

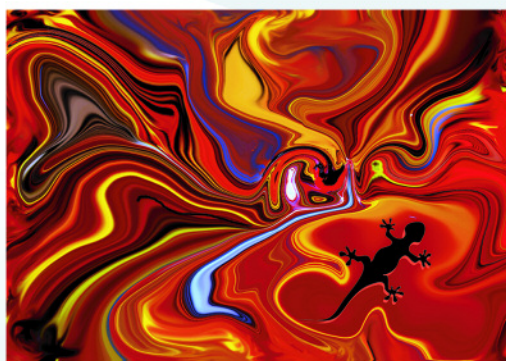


2005 ANNUAL REPORT



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### Cover painting

Joseph Fitz, *Old Gecko*, 2006, digital image  
Joseph Fitz is a Waramungu man from the Tennant Creek region of the Northern Territory. His interest in art started with black and white sketches, and has progressed to using computer graphics techniques to produce Aboriginal art with a contemporary flair.



Joseph is part of the 'Menzies Mob', working as a project officer at Menzies School of Health Research for the past seven years. He has been actively involved in a range of research projects, including the Healthy Lifestyle Project in north-east Arnhem Land and the Coordinated Care Trial Evaluations in Alice Springs, in addition to providing cultural advice to fellow researchers as a member of MSHR's Indigenous Forum. He is currently working on the Aboriginal Birth Cohort.



menzies school of health research

**OUR MISSION: to improve the health of people of northern and central Australia and regions to the near north through multidisciplinary research and education.**

## Who we are . . . What we do . . .

Menzies School of Health Research (MSHR) is the only Australian health and medical research institute with a primary focus on the health of Indigenous communities and people living in tropical and remote areas.

MSHR was established in 1985 as a cooperative venture between the Northern Territory Government, the Menzies Foundation and the University of Sydney. Today, MSHR is acknowledged as the nation's leader in Indigenous health research, earning over half the total National Health and Medical Research Council's Indigenous health research funding in the past three years. We produce over 80 articles and other publications in refereed journals each year and actively engage in research transfer activities in areas of health policy and health-service development.

Over the years, our research has expanded to include infectious diseases, chronic disease, environmental health, mental health, substance abuse, health services research, and population health. At the same time, we are growing an international health research program primarily focused on malaria and tuberculosis.

Students are vital to our growth, and are supported by innovative education training programs spanning postgraduate research training, public health coursework, and short courses in topics such as advanced statistical analysis and social determinants of health. National and international students are attracted by our unique focus on Indigenous health.

We seek to boost our research efficacy and impact by building partnerships with Aboriginal people, health services, and governments. As part of the Institute of Advanced Studies, MSHR has a central role to play with strengthening research activity at Charles Darwin University. We are also a core partner and centre agent of the Cooperative Research Centre for Aboriginal Health.

Our research projects involve external collaborators located throughout Australia, with an expanding network of colleagues throughout the world.

**MSHR staff and facilities are uniquely positioned to conduct research across the country's tropical north, throughout remote Indigenous communities, and in partnership with our neighbouring countries.**

Our headquarters are located on the Royal Darwin Hospital Campus, Darwin, providing office accommodation for the majority of our staff and students, in addition to a well-equipped and highly regarded laboratory (PC2 and PC3 containment facilities).

We also operate a smaller unit in Alice Springs co-located with the Centre for Remote Health, and a joint research facility with the Indonesian Ministry of Health's National Institute of Health Research and Development in Timika, Indonesia.



# Highlights

## 2005 at a glance

- » Attracted almost \$3.5 million in new competitive funding for research and education programs.
- » Achieved income growth of 16% from the previous year. Total income for the year reached almost \$16 million.
- » Published over 80 articles and other publications in refereed journals.
- » Grew our workforce to over 140, attracting expert staff from within, and to, the Northern Territory.
- » Gained positive media coverage in local and national media, with over 140 mentions recorded throughout the year.

## Key appointments

- » Dr Ngiare Brown appointed to the newly established position of Assistant Director, Indigenous Health.
- » MSHR's Dr Craig Boutlis competed nationally to secure the Father Frank Flynn Fellowship, established by the Northern Territory Government in 1989 to promote the initiation of research of international significance into diseases pertinent to the Northern Territory.
- » Prof Jonathan Carapetis appointed as Director of MSHR, commencing in the role in April 2006. Prof Carapetis' appointment followed the departure of Prof Kerin O'Dea in October 2005.



(Left to right) Dr Bill Glasson, outgoing Australian Medical Association (AMA) President, The Hon Clare Martin, Chief Minister of the Northern Territory, and Mr Geoffrey Angeles, Research Officer, MSHR. Mr Angeles was awarded the inaugural Ross Ingram Memorial Essay Prize at the 2005 AMA National Conference for his essay on the link between Indigenous fishing and health.

## Awards and recognition

- » Dr Ngiare Brown, Assistant Director, Indigenous Health, awarded an Honorary Fellowship of The Royal Australian College of General Practitioners (RACGP).
- » Dr Ngiare Brown, Assistant Director, Indigenous Health, awarded the Australian Medical Association (AMA) Woman in Medicine Award for 2005.
- » Dr Shelley Walton, Senior Research Fellow and Head, Scabies and Skin Pathogen Research Laboratory, awarded a National Health and Medical Research Council (NHMRC) Career Development Award.
- » Dr Paul Burgess, PhD student, was an inaugural recipient of the RACGP/ Australian Primary Health Care Research Institute (APHCRI) Indigenous Health Award.
- » Mr Geoffrey Angeles, Research Officer, won the *Medical Journal of Australia's* inaugural Dr Ross Ingram Memorial Essay Competition. Mr Yin Paradies, MSHR PhD student, was a runner-up.
- » Prof Bart Currie, Tropical and Emerging Infectious Diseases Division Leader, awarded the inaugural Chief Minister's Research and Innovation Award for melioidosis research in the Northern Territory. Prof Currie was also awarded the NT Research Award. Dr Sue Sayers, MSHR Senior Research Fellow, received a Special Commendation Award.
- » Dr Sheree Cairney, Senior Research Fellow, awarded an Australian Broadcasting Corporation (ABC) Australian Academy of Science Media Fellowship for 2005.
- » Dr Geoffrey Isbister, Senior Research Fellow, awarded a Young Tall Poppy Science Award for 2005 by the Australian Institute of Political Science.
- » Dr Alan Clough, NHMRC Postdoctoral Fellow, awarded the 2005 Early Career Award by the Australian Professional Society on Alcohol and Drugs.
- » Dr Fay Johnston, PhD student, awarded the annual National Asthma Council Research Award by the RACGP. Dr Johnston was also presented with a student award from Australasian Epidemiology Association at its annual scientific meeting.
- » Ms Kate Mounsey, PhD student, won an Australian Research Council (ARC)/NHMRC Network for Parasitology travel award.
- » Assoc Prof Joan Cunningham, Environments, Services and Populations Division Leader, named a Northern Territory finalist in the 2005 Telstra Business Women's Award.

## Special events, partnerships and visitors

- » The Riekmann Malaria Symposium was held at MSHR in August 2005. This international meeting of malaria experts was held to develop standardised methods of collecting and analysing clinical, cellular and molecular mechanisms of drug resistance.
- » MSHR hosted a 'kids party morning tea' as part of the national Research Australia 'Thank You' Day celebrations. The 2005 'Thank You' Day campaign received more than 450 000 messages of thanks from Australians to health and medical researchers located around the country.

# Chairperson's report



**2** 005 has been an eventful year marked with celebrations, great change, and strong research growth.

A standout highlight of the year was the celebration of the 20th anniversary of MSHR. Beginning in 1985 as the realisation of a long-held dream for a research institute in northern Australia, the evolution of MSHR into the leading research institute nationally in Indigenous and tropical health is a remarkable story.

MSHR's achievements were marked by '20:20 vision', a two-day symposium held at Charles Darwin University. While highlighting MSHR's remarkable history, the symposium's focus on facing future health challenges was particularly rousing, with lively presentations and debate.

In addition to welcoming back to MSHR many old friends and supporters from throughout the past 20 years, it was also an honour to welcome the Ambassador of Indonesia, His Excellency, Mr Imron Cotan, and senior collaborators from our Timor-Leste research program.

At the invitation of the Northern Territory Minister for Health, the Hon Dr Peter Toyne, current and past staff, students and supporters of MSHR gathered at Parliament House for a cocktail party to acknowledge the contribution MSHR has made to the Northern Territory. This was another great event to mark our anniversary, and I thank the government of the Northern Territory for its ongoing support of MSHR.

Prof Kerin O'Dea notified the Board early in the year that she would not seek reappointment as the Director. Prof O'Dea arrived at a time when MSHR was building great momentum and she took it to new heights. Under her leadership MSHR has prospered, with an exceptional record of attracting competitive research funding along with her strong advocacy of Aboriginal health as a national issue. We anticipate many visits back to the Territory as Prof O'Dea continues her research on chronic diseases in Aboriginal communities.

From a strong field, the Board selected Prof Jonathan Carapetis to lead MSHR into the next stage of our development. We look forward with interest and enthusiasm to the opportunities Prof Carapetis' appointment will bring to MSHR. His strong clinical background should further ensure that MSHR's research is actively influencing health policy and guiding improved practices in health delivery to the people of tropical and central Australia and neighbouring countries.

I would like to thank Prof Bart Currie for his interim directorship while upholding a demanding clinical and research workload until Prof Carapetis takes up the position in April 2006.

The new Director will be taking over with MSHR in a very strong position in terms of research breadth and strength. It is a pleasure to record that this is the third year in a row research grant income has accomplished growth in excess of 14%. Maintaining this excellence is both a challenge and an opportunity for the staff of MSHR.

As Australia's preeminent research school addressing issues of Aboriginal and tropical health, our future challenge lies in growing our potential to be one of Australia's leading research institutions in any field. An integral part of ensuring this will be to consolidate our strategic direction, build our fundraising and media profile, and foster our relationship within the Institute of Advanced Studies, Charles Darwin University. The Board looks forward to working with the staff and with the new Director in delivering on these aspirations.

Finally, I would like to warmly thank my fellow Board members for their counsel and support, and pay tribute to our outgoing Board members Dr Val Ashe, Prof Judith Whitworth, Mr Peter Plummer, and to the MSHR staff representative Ms Kim Hare.

**Professor Simon Maddocks**

the evolution of MSHR into the leading research institute nationally in Indigenous and tropical health is a remarkable story

## Director's report



A poll sponsored by Research Australia recently revealed that 'Australians consider medical research to be a more important priority for funding and resources than tax cuts and border protection' (News-Medical.net).

As the director of an organisation whose focus is Indigenous, remote and tropical health research, it is refreshing to see that Australians believe extra funding should be directed into researching diseases and conditions such as diabetes, obesity, and heart disease.

2005 was another great year. It was the 20th anniversary of the Menzies School of Health Research, and we celebrated this important occasion with two significant events.

On 31 May we commenced a two day symposium, in conjunction with our colleagues at Charles Darwin University, titled '20:20 vision: Health challenges of the next 20 years — Celebrating 20 years of Menzies School of Health Research'. The symposium was hosted by prominent ABC health journalist Dr Norman Swan and drew almost 300 registrants from all over Australia.

The symposium was both a celebration of MSHR's past and a look to the future health environment in the region, with sessions on international health, tropical infectious diseases, obesity and other diseases of urbanisation, and the importance of a healthy start to life. The symposium ended with a hard-hitting panel discussion on future challenges in Indigenous health. I wish to extend my thanks to the many wonderful speakers locally and nationally who freely gave of their time to present such thought-provoking and fascinating material.

Later in the year, the Northern Territory Government's Health Minister, the Hon Dr Peter Toyne MLA, also generously hosted a cocktail reception at Parliament House to celebrate MSHR's 20 years. A hallmark of the past 20 years has been the support of MSHR by successive Northern Territory Governments — that bipartisan support has underpinned our success. I am particularly grateful that our Northern Territory Government funding is now on a secure footing. We have a uniquely strong partnership with the NT Department of Health and Community Services, including a number of key joint appointments, and I am proud that the research conducted here is driven by the clinical and public health questions of the NT and the region.

Success with competitive grants continues to be strong, with substantial grants awarded to tackle local health issues such as petrol sniffing, melioidosis and heart disease in Aboriginal Australians, as well as a prestigious Career Development Award for Dr Shelley Walton to increase our understanding of the biology of the scabies mite.

I am particularly delighted to report that MSHR now generates \$3.60 for every \$1.00 received from the Northern Territory Government. But of course it is not simply about the dollars: it is the health outcomes of our research which are the most important — the outcomes which improve people's health and, ultimately, their lives.

It is pleasing to report that local researchers can make an impact on global policy. The International Health team, led by Prof Nick Anstey, and colleagues from the Indonesian Ministry of Health, participated in a regional collaboration showing that artesunate reduced the risk of death from severe malaria by a third, and with fewer side effects than quinine in preventing death in adults.

This new development in the treatment of malaria has the potential to save millions of lives, and has been broadcast to the medical community via a paper co-authored by Prof Anstey and recently published in the prestigious journal *The Lancet*. This study has also changed the World Health Organization's global policy, with artesunate replacing quinine as treatment of choice for severe malaria.

2005 saw the appointment of Dr Ngiare Brown to the newly established MSHR position of Assistant Director, Indigenous Health. We are lucky to have Dr Brown on staff. Her role will include enhancing the professional development, recruitment and retention of Aboriginal and Torres Strait Islander staff, as well as ensuring that all MSHR grants and submissions appropriately address Indigenous health issues and outcomes. I am delighted to report that of our approximately 200 staff (full-time, part-time, casual), 60 are Aboriginal or Torres Strait Islander, of whom three are medical practitioners.

Our financial and administrative management remains in great shape. This year we completed a major laboratory refit, which resulted in the creation of office space for 30 staff and has significantly eased some of the accommodation pressures in the remainder of the building.

This annual report is testimony to the very exciting and innovative work carried out by the various MSHR divisions: Environments, Services and Populations; Tropical and Emerging Infectious Diseases; Chronic Diseases; and Education and Training. I urge you to take the time to have a read.

Local researchers can make an impact on global policy

After five years, this is my final annual report as Director of the Menzies School of Health Research. I leave with mixed feelings — sadness at leaving behind my research colleagues and a job that I have enjoyed, but also great pride at leaving the organisation in very good shape after five years of significant growth and research success. I hand over the baton to my successor, Prof Jonathan Carapetis, who I know will continue to foster MSHR's high standards. I will continue to take a keen interest in MSHR's research activities, and I anticipate regular visits to the Territory as part of my own continuing research on diabetes and related chronic diseases in Aboriginal communities.

Finally, I thank the Interim Director, Prof Bart Currie, the staff and students of MSHR, the Board and its committed Chair, Prof Simon Maddocks, the Northern Territory Government, the Menzies Foundation, our collaborators and partners — particularly those in Indigenous communities who have greatly assisted our research — and our donors and supporters who collectively believe in what we strive to achieve. It has truly been a privilege to serve as Director of this organisation and lead and develop such a dedicated and talented group of staff who I know will continue to do great things in the future. I wish you all well.

