 8 89 22 81 96

### Financial Reporting Framework

The financial report is a general purpose financial report prepared in accordance with:

Accounting Standards;  
Urgent Issues Group Consensus Views; and  
Other authoritative pronouncements of the Australian Accounting Standards Board.

These financial statements have been prepared on the basis of historical cost with the exception of investments which are subject to revaluation.

Set out hereunder are the significant accounting policies adopted by MSHR in preparation of its accounts for the financial year ended 31 December 2002. Accounting policies adopted are consistent with last year, unless otherwise stated.

### Significant Accounting Policies

Accounting policies are selected and applied in a manner which ensures that the resulting financial information satisfies the concepts of relevance and reliability, thereby ensuring that the substance of the underlying transactions or other events is reported.

The following significant accounting policies have been adopted in the preparation and presentation of the financial report.

#### *a Change in Financial Reporting Year*

As per the Menzies School of Health Research Act, the Board of Governors approved the changing of MSHR's financial reporting year from 1 July – 30 June to 1 January – 31 December. This change has permitted closer matching of revenue and expenditure to the funding periods in which that revenue is received and expenditure incurred. As a result of this change in reporting period, the Board of Governors reported on a six-month period ending 31 December 2001. Comparatives are for six months from 1 July 2001 to 31 December 2001. There have not been any adjustments to those audited results.

#### *b Change in Accounting Policy*

As of the 2002 financial reporting year MSHR will revalue Investments on an annual basis with any changes debited or credited to the Investment Revaluation Reserve. If an Investment goes below cost any decrement will be expensed in the Statement of Financial Performance. This change to accounting policy has been made to ensure that Investments reflect market values as at the MSHR reporting date of 31 December. Dividends will still be brought to account as they are earned. The amount of the adjustment recognised in the Statement of Financial Position is \$6,106.

## Restated Statement of Financial Position

The following Statement of Financial Position shows the information that would have been disclosed had the new accounting policy always been applied.

	2002	2001
	\$	\$
<b>Current Assets</b>		
Cash	5,459,983	3,755,862
Trust Account	280,806	1,195,065
Trade Debtors	485,445	1,017,646
Prepaid Expenses	152,905	89,773
GST Receivable	80	–
Accrued Revenue	162,805	–
Investments	151,172	9,646
<b>Total Current Assets</b>	<b><u>6,693,196</u></b>	<b><u>6,067,992</u></b>
<b>Non-Current Assets</b>		
Property, Plant and Equipment	610,582	687,744
<b>Total Non-Current Assets</b>	<b><u>610,582</u></b>	<b><u>687,744</u></b>
<b>Total Assets</b>	<b><u>7,303,779</u></b>	<b><u>6,755,736</u></b>
<b>Current Liabilities</b>		
Trust Account	280,806	1,195,065
Trade Creditors	290,366	180,482
Accrued Expenses	24,000	181,729
GST Payable	–	38,105
Receipts in Advance	241,086	200,250
Employee Benefits	534,793	528,701
<b>Total Current Liabilities</b>	<b><u>1,371,051</u></b>	<b><u>2,324,332</u></b>
<b>Non-Current Liabilities</b>		
Employee Benefits	114,685	131,145
<b>Total Non-Current Liabilities</b>	<b><u>114,685</u></b>	<b><u>131,145</u></b>
<b>Total Liabilities</b>	<b><u>1,485,736</u></b>	<b><u>2,455,477</u></b>
<b>Net Assets</b>	<b><u>5,818,042</u></b>	<b><u>4,300,259</u></b>
<b>Accumulated Funds</b>		
Retained Earnings	5,467,736	4,294,153
Capital Equipment Reserve	342,674	–
Investment Revaluation Reserve	7,632	6,106
<b>Total Accumulated Funds</b>	<b><u>5,818,042</u></b>	<b><u>4,300,259</u></b>

### *c Revenue Recognition Policy*

Revenue recognition for grant and donation income received is carried out on the following basis:

