



menzies school of health research

annual report



2006

The Menzies School of Health Research (MSHR) was established in 1985 as a body corporate of the Northern Territory (NT) Government under the *Menzies School of Health Research Act 1985* (The MSHR Act). This act was amended in 2004 to formalise the relationship with Charles Darwin University (CDU). MSHR is now a controlled-entity of CDU and constitutes a school within the university's Institute of Advanced Studies.



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

MSHR headquarters are located on the Royal Darwin Hospital Campus, providing office accommodation for the majority of our staff and students. It also houses a well equipped and highly regarded laboratory with (PC2 and PC3 containment facilities), conducting leading edge science ranging from analysis of snake venom, soil samples for Melioidosis, scabies mite drug resistance to pathogenicity of streptococci.

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.

In the spirit of respect, Menzies School of Health Research acknowledges the people and elders of the Aboriginal and Torres Strait Islander Nations, who are the Traditional Owners of the land and seas of Australia.

For the purpose of this document 'Indigenous' refers to Australia's Aboriginal and Torres Strait Islander peoples.

who we are.. what we do..

The 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 collaboration between the NT Government, the Menzies Foundation and the University of Sydney. The school was developed as a centre of excellence in health for tropical and arid regions of Australia. Early areas of research and education included heart disease, trachoma and Chlamydia, hepatitis B, alcohol related diseases, nutrition and infectious diseases.

More than twenty years later, our research has diversified to include infectious and chronic disease, environmental and mental health, substance misuse, health services research and population health. At the same time, we have an expanding international health program focused on malaria and tuberculosis.

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

Our researchers work in over forty communities across the Northern Territory and our research and expertise touches the lives of many. We have a budget of almost \$20 million, employ almost 200 staff and are currently engaged in over 50 research projects. Menzies today has the reputation of being the leader in Indigenous and tropical health in Australia and beyond.

Looking to the future we have plans that will see a shift in some of our research priorities. Plans that will see the emergence of new approaches to research and the broadening of our research portfolio. Empowerment and capacity building at a community level, working to give Indigenous children a better start in life, working to gain a better understanding of some of the underlying causes of health inequalities such as education and literacy and examining ways in which we can make a difference to the healing and resilience of Indigenous communities will all feature prominently. We also have a vision to grow our work in International health – expanding our expertise into more towns and villages in more countries across our region. Increases in numbers, scope and breadth of students will also continue to be a contributor to the growth of Menzies.

Collaboration with others will be the key to our success, and to help us achieve our goals we will be working hand in hand with governments, industries, communities and individuals. By working together we can help to improve the way people live their lives and help to secure a healthy future for Indigenous Australia and communities based in the tropical regions to our north.



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COVER IMAGE

Lena Kurinya
Water plant 2001
Etching on paper, image 49.5 x 24.5 cm

Printed: Northern Editions at Charles Darwin University
Image courtesy of the artist's estate and Maningrida Arts and Culture.

Lena Kurinya (c.1939–2003) was an active weaver, sculptor, and painter from Maningrida in Central Arnhem Land. In her later life she resided at an outstation called Kurrindin. Lena's media includes weaving (coil baskets, dilly bags, strings bags), mimih spirit sculptures, pastel on paper, etching, and screenprinting. Her subjects generally celebrate local flora and fauna as well as local mimih mythologies. Lena is represented in major collections such as the Kluge Foundation, Virginia, USA, Museum of Contemporary Art, Sydney and National Gallery of Australia, Canberra.

She participated in 'Bushcolour: Works on Paper, by female artists from the Maningrida region', 1999, Charles Darwin University Gallery, Darwin, among others.

2006 at a glance

Research and Education

- MSHR attracted income of almost \$17 million in 2006 including \$4.6 million in competitive National Health and Medical Research Council (NHMRC) grants.
- Publication in *The Lancet* of an important study documenting the effectiveness of specialist outreach services to Aboriginal communities.
- Completion of the first stage of the successful Audit and Best Practice for Chronic Disease (ABCD) project and subsequent Australian Government funding for an extension of this project to over 40 communities nationally.
- Publication of Australia's first national guidelines for management and control of rheumatic heart disease: a culmination of more than a decade of research led by MSHR.
- Publication of evidence that health care and health status of Indigenous Australians is starting to head in the right direction: mortality rates from many chronic diseases are slowing in Indigenous adults, and cervical screening programs are reaching more Indigenous women.
- Publication of a textbook – 'The Social Determinants of Indigenous Health'. This textbook draws together the essence of discussions, seminars and short courses in which MSHR and the Cooperative Research Council (CRC) for Aboriginal Health have been involved since 2002.
- A new species of box jellyfish – *Chiropsella bart* – was identified and found to be present in the waters off the Gove Peninsula during the months of May to October which has traditionally been considered as the 'safe' swimming season.