**Professor Kerin O'Dea AO**

6 Our financial and administrative management remains in great shape. 9

## NT Parliamentary Adjournment Debate, 20 October 2005

### Northern Territory Minister for Health, the Hon Peter Toyne MLA

*Madam Speaker, I just want to deal with a number of matters in my time, the first being to share with the house the outstanding achievements of Professor Kerin O'Dea in recognition of the contribution she has made to research and knowledge in the Territory, and the leadership she has shown as the Director of Menzies School of Health Research.*

*In June 2000, Professor Kerin O'Dea, a well-respected, successful public health researcher, was appointed as Director of Menzies School of Health Research. Much has happened since then. Through hard work and tireless commitment to organisation reform, Menzies School of Health Research has flourished in the past five years and is now recognised as the institute at the forefront of Aboriginal and tropical health research in Australia.*

*Menzies' success in attracting competitive research funding under Professor O'Dea's leadership has been exceptional. In 2004, the National Health and Medical Research Council's (NHMRC) grant income was a record \$10.6 million, which meant that for the third year in a row, MSHR had earned over 50% of the total NHMRC Aboriginal health research funding.*

*Professor Kerin O'Dea led a research team in a successful bid for a \$7.1 million program grant to address chronic diseases in Aboriginal and Torres Strait Islander populations. This was the largest single grant in Menzies' 19-year history.*

*The personal achievements of Professor Kerin O'Dea have also been recognised nationally with her receiving an Order of Australia in 2004, for service in the 'areas of medical and nutrition research, to the development of public health policy, and to community, particularly Aboriginal Australians, through research into chronic disease and prevention methods'. She was also named as a Northern Territory finalist for the Australian of the Year in 2005.*

*Her contribution to the Northern Territory extends beyond the realms of Menzies. She has played a strong advocacy role for Aboriginal health on the Northern Territory Health Advisory Council. At a national level, Professor O'Dea contributed her public health skills on numerous committees, including Council Member for the NHMRC, member of the National Obesity Taskforce, Board member of Food Standards Australia and New Zealand and Chair of the Advisory Committee for the Australian Longitudinal Study of Women's Health.*

*Professor Kerin O'Dea indicated to me earlier this year that she would not be seeking reappointment. The Menzies Board is currently recruiting to the position.*

*I'm sure all of you will join me in acknowledging Professor O'Dea's outstanding contribution.*

*Madam Speaker, I move that the Assembly take note of the Statement.*

# 20th anniversary

## 20:20 vision symposium

A symposium to mark MSHR's 20th anniversary was held at Charles Darwin University on 31 May and 1 June 2005. The symposium was both a celebration of the past and a look to future health challenges in Australia and the region over the next 20 years.

The symposium was expertly chaired by Dr Norman Swan, well known ABC health journalist.



Sir Daryl Dawson AO, Chairman of the Menzies Foundation, attended and paid tribute to the success of MSHR over the past 20 years.



Current and past staff, students and friends were captivated by the 20th anniversary PowerPoint show — presented by Prof John Mathews — which paid homage to the people, places and work of MSHR.

We were particularly honoured to have the Ambassador of Indonesia, His Excellency Mr Imron Cotan, present in the International Health session on day one, together with senior collaborators from our Timor-Leste research program.



PHOTOS COURTESY BARRY LEDWIDGE, CDU



The symposium included a number of hard-hitting panel discussions on future health challenges.



20:20 vision presentations and photo gallery available at [www.cdu.edu.au/cdss/](http://www.cdu.edu.au/cdss/)

## Parliament House function

The Northern Territory Minister for Health, the Hon Dr Peter Toyne MLA, hosted a reception on 28 September to celebrate the anniversary of Menzies School of Health Research.

Over 200 past and current staff, students and friends of MSHR gathered for a delightful cocktail reception in the main hall at Parliament House.



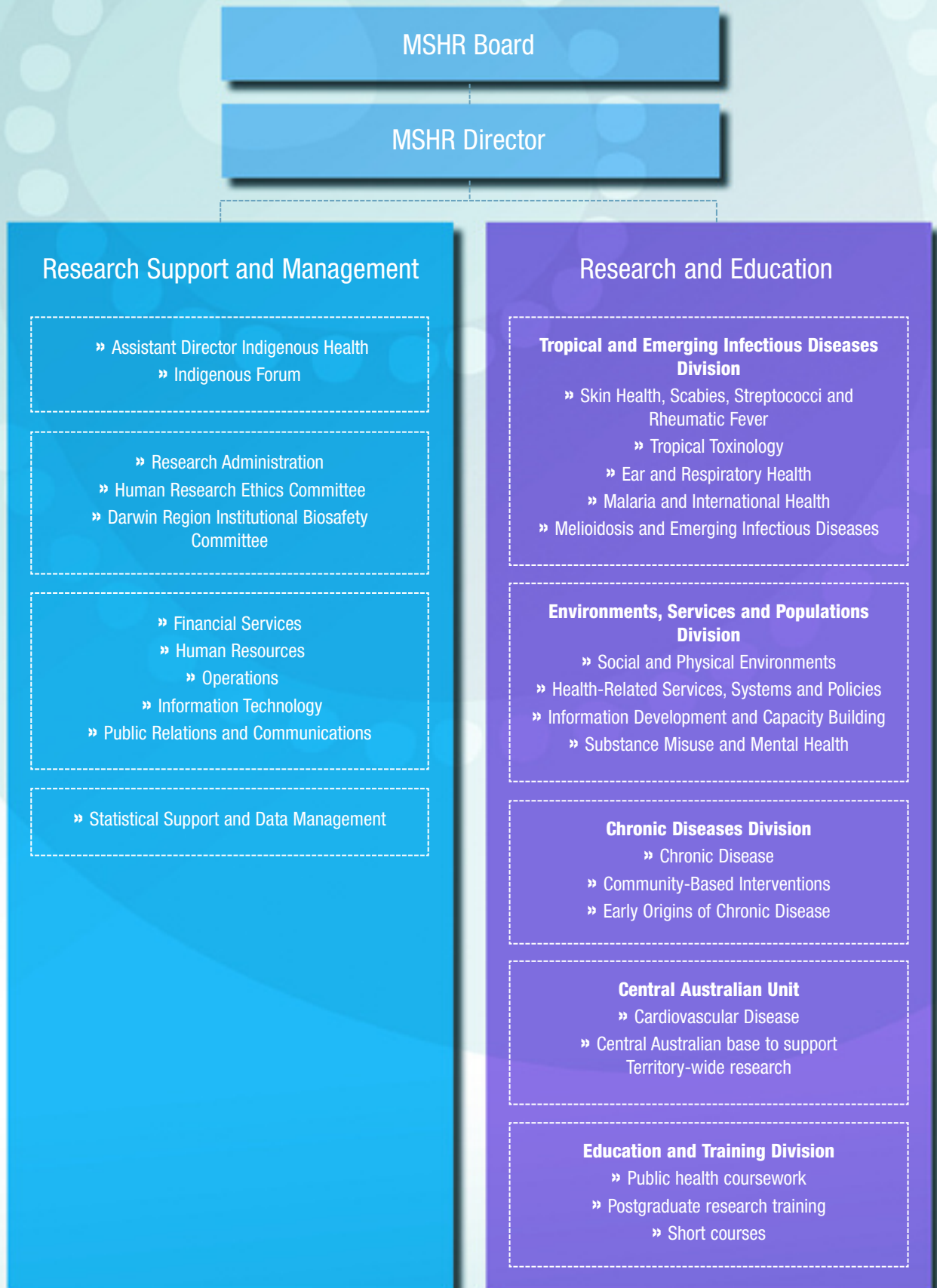


## Significant research outcomes over the last 20 years . . .

- » Established an Aboriginal birth cohort of 686 Aboriginal babies from 1987, currently in the third wave of data collection.
- » Improved quality of food in the communities' local stores following community-based interventions.
- » Designed a coordinated program for the prevention and treatment of rheumatic fever.
- » Introduced a systematic pharmacotherapy program to treat renal disease on the Tiwi Islands leading to marked improvements in blood pressure and stabilisation of renal function.
- » Excluded dogs as a reservoir of human scabies in remote Aboriginal communities through the use of DNA fingerprinting, thus changing the focus of programs to be on prevention and treatment of scabies in children, rather than targeting the dogs.
- » Dramatic reductions in scabies and streptococcal skin sores resulting from a mix of clinical, public health, community-based interventions and laboratory initiatives leading to a stronger evidence base for practice.
- » Development of national prevention and treatment guidelines for middle-ear disease in Aboriginal children.
- » Halved the number of deaths in the NT from melioidosis following clinical studies of new treatments, combined with public health information on prevention and early diagnosis and treatment of melioidosis.
- » Documented the harmful effects of kava, alcohol and petrol sniffing in remote Aboriginal communities and advocated for regulation to control the supply of kava and alcohol availability.
- » Movement disorder on Groote Eylandt shown to be independent of manganese exposure and genetically diagnosed as Machado Joseph disease.
- » Identified and sequenced the CLAG (cytoadherence) gene for malarial parasites.
- » First Australian sequencing of the chlamydia plasmid and the first Australian isolation of *Chlamydia pneumoniae*.
- » Compilation of national data on health-related infrastructure in remote Aboriginal communities used as a key tool for policymakers and Indigenous leaders planning services in remote Indigenous communities in the NT.
- » Studies finding that it is possible to recover brain function after sustained abstinence from petrol sniffing.
- » Developed clinical audit tools and a continuous quality improvement framework for Aboriginal health services, thus boosting the quality of care for people with chronic disease.
- » Pioneered the culture of the causative organism of donovanosis using chlamydial tissue culture techniques and the development of a new PCR technique for rapid diagnosis of donovanosis.
- » Studied the long term trends in cancer mortality in NT Indigenous people and the identification of factors that are responsible for low cancer survival for Indigenous cancer patients.
- » Analysed the disparities between Indigenous people and other Australians treated in Australian public hospitals, resulting in important implications for addressing the barriers to health care for Indigenous people.
- » Malaria research studies that have changed global, Indonesian and Australian malaria treatment protocols.



# Organisational chart



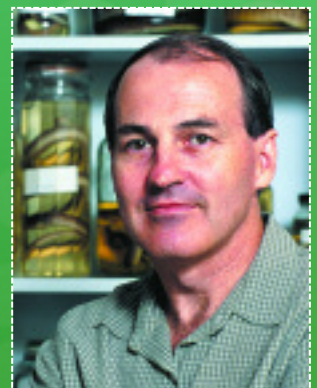
# Tropical and Emerging Infectious Diseases Division

The Tropical and Emerging Infectious Diseases Division investigates specific illnesses of priority and monitors emerging diseases for Indigenous people and others living in tropical and remote environments.

We focus on developing and assessing prevention and treatment methods by seeking a better understanding of the underlying disease processes. Epidemiology, clinical observations and basic laboratory work are interlinked, with evidence-based approaches undertaken when possible.

Our program areas span:

- » Skin Health, Scabies, Streptococci and Rheumatic Fever
- » Tropical Toxinology
- » Ear and Respiratory Health
- » Malaria and International Health
- » Melioidosis and Emerging Infectious Diseases



Head of Division, Professor Bart Currie

## Skin Health, Scabies, Streptococci and Rheumatic Fever

**S**cabies and secondary streptococcal skin infections are widespread in many remote Aboriginal communities in northern and central Australia, with up to 60% of children in some remote communities estimated to be infected with scabies.

There is also a link between endemic scabies and skin infections in childhood, and the extreme rates of end-stage renal failure, rheumatic heart disease and other serious conditions found in adults.

A major innovation for MSHR in collaboration with the Cooperative Research Centre for Aboriginal Health is the integration of various laboratory, clinical and public health projects under the Skin Health initiative.

Our laboratory-based research aims to better understand why some people are more affected than others by scabies mites and streptococcal bacteria, and search for potential vaccines and new diagnostic and treatment options.

Clinical and public health research is aimed at refining prevention and treatment protocols for community and hospital use. The Healthy Skin program brings locals, researchers and health workers together to tackle scabies and skin infections. A strategy currently being trialled is the hosting of community treatment days for scabies involving residents in East Arnhem Land, followed by regular monitoring of skin infections to treat new cases as they arise. It is hoped that this regional approach will reduce the spread of scabies, decrease skin bacterial infections and greatly impact on the health of community members.

### Our researchers and students are . . .

» Undertaking molecular studies in our laboratory, looking at a group of scabies proteins that are very similar to the extensively studied house dust mite allergens, to obtain a clearer idea of immune responses in normal scabies compared to crusted scabies (severe scabies infestation).

This year our studies have shown for the first time that there are differences in the type and magnitude of the antibody and cellular immune responses between patients with crusted and ordinary scabies.

We are currently developing T-cell cultures to investigate the immunological pathway responsible for the development of crusted scabies.

Long-term outcomes of this work may include new treatment for crusted scabies based on immunotherapy. We are also working towards a rapid immunodiagnostic assay that may lead to a blood test for accurate and early diagnosis of the disease, and therefore better control of the infestation. Currently, diagnosis is difficult as scabies can mimic other skin diseases.

» Reporting evidence of increasing resistance of scabies mites to topical permethrin and in vitro and clinical evidence of resistance to oral ivermectin. We are extending this work to identify the mechanisms of resistance at the molecular level. Studies are now underway to validate whether certain genes we have identified are associated with ivermectin and permethrin resistance in scabies mites. This work may enable early detection and monitoring of permethrin and ivermectin drug resistance in scabies mites.

» Gaining an overall picture of the diverse range of streptococci that thrive in our tropical environment, in order to develop treatment and preventative strategies to reduce streptococcal disease affecting Indigenous Australians. This year, we described streptococcal isolates associated with acute post-streptococcal glomerulonephritis (APSGN) outbreaks across the Top End over a period of 15 years, as well as further analysis of 100 representative group A streptococcus (GAS) isolates demonstrating links between genotype, protein-binding capability and disease association.

» Building on our preliminary study, during which screening of the human heart cDNA library identified 13 autoreactive heart proteins not recognised by sera from healthy controls. We now aim to test specificity of these heart antigens as potential diagnostic candidates for acute rheumatic fever.

» Investigating the cause of acute rheumatic fever in Aboriginal communities, to determine if GAS skin infection can lead to acute rheumatic fever. It is traditionally taught that rheumatic fever only arises from GAS infection of the throat.

Data collection was completed this year, with over 4800 throat swabs and almost 500 skin-sore swabs processed through MSHR over the last two years. Laboratory analyses of streptococcal isolates are now well underway.

We have documented that streptococcal throat infection is rare and bacterial skin infections are common in remote communities where high rates of rheumatic fever are recorded.

As a result of this study, optimal methods for sampling and transporting swabs from remote communities have been established, and these techniques have been incorporated into World Health Organization recommendations.

**Ms Kate Mounsey and Ms Amy Slender in the Scabies and Skin Pathogen Research Laboratory at MSHR.** PHOTO COURTESY BARRY LEDWIDGE, CDU.



» Continuing work on population health approaches to reduce scabies and streptococcal disease among people living in remote Aboriginal communities. This collaborative study is taking a coordinated regional approach to the Healthy Skin program across a group of six Aboriginal communities in the East Arnhem Land region, and will evaluate the program's impact on health in this region.

In 2005, successful mass treatment days were held in all communities, in addition to community screenings of children to record baseline data and assess rates of scabies, skin sores and tinea. The Healthy Skin team recruited paediatric registrars and dermatologists to assist with the screening process, and is recruiting and training Aboriginal community workers to work with the research team in the communities.

### Research project titles

- » Characterisation of immune responses to *Sarcoptes scabiei* cysteine proteases, Group 1 allergen homologues, in scabies.
- » The role of T cells in the allergic type response to scabies.
- » The development of an immunodiagnostic assay for scabies.
- » Investigating the molecular basis of emerging drug resistance in scabies mites.
- » Molecular diagnosis of ivermectin resistance mechanisms in scabies mites from northern Australia.\*
- » Searching for an immunodiagnostic protein for scabies.\*
- » Identification and characterisation of streptococcal pathogenicity factors.
- » Development of a diagnostic assay to identify acute rheumatic fever.
- » Can skin infection with group A streptococcus cause acute rheumatic fever?
- » Can skin sores cause rheumatic heart disease?\*
- » Part 1 — B cell antigens D8/17 as a marker of susceptibility for rheumatic fever in Australians. Part 2 — the sharp end of the needle. Rheumatic fever prevention and concepts for care for Yolngu patients.\*
- » Healthy skin program.