- i all grant income (revenue, capital and specific purpose) is recognised as income in year of receipt
- ii revenue received for projects to be commenced in the following financial year, is carried forward in 'Receipts in Advance'
- iii all other project-related income is fully expended in the year of receipt

In years prior to 31 December 2001 revenue received but unexpended for projects commenced but not completed by financial year end was carried forward as 'Receipts in Advance'. With the change in financial reporting dates, revenue is now recognised upon receipt. This will enable comparability between financial years, provide relevant financial information to users and facilitate user's understanding. The amount of the adjustment recognised in the Statement of Financial Performance for the period ending 31 December 2001 was \$1,543,082.

**d Stocks**

Stocks of consumable scientific and administrative items purchased in the normal operations are not taken into account at close of balance date as assets, but are written off at the time of purchase.

**e Employee Benefits**

Provision is made for long service leave and annual leave estimated to be payable to employees. The amounts provided have been apportioned between current and non-current, the current provision being the portion that is expected to be paid within the next twelve months.

In the case of long service leave, employee entitlements vest after the completion of ten years' service. A special pro-rata entitlement may be paid in lieu of long service leave on resignation of employment after seven or more years of service. In accordance with accounting standard AASB 1028 — Employee Benefits, MSHR has calculated long service leave entitlements not settled at 31 December 2002 on a present-value basis.

Sick-leave entitlements are non-vesting with experience showing that sick leave taken is less than the entitlement accruing. In recognition of this, no liability has been recognised.

The 2001 MSHR Enterprise Agreement allowed for employees to salary sacrifice on the condition that any fringe benefits tax incurred would be payable by the employee.

**f Superannuation**

Employees' superannuation entitlements are principally provided through the Northern Territory Government and Public Authorities Superannuation Scheme (NTGPASS), the Australian Government Employees Superannuation Trust (AGEST), and the Superannuation Scheme for Australian Universities (SSAU).

Benefits from these schemes are supplemented by a minimum 3% productivity benefit from the Northern Territory Supplementary Superannuation Scheme (NTSSS) for pre-10 August 1999, except for employees who have had their employment contracts renewed and are not members of NTGPASS.

Scheme membership among employees at 31 December 2002 was as follows:

AGEST	36
NTSSS	2
NTGPASS (plus NTSSS)	18
SSAU	29
COMSUPER	2

The Northern Territory Government meets the cost of employer-financed benefits in the NTGPASS and NTSSS with administration being undertaken by the Northern Territory Superannuation Office.

	2002	2001
Full-Time Equivalent Employees as at 31 December 2002	79	90

**g Income Tax**

The income of MSHR is exempt from income tax pursuant to the provisions of Section 50-5 of the *Income Tax Assessment Act, 1997*.

**h Goods and Services Tax**

Revenue, expenses and assets are recognised net of the amount of goods and services tax (GST), except:

- i where the amount of GST incurred is not recoverable from the taxation authority, it is recognised as part of the cost of acquisition of an asset or as part of an item of expense; or
- ii for receivables and payables which are recognised inclusive of GST. The net amount of GST recoverable from, or payable to, the taxation authority is included as part of receivables or payables.

Cash flows are included in the Statement of Cash Flows on a gross basis. The GST component of cash flows arising from investing and financing activities, which is recoverable from, or payable to, the taxation authority is classified as operating cash flows.

**i Depreciation**

Depreciation is provided on property, plant and equipment, including freehold buildings. Depreciation is calculated on a straight-line (except for motor vehicles which is calculated on a diminishing value) basis so as to write off the net cost or other revalued amount of each asset over its expected useful life. Leasehold improvements are depreciated over the period of the lease or estimated useful life, whichever is the shorter, using the straight-line method. The following estimated useful lives are used in the calculation of the depreciation:

Buildings	10 years
Leasehold Improvements	3–5 years
Plant and Equipment	3–5 years
Motor Vehicles	7 years

**j Trade Receivables**

Trade receivables and other receivables are recorded at amounts due.