People

- Two MSHR staff – Dr Rebecca Towers and Associate Professor Ross Andrews – were successful in NHMRC Postdoctoral Training Fellowships, and eight students gained scholarships.
- MSHR's Kate Mounsey was awarded the 2006 NT Young Achievers Science and Engineering Award for her work on ivermectin resistance in scabies mites.
- Dr Jacqui Boyle was awarded the Australian Academy of Science's Douglas and Lola Douglas Scholarship in Medical Science.
- Prof Bart Currie was named a finalist for the Northern Territory Australian of the Year.
- Six MSHR students completed their research theses during 2006, including Dr Yin Paradies – MSHR's first Indigenous research student.
- Prof Jonathan Carapetis was named as one of Australia's top-ten 'bright sparks' by COSMOS Magazine and research lead by him was listed as one of "Ten of the Best" government-funded projects in Australia by the National Health and Medical Research Council.
- Ms Susan Hutton became the first MSHR staff member to complete 20 years of continuous service. This was marked by awarding her the School medallion for her contribution to the MSHR and to health in the NT.

Corporate

- MSHR's newly appointed Director, Prof Jonathan Carapetis, took up his new position in April 2006.
- MSHR's total annual income increased by 5.6 per cent to almost \$17 million.
- Planning commenced for the development and implementation of the new MSHR Strategic Plan.
- Mr Robert Griew resigned as a MSHR Board member at the end of 2006, and Ms Ros Bracher was appointed to take up a position in early 2007.
- Key staff appointments in 2006 include Dr John Condon as Deputy Director, Associate Professor David Cooper to the Chair of Disaster Response and Preparedness, Associate Professor Ross Andrews as head of immunisation research, Mr Brendon Douglas as Executive Officer, Mrs Julie Carmichael as Communications and Development Manager, and Mr Joseph McDonnell as Biostatistician.



chairman's message

This has been a most successful year for the Menzies School of Health Research, and I am delighted to present this Annual Report on the activities and achievements of the past year. Common themes in recent reports have included challenges, change and celebrations. I think they are equally applicable this year.

The challenges have not in themselves been unusual. There is the ever-present requirement to maintain the highest standards of research excellence and delivery of research outcomes, and to ensure that these are translated into health care delivery at the community level. This underpins the capacity of staff to be competitive in national grant rounds and to ensure that MSHR is meeting the needs of its stakeholders. As is reflected in the substantive sections of this report, the staff of the School met these challenges head on, and their continued success has been a source of inspiration and constant stimulus for the Board.

The other challenge for staff in 2006 was the transition period between Directors, and I would like again to acknowledge the support and assistance provided by the staff of the School to the interim leadership team of Prof Bart Currie and Ms Louise Clark through this period, and to thank both these individuals for their outstanding efforts during this time. That MSHR was able to sustain productivity, excellence and focus through this time is a credit to all involved.

The one constant in this world is change, and that ought not be an issue for a research school; after all, it is the very essence of what we strive to deliver. But change within is not always as easily accommodated, and we all have different ways of coping. Change for MSHR in 2006 was the much anticipated arrival of the new Director. Professor Jonathan Carapetis has brought renewed enthusiasm and optimism to the School, and it has been a pleasure to observe the very positive way that staff and students have responded to Jonathan's arrival and leadership. He has delivered a new management structure and team to support the growth and development of the School and we look forward to the opportunities this should bring in the year ahead.

The Board was keen to ensure that a clear strategy was developed with the staff and new Director for the School's development over the next five years. I mentioned in my report last year that there was a need to consolidate our strategic direction, build our fundraising and media profile, and foster our relationships within the Institute of Advanced Studies at Charles Darwin University. Staff responded very actively to a Strategic Planning process this year, and it was most valuable for a number of Board members to join staff of the School in a two-day retreat to establish the framework and core components for this new plan. The Board will also use this plan to ensure that governance and policy is best structured to support the aspirations espoused within the new plan for the future success of the School, its staff and students.

Change also occurred in Board membership, and we welcomed Mr Robert Wells and Ms Margaret Banks as new Board members this year.

At the end of the year, Mr Robert Griew announced his resignation from the Department of Health and Community Services and from the Board. Mr Griew has made an outstanding contribution to the School as a most valued Board member, and in facilitating interactions between the School, the Department and Government. Robert's support and advice was always greatly appreciated, and we will miss his involvement. On behalf of the Board and the School, I thank him for his efforts and wish him well in his future endeavours.