\*Student projects



Mrs Loyla Leysley, Healthy Skin Educator, with the Healthy Skin Story educational flip chart used within communities.

## Tropical Toxinology

**A**cross our land and coast live a diverse and deadly range of venomous animals.

Our research monitors and documents the human body's reaction to venom and antivenom therapies currently available for snake, spider and jellyfish envenomings. We are also interested in trialling new treatment and first aid practices, in addition to monitoring the occurrence of envenomings to distribute timely public health warnings.

### Our researchers are . . .

- » Monitoring the occurrence and type of box jellyfish stings in the waters off the Top End of the Northern Territory. Publication of our prospective study of 606 documented jellyfish stings that occurred between 1991 and 2004.
- » Trialling the use of hot-water immersion versus ice packs for pain relief in the treatment of box jellyfish stings at Royal Darwin Hospital. This study commenced in late 2005.
- » Continuing to document all snakebite envenomings in the Top End, recently publishing 13 years of data on snakebites at Royal Darwin Hospital. We are also monitoring the impact of the cane toad invasion on the epidemiology of snakebite in the Top End. We are particularly interested to see whether bites from taipans will become more common. Unlike the other major Top End venomous snakes, taipans are not toad or frog eaters.
- » Coordinating the Australian Snakebite Project (ASP), a prospective multicentre study of snakebite in Australia involving over 40 rural and metropolitan hospitals. This project is working to provide guidelines for dosing and timing of antivenom for envenoming from the major Australian snakes. It is also reviewing the effectiveness of the pressure-immobilisation method of first aid for snakebite.
- » Investigating the pharmacological effects of the northern mouse spider venom. In 2005, over 100 mouse spiders were collected in Darwin and milked for venom.
- » Involved in a multicentre trial with 10 hospital emergency departments to determine whether intravenous antivenom is more effective than intramuscular antivenom for the treatment of redback spider bite. Interim analysis in early 2005 indicated only a moderate difference between intravenous and intramuscular antivenom.

### Research project titles

- » The Top End prospective jellyfish study.
- » A randomised controlled trial of hot-water immersion versus ice packs for *Chironex fleckeri* stings.
- » The Top End prospective snakebite study.
- » Australian Snakebite Project (ASP).
- » Pharmacological investigations of venom from the northern mouse spider (*Missulena pruinosa*).
- » RAVE: Randomised controlled trial of antivenom treatment for redback spider bite: intravenous versus intramuscular antivenom.

Full research reports available at [www.menzies.edu.au](http://www.menzies.edu.au)

# Ear and Respiratory Health



MSHR is part of a national network pulling together information, experiences, ideas and resources on Indigenous ear health and hearing. The Indigenous EarInfonet ([www.healthinfonet.ecu.edu.au/ears](http://www.healthinfonet.ecu.edu.au/ears)) is a 'one-stop shop' for people working with Indigenous children affected by otitis media and their families. Photos courtesy Ear and Respiratory Health Team, MSHR.

**A** boriginal children experience the highest rates of chronic ear drum perforations (chronic suppurative otitis media or CSOM) in the world, resulting in long-term middle-ear damage, hearing loss and educational disadvantage. It is estimated that only about one in five children in remote Aboriginal communities have normal hearing, with the remaining four out of every five children requiring follow-up care from their local health clinic. This care includes referral for hearing loss assessment, some form of medical intervention (such as prescribed antibiotics) or surgery.

Our work focuses on the causes of severe ear and respiratory conditions, and assesses interventions to prevent and treat these illnesses.

We've documented modest benefits for treating and preventing ear drum perforations in Aboriginal children. The new pneumococcal conjugate vaccine Prevenar is effective in preventing middle-ear infections caused by the seven strains that are included in the vaccine. Unfortunately, other strains have increased and other species of bacteria continue to cause ear infections in these children, and no overall benefit of this vaccine has been seen for perforations. Antibiotics (amoxicillin) reduce the risk of perforation by 50%, and clearance of ear discharge can be resolved in 40% of children who have previously untreatable CSOM. These antibiotic therapies are effective during intensive and long-term use, but this is difficult for many families. The problem of bacteria becoming resistant is a concern, although this has been less common than expected. Short-term therapy (azithromycin, single dose) has a similar benefit for acute (new) infections as twice-daily amoxicillin (about 40% of children improve), but, again, there are concerns of bacterial resistance that must be weighed against the clinical benefit. We now look to embark on further studies that will build on these current findings in order to achieve clinically useful results that effectively prevent or treat ear drum perforations.

Our research, showing the very early onset of bacterial colonisation and subsequent ear infections in Aboriginal children, is the basis for a new study trialling maternal immunisation with Pneumovax, a drug which has been available for adults for many years. The use of this vaccine in pregnant and breastfeeding mums is a new idea that may increase the antibody protection transferred from mother to baby at birth and through breast milk. This new collaborative study will start recruiting participants in early 2006.

We believe that ongoing improvements in primary health care services in clinics and communities may greatly improve child health in remote areas. As such, we are broadening our research scope to include the 'Strong Teeth for Little Kids' study which will evaluate the effectiveness in preventing tooth decay by incorporating oral health into existing primary health care programs in remote communities. Child-health workers will be trained by dental therapists in the application of fluoride varnish, and communities are being invited to participate in designing oral health promotion programs, including improving awareness and access to toothbrushes, fluoride toothpaste and tooth-friendly foods and drinks.



## Our researchers and students are . . .

» Documenting the modest effects of the 7-valent pneumococcal conjugate vaccine Prevenar in preventing otitis media in Aboriginal children. We have found the Prevenar vaccine to be highly effective in eradicating bacterial strains targeted by the vaccine. However, we have also recorded an increase in the prevalence of other bacterial strains following vaccination, which may also be a cause of severe ear infection leading to perforation.

Our next challenge will be to look at these replacement bacteria strains and determine whether they are also the cause of severe ear disease, or if they are less virulent than those eradicated by the vaccine.

» Finding that the Prevenar vaccination is producing a 'herd' immunity effect. In the Aboriginal community involved in our study, vaccination of the infants resulted in a reduction in presence of these strains in older age groups within that community.

» Finding simpler and short-course antibiotic treatment options for Aboriginal children diagnosed with acute otitis media: single-dose azithromycin versus seven-days amoxicillin. Overall, we found both antibiotics gave similar results, with 40% of children improving at one week. We also found that azithromycin dramatically reduced the bacterial colonisation in the nose. Future studies investigating the clinical and bacteriological outcomes of a second dose of azithromycin are planned.

» Monitoring the impact of vaccination programs and antibiotic treatments on the pneumococcal strains found in children in Darwin childcare centres and children in Aboriginal communities. We have identified a possible vaccination coverage threshold required to gain herd immunity in a community. We have also found geographic variations in antibiotic resistance profiles of pneumococcal strains which reflect regional antibiotic usage patterns. These findings are fed back to those regions so that they may plan for the best use of those antibiotics.

» Measuring the concentration of respiratory pathogens in children diagnosed with otitis media in Darwin childcare centres compared to children with the same diagnosis in remote Aboriginal communities. For children with mild ear disease, we found the Aboriginal children had a much greater density of bacteria than non-Aboriginal children. This may explain why mild ear disease progresses to ear drum perforations in Aboriginal children. For children with more serious ear disease the bacterial concentration was much higher, in both Aboriginal and non-Aboriginal children. We also examined nasal swabs from Aboriginal children at birth until the first clinical signs of disease and identified the critical period when the bacteria levels increased markedly.

» Determining if topical antibiotics are superior to ear cleaning alone in reducing the inflammation associated with chronic suppurative otitis media. We have shown that antibiotic drops are needed in addition to cleaning the ears to resolve discharge.

» Commencing a randomised controlled trial to find out if pneumococcal immunisation of mothers in the last few months of pregnancy, or to mothers when the baby is born, can prevent ear disease in Aboriginal and Torres Strait Islander infants. We believe antibodies passed on from the mother while the baby is in the womb, or through breast milk, may protect babies from ear disease. The research team will start inviting pregnant women to participate in the trial in 2006.

» Undertaking consultation with over 40 Aboriginal communities in preparation for a cluster randomised controlled trial evaluating the effectiveness of a health care intervention to prevent dental decay among preschool children. The project involves a six-monthly application of fluoride varnish and an oral health promotion program delivering messages such as the importance of drinking water, avoiding lollies and brushing teeth. This project involves training of local health professionals in oral health, and incorporating it into primary health care service for children.

Full research reports available at [www.menzies.edu.au](http://www.menzies.edu.au)

## Research project titles

- » Community pneumococcal protection project (CPPP).
- » Immunogenicity of 7-valent pneumococcal conjugate vaccine (Prevenar) in Tiwi infants.
- » Vaccine interactions between 7-valent pneumococcal conjugate vaccine, Prevenar, and the scheduled diphtheria, tetanus, and pertussis and *Haemophilus influenzae* type b vaccines, in Tiwi infants.
- » Azithromycin versus amoxicillin for the treatment of acute otitis media in Aboriginal Children (ATTAAC).
- » Pneumococcal surveillance in the Northern Territory: implications of vaccination and mass treatment programs (MARS).
- » Implications of bacterial load for vaccine efficacy and antibiotic treatment outcomes in high-risk populations (BLOOM). Completed, not published.
- » Ciprofloxacin versus Sofradex in runny ears (C-SURE).
- » Otitis media in Indigenous and non-Indigenous children: microbiological and immunological risk factors (WAHI).
- » Invasive *Acinetobacter* infection in the tropical Northern Territory.
- » Immunising Aboriginal mothers with pneumococcal polysaccharide vaccine to prevent infant ear disease and carriage (PneuMum).
- » Development and evaluation of a primary health care model to prevent dental decay in Aboriginal preschool children.
- » Reducing the burden of infectious disease in young Aboriginal children: an evidence-based multidisciplinary approach.
- » Chronic suppurative otitis media in Aboriginal children: opportunities for improved health outcomes.\*
- » Selective use of long term antibiotics for chronic lung obstructive disease in Aboriginal adults: a multi-centre trial.

\*Student projects

## Malaria and International Health

**E**ach year, malaria affects over 500 million people internationally, with up to two million deaths. Children and pregnant women are particularly vulnerable. Tuberculosis (TB) affects eight million people worldwide, also contributing to two million deaths. Both diseases are major causes of morbidity and mortality in countries in our region, including eastern Indonesia and East Timor.

MSHR's Malaria and International Health program has been working with the Indonesian Ministry of Health's National Institute of Health Research and Development (NIHRD) for the last 10 years, resulting in an exciting partnership that is tackling malaria and TB on a regional basis. More recent regional collaborations include partners in East Timor and Thailand.

Our research program involves a wide range of projects aimed at improving diagnosis, treatment and prevention of malaria and TB, with a focus on evaluating new and affordable combination treatments for malaria, improving our understanding and treatment of severe malaria, and improving TB treatment outcomes.

A significant component of our work is undertaken in Timika, Papua, Indonesia, where drug-resistant malaria is a major problem. A joint NIHRD-MSHR team of over 15 research staff is based in Timika at Rumah Sakit Mitra Masyarakat (RSMM) Hospital working on malaria and TB studies in partnership with local health care providers.



**Arginine trial investigators demonstrate the physiological procedures involved in the trial to the RSMM Hospital Director, Dr Paulus Sugiarto, in the hospital's new Clinical Research Ward. These studies are aimed at increasing nitric oxide production, reducing blood vessel stickiness and improving outcomes in severe malaria. Pictured from left to right: Dr Daniel Lampah, Mr Pak Noah Warikar, Dr Tsin Yeo, Dr Enny Kenangalem, Dr Paulus Sugiarto (on bed) and Dr Emiliana Tjitra.** Photo courtesy International Health Program, MSHR.

### Our researchers and students, in partnership with the Indonesian Ministry of Health, are . . .

» Changing global health policy following the completion of the multicentre South-East Asian Quinine versus Artesunate severe Malaria Trial (SEAQUAMAT) study. The Timika field site enrolled 20% of patients in the largest treatment trial ever performed in severe malaria comparing intravenous artesunate therapy with that of quinine. The study demonstrated a 34% reduction in mortality in the artesunate arm. As a result of the study the WHO has changed global policy, and Indonesia and Australia have both changed national policy.

» Improving treatment outcomes after completing the largest ever comparative trial of artemisinin-combination therapy in Indonesia, involving over 1000 patients with malaria. Results have led to the Indonesian Ministry of Health's decision to recommend widespread deployment of dihydroartemisinin-piperazine (a new and relatively inexpensive artemisinin-containing combination antimalarial treatment) in the Timika region.

» Consolidating a comprehensive malariometric surveillance system in Timika, Papua, to define and prospectively monitor the amount and cost of malaria in the community and hospital. This includes prevalence and incidence surveys as well as information from entomology, hospital admissions, pregnant women and laboratory records. This data was presented by Indonesian collaborators at the International Federation of Tropical Medicine in Marseilles, France.

» Completing a large, in-depth, baseline house-to-house survey which addressed anthropomorphic, demographic, economic and morbidity data from 860 households.

» Leading the first comprehensive in vitro characterisation of *Plasmodium vivax* drug sensitivity from a region endemic for chloroquine-resistant vivax malaria.

» Commencing Wellcome Trust-NHMRC funded trials of arginine supplementation in falciparum malaria. These are aimed at increasing nitric oxide production, reducing blood vessel stickiness and improving outcome in severe malaria.

» Constructing a Clinical Research Ward at RSMM Hospital in Timika, and commencing novel measurements of blood vessel function in severe falciparum malaria.

» Identifying new insights into how the body protects itself from malaria infection, and what goes wrong in severe malaria, drawn from a large microarray analysis of immune responses to malaria.

» Identifying a major burden of severe malaria from *Plasmodium vivax*, previously thought to be a rare cause of severe disease.

» Gaining recognition internationally for our work, such as the invitation of MSHR researchers to present malaria findings at the second global meeting dedicated to vivax malaria in Washington DC, USA. MSHR TB researchers were also invited to present at a symposium on TB in complex emergencies at the Global Lung Health Conference of the International Union Against TB and Lung Diseases in Paris, France, in October.

In August MSHR hosted an international meeting of malaria experts to identify major obstacles in determining clinical, in vitro and molecular markers of antimalarial drug resistance and facilitate a process by which standardised methodology could be developed.





Mr Manuel Martins purchasing food at a local market in Dili for MSHR's Food Incentives for TB Treatment Compliance in East Timor study. Photo courtesy International Health Program, MSHR.

» Finding a significant residual restrictive deficit after completing TB therapy in our follow-up work of the TB lung-function study. This has important public health implications for respiratory health, and raises the possibility of a role for adjunctive therapy to improve outcomes and minimise residual lung disease. Studies will commence in 2006.

» Publishing the first community-based, TB drug resistance survey in Indonesia. Multidrug-resistant TB represents 2% of newly diagnosed patients in the district.

» Commencing Timor-Leste's first ever randomised controlled trial of adjunctive food to improve treatment compliance in tuberculosis. Over 270 patients have completed the intensive phase of treatment. The study has had an important role in developing research infrastructure in Timor-Leste. MSHR researchers were co-organisers of a national health research conference in Dili in June 2005.