**k Recoverable Amount of Non-Current Assets**

Non-current assets are written down to recoverable amount where the carrying value of any non-current asset exceeds recoverable amount. In determining the recoverable amount of non-current assets, the expected net cash flows have not been discounted to their present value.

**2 SURPLUSES FROM ORDINARY ACTIVITIES**

Surpluses from ordinary activities include the following items of revenue:

	2002 12 months \$	2001 6 months \$
<b>Operating Revenue</b>		
Grant Income	8,869,079	5,310,789
Donations	267,385	206,216
Interest and Dividends	243,457	107,946
Reimbursements	374,097	425,561
Sundry Income	187,366	65,831
<b>Total Operating Revenue</b>	<u>9,941,384</u>	<u>6,116,343</u>

**3 CASH**

For the purposes of the Statement of Cash Flows, MSHR considers cash to include cash on hand and in banks. Cash and cash deposits at the end of the reporting period are reconciled to the Statement of Financial Position as follows:

<b>a Reconciliation of Cash</b>		
Cash on Hand	–	400
Cash	5,459,983	3,755,462
<b>Total Cash</b>	<u>5,459,983</u>	<u>3,755,862</u>



**b Reconciliation of Net Cash Used in Operating Activities to Operation Results**

	2002 12 months \$	2001 6 months \$
<b>Net Surplus</b>	1,516,257	1,670,900
<i>Changes in:</i>		
(Inc)/Dec Trade Debtors	532,201	(290,045)
(Inc)/Dec Prepaid Expenses	(63,132)	117,699
(Inc)/Dec Accrued Revenue	(162,805)	46,365
(Inc)/Dec Goods and Services Tax	(38,185)	4,588
Inc/(Dec) Trade Creditors	109,884	70,750
Inc/(Dec) Accrued Expenses	(157,729)	(142,385)
Inc/(Dec) Receipts in Advance	40,836	(1,851,922)
Inc/(Dec) Provisions	(10,368)	126,822
Non-Cash Donation	(140,000)	-
Loss on Disposal of Asset	20,440	-
Depreciation	303,280	194,608
<b>Net Cash Flows Provided By/(Used in)</b>		
<b>Operating Activities</b>	<u>1,950,680</u>	<u>(52,620)</u>

**c Non-Cash Investing Activities**

Shares in Australian Medical Research and Development Corporation were acquired for nil consideration when ownership of the shares was transferred to MSHR at no cost in November 2002. The non-reciprocal transfer has been recognised as revenue of \$140,000 within the financial statements, that being the market value of the shares at the date of transfer. See note 8 for further information.

**4 COOPERATIVE RESEARCH CENTRE**

The Cooperative Research Centre for Aboriginal and Tropical Health (CRCATH) is a joint venture funded by the Commonwealth of Australia, Department of Health and Community Services, Northern Territory University, Flinders University of South Australia, Danila Dilba Biluru Butji Binnilutlum Health Service Aboriginal Corporation, Central Australian Aboriginal Congress Inc., and the Menzies School of Health Research. The main activity of the CRCATH is research into Indigenous and tropical health. MSHR's contractual participation rate in the joint venture is 46.1%.

The Menzies School of Health Research, in its role as the Centre Agent for the Cooperative Research Centre, established a trust account in the name of the Cooperative Research Centre for Aboriginal and Tropical Health. All funds from the Commonwealth of Australia and other contributing partners are received by MSHR in trust, on behalf of all the partners. Funds received by MSHR are shown in MSHR's accounts. Receipts, expenditures and balances of the Cooperative Research Centre Trust Account, managed by the MSHR are summarised below:

Opening Balance	1,195,065	1,515,963
Receipts	2,484,438	1,137,054
Expenditure	(3,398,697)	(1,457,952)
<b>Closing Balance</b>	<u>280,806</u>	<u>1,195,065</u>

**5 PREPAID EXPENSES**

Employment Expenses	21,311	-
Insurance	95,326	63,704
Maintenance Agreement	10,126	-
Subscriptions	26,142	26,069
<b>Total Prepaid Expenses</b>	<u>152,905</u>	<u>89,773</u>

## 6 ACCRUED REVENUE

Accrued revenue is estimated as due to the Menzies School of Health Research.