Full research reports available at [www.menzies.edu.au](http://www.menzies.edu.au)

### Research project titles

- » Is artesunate better than quinine in reducing the risk of death from severe malaria?
- » Can arginine be used to help treat malaria?\*
- » Genes protecting from severe malaria.
- » Understanding how malaria affects the lungs.
- » Severe disease from *Plasmodium vivax*.
- » Understanding the immune response to malaria.
- » Using microarrays to understand immune responses and pathophysiology in uncomplicated and severe malaria.
- » Defining the epidemiology and burden of malaria in Papua, Indonesia.
- » New treatments for multidrug resistant strains of *Plasmodium falciparum* and *P. vivax*.\*
- » In vitro and molecular studies of multidrug resistant malaria.
- » Patterns of gene expression that characterise outcomes from malaria infection.
- » Pulmonary disability in TB patients and related TB studies in Timika, Papua Province, Indonesia.
- » Post-conflict infectious diseases health service development.
- » TB studies in Timor-Leste.
- » Operational research on tuberculosis control program in East Timor.\*
- » Community perceptions of TB in a remote Aboriginal community.
- » Clinical studies to determine the optimal treatment for drug-resistant malaria in Timika, Indonesia.\*

\*Student projects

# Melioidosis and Emerging Infectious Diseases

**M**elioidosis is an under-recognised — but potentially fatal — tropical disease that can trigger a range of symptoms, making it particularly difficult to diagnose. The bacteria causing melioidosis, *Burkholderia pseudomallei*, can be found in soil and surface water in tropical areas, usually after heavy rainfall, and is common within Australia's Top End and regions of South-East Asia.

MSHR has been interested in the incidence, distribution and control of melioidosis, while also working on ways to improve prevention, early diagnosis and effective treatment, for over 16 years.

MSHR's long-term interest in melioidosis has resulted in a valuable set of prospective data matching clinical observations with cultures stored in our laboratory, and linking them to the geographic source of the bacteria.

This clinical, laboratory and environmental research has helped reduce the mortality rate from melioidosis in the Top End to the lowest in the world.

We are currently using DNA fingerprinting methods developed specifically for melioidosis bacteria to better understand why melioidosis can be such a severe disease, how it spreads from the environment to humans and animals, and how it has possibly spread within Australia and overseas. We are also trialling a real-time PCR for use as a rapid diagnostic test for melioidosis and for ongoing environmental studies.

## Research project titles

- » Presence of the melioidosis bacterium in bore water in rural Darwin blocks.
- » Melioidosis clinical and diagnostic studies in the Northern Territory.
- » Molecular studies of *Burkholderia pseudomallei*.
- » Melioidosis clinical and diagnostic studies in Thailand.
- » A clinical trial of G-CSF for the treatment of severe melioidosis in Thailand.
- » A clinical evaluation of a TTSS1 real-time polymerase chain reaction for diagnosing melioidosis.\*
- » Melioidosis: epidemiology, pathophysiology and management.\*

\*Student projects

## Our researchers and students are . . .

» Investigating the presence of the melioidosis bacterium from bore water in rural Darwin blocks. In 2005, we confirmed the presence of *Burkholderia pseudomallei* in bores during the dry season. We also cultured the bacterium from over 25% of bores sampled. Molecular typing showed linkage to disease-causing strains of *B. pseudomallei*.

» Trialling and evaluating a rapid diagnostic test for melioidosis at Royal Darwin Hospital. Melioidosis is difficult to recognise clinically, with diagnosis currently relying on culturing of the bacterium, which can take several days. A sensitive real-time PCR able to produce a result within hours would allow earlier diagnosis with more rapid administration of appropriate antibiotic treatment.

» Improving treatment protocols with our clinical colleagues at Royal Darwin Hospital, with mortality from melioidosis continuing to decrease.

» Undertaking molecular studies to determine if there are any geographical patterns of infections. Our analysis to date suggests there is a geographical localisation of strains, which means that Australian strains have evolved separately from those in South-East Asia.

» Aiming to determine if particular strains of melioidosis bacteria are responsible for particular clinical presentations of the disease. To date our molecular studies have not found any evidence that particular strains are associated with infections of particular organs or varying severity.

» Completing clinical trials of G-CSF (a naturally occurring substance produced by humans and animals in response to infection) for severe melioidosis in Thailand. This study aims to improve outcomes for Thai patients who have, historically, had a high death rate from melioidosis, despite adequate antibiotics.

We are also evaluating the use of clinical tools and diagnostics in patients with melioidosis in Thailand, in collaboration with the Wellcome Trust—Oxford University—Mahidol University Tropical Medicine Research Program, Bangkok and the Sapprasithiprasong Hospital, Ubon Ratchathani, Thailand.

Full research reports available at [www.menzies.edu.au](http://www.menzies.edu.au)



**MSHR melioidosis research links clinical cases of melioidosis with environmental sources. In this case, a hospital**

**patient with melioidosis recalled grazing his knee at a soccer field. MSHR environmental studies at the site demonstrated the presence of the melioidosis bacteria, and genetic fingerprinting confirmed one bacterial strain in the soil to be identical to the patient's strain. Final environmental analysis will inform the local council if improved drainage or field resurfacing is required to prevent further infections.** PHOTOS COURTESY

# Environments, Services and Populations Division

The determinants of health go beyond purely biological causes, with the physical environment, social context, quality of health services and substance use having a significant impact. But how, and to what extent?

Our research seeks to meet the growing demand from policymakers and government bodies to build an evidence base in order to shape the ways in which Aboriginal health care and related services are delivered.

We employ a wide range of researchers to facilitate an exciting array of interdisciplinary health research in disciplines spanning epidemiology, biostatistics, anthropology, sociology, medicine, nursing, law, health promotion, neuroscience, psychiatry and environmental science.

Our research takes place within four programs:

- » Social and Physical Environments
- » Health Related Services, Systems and Policies
- » Information Development and Capacity Building
- » Substance Misuse and Mental Health



Head of Division, Associate Professor Joan Cunningham

# Social and Physical Environments

**S**ocial and environmental factors are widely accepted as playing a significant role in the poor health of Aboriginal and Torres Strait Islander people living in rural and remote regions of Australia, yet these factors are poorly understood.

MSHR is building knowledge and evidence of these important underlying determinants of health through research that combines scientific integrity and community needs in order to guide policies and initiatives affecting Aboriginal health.

## Research project titles

- » The impact of household infrastructure improvements on child health in remote Aboriginal communities.
- » Fluoridation of water supplies in remote Indigenous communities in the Northern Territory: requirements, feasibility and cost-effectiveness.
- » Socioeconomic and environmental determinants of health in Indigenous communities in the Northern Territory.\*
- » Racism, stress and the health of Indigenous Australians: a critical epidemiological study.\*
- » Population-health-environment: improving hygiene and children's health in remote Indigenous communities.\*
- » The relationship between bushfire smoke and human health in the Australian monsoon tropics.\*
- » Analysis and feedback of child health data in remote Indigenous communities.\*

\*Student projects

## Our research teams and students are . . .

» Tracing the changes in housing in 11 remote Aboriginal communities currently undergoing major infrastructure development, to learn whether these changes impact on the health of the children living there.

In 2005 we completed our community data collections and health centre audits for eight communities. The results will guide the development of future infrastructure projects.

» Investigating the benefits and practicability of fluoridating water supplies in remote Aboriginal communities to combat the very high rates of dental problems that contribute to poor health.

We are looking to identify Aboriginal communities that are likely to benefit from fluoridation, and examine the feasibility of installing small-scale fluoridation plants in two communities. With data collection almost complete, findings from this study are planned for mid-2006.

» Looking at the availability and quality of routinely collected data from various Northern Territory and Commonwealth Government departments, and using it to gauge the relative needs of Aboriginal communities. Drawing together this range of data on a geographical level will aid more effective and equitable regional planning.

» Examining the association between racism, stress and a range of health outcomes for Indigenous Australians living in the Darwin area. This first epidemiological study of racism and health among Indigenous Australians produced three publications in 2005.

» Identifying a complex array of physical and social barriers preventing families in remote Aboriginal communities from achieving safe levels of hygiene. This information will be used to develop effective and sustainable hygiene-improvement programs to reduce common childhood infectious diseases.

» Looking at the health effects of bushfire smoke pollution in the monsoon tropics by monitoring atmospheric pollution, pollen and health. Health outcomes monitored since 2004 include daily symptoms and medication use of people with asthma, and surveillance of GP visits and pharmacy sales for hay fever and influenza-like illnesses.

This work forms part of a large multidisciplinary project looking at bushfire smoke and the relationship between human and landscape health, which may have implications for land management issues.

Full research reports available at [www.menzies.edu.au](http://www.menzies.edu.au)



The impact of household infrastructure improvements on child health is currently being investigated in 11 remote Aboriginal communities. PHOTOS COURTESY HIGH PROJECT, MSHR



# Health-Related Services, Systems and Policies

**W**e are concerned with the 'health' of Aboriginal health-related services, their organisation and delivery, and the policies that underpin these.

The flagship project of our work involves putting into practice continuous quality improvement processes to improve primary health care services in remote Aboriginal communities.

We are also particularly interested in Aboriginal people's use of existing health services, and seek to identify and overcome barriers to accessing treatment and care.

## Our researchers and students are . . .

» Making existing health services work better by putting into practice continuous quality improvement processes in health clinics in Aboriginal communities.

In 2005, the Audit and Best Practice for Chronic Disease project (ABCD, Phase 1) completed its third and final quality improvement cycle in 11 Aboriginal health centres in the Top End. Results showed significant clinical and health system improvements, boosting the quality of care for people with and without chronic disease living in remote communities. The success of this project has formed the basis of an extension program (ABCD Extension, Phase 2).

» Refining audit tools and developing new methods to assess mental health, environmental health and health promotion as part of the ABCD Extension program which commenced in 2005.

This program involves structured assessments of health centre systems and audits of clinical practice to encourage health centre driven improvements. This project began in 12 centres in the Top End and is currently being extended through regional hubs in New South Wales, Western Australia, Central Australia and Queensland.

» Revealing important new insights into the health and wellbeing of Aboriginal and Torres Strait Islander people living in urban areas, in particular their rates of diabetes and related conditions, such as heart and kidney disease.

This year, the Diabetes and Related conditions in Urban Indigenous people in the Darwin region (DRUID) study completed health checks and data collection for more than 1000 people — representing the greatest number of Indigenous adults in an urban area to ever participate in a health study. Presentations to community groups and partner organisations are underway to share results of the study, and study methods have been submitted for publication.

» Aiming to improve Indigenous patients' access to kidney transplants through a large, Australia-wide research program. Interviews with renal patients and staff, in renal units across five states and territories, will be completed in early 2006. Strategies to improve access, timeliness and quality of remote area renal services for Indigenous Australians have been developed and endorsed by the Australian Health Ministers' Advisory Council.

» Identifying certain factors responsible for the late diagnosis and less effective treatment of Indigenous people with cancer. This work will be used to inform improvements in diagnostic and acute care services.

» Coordinating the Top End site of an Australian study measuring the prevalence of cancer-causing genotypes of human papilloma virus (HPV) in Indigenous and non-Indigenous women. This collaborative study aims to determine if women in Australia, in particular Indigenous women, are affected by the same cancer-causing HPV genotypes for which a vaccine has been developed overseas.

» Investigating a potential epidemic of vulval cancer (an extremely rare cancer), in Indigenous women in several NT communities. We are confirming the number of cases in these communities and seeking to develop a prevention or early detection strategy to reduce the impact of this cancer.

» Looking at polycystic ovarian syndrome (PCOS) — an endocrine problem affecting fertility, and possibly contributing to diabetes and heart disease — in Indigenous women. We are developing an information sheet on PCOS for health providers with the NT Department of Health and Community Services.

» Examining how Aboriginal health policy is being put into practice, and trying to identify the barriers restricting the implementation of newly created Aboriginal health policy.

» Examining the development and delivery of maternity care in Timor-Leste, looking specifically at maternity waiting homes as a way to reduce maternal and perinatal mortality.



**The Audit and Best Practice for Chronic Disease project encouraged health centre driven improvements of clinical practice through structured feedback of audit results to the centres.** PHOTO COURTESY ABCD

PROJECT, MSHR.

## Research project titles

- » Audit and Best Practice for Chronic Disease (ABCD) project (Phase 1).
- » ABCD Extension (Phase 2).
- » The DRUID study: Diabetes and Related conditions in Urban Indigenous people in the Darwin region.
- » IMPAKT: Improving Indigenous patients' access to kidney transplantation.
- » Health services' performance for Indigenous people with cancer.
- » The prevalence of cancer-causing genotypes of human papillomavirus in Australian Indigenous and non-Indigenous women.
- » Cervical cytology and outcomes in women of the Top End of the Northern Territory.
- » Vaccination of Aboriginal and Torres Strait Islander people in Australia.
- » A cluster of vulval cancer in the Northern Territory.
- » Australian Primary Health Care Research Institute stream four systematic literature review.
- » Polycystic ovarian syndrome in Indigenous women.\*
- » Assessing change in public health research: an ethnography of an Indigenous public health institution.\*
- » Implementing Aboriginal health policy in Australia: a case study of the Northern Territory Preventable Chronic Disease Strategy.\*
- » Factors that influence research uptake: a case study of ABCD.\*
- » Community engagement in government services: a case study.\*
- » Reconstructing maternal care services: birthing in Timor-Leste.\*
- » Changing health centre systems for better diabetes care in Aboriginal communities in the Northern Territory.\*

\*Student projects

Full research reports available at [www.menzies.edu.au](http://www.menzies.edu.au)

# Information Development and Capacity Building

**W**e are increasing the number of researchers with advanced quantitative skills in Aboriginal health by developing the skills and careers of junior researchers. We are also improving the quality of data available for those making decisions about health services and policy through strategic research and analysis.

Our capacity-building work now encompasses 35 projects, five post-doctoral fellows, six PhD students and a cadet researcher. This work has resulted in a number of influential publications in peer-reviewed journals and has greatly enhanced the evidence available.

## Research project titles

- » CIPHER: Capacity building in Indigenous Policy-relevant Health Research.
- » Developing, improving, evaluating and using health information to inform policy and practice.
- » Development of a short course: Social Determinants and Indigenous Health.
- » Skills enhancement for health surveillance.
- » Exploring the characteristics of the Aboriginal health research workforce.
- » Towards the development of an information system for social and environmental determinants of Indigenous remote community health.
- » Priorities for Indigenous health relevant systematic reviews in health promotion and public health.
- » Information atlas project.

## Our researchers and students are . . .

- » Expanding our population health capacity-building program (CIPHER), with the University of Melbourne, to develop more researchers able to undertake high quality research and analysis, and producing evidence that can guide Indigenous health and social policy. This year we recruited a new postdoctoral research fellow, an additional Indigenous PhD student, and our first Indigenous cadet to the program. We organised and delivered the CIPHER Annual Learning Conference, featuring an invitational workshop on capacity building in Indigenous health research and a presentation of our current projects to a national audience involved in health policy, practice and research.
- » Working with a range of government bodies to develop and improve health data, and make the best possible use of current data sources that inform policy.
- » Active members on a range of government departments and advisory bodies, including Australian Government, state and territory departments of health, community services and housing, the Australian Bureau of Statistics and the Australian Institute of Health and Welfare.
- » Achieving outstanding success delivering a short course aimed at increasing the understanding of the social determinants of Indigenous health.
- » Researching the researchers — looking at the characteristics and experiences of researchers involved in Indigenous health research to learn how to encourage more researchers into the field.
- » Exploring issues of data availability and quality relating to social and environmental determinants of Indigenous health to allow researchers and policymakers to monitor change and evaluate health services in remote communities.
- » Forming a taskforce of Indigenous researchers from Australia, New Zealand and North America to address the lack of systematic reviews of improvements in social determinants of Indigenous health.



**Assoc Prof Joan Cunningham with MSHR PhD student Mr Yin Paradies.** PHOTO COURTESY BARRY

LEDWIDGE, CDU.

Full research reports available at [www.menzies.edu.au](http://www.menzies.edu.au)

# Substance Misuse and Mental Health

**M**SHR has an expanding program of research investigating the health effects and impact of petrol sniffing, kava, cannabis, alcohol and multisubstance abuse in Aboriginal communities, primarily in the Northern Territory.

We are undertaking studies to increase our understanding of brain function resulting from substance abuse and mental illness, as well as new research looking at psychosocial wellbeing as a possible contributor to the development of chronic disease.

Educational posters and flipcharts developed by this group, based on their research, provide some of the first educational material available to educate Aboriginal people about the effects of substance abuse and of mental illness.

We are also working towards developing a collaborative centre for the study of addictions and addictive behaviour, and their associated social and economic consequences in northern Australia and in relevant parts of South-East Asia and the Pacific.

## Research project titles

- » Drugs and the Brain.
- » Producing education resources on the effects of petrol sniffing (and other inhalant abuse) for Indigenous Australians.
- » Strong Souls Study.
- » Feedback to communities about cannabis research funded by NHMRC: a pilot project of a community-driven feedback model.
- » A prospective evaluation of a community-driven initiative to intervene in harmful patterns of substance misuse in a remote locality in the NT: the Groote Eylandt and Milyakburra Youth Development Unit.
- » How do you learn the intricate 'community development' dance in changing cannabis behaviours of young people in a remote Aboriginal community?\*
- » The social implications of substance abuse within isolated mining townships and the public health implications.\*
- » Relapse prevention in remote Indigenous mental health.\*
- » Best practice guidelines for evaluating Indigenous residential alcohol and drug programs.

\*Student projects



*Sniffing and the Brain* educational resource kit was launched nationally by Federal Minister for Health and Ageing, the Hon Tony Abbott MHR.

## Our researchers and students are . . .

- » Developing cognitive assessment tools specifically tailored for Indigenous people to understand the effects of petrol, alcohol and other substance abuse on the brain and behaviour. In 2005 we established a computerised cognitive assessment useful to detect cognitive impairment caused by episodic patterns of alcohol abuse.
- » Producing education materials, including *Sniffing and the Brain*, an educational resource kit to give Aboriginal people accurate information about how sniffing affects the brain, body and behaviour. This resource kit was launched nationally in Darwin by the Federal Minister for Health and Ageing, the Hon Tony Abbott MHR, and has been distributed to remote communities across the Northern Territory and Australia. We also produced the *Mental Health Brain Story*, an education tool for remote Aboriginal communities about the chemical imbalance in the brain that underlies mental illness.
- » Building on our recent work to expand our knowledge of the brain's ability to repair itself in those who have stopped petrol sniffing.
- » Developing tools to assess the mental health of Indigenous people, and examine how factors like resilience and emotional wellbeing affect health and chronic disease. In 2005 we developed a culturally appropriate check list to assess social, emotional and spiritual wellbeing.
- » Revealing that cannabis use in Aboriginal communities in East Arnhem Land has declined moderately among Aboriginal women and men over 20, although the main users continue to be adolescent males. These results coincide with increased NT police efforts targeting trafficking of illicit drugs to remote communities following our earlier study documenting, for the first time, the rapid and widespread uptake of cannabis use in Top End communities.
- » Developing community feedback, for community members and interested local agencies, to raise awareness and interest about our cannabis research results. Workshops and a DVD will be developed to provide education about cannabis, share research results to date, and generate discussion on interventions to treat cannabis misuse and smoking generally.
- » Continuing with follow-up studies of cannabis users, looking at whether cannabis use and other substance abuse amongst young people in remote Aboriginal communities has changed.
- » Developing a project looking at the social impacts and public health implications of substance abuse within isolated mining townships.
- » Trialling a new preventative treatment to reduce relapses of serious mental illness in five Top End remote Aboriginal communities, as part of the Australian Integrated Mental Health Initiative in the Northern Territory (AIMHI NT). In 2005 we developed mental health stories addressing the causes of getting sick again, and commenced a treatment trial in the first group of clients and carers.
- » Reviewing existing evaluation methods of Indigenous residential alcohol and drug rehabilitation programs to identify and trial new measures of evaluation. The study involves four Indigenous rehabilitation centres in Western Australia, Northern Territory and New South Wales.

Full research reports available at  
[www.menzies.edu.au](http://www.menzies.edu.au)

## Central Australian Unit

**D**r Alex Brown, Senior Research Fellow, MSHR, leads a team of six staff employed across a range of research projects based in Alice Springs.

The Central Australian Unit is developing a program of research primarily concerned with exploring the experience of cardiovascular disease among Indigenous Australians.

Clinical and community-based work is also undertaken by the team as a satellite site for Northern Territory-wide projects in collaboration with MSHR colleagues located in Darwin.

### Our Central Australian team are . . .

» Assessing the quality of care for people with heart attacks from onset of the attack to two years later. This is to determine whether Aboriginal people are receiving poorer care, which would contribute to worse outcomes. We continued hospital admission and primary health centre data collection throughout 2005, and established a partnership with an Australia-wide multicentre registry of acute coronary syndromes in 40 Australian hospitals to progress data collection in a multitude of study sites serving Indigenous clients.

» Looking at the links between psychosocial stress and depression in Aboriginal men and the development of cardiovascular disease. We are preparing to commence field work in early 2006.

» Following up almost 1000 people screened for cardiovascular disease in 1995 across four communities in Central Australia to determine the most important predictors of cardiovascular disease. To date, we have completed follow-up screening in two of the communities.

» Determining the structural, educational, physical and philosophical barriers that impact on those who live in Central Australia and suffer a heart attack. The work is in collaboration with the Centre for Remote Health.

» Preparing to broaden the scope of research activity in 2006 by coordinating a Central Australian branch of research projects with MSHR colleagues based in Darwin, such as the petrol sniffing project, a multi-centre bronchiectasis study, the Aboriginal Oral Health Study, and the Audit and Best Practice for Chronic Disease Extension project.

Full research reports available at  
[www.menzies.edu.au](http://www.menzies.edu.au)



**The Central Australian team (left to right): Mr Jeff Hulcombe, Ms Helen Liddle, Dr Alex Brown, Mrs Iris Robert and Mr Warwick Beaver.**



**Dr Alex Brown (centre), Head MSHR's Central Australian Unit, receiving an award at the Pfizer CVL Award ceremony held in July 2005.**

### Research project titles

- » The Central Australian secondary prevention of acute coronary syndromes (CASPA) study.
- » Men, hearts and minds: exploring the links between psychosocial stress, depression and coronary heart disease in Indigenous men from Central Australia.\*
- » Barriers to optimal management of ischaemic heart disease and associated risk factors and comorbidities for people living in Central Australia.
- » Predicting risk of cardiovascular disease in Aboriginal peoples.

\*Student projects



# Chronic Diseases Division

The Chronic Diseases Division focuses on building knowledge and evidence of the complex causal pathways to chronic diseases — such as diabetes, kidney and heart disease — including the impact of bio-psycho-social factors across the life course in Indigenous populations.

Through developing an understanding of the scientific basis of these lifestyle-related chronic diseases, we seek to develop community-based interventions to improve health outcomes.

We pursue collaborative research involving a wide range of disciplines, including epidemiology, biostatistics, psychology, social science, anthropology, biochemistry, nutrition, and clinical medicine.

Our research encompasses:

- » Chronic Disease
- » Community-Based Interventions
- » Early Origins of Chronic Disease

The work of the MSHR's Central Australian Unit has been presented alongside the Chronic Diseases Division, as cardiovascular disease is the primary thrust of its current research.



Head of Division, Professor Kerin O'Dea

# Chronic Disease

**I**n an alarming trend, lifestyle-related chronic diseases, such as diabetes, continue to soar throughout Australia, particularly in Indigenous communities.

Indigenous people have a 15 to 20 year shorter life expectancy than the overall Australian population. Diabetes and related conditions, including heart and kidney disease, are major contributors to this reduced longevity.

This body of research investigates the causal pathways of lifestyle-related chronic diseases, largely in Indigenous populations. We also compare diabetes, heart disease and risk factors across different Australian populations, in addition to undertaking clinical studies.



**Ms Heather Hall serves up fish at the Nightcliff Renal Clinic.** PHOTO COURTESY FISH AND FRUIT STUDY, MSHR.

## Research project titles

- » Biochemical markers of dietary intake and links to risk of cardiovascular disease.
- » How serious a cardiovascular disease risk factor is type 2 diabetes for Indigenous Australians?
- » Non-invasive assessment of cardiovascular disease: impact of type 2 diabetes and the metabolic syndrome.
- » Novel risk factors for cardiovascular disease.
- » Predictors of cardiovascular disease mortality in the Melbourne Collaborative Cohort Study.
- » What is the healthy body mass index range for Aboriginal and Torres Strait Islander peoples?
- » Predicting heart disease in Aboriginal and Torres Strait Island peoples.
- » A randomised trial of fish and fruit to improve survival of Aboriginal people with end-stage renal disease.
- » Early antecedents of renal disease in Aboriginal Australians.\*
- » A comparison of risk factors for diabetes and cardiovascular disease in Australian Aborigines living in homelands and a centralised community.\*
- » A dietary intervention to reduce cardiovascular markers in end-stage renal disease: a clinical trial of fish and fruit in Aboriginal people on dialysis.\*
- » Inflammation, oxidative stress and cardiovascular risk factors in Indigenous Australians.\*

\*Student projects

## Our researchers and students are . . .

» Comparing the diets of Indigenous Australians with high cardiovascular disease (CVD) mortality against migrants from the Mediterranean region with low CVD mortality in order to better understand how diet can reduce the risk of CVD. We are measuring carotenoids (coloured pigments), which are markers of the consumption of particular types of plant food in the diet, and the concentrations of different types of fats from the diet. We have found Greek migrants have significantly higher plasma carotenoid levels indicating a much higher intake of a range of vegetables and fruits. The most traditional Greek diet pattern is one associated with the lowest risk of CVD, even in the presence of overweight and obesity (but in the absence of diabetes or cigarette smoking).

» Examining a wide range of markers of CVD to discover their relative importance and how they interact to contribute to the very high rates of CVD in Indigenous Australians. We are particularly interested in determining if type 2 diabetes is responsible for greatly increasing the risk of CVD.

» Presenting findings that add to the growing evidence that high blood fats and fat around the abdomen should be recognised as risk factors to heart disease, particularly in Indigenous Australians, in addition to the currently acknowledged risk factors which include age, male gender, diabetes, high blood pressure and cigarette smoking.

» Examining novel risk factors of cardiovascular disease in Indigenous populations, as conventional risk factors do not fully explain the very high rates of premature cardiovascular disease experienced.

» Analysing anthropometry (body measurement) variables as predictors for cardiovascular mortality in Australian-born and Mediterranean-born populations. Results suggest that waist to hip ratio may be a more universally applicable measure of obesity with respect to cardiovascular disease risk than body mass index (BMI) for multi-ethnic populations.

» Determining the healthy BMI range for Aboriginal people to allow a simple measure for primary health care providers to use when assessing risk of chronic diseases. Current measures identifying the 'healthy' range for Europeans is associated with high rates of diabetes in Aboriginal people, so appropriate ranges associated with minimal risk need to be determined.

» Conducting a randomised trial to determine if a simple dietary intervention of fish and fruit three times a week will improve survival of Aboriginal people with end-stage renal disease.

One year post intervention tests measuring nutritional and cardiovascular status are nearing completion. The trial is expanding to other centres, with Cairns, Queensland, and Broome, Western Australia, commencing the intervention in early 2006.

Full research reports available at [www.menzies.edu.au](http://www.menzies.edu.au)

# Community-Based Interventions

**M**SHR has been working alongside Aboriginal people to develop community-based interventions to reduce the risk and impact of diabetes and related chronic diseases in Aboriginal communities.

Our goal is to bolster Aboriginal people to be active participants in their own health, rather than passive recipients of health, by educating the community on healthy lifestyle options.

The focus of the interventions has been to improve the quality of diets, increase physical activity and reduce smoking, while fostering a rich spiritual life.

A particular challenge of this work is being responsive to community concerns and enhancing the research capacity of the community, while conforming to scientific methodologies and producing results acceptable to colleagues and funding bodies.



**Students at Shepherdson College learn how to prepare healthy meals.**

**Ms Stephanie Yikaniwuy instructs students on family food preparation.**



PHOTO COURTESY GALIWIN'KU HEALTHY LIFESTYLE PROJECT, MSHR

## Our researchers and students are . . .

» Working across the Galiwin'ku community, in north-east Arnhem Land, to spread the healthy eating and active lifestyle message and support the community in developing interventions to reduce the impact of chronic disease.

This work is resulting in an increase in the consumption of fresh fruit and vegetables, as based on turnover analysis at the local community store. Local people are taking their own initiatives in self-directed physical activity, such as informal regular walking groups. A sustained interest in gardening is now financially supported by the local council.

» Collaborating with Galiwin'ku's Shepherdson College middle, primary and senior-school students to demonstrate young people's understandings of food in relation to health.

» Developing partnerships with Galiwin'ku community food outlets to develop a food supply monitoring and action tool based on store turnover.

» Drawing together a strong collaboration between researchers, the local food store, local takeaway and the school to develop a community governance structure that will be responsible for a coordinated and strategic approach to improvements in the community food supply, and to develop a community food policy in Galiwin'ku. To launch this food coalition, Mr W Daydjati was honoured for his lifelong commitment and promotion of Yolngu people having affordable healthy food.

» Evaluating the impact of involvement in land management activities on the health of Indigenous people. In 2005 we undertook biomedical, landscape ecology and ethnographic fieldwork.

» Implementing the Aboriginal and Torres Strait Islander Adult Health Check in a remote community setting. We will now evaluate the impact of this health check on infectious and chronic disease.

**Full research reports available at [www.menzies.edu.au](http://www.menzies.edu.au)**

## Research project titles

- » Community-based interventions to reduce the risk of diabetes and cardiovascular disease in Indigenous Australians.
- » A review of the factors that have shaped local food supplies and people's access to healthy foods in remote Aboriginal communities in the Northern Territory.\*
- » Investigation of the cultural salience of psychosocial indicators of health outcomes in Aboriginal diabetes prevention programs.
- » Sustainable northern landscapes and the nexus with Indigenous health.
- » The Aboriginal and Torres Strait Islander Adult Health Check (AHC): is it an appropriate strategy towards health equity in remote areas?\*

\*Student projects

# Early Origins of Chronic Disease

**M**SHR has tracked since birth the health of 686 babies born at Royal Darwin Hospital, this being the oldest and largest birth cohort of any Indigenous population in the world.

Now that the Aboriginal birth cohort (ABC) 'babies' are nearing their 18th birthday, their current physical and mental health may hold important new insights into the dynamics of heart disease, diabetes and kidney disease. It may also reveal a window of opportunity in childhood to prevent the development of chronic disease in later life.

To date, we've collected information on these babies at birth, the health and lifestyle of their mothers during pregnancy, and their growth and health at 11 years of age. The most significant round of health checks may prove to be the ones starting now, as it's possible the signs of chronic disease only occur if these small babies become overweight adults.

For the first time, the ABC team will look beyond physical health to also examine the psychological wellbeing of these young adults, in addition to judging oral health as a further potential risk factor.