	2002 12 months \$	2001 6 months \$
Reimbursements	142,397	–
Bank Interest	15,068	–
GST	5,340	–
<b>Total Accrued Revenue</b>	<b><u>162,805</u></b>	<b><u>–</u></b>

## 7 EMPLOYEE BENEFITS

Recreation Leave – Current	401,871	421,222
Long Service Leave – Current	132,922	107,479
<b>Total Employee Benefits – Current</b>	<b><u>534,793</u></b>	<b><u>528,701</u></b>
Long Service Leave – Non-Current	114,685	131,145
<b>Total Employee Benefits – Non-Current</b>	<b><u>114,685</u></b>	<b><u>131,145</u></b>

## 8 INVESTMENTS

Investments comprise of 1,060 shares in The Australian Gas Light Company (donated to MSHR in 1992 by Miss Elizabeth Phillips) and 333,334 shares in the Australian Medical Research and Development Corporation (AMRAD). See note 15 for further information.

Dividends are brought to account as they are earned.

Market value of investments at 31 December 2002 is as follows:

1060 AGL Shares @ \$10.54	11,172	9,646
333,334 AMRAD Shares @ \$0.42	140,000	–
<b>Total Investments</b>	<b><u>151,172</u></b>	<b><u>9,646</u></b>

## 9 PROPERTY, PLANT AND EQUIPMENT

i Property, plant and equipment are brought to account where the value is greater than \$2,000 and depreciated over three to five years using the straight-line method.

ii Motor vehicles are depreciated on a diminishing value basis at the rate of 22.5% per annum.

	Building	Leasehold improvements	Computer equipment	Laboratory equipment	Office equipment	Vehicles	Total
<b>Gross Carrying Amount</b>							
Balance at 31 Dec 2001	79,940	461,724	822,186	1,115,545	114,576	125,931	2,719,902
Additions	–	–	170,011	76,549	–	–	246,560
Disposals	(79,940)	–	(548,021)	(395,894)	(98,731)	–	(1,122,586)
<b>Balance as at 31 Dec 2002</b>	<b><u>–</u></b>	<b><u>461,724</u></b>	<b><u>444,176</u></b>	<b><u>796,200</u></b>	<b><u>15,845</u></b>	<b><u>125,931</u></b>	<b><u>1,843,875</u></b>
<b>Accumulated Depreciation</b>							
Balance at 31 Dec 2001	79,940	405,285	705,563	677,724	104,574	59,072	2,032,158
Disposals	(79,940)	–	(548,021)	(375,454)	(98,731)	–	(1,102,146)
Depreciation Expense	–	13,537	122,690	150,188	1,826	15,039	303,280
<b>Balance at 31 Dec 2002</b>	<b><u>–</u></b>	<b><u>418,822</u></b>	<b><u>280,233</u></b>	<b><u>452,458</u></b>	<b><u>7,669</u></b>	<b><u>74,111</u></b>	<b><u>1,233,293</u></b>
<b>Net Book Value</b>							
As at 31 Dec 2001	–	56,439	116,623	437,821	10,002	66,859	687,744
<b>As at 31 Dec 2002</b>	<b><u>–</u></b>	<b><u>42,902</u></b>	<b><u>163,943</u></b>	<b><u>343,742</u></b>	<b><u>8,176</u></b>	<b><u>51,820</u></b>	<b><u>610,582</u></b>

## 10 ACCRUED EXPENSES

	2002 12 months \$	2001 6 months \$
Salaries and On-Costs	–	134,729
Administration	24,000	47,000
<b>Total Accrued Expenses</b>	<b><u>24,000</u></b>	<b><u>181,729</u></b>