**Eighteen year old Mr Aiden Hill and his mum, Mrs Penny Hill, are among the first cohort families to be 'found' as part of the next round of health checks planned for our Aboriginal Birth Cohort.**

PHOTOS COURTESY ABORIGINAL BIRTH COHORT TEAM, MSHR.



The ABC team feature as cartoon characters in new Clan Cohort promotional materials and website.

## Our researchers are . . .

- » Preparing to undertake physical, oral and mental health checks with ABC 'children', who are now 16 to 19 years of age. Health checks are due to commence early 2006.
- » Establishing a website for the ABC study ([www.clancohort.com.au](http://www.clancohort.com.au)) as a valuable tool for study participants, Indigenous communities and health professionals.
- » Examining the risk factors of type 2 diabetes and heart disease in this birth cohort and linking the findings to birth size, child growth, current growth and socioeconomic conditions.
- » Examining the dental experience of the birth cohort against birth weight, early childhood nutrition, and early childhood general health. In 2005 we developed a socio-dental questionnaire and software for birth cohort dental data collection.
- » Measuring the current prevalence of hepatitis B virus (HBV) infection and long-term persistence of HBV antibody in adolescents for the first time in Australia, and response to HBV vaccine booster in children who have low immunity.

## Research project titles

- » Wave 3 follow-up of Aboriginal birth cohort (ABC) adolescents.
- » Diabetes risk markers in Wave 3 of the ABC study.
- » Cardiovascular risk factors in ABC adolescents.
- » Risk of heart disease for Aboriginal adolescents.
- » Investigation of oral health among Aboriginal people involved in a longitudinal study.
- » Hepatitis B immunity in Indigenous and 'at risk' children who received hepatitis B vaccination in infancy.

# Education and Training Division

The Education and Training Division offers a unique focus on Indigenous and tropical health, attracting students locally, nationally and internationally.

Postgraduate courses and student research are enhanced by MSHR's research programs.

We offer . . .

- » Public health coursework
- » Postgraduate research opportunities
- » A range of short courses



Head of Division, Associate Professor Paul Kelly

**M**SHR's research programs strengthen and support our innovative Education and Training Division. Students locally, nationally and internationally are attracted by our unique focus on Indigenous health, taught by active researchers who deliver topical and stimulating content.

### We offer . . .

- » **Public health coursework** targeting people working in the health environment, to develop their professional skills in the field of Indigenous, tropical and remote health. Our program comprises a Graduate Diploma, Master of Public Health and Professional Doctorate. Our coursework is accredited through Charles Darwin University, and MSHR membership of the Australian Network of Academic Public Health Institutions ensures our coursework is competitive nationally.
- » We oversee **postgraduate research students**, and provide these students with the skills necessary to complete their projects, in partnership with our supervising senior research staff.
- » We engage leading Australian researchers to develop and deliver topical **short courses** to enhance the range of electives available to our public health students, the professional development of MSHR staff and the wider public health workforce. These short courses also attract interstate participants, including postgraduate health students enrolled elsewhere in Australia.

We are developing strategies to expand our student base, with particular focus on Indigenous and international students. One way we are working to increase opportunities for Indigenous students to study at MSHR, and retain these students once they enrol, is through a developing partnership with Batchelor Institute of Indigenous Tertiary Education. Overall, we have continued strong enrolments, with increasing interest from International students.

Our coursework material is now available on CD and supported by Learnline. This allows students to keep in contact with their peers and lecturers throughout the course, and enables them to submit assessments and track their grades online, wherever they are located.

A significant strength of our coursework program is the residential component, giving students the opportunity to work together, and facilitating face-to-face contact with lecturers.

A key focus for the coming year will be the promotion of the uniqueness of our Indigenous and tropical health programs into previously untapped markets interstate.

The Val Ashe Prize for academic excellence in the Public Health Coursework Program for 2005 was awarded to Mr Gary Moriarty (right). Mr Moriarty is the Director of Licensing in the Racing, Gaming and Licensing Division of the Northern Territory Treasury. He consistently achieved very high grades in all areas of his studies, and it is his intention to complete the Master of Public Health in the near future.



Dr Richard Chenhall, NHMRC postdoctoral research fellow and MSHR public health lecturer, pictured with Mrs Betty Roberts, while undertaking field work in Ngukurr, south-east Arnhem Land. The majority of public health coursework lecturers are actively involved in current research projects.

## Our Education and Training team are . . .

- » Increasing the number of students in our public health coursework program, with 121 enrolments for the year.  
We have eight international coursework students.  
Twelve students graduated throughout 2005 across all coursework programs.  
Three students undertook their Master of Public Health research treatise in 2005, with one student graduating from the Master of Public Health (Coursework and Treatise).
- » Securing ongoing core funding from the Population Health Education and Research Program (PHERP) for five years. This funding reflects MSHR education program success built up over the past 10 years.
- » Offering a Master of Public Health (MPH) Treatise Scholarship for MPH students, designed to stimulate student interest in undertaking a treatise in the future.
- » Collaborating with Batchelor Institute of Indigenous Tertiary Education (BIITE) to redesign a BIITE undergraduate unit in public health. This course has been closely aligned with the MSHR Introduction to Public Health unit so that students may come into the MSHR coursework program with some previous exposure to the content of the introductory course.  
The BIITE Public Health course will be ready for delivery in Semester 1 2006, with BIITE students attending a week-long residential at MSHR in March. Staff from MSHR will provide guest lectures during the residential to further expose students to the type of research undertaken at MSHR, and promote possible future career opportunities.
- » Continuing to develop access to education information and teaching-help services for staff through the MSHR website, intranet, and the E-Reserve system through the library at Charles Darwin University.
- » Strengthening links with key industry stakeholders — including the Aboriginal Medical Services Alliance of the Northern Territory (AMSANT) and the Northern Territory Department of Health and Community Services — to assist their staff to undertake postgraduate programs in public health for professional development.
- » Overseeing 10 new research training students, with a total of 35 students — from honours to PhD — enrolled through seven universities during 2005. We supported two PhD, two Master of Public Health (Research) and two honours graduates.
- » Offering University of Melbourne Advanced Medical Science (AMS) students the option to undertake their research year at MSHR, with three AMS students completing this option during 2005 following agreement with the university.
- » Offering stimulating and topical short courses, with six successful and well-attended courses delivered during 2005.
- » Developing a range of graduate level subjects concerning public health nutrition in collaboration with universities across Australia. These subjects reflect the range of activity that comprises a public health approach to nutrition. All subjects are now available via distance education and can be taken for cross-institutional credit within many graduate health programs.
- » Involved in a series of case studies to determine how Australia's academic public health institutions have contributed to improving health and public health capacity in Australia, and to raise challenges for the future. These case studies were highly influential in the Australian Department of Health and Ageing decision to continue to fund PHERP for a further five years.

Full education report available at [www.menzies.edu.au](http://www.menzies.edu.au)



Dr Kate Senior joined the Education and Training Division to coordinate the public health coursework program. She was also the Acting Education and Training Division Leader while Assoc Prof Paul Kelly undertook sabbatical leave with the University of New South Wales from July to December 2005.



Are YOU interested in postgraduate research with Menzies School of Health Research?

Research scholarships span molecular biology to population health, and health service delivery in the unique areas of Indigenous, remote and tropical health.

For details, contact the Academic Administrator:

Phone 08 8922 7873

Email [acad-admin@menzies.edu.au](mailto:acad-admin@menzies.edu.au)

# Research Support and Management report

**A**s MSHR expands, the management and research support groups have continued to operate efficient and lean research administration, financial, operations and corporate services on a cost of less than 15% of total expenditure. The primary purpose is to assist research groups to manage the business of research with integrity and accountability.

## Research Administration

Our research administration officers had a busy year in 2005, providing administrative support for the identification of potential research funding and assisting in the development of grant applications which resulted in MSHR attracting almost \$3.5 million in competitive funding.

A redesign of the research grants database now enables the research administration team to gather additional information to meet new reporting requirements, including MSHR higher education research data collection as a controlled entity of Charles Darwin University.

Administrative processes, introduced in 2005 have streamlined the reporting and compliance requirements for the Human Research Ethics Committee and the Institutional Biosafety Committee.

## Financial Services

Under the management of the financial controller, the annual financial reporting process underwent major changes in 2005 as this was the first year that MSHR was required to report under the new International Financial Reporting Standards (IFRS). A review was conducted across all operational areas to assess what impact, if any, IFRS would have. An upgrade of the financial system will be completed in early 2006. This is aimed at increasing real-time access.

## Human Resources

The growth in research activity meant a busy year for recruitment and induction of new staff. Indigenous staff recruitment was particularly successful, with Indigenous staff now accounting for almost 30% of our workforce. The new induction processes have received positive feedback. New people also have access to cultural awareness sessions held every four to six months. During the year, a number of new policies were rolled out, including a new promotions policy. This work will continue under the guidance of a policy committee.

## Operations

Operations was bolstered by additional team members in 2005, increasing our services in reception, travel and building management. Accommodation pressure in the John Mathews Building was eased with the completion in 2005 of a major building refit which saw the conversion of a laboratory into office space for 30 people.

## Information Technology

Improvement to information technology, voice communication and data management remained the focus of our work, as well as ensuring the ongoing security and storage of MSHR research, administrative and financial data. The Helpdesk's functionality throughout 2005 ran at a high standard, with a continuous rollout of new hardware in the communications room and desktop-upgrading equipment for 70% of our staff.

## Biostatistics and Database Management

Another busy year for the team dealing with the data. Managing and analysing data for over 40 diverse projects ranging from malaria, melioidosis and otitis media to the association between child health and housing or the Barker hypothesis of low birth weight and chronic disease. Our statistician also teaches biostatistics and epidemiology subjects within the Masters of Public Health, conducts training, and provides advice for various health professionals outside MSHR.

## Public Relations and Communications

We coordinated eight media drives and responded to media enquiries, recording over 140 positive media mentions, as well as commencing a regular health information spot with the Top End Aboriginal Bush Broadcasting Association.

High-quality promotional material was produced, including the MSHR annual report and display banners. Much work focused on ensuring the website and staff intranet remained up to date for timely and accurate dissemination of MSHR information within and outside of the organisation.



## Assistant Director, Indigenous Health

**I**t was an honour and a pleasure to be able to join the MSHR team in 2005. This research institution has an array of talented individuals and teams undertaking innovative work, and it has been exciting, as well as challenging, to become part of the MSHR environment.

I would like to specifically acknowledge and thank existing Aboriginal and Torres Strait Islander staff, whose expertise and dedication have made them integral to the identity and activities of MSHR.

It was also a pleasure to welcome a number of new Aboriginal staff to MSHR, both in Darwin and in Alice Springs. During the course of the year we had close to 60 Aboriginal and Torres Strait Islander staff employed across MSHR projects. The majority of these staff are community members who continue to assist Menzies with its work, and without whom we would not be able to function.

Our Aboriginal men excelled in the Dr Ross Ingram Memorial Essay competition run by the *Medical Journal of Australia*, with Mr Geoffrey 'Jacko' Angeles winning for his outstanding contribution. Dr Ingram was a good friend, so it was very special for me to have a colleague awarded this particular prize.

Through the work and connections of the Aboriginal and Torres Strait Islander staff we will now offer regular cultural awareness and cultural competence training to *all* MSHR staff. We have also drafted an Aboriginal and Torres Strait Islander Employment Strategy in conjunction with the Cooperative Research Centre for Aboriginal Health, so that as an institution we may be better able to attract, train and retain Aboriginal mob.

From 2006 onwards, Indigenous Forum members will also be pooling their not insubstantial talents and expertise in a more formalised arrangement, in order to value-add to funding proposals that are submitted by MSHR.

Yet, even with accolades and successes, we must remain mindful that we should never become complacent about our work. MSHR has an excellent reputation as a research institution; however, there is always room for improvement.

Our core business is Aboriginal, tropical and remote health research and education. My interpretation of this core business is that, at the forefront of our endeavours, is service to the community, from engagement to knowledge translation. If we can maintain this focus, then perhaps our work and impact on reducing Indigenous disparities will be all the more comprehensive.

Our challenge for 2006 and beyond is to create a culturally safe environment wherever we work, and improve the communication processes between our teams, with our Aboriginal communities and with the general public.

**Dr Ngiare Brown**  
Assistant Director, Indigenous Health

During the course of the year we had close to 60 Aboriginal and Torres Strait Islander staff employed across MSHR projects.

# Governance

**T**he Menzies School of Health Research (MSHR) operates as an independent body corporate under the control of a Governing Board. MSHR is a controlled entity of Charles Darwin University.

MSHR is required to furnish an annual report and audited financial statements to an annual general meeting, with financial results consolidated within those of Charles Darwin University.

MSHR accounts are subject to audit by the Auditor General of the Northern Territory. MSHR also reports to the Northern Territory Legislative Assembly through the Minister for Health and Community Services.

## Board members



**CHAIRMAN**  
**Prof Simon Maddocks**  
 Chief Scientist, South Australian Research Development Institute for Livestock Systems.



**DEPUTY CHAIRMAN**  
**Mr Peter Carew AM**  
 Managing Director of Integrated Technical Services Pty Ltd (ITS), and Director of ITS Telecommunications Pty Ltd.



**TREASURER**  
**Mr Michael Martin**  
 Deputy Chief Executive Officer, Department of Corporate and Information Services, Northern Territory.



**Prof Helen Garnett**  
 Vice Chancellor, Charles Darwin University.



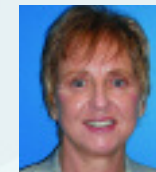
**Prof Bob Wasson**  
 Deputy Vice Chancellor, Research, Charles Darwin University



**Prof Bruce Armstrong AM**  
 Associate Dean, Faculty of Medicine and Head of the School of Public Health, University of Sydney.



**Mr Robert Griew**  
 Chief Executive Officer, Department of Health and Community Services, Northern Territory.



**Ms Margaret Banks**  
 Chief Executive Officer, Department of Education, Employment and Training, Northern Territory (from November 2005).



**Dr Shane Houston**  
 Assistant Secretary, Office of Aboriginal Health, Family and Social Policy, Department of Health and Community Services, Northern Territory.



**Ms Kate George**  
 Director, Aboriginal Policy and Services, Department of Justice, Western Australia.



**Prof Judith Whitworth AC**  
 Director, John Curtin School of Medical Research, Australian National University.



**Mr Peter Plummer**  
 Chief Executive Officer, Department of Education, Employment and Training, Northern Territory (until July 2005).



**Mr Ken Simpson**  
 Acting Chief Executive Officer, Department of Education, Employment and Training, Northern Territory (July–October 2005).



**Dr L Valerie Asche AM**  
 Editor, *Recent Advances in Microbiology* (until September 2005).



**Prof Bart Currie**  
 Interim Director, Menzies School of Health Research (from October 2005).



**Prof Kerin O'Dea AO**  
 Director, Menzies School of Health Research (until October 2005).

## Observers of the Board

### Secretary to the Board

Ms Annette Heathwood (until June 2005)  
Mrs Anne-Marie Cassell (June–October 2005)  
Ms Karen Drayton (from October 2005)

### CRCAH Chief Executive Officer

Mr Mick Gooda

### MSHR Staff Representative

Ms Kim Hare (until October 2005)  
Mrs Jill Albion (from November 2005)

## Board committees

The Governing Board was assisted by the following committees.

### Finance Committee

Mr Michael Martin (Chair)  
Mrs Sue Bradley  
Mr Peter Carew  
Prof Kerin O'Dea (until October 2005)  
Prof Bart Currie (from October 2005)  
Mr David Morgan (Secretary)

### Academic Standing Committee

Prof Kerin O'Dea (Chair)  
Prof Bruce Armstrong  
Prof Bob Wasson  
Prof Judith Whitworth

### Research Committee

Prof Kerin O'Dea (Chair)  
Prof Bruce Armstrong  
Prof Ross Bailie  
Prof Bart Currie

### Human Research Ethics Committee

The Very Reverend Dr Michael Nixon (Chair)  
Ms Jenny Abdilla  
Prof Nick Anstey (to June 2005)  
Mr Ken Brown (to May 2005)  
Ms Robyn Cooke  
Dr Deborah Holt (from June 2005)  
Dr Shane Houston (to June 2005)  
Assoc Prof Paul Kelly  
Dr Michael Lowe (from July 2005)  
Mr Ray Matthews  
Ms Joy Pulley  
Ms Helen Spiers  
Mr Gene Truan (from December 2005)  
Dr Alan Walker (from July 2005)  
Dr Shelley Walton (to June 2005)  
Mr Bob Whitehead (proxy for Robyn Cooke)  
Ms Linda Ward (Secretary)

### Aboriginal Ethics Subcommittee

Dr Shane Houston (Chair to June 2005)  
Mr Shane Motlap (Deputy Chair, Acting Chair from July 2005)  
Mrs Norma Bengier  
Dr Ngjare Brown  
Ms Terry Dunbar  
Ms Joanne Garnggulkpuy  
Dr Michael Lowe (Scientific Adviser, to June 2005)  
Mr Peter Pangquee

### Darwin Region Insitutional Biosafety Committee

Mrs Susan Hutton (Chair)  
Dr Valerie Asche  
Assoc Prof Karen Gibb (to October 2005)  
Mr Lodi Hoeber  
Dr Gary Lum  
Mr Neil Ludvigsen (from November 2005)  
Dr Lorna Melville  
Dr Anna Padovan  
Ms Claire Stretten (proxy for Karen Gibb to October 2005)  
Ms Pamela Trotman  
Dr Shelley Walton  
Ms Linda Ward (Secretary)

### Laboratory Safety Committee

Mrs Sue Hutton (Chair)  
Ms Jo Bex  
Ms Kim Hare  
Mr Mark Mayo  
Ms Sue Pizzutto

## Patrons and Members

### Official Joint Patrons

His Honour Mr Ted Egan AO,  
Administrator of the Northern Territory,  
and Ms Nerys Evans

### Patrons

The Hon Austin Asche AC QC  
Mr Ron Archer AM  
Sir Gustav Nossal AC CBE  
Mr Charles Goode  
The Hon John Dawkins  
Prof Lowitja O'Donoghue CBE AM  
Mr William Scammell CBE  
Dr John Hargrave AO MBE

### MSHR Medallion Recipients

Dr Valerie Asche  
Miss Margaret Brewster  
Father Frank Flynn MSC AC\*  
Mr Harry Giese AM MBE\*  
Prof Richard Gye AO  
Dr John Hargrave AO MBE  
Prof David Kemp FAA  
Prof John Mathews AM  
Mr Ray Norman AM  
Dr Brian Reid  
Dr KS Sriprakash

### Life Members

Dr Keith Fleming  
Dr Ella Stack CBE

\*Deceased

## Honorary members

Name	From	To	Details	Level
Dr Ivan BASTIAN	1/12/02	1/11/05	IMVS facilities and expertise in research projects in East Timor and Indonesia	SRF
Prof Jonathan CARAPETIS	7/11/05	1/4/06	Future appointment as Director	PROF
Dr Alan CASS	5/12/03	4/12/06	Research into renal disease in Indigenous populations	SRF
Dr Allen CHENG	8/4/05	7/4/08	Collaborative research into tropical disease, particularly melioidosis	SRF
Dr Peter D'ABBS	1/03/2002	7/4/2008	Collaboration on substance abuse	SRF
Assoc Prof Mark DANIEL	1/01/2002	7/4/2008	Collaborative links on community-based diabetes project (public health, including chronic disease and epidemiology)	SRF
Dr Peter FAGAN	1/1/06	31/12/08	Collaborative research in streptococci	RF
Prof Wendy HOY	5/9/03	1/8/06	Renal disease in Indigenous populations	PROF
Dr Matthew JOSE	12/11/05	11/11/08	Collaborative research into renal disease	SRF
Mr Richard LUMB	1/12/02	1/11/05	Mycobacteriology at IMVS and IMVS labs for research in East Timor	RF
Dr Graeme MAGUIRE	1/12/02	1/11/05	Lung disease collaboration	RF
Dr Joao MARTINS	3/11/05	2/11/08	Collaborative research efforts in public health	PRF
Dr Stephen McDONALD	17/5/04	17/4/07	Renal disease in Indigenous populations	RF
Dr Ric PRICE	1/6/02	1/5/05	Malaria	SRF
Prof Karl RIECKMANN	3/11/05	2/11/08	Collaborative research into tropical disease, particularly malaria	PROF
Dr Sue SAYERS	1/10/2001	7/4/2008	Aboriginal birth cohort study	SRF
Dr KS SRIPRAKASH	1/6/01	1/5/04	Streptococci	SRF
Dr Emiliana TJITRA	1/03/2002	7/4/2008	Strengthening ties with Indonesia, especially in malaria collaboration	SRF
Dr Zhiqiang WANG	1/2/03	1/1/06	Collaborative research in epidemiology	SRF
Dr Tarun WEERAMANTHRI	1/12/02	1/11/05	Preventable chronic disease program in the NT	SRF
Dr Neville WHITE	1/10/01	1/9/04	Research Yolngu people of East Arnhem Land	SRF
Dr AI YONOVITZ	1/3/01	1/2/04	Audiology	RF

# Publications 2005

## Refereed journal articles

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## Other contributions to refereed journals (editorials, essays, letters, etc)

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- Athan E, Allworth AM, Engler C, Bastian I, **Cheng AC**. Letter: Melioidosis in tsunami survivors. *Emerg Infect Dis* 2005; 11: 1638–9.
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## Journal articles in press

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- Anuntagool N, Wuthiekanun V, White NJ, **Currie BJ**, Sermswan RW, Wongratanchewin S, Taweekhaisupong S, Chaiyaroj SC, Sirisinha S. Lipopolysaccharide heterogeneity among *Burkholderia pseudomallei* from different geographical and clinical origins. *Am J Trop Med Hyg*.
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- Cheng AC, Jacups SP, Gal D, Mayo M, Currie BJ**. Extreme weather events and environmental contamination are associated with case-clusters of melioidosis in the Northern Territory of Australia. *Int J Epidemiol*.
- Cheng AC**, O'Brien M, Freeman K, Lum G, **Currie BJ**. The indirect hemagglutination assay in patients with melioidosis in northern Australia. *Am J Trop Med Hyg*.
- Currie BJ, Jacups SP**. *Chironex fleckeri* and other box jellyfish in tropical Australia: a prospective study in the 'Top End' of the Northern Territory. *Med J Aust*.
- Currie BJ**, McCarthy JS. Strongyloides stercoralis infection as a manifestation of immune restoration syndrome? *Clin Infect Dis*.
- Gruen RL, Morris PS, McDonald EL, Bailie RS**. Global evidence and global relevance: a double bind for systematic reviews. *Intern J Equity Health*.
- Lumb R, Van Deun A, **Kelly P**, Bastian I. Not all microscopes are equal. *Int J Tuberc Lung Dis*.
- O'Dea K**. Preventable chronic diseases among Indigenous Australians: the need for a comprehensive national approach. *Heart Lung and Circulation*.
- Ralph A, **Jacups S**, McGough K, **McDonald M, Currie BJ**. The challenge of acute rheumatic fever diagnosis in a

high-incidence population: a prospective study and proposed guidelines for diagnosis in Australia's Northern Territory. *Heart Lung and Circulation*.

Ralph A, Raines M, Rode J, **Currie BJ**. Histoplasmosis in Aboriginal patients from Australia's tropical Northern Territory: one probable and one confirmed case. *Trans Royal Soc Trop Med Hyg*.

Schutte AE, **Shemesh T**, Rowley K, Best JD, McDermott R, **O'Dea K**. The metabolic syndrome and changing relationship between blood pressure and insulin with age, as observed in Aboriginal and Torres Strait Islander peoples. *Diab Med*.

Stewart T, McDonald R, **Currie B**. Use of the Jones criteria in the diagnosis of acute rheumatic fever in a rural Australian setting. *Aust NZ J Public Health*.

## Non-refereed journal articles

- Bailie R, Paradies Y**. Adapt or die: epidemiology and Indigenous health research. *Australasian Epidemiologist* 2005; 12.1:24–30.
- Campbell LT, **Currie BJ**, Krockenberger M, Malik R, Meyer W, Heitman J, Carter D. Clonality and recombination in genetically differentiated subgroups of *Cryptococcus gattii*. *Eukaryotic Cell* 2005; 4:1403–9.
- Cheng AC**, Dance DAB, **Currie BJ**. Letter: Bioterrorism, glanders and melioidosis. *Eurosurveillance* 2005; 10:11–12.
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- Paradies Y**. Confounding and Interaction in epidemiology. *Australasian Epidemiologist* 2005; 12:23–5.

## Book chapters

- Brown G, **Anstey N**. Malaria. In: Yung A, **McDonald M**, Spelman D, Street A, Johnson P, Sorrell T, McCormack J, eds. *Infectious diseases: a clinical approach*. Melbourne: IP Communications Pty Ltd; 2005:316–27.
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## Book chapters in press

- Cairney S**, Maruff P. Aboriginal culture, petrol sniffing and the brain: between sorcery and neuroscience. In: Cohen H, Stemmer B, eds. *Fragments of the mind and brain: pulling together the pieces of the physical and psychological representations of consciousness*. Marquette MI: Northern Michigan University Press.
- Lipuma JJ, **Currie BJ**, Lum G, Vandamme PA. *Burkholderia, Stenotrophomonas, Ralstonia, Cupriavidus, Pandoraea, Brevundimonas, Comamonas, Delftia, and Acidovorax*. In: *Manual of clinical microbiology*. American Society of Microbiology.

## Reports

- Gruen RL**. The Royal Darwin Hospital National Trauma and Critical Care Response Centre. A stakeholder's analysis of key directions forward. Darwin: Menzies School of Health Research, 2005.
- Kelahe M, **Taylor-Thomson D**, Harrison N, **O'Donoghue L**, Dunt D, Barnes T, Anderson I. Evaluation of PBS medicine supply arrangements for remote area Aboriginal health services under S100 of the National Health Act. Melbourne: CRAH and Program Evaluation Unit, University of Melbourne, 2005.
- Smith J, McDermott R, Anderson P, Belbin C, Connors C, Dullow A, d'Abbs P, **Kelly P**, **O'Dea K**, Ryan PD, Schmidt B, Scuffham P, Simpson K, Wilson A. Educating to improve population health outcomes in chronic disease: a curriculum package to integrate a population health approach for the prevention, early detection and management of chronic disease when educating the primary health care workforce in remote and rural northern Australia. Darwin: Menzies School of Health Research, 2005.

## Invited presentations

**Angeles G**, An Indigenous perspective on sustainable mine closure agreements. Australian Centre for Minerals Extension and Research Conference. Melbourne, Vic. July 2005.

**Anstey N**, Current and future uses of artemisinins as first-line antimalarials. 1st International Parasitic Disease Update and 6th Jakarta Antimicrobial Symposium, Jakarta, Indonesia. April 2005.

**Anstey N**, Vivax malaria: severe disease and pathogenesis. Vivax Malaria Research: 2005 and Beyond, The Institute for Genomic Research. Rockville, Maryland, USA. 9–10 December 2005.

**Baillie R**, Improving primary care services for the prevention and management of chronic illness. University of Melbourne School of Population Health Seminar, Melbourne, Vic. 18 May 2005.

**Baillie R**, Housing and child health in remote Aboriginal communities. Chronic Disease Network Conference, Darwin, NT. 9 September 2005.

**Brown A**, Can we untangle the determinants of CVD among Indigenous Australians? The George Institute. Sydney, NSW. 1 February 2005.

**Brown A**, Understanding Indigenous health disadvantage. NTGPE Conference. Alice Springs, NT. 21 April 2005.

**Brown A**, Cardiovascular disease among Indigenous Australians: explaining widening differentials. Queens University, Kingston, Ontario, Canada. 20 May 2005.

**Brown N**, Future challenges in Indigenous health in the current political environment, Darwin, NT. May/June 2005.

**Brown N**, Foetal alcohol spectrum disorder in Australian Indigenous communities. Native Hawaiian Centre of Excellence Professional Development Series. Oahu, Hawaii. June 2005.

**Brown N**, William Arnold Connolly Oration, Royal Australasian College of General Practitioners, Annual Scientific Meeting. October 2005.

**Burgess P**, Place and Health. Social Determinants of Indigenous Health Conference, Cooperative Research Centre for Aboriginal Health. Darwin, NT. April 2005.

**Burgess P**, Academic General Practice Registrar. AGPT and GPRA academic

general practice registrars' workshop. Rockford Hotel, Adelaide, SA. 23 July 2005.

**Cairney S**, Indigenous young people with a cognitive disability and Australian juvenile justices systems. Human rights and Equal Opportunity Commission. Sydney, NSW. June 2005.

**Chenhall R**, Appropriate measures for the monitoring and evaluation of Indigenous Australian residential rehabilitation programs. Health Outcomes 2005: Making a difference, Canberra, ACT. 17–18 August 2005.

**Clough A**, Liquor restricted areas in the Northern Territory. Australian Liquor Licensing Conference: Indigenous Issues Subgroup. Broome, WA. May 2005.

**Currie B**, Emerging infectious disease: paradise lost. University of the 3rd Age — Annual General Meeting, Ruth Webster Memorial Lecture. Casuarina, NT. 17 March 2005.

**Currie B**, Melioidosis: update on diagnosis and treatment. The Australasian Society for Infectious Disease Inc. Annual Scientific Meeting. Margaret River, WA. 9–13 April 2005.

**Currie B**, C-156. Development and evaluation of a TaqMan-based real-time PCR assay for the identification of *Burkholderia pseudomallei*. 105th American Society for Microbiology General Meeting. Atlanta, USA. 5–9 July 2005.

**Currie B**, Research and infectious disease in the Northern Territory: an historical perspective. Association of Retired Specialist of Royal Darwin Hospital. Darwin, NT. 5 July 2005.

**Currie B**, Micro and macro pathogens of the Top End. Tristate 2005 — Australian Society for Microbiology. Annual Scientific Conference. Darwin, NT. 8–9 July 2005.

**Currie B**, Critical issues in prevention and control of rheumatic fever and rheumatic heart disease. The XVth Lancefield International Symposium on Streptococci and Streptococcal Diseases, Palm Cove, Qld. 25–29 September 2005.

**Currie B**, Melioidosis. Centre for Disease Control Conference. Darwin, NT. 18–20 October 2005.

**Currie B**, Macro and micro nasties in the NT. The Royal Australasian College of General Practitioners 48th Annual Scientific Convention. Darwin, NT. 1 October 2005.

**Gunthorpe W**, Assessing mental health risk among young Indigenous people.

Chronic Disease Network Conference, Darwin, NT. 9 September 2005.

**Kelly P**, When the television images fade: sustaining TB control after complex humanitarian emergencies. The 36th Global Conference on Lung Health, International Union Against Tuberculosis and Lung Disease, Paris, France. 18–22 October 2005.

**Kowal E**, Elders, experts and entrepreneurs: a postcolonial analysis of the governance debate. Indigenous Governance — Challenges, Opportunities and Outcomes Seminar Series, Darwin, NT. 26 October 2005.