## 11 RECEIPTS IN ADVANCE

<b>Receipts in Advance</b>		
Commonwealth Grants	116,062	30,000
NT Government Grants	–	150,000
Non-Government Grants	119,312	20,000
CRCATH	5,412	–
Deposits	300	250
<b>Total Receipts in Advance</b>	<b><u>241,086</u></b>	<b><u>200,250</u></b>

## 12 ACCUMULATED SURPLUS

## a Accumulated Surpluses Comprise

Retained Earnings	5,467,736	4,294,153
Capital Equipment Reserve	342,674	–
Investment Revaluation Reserve	7,632	–
<b>Total Accumulated Surpluses</b>	<b><u>5,818,042</u></b>	<b><u>4,294,153</u></b>

## b Movements in Accumulated Surpluses

*Retained Earnings*

Balance at Beginning of Financial Year	4,294,153	2,623,253
Surplus at End of Financial Year	1,516,257	1,670,900
Transfer to Capital Equipment Reserve	(342,674)	–
<b>Balance at End of Financial Year</b>	<b><u>5,467,736</u></b>	<b><u>4,294,153</u></b>

The retained earnings contains those surpluses that arise from ordinary operational activities.

*Capital Equipment Reserve*

Balance at Beginning of Financial Year	–	–
Transfer from Surplus at End of Financial Year	342,674	–
<b>Balance at End of Financial Year</b>	<b><u>342,674</u></b>	<b><u>–</u></b>

In recognition of the need to plan for the purchase of large capital equipment items the Governing Board approved the establishment of a Capital Equipment Reserve. Amounts transferred to the Capital Equipment Reserve are calculated on an annual basis as follows:

An amount equal to the depreciation expense recorded for that year

An amount equal to twenty (20) percent of any surplus generated by the Administration Cost Centre

An amount equal to ten (10) percent of any surpluses generated from those research projects that are not tied to grant funding and have been undertaken on a fee-for-service basis.

*Investment Revaluation Reserve*

Balance at Beginning of Financial Year	–	–
Revaluation of AGL Shares	7,632	–
<b>Balance at End of Financial Year</b>	<b><u>7,632</u></b>	<b><u>–</u></b>

The investment revaluation reserve arises on the revaluation of investments. Where a revalued investment is sold that portion of the investment revaluation reserve which relates to that investment, and is effectively realised is transferred to general reserves.

### 13 EXECUTIVES' REMUNERATION

a Aggregate remuneration of executive officers of MSHR receiving \$100,000 or more:

	2002 12 months \$	2001 6 months \$
	760,830	103,063

b The number of executive officers whose remuneration falls within each successive \$10,000 bands of income (commencing at \$100,000):

	Numbers	Numbers
\$100,000 – \$109,999	2	1
\$110,000 – \$119,999	3	–
\$200,000 – \$210,000	1	–

### 14 FINANCIAL INSTRUMENTS

#### a Significant Accounting Policies

Details of significant accounting policies and methods adopted, including the criteria recognition, the basis of measurement and the basis on which revenues and expenses are recognised, in respect of each class of financial asset, financial liability and equity instrument are disclosed in note 1 to the accounts.

#### b Credit Risk

Credit risk refers to the risk that a counter-party will default on its contractual obligations resulting in financial loss to MSHR. The carrying amount of the financial assets recorded in the Statement of Financial Position, net of any provision for losses, represents MSHR's maximum exposure to credit risk.

#### c Net Fair Value

The net market value at 31 December 2002 of each class of financial asset and financial liability is their carrying amount as stated in the Statement of Financial Position of MSHR, determined in accordance with the accounting policies disclosed in Note 1 to the accounts.