**Martins N**, Working together to reconstruct tuberculosis services after major conflict: the East Timor experience. The 36th Global Conference on Lung Health, International Union Against Tuberculosis and Lung Disease, Paris, France. 18–22 October 2005.

**O'Dea K**, 3rd Economic and Social Outlook conference. Sustaining Prosperity: New reform opportunities for Australia. Melbourne, Vic. 31 March–1 April 2005.

**O'Dea K**, Preventable chronic disease in Indigenous Australian populations: the need for a comprehensive national approach. Annual Supreme and Federal Courts Judges' Conference. Darwin, NT. 25 January 2005.

**Price R**, ACT working in partnership. American Society of Tropical Medicine 54th Annual meeting, Washington, USA. 12 December 2006.

**Price R**, Trials of new antimalarials for resistant *vivax* malaria. 'Vivax Malaria Research: 2005 and Beyond', The Institute for Genomic Research. Washington DC, USA. 9–10 December 2005.

Russell BM, Suwanarusk R, Chavchich M, Chalfein F, Kenangalem E, Cheng Q, Lek-Uthai U, Kosaisvee V, Brockman A, Nosten F, Jones JW, **Anstey NM**, **Tjitra E**, **Price RN**, In vitro and molecular genotyping studies of chloroquine resistant and sensitive *Plasmodium vivax*. 'Vivax Malaria Research: 2005 and Beyond', The Institute for Genomic Research. Washington DC, USA. 9–10 December 2005.

**Sayers S**, In an Aboriginal birth cohort only child size, not birth size, predicts insulin and glucose concentrations in childhood. ADIPS & SOMANZ combined Annual Scientific Meeting. Darwin, NT. July 2005.

**Sayers S**, The ABC of life: the Aboriginal Birth Cohort study childhood influences on adult chronic disease. The 9th Annual

Conference Chronic Disease Network. Darwin, NT. September 2005.

**Senior K**, Walking around at night: a study of young women's sexual decision-making in a remote Aboriginal community. Chronic Disease Network Conference. Darwin, NT. 8–9 September 2005.

**Walton S**, Itchy and scratchy: what's new in scabies research? Australian Society of Microbiology Tri-State Meeting, Darwin, NT. 2005.

# Research funding

## Competitive research grants awarded during 2005

Funding body	Chief investigators	Grant type	Funding initiative	Title	Dates	Total received
Australian Government AusAID ISS 050W24	LEACH, Amanda	Travel	International Seminar Support Scheme	International Symposium on Pneumococci and Pneumococcal Diseases	02 Apr 06–06 Apr 06	\$25,423.10
Australian Institute of Aboriginal and Torres Strait Islander Studies	MARSH, Robyn	Travel		5th Extraordinary International Symposium on Recent Advances in Otitis Media — Amsterdam	24 May 05–27 May 05	\$2,000.00
Australian Institute of Aboriginal & Torres Strait Islander Studies G2005/7/098	BROWN, Alex; O'DEA, Kerin; WEERAMANTHRI, Tarun	Project		Men, hearts and minds study: exploring the link between stress and heart disease in indigenous men (stage 1)	01 Jul 05–30 Jun 06	\$47,722.30
Australian Primary Health Care Research Institute	BAILIE, Ross; MORRIS, Peter; PATERSON, Barbara; MCDONALD, Elizabeth	Project	Stream Four	A systematic review of 'Children and young Australians, health promotion and prevention'	01 Oct 05–20 Sep 06	\$181,644.00
Australian Society for Infectious Disease	RATCLIFF, Alison	Travel	AstraZeneca Travel Scholarship 2005 — Second Award	XVth International Congress for Tropical Medicine and Malaria — Marseilles, France 2005	11 Sep 05–15 Sep 05	\$5,000.00
Channel 7 Children's Research Foundation of SA Inc	FAGAN, Peter; CURRIE, Bart	Project		Development of a rheumatic fever diagnostic: cloning, expression and purification of antigens from the human heart which were identified as cross-reacting with sera from rheumatic fever patients	01 Jan 06–31 Dec 06	\$42,000.00
Channel 7 Children's Research Foundation of SA Inc	LEACH, Amanda; SMITH-VAUGHAN, Heidi	Project		Implications of nonencapsulated <i>Streptococcus pneumoniae</i> carriage for maintenance of antibiotic resistance genes and the efficacy of pneumococcal conjugate vaccine (Prevenar) for pneumococcal disease	01 Jan 06–31 Dec 07	\$42,000.00
Channel 7 Children's Research Foundation of SA Inc	WALTON, Shelley; CURRIE, Bart	Project		An immunodiagnostic assay for scabies	01 Jan 06–31 Dec 07	\$35,000.00
Commonwealth Department of Health and Ageing	BAILIE, Ross	Project		Audit and best practice chronic disease extension	01 Jul 05–31 Dec 08	\$400,000.00
Commonwealth Dept of Health and Ageing	CAIRNEY, Sheree	Project		Producing educational resources on the effects of petrol sniffing (and other inhalant abuse) for Indigenous Australians	27 May 05–23 Sep 05	\$65,440.00
Commonwealth Department of Health and Ageing	SCARLETT, Maria; O'DEA, Kerin	Project	Rural Primary Health Program	Building healthy communities — Galwini'ku (phase one)	06 Jun 05–06 Jan 06	\$41,266.00
CRCAH*	ANDREWS Ross, WALTON Shelley, STIRLING Janelle, CONNORS Christine	Project		Filling the gaps in the Healthy Skin program	01 Oct 05–30 Sep 08	\$722,000.00
CRCAH SE63	NAGEL, Tricia; KAVANAGH, David	Project		Australian integrated mental health initiative — NT	01 Jul 03–30 Jun 08	\$157,500.00
Diabetes Australia Research Trust	MACKERRAS, Dorothy	Project		Diabetes risk markers in Wave 3 of the Aboriginal Birth Cohort study	01 Jan 06–31 Dec 06	\$45,000.00
National Heart Foundation of Australia	BROWN, Alex	Travel		For travel to Montreal, Canada	29 Apr 05–03 Jun 05	\$2,218.00
NHMRC** 333420	ESLER, Danielle; JOHNSTON, Fay; THOMAS, David; CONNORS, Christine; NAGEL, Tricia	Strategic Research	General Practice Clinical Research Grant	Sadness and heart disease	01 Jan 06–31 Dec 06	\$29,650.00
NHMRC 333421	BURGESS, C; JOHNSTON, Fay; CONNORS, Christine; MCDERMOTT, Robyn; ROBINSON, Gary; O'DEA, Kerin	Strategic Research	General Practice Clinical Research Grant — Full Application	Implementing the Aboriginal and Torres Strait Islander Adult Health Check. Improving early detection and evaluating innovative prevention activities in remote areas	01 Jan 06–31 Dec 08	\$341,975.00
NHMRC 361668		Equipment		NHMRC standard equipment grant — 2005	01 Jul 05–30 Jun 06	\$117,980.00
NHMRC 383500	GUNTHORPE, Wendy; SAYERS, Sue; CAIRNEY, Sheree; PARADIES, Yin	Project		Strong souls study	01 Jan 06–31 Dec 08	\$189,875.00



Funding body	Chief investigators	Grant type	Funding initiative	Title	Dates	Total received
NHMRC 383504	CURRIE, Bart; CHENG, Allen; SPRATT, B; MAYO, Mark; NORTON, R	Project		Continuation of the Darwin prospective melioidosis study	01 Jan 06–31 Dec 08	\$437,750.00
NHMRC 383507	CAIRNEY, Sheree; MARUFF, Paul; CLOUGH, Alan; TORZILLO, Paul; CURRIE, Bart	Project		Neurocognitive and social changes associated with unleaded petrol sniffing and abstinence from further sniffing	01 Jan 06–31 Dec 08	\$625,000.00
NHMRC 383511	WALTON, Shelley	Career Development	R Douglas Wright Biomedical Career Development Award	Strategies to improve the diagnosis, prevention, treatment and control of scabies	01 Jan 06–31 Dec 10	\$436,250.00
NHMRC 383515	BOYLE, Jacqueline	Scholarship	Training Scholarship for Indigenous Australian Health Research	Polycystic ovary syndrome, reproductive health and metabolic abnormalities in Indigenous women in the Northern Territory	01 Jan 06–31 Dec 08	\$91,800.00
Northern Territory Government	CURRIE, Bart; MAYO, Mark	Project	Northern Territory Research & Innovation Fund	Risk assessment for presence of <i>Burkholderia pseudomallei</i> in NT waters	01 Jul 05–30 Jun 07	\$15,000.00
Northern Territory Government	SAYERS, Sue; MACKERRAS, Dorothy; SINGH, Gurmeet; GUNTHORPE, Wendy	Project	Northern Territory Research & Innovation Fund (NTRIF)	Aboriginal Birth Cohort Study	01 Mar 06–12 Dec 08	\$30,000.00
Royal Australian College of Physicians	BURGESS, C	Project	RACGP/APHCRI Indigenous Health Award	The Aboriginal and Torres Strait Islander adult health check: An evidence-based strategy for health equity in remote areas	01 Oct 05–01 Oct 06	\$2,000.00

\*CRCAH: Cooperative Research Centre for Aboriginal Health

\*\*NHMRC: National Health and Medical Research Council

## Research grant income received in 2005

### COMMERCIAL INCOME

Wyeth Australia Pty Ltd \$69,100

### NATIONAL COMPETITIVE GRANTS

Australian Health Ministers' Advisory Council \$103,254  
National Health and Medical Research Council \$5,611,723

### GOVERNMENT GRANTS

NT Department of Chief Minister \$25,000  
Commonwealth Department of Health and Ageing \$374,181  
NT Department of Health and Community Services \$102,300

### OVERSEAS GRANTS

National Institute of Health \$175,833  
The Wellcome Trust \$371,017  
World Health Organization \$39,583

### OTHER GRANTS

Australian Institute of Aboriginal and Torres Straits Islander Studies (AIATSIS) \$49,722  
Channel 7 Children's Research Foundation of SA Inc \$22,500  
CSL Ltd, GlaxoSmithKline Australia Ltd and Cooperative Research Centre (Via Royal Women's Hospital) \$14,000  
Diabetes Australia Research Trust \$22,500  
National Heart Foundation of Australia \$186,274  
Rio Tinto Aboriginal Foundation (via University of Melbourne) \$485,922  
Royal Australian and New Zealand College of Obstetricians and Gynaecologists Research Foundation \$25,000  
Top End Division of General Practice \$1,500  
The Australian National University  
Australian Primary Health Care Research Institute \$82,566

### COOPERATIVE RESEARCH CENTRE GRANTS

Cooperative Research Centre for Aboriginal Health \$480,930

# Financial overview

## 1 January 2005–31 December 2005

	2005	2004	2003	Percentage change 2005–04	Notes
<b>Income</b>	\$15,912,771	\$13,656,526	\$11,962,385	16.52%	1
<b>Expenditure</b>	\$16,072,224	\$12,058,220	\$9,977,443	33.3%	2
<b>Net surplus / (deficit)</b>	(\$159,454)	\$1,598,306	\$1,984,942	–	3
<b>Net assets</b>	\$9,376,341	\$9,573,735	\$7,900,364	(1.6%)	4
<b>Staff (full-time equivalents)</b>	116	95	95	22%	5

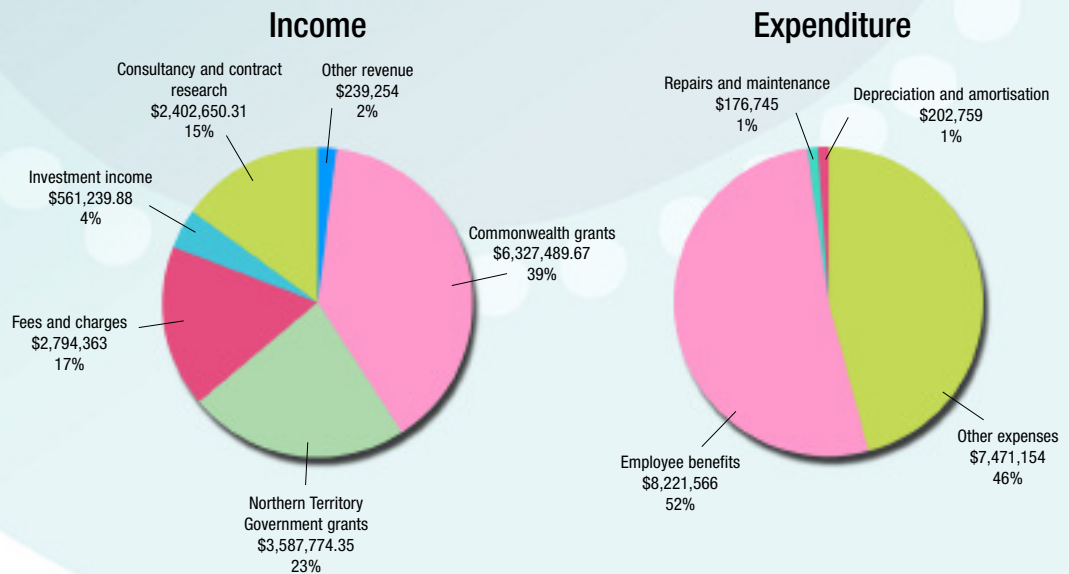
1 Increase in income is attributed to a increase in competitively awarded research grant funding.

2 Increase is directly related to increased research activity.

3 Audited net deficit has resulted due to timing issues between receipt of project funds and commencement of actual project activity.

4 Net assets include cash balances that, under agreed funding conditions, are committed to future research activities.

5 Represents increase in research operational activity.



### Donations

Anonymous	\$25,000
Ms Belinda Gibson	\$2,000
Mrs Sheila Frey	\$1,000
Reserve Bank of Australia	\$1,000

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Printed financial statement available by phoning MSHR on 08 8922 8196

# For further information *current as of April 2006*

Prof Bart Currie	Interim Director (until June 2006)	08 8922 8196
Prof Jonathan Carapetis	Director (from June 2006)	08 8922 8597
Ms Louise Clark	Acting Deputy Director	08 8922 8854
Dr Ngiare Brown	Assistant Director, Indigenous Health	08 8922 7825

## Administration and Public Relations

Mr David Morgan	Financial Controller	08 8922 8053
Mrs Sue Hutton	Operations Manager	08 8922 8025
Ms Nicki Crute	Human Resources Officer	08 8922 7832
Mrs Alison Ellis	Fundraising and Corporate Relations Officer	08 8922 8989

## Research Administration and Ethical Issues

Miss Gabrielle Falls	Senior Research Administrator	08 8922 8624
Ms Maria Scarlett	Ethics Administration Officer	08 8922 7922

## Tropical and Emerging Infectious Diseases Division

Prof Bart Currie	Division Leader	08 8922 8056
Prof Nicholas Anstey	Principal Research Fellow	08 8922 8932
Mrs Jill Albion	Research Administration Officer	08 8922 7837

## Chronic Diseases Division

Dr Dorothy Mackerras	Division Leader	08 8922 7833
Ms Tracey Burke	Research Administration Officer	08 8922 7833

## Environments, Services and Populations Division

Assoc Prof Joan Cunningham	Division Leader, Principal Research Fellow	08 8922 8797
Prof Ross Baillie	Professor of Public Health, NHMRC Senior Research Fellow	08 8922 8673
Ms Tracey Burke	Research Administration Officer	08 8922 7833

## Central Australian Unit

Dr Alex Brown	Senior Research Fellow	08 8951 4740
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## Education and Training Division

Dr Kate Senior	Acting Head	08 8922 8007
Ms Catherine Richardson	Academic Administrator	08 8922 7873

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## Acknowledgements

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Joseph Fitz, *Old Gecko*, 2006, digital image



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