#### d Interest Rate Risk

The following table details MSHR's exposure to interest rate risk at 31 December 2002:

	Average interest rate %	Variable interest rate \$	Fixed < than 1 year \$	Fixed 1 to 5 years \$	Fixed > than 5 years \$	Non- interest bearing \$	Total \$
<b>Financial Assets</b>							
Cash	4.3	759,983	–	–	–	–	759,983
Trade Receivables		–	–	–	–	485,445	485,445
Short-Term Deposits	4.7	4,700,000	–	–	–	–	4,700,000
Listed Shares		–	–	–	–	151,172	151,172
		<u>5,459,983</u>	–	–	–	<u>636,617</u>	<u>6,096,600</u>
<b>Financial Liabilities</b>							
Trade Payables		–	–	–	–	290,367	290,367
Employee Benefits		–	–	–	–	649,478	649,478
		–	–	–	–	<u>938,845</u>	<u>939,845</u>

The following table details the MSHR's exposure to interest rate risk at 31 December 2001:

	Average interest rate %	Variable interest rate \$	Fixed < than 1 year \$	Fixed 1 to 5 years \$	Fixed > than 5 years \$	Non- interest bearing \$	Total \$
<b>Financial Assets</b>							
Cash	4.1	3,755,862	-	-	-	-	3,755,862
Trade Receivables		-	-	-	-	1,017,646	1,017,646
Short-Term Deposits	-	-	-	-	-	-	-
Listed Shares		-	-	-	-	3,540	3,540
		<u>3,755,862</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1,021,186</u>	<u>4,777,048</u>
<b>Financial Liabilities</b>							
Trade Payables		-	-	-	-	362,211	362,211
Employee Benefits		-	-	-	-	659,846	659,846
		<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1,022,057</u>	<u>1,022,057</u>

## 15 RIGHTS AND OBLIGATIONS

In April 1993 MSHR entered into an agreement with the Australian Medical Research and Development Corporation (AMRAD), giving AMRAD first refusal to develop products and to acquire the intellectual rights to such products arising from research (except for intellectual property rights of Aboriginal persons).

In consideration of MSHR agreeing to enter into this agreement, AMRAD allotted to the Victorian Medical Consortium Pty Ltd acting as trustee of the Institutes of Biotechnology Trust, 166,667 fully paid shares of \$1.00 each in the capital of AMRAD at a premium of 200 cents per share. When the shares were publicly listed on the Australian Stock Exchange in 1996 each share was split into two fully paid shares of \$0.50 each giving a total shareholding of 333,334 shares.

MSHR had the right on the ninth anniversary (2002) to have the shares transferred to it from the trustee or to sell the shares and receive the proceeds. On 22 November 2002 the MSHR Board of Directors exercised this right and the shares were transferred from the Victorian Medical Consortium Pty Ltd to Menzies School of Health Research. On the date of transfer the total value of the shares was \$140,000.

## 16 RENTAL ARRANGEMENTS

In 1984 the Northern Territory made a commitment to provide the Menzies School of Health Research with premises and facilities for its work. Through the goodwill arising out of MSHR's past and its ongoing record of research and education, funds were appropriated in 1995 by the Commonwealth of Australia and the Northern Territory Government to construct the new building on Northern Territory Government land at the Royal Darwin Hospital site. Following occupation of the new building in November 1996, and as a result of the aforementioned goodwill, a nominal rental is charged for the premises. A lease agreement reflecting this goodwill is in place until 13 August 2008.

## 17 COMMITMENTS FOR EXPENDITURE

MSHR is committed to providing contributions to the Cooperative Research Centre for Aboriginal and Tropical Health (CRCATH). These commitments are comprised of a cash contribution of \$50,000 and in-kind contributions until the end of the CRCATH on 30 June 2003. From July 2003 a seven-year agreement, which is currently under negotiations, will detail cash and in-kind contributions for the new Cooperative Research Centre for Aboriginal Health.

## 18 AUDIT SERVICES

The Northern Territory Auditor General's Office audits the financial statements of MSHR. These services are provided at no cost to the organisation.

## 19 STATEMENT OF ECONOMIC DEPENDENCY

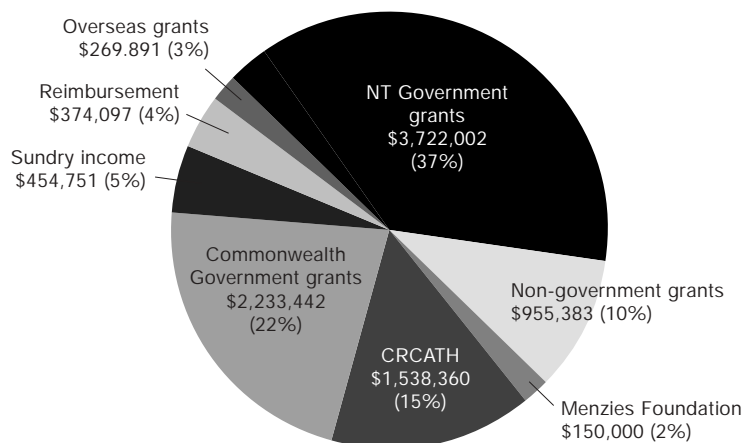
The management of grant-funded projects by MSHR is dependent on continued funding from the Northern Territory Government and other granting bodies.

## Financial ratios for the financial year ending 31 December 2002\*

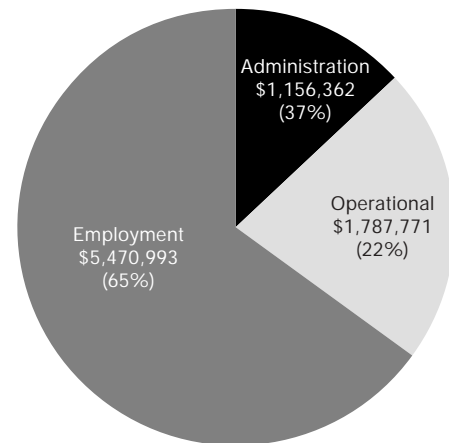
	2002	2001
<b>Consolidated Activities</b>		
NT operational funding as a ratio of total grant funding	1:1.54	1:2.38
Grant funding as a percentage of total income	89.2%	90.2%
Administrative expenses as a percentage of total expenditure	13.8%	15.1%
Operational expenses as a percentage of total expenditure	21.2%	15.9%
Employment expenses as a percentage of total expenditure	64.9%	69.0%
<b>Liquidity Ratio</b>		
Current assets as a ratio to current liabilities	5.9:1	2.6:1
<b>Financial Stability Ratio</b>		
Total liabilities as a percentage of total assets	17.4%	57.1%
<b>Core Activities</b>		
Core income as a percentage of total funding	51.9%	30.2%
Core expenditure as a percentage of total expenditure	50.6%	37.8%
Core salaries as a percentage of total salaries	48.2%	30.0%
<b>Project Activities</b>		
Project income as a percentage of total funding	48.1%	69.8%
Project expenditure as a percentage of total expenditure	49.4%	62.2%
Project salaries as a percentage of total salaries	51.8%	70.0%

\* The financial ratios are provided for information purposes and have not been audited.

## Income



## Expenditure



## DONATIONS

S Frey	\$1,000
Henry Walker Eltin Group Limited	\$8,500
Reserve Bank of Australia	\$1,000
Tudor Foundation	\$18,800
Wyeth Australia	\$3,000
<b>Total</b>	<b>\$32,300</b>

# For further information

## Research and Policy Matters

Professor Kerin O'Dea	<i>Director</i>	(08) 8922 8605
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## Acknowledgements

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Cover:  
*Tjanka* (detail), by Nancy Naninurra, Balgo,  
Western Australia

Acrylic on canvas 2001 50 x 100 cm  
© Nancy Naninurra, 2001/licensed by VISCOPY, Sydney, 2003

The painting shows the country east of Balgo, near Ngulupi, a place where Nancy lived and hunted as a young woman with her family. The main circle is Tjanka, a hill where there is a cave with a spring. This is a sacred place often used for ceremonial purposes. The rest of the painting depicts *tali*, or sand dunes.



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