I would also take this opportunity to thank the Hon. Dr Peter Toyne MLA, for his support of MSHR throughout his time as the Northern Territory (NT) Minister for Health. Dr Toyne was a strong advocate for improving Indigenous health, and took a very real interest in the activities of the Menzies School. I also congratulate Dr Chris Burns MLA on his appointment as Minister for Health. Dr Burns has had a long personal association with MSHR and we look forward to working with him in this new capacity.

And so to celebrations. Last year was marked by the significant celebration of the 20th anniversary of the formation of the School. This year didn't have an equivalent in any one forum, although there has been much to celebrate. As is recorded elsewhere in this report, there were many successes and staff personal achievements to acknowledge throughout the year, including our new Director being named by the popular science magazine COSMOS, as one of their "Bright Sparks" (Australia's top 10 scientific minds under 45 years of age), and separately for research led by him into streptococcal diseases, listed as one of NHMRC's "Ten of the Best" government-funded projects in Australia. And it was a particular pleasure for the Board to celebrate the significant contributions of staff member Ms Susan Hutton, who became the first MSHR staff member to complete 20 years of continuous service in 2006. This was marked by awarding her the School medallion for her contribution to the MSHR and to health in the NT.

In closing, I wish to acknowledge the very valued support of our key partners and stakeholders, in particular the NT Government, the Menzies Foundation, the Charles Darwin University and the numerous NT communities with which staff and students are involved with research projects. Without their support and engagement, nothing would be possible.

I would also like to thank my fellow Board members for their ongoing involvement and active support of the School, and for their counsel and support to me throughout the year.

Lastly, I offer my congratulations to the staff and students of the Menzies School of Health Research for a year of great success and achievements, and with the Board, I look forward to the opportunities to be delivered in the coming year.

Professor Simon Maddocks, **Chair**



director's report

I take great pleasure in presenting our 2006 Annual Report, my first as Director. This has been a year of change for MSHR: change in leadership, and planning for changes in direction. Despite having a prolonged period without a Director, and the inevitable uncertainties that come with the arrival of a new Director, MSHR staff were more productive than ever. This is a credit to the talent and enthusiasm of the research staff, the hard work of the support staff, and in particular to Bart Currie (who acted as Interim Director), Louise Clark (Acting Deputy Director) and Simon Maddocks (Chairman of the Board) for providing leadership and stability prior to my arrival.

MSHR performed extremely well in the NHMRC project grant round, winning more than \$4.5 million in new funding. Two staff were successful in NHMRC Postdoctoral Training Fellowships, and eight research students gained scholarships. During 2006, MSHR continued to be the largest single recipient of all NHMRC Indigenous health research funding, reinforcing our position as Australia's premier Indigenous health research institution.

Research highlights included the publication in *The Lancet* of an important study documenting the effectiveness of specialist outreach services to Aboriginal communities, the finalisation of the first stage of the successful Audit and Best Practice for Chronic Disease (ABCD) project and subsequent funding for an extension of this project to 40 communities nationally, and publication of evidence that health care and health status of Indigenous Australians is starting to head in the right direction: mortality rates from many chronic diseases are slowing in Indigenous adults, and cervical screening programs are reaching more Indigenous women. The ABCD project, which now involves collaboration with government and community-controlled primary care services in several states, is a particularly good example of the collaborative nature of many of our research projects. 2006 also saw the publication of Australia's first national guideline for management and control of rheumatic heart disease: a culmination of more than a decade of research led by MSHR.

The personal achievements of MSHR staff included Kate Mounsey winning the Young Achievers Science's and Engineering Award, Dr Jacqui Boyle winning the Australian Academy of Science Douglas and Lola Douglas Scholarship in Medical Science, and Prof Bart Currie being nominated for NT Australian of the Year. Six MSHR students completed their research studies during 2006, but we are particularly proud of one of our Indigenous students, Dr Yin Paradies, whose thesis entitled 'Racism, Stress and the Health of Indigenous Australians' passed without emendations and was hailed by his examiners as a work of the highest order.

We made a number of senior appointments during 2006. We welcomed Dr John Condon to the position of Deputy Director, Brendon Douglas as Executive Officer and Julie Carmichael as Communications and Development Manager. All are critical to ensuring that MSHR has a solid administrative support base as well as an eye to new strategies and fundraising for the future. Julie heads up a new Communications Unit, which is charged with

improving links with and transfer of information to and from our partners, collaborators and the wider community. We also appointed Associate Professor Ross Andrews who now leads our Immunisation research group, Mr Joseph McDonnell as biostatistician, and Associate Professor David Cooper to the Chair of Disaster Response and Preparedness. This last appointment is shared between MSHR, Charles Darwin University and the NT Dept of Health and Community Services, and presages the opening of the National Critical Care and Trauma Response Centre, to be based at Royal Darwin Hospital.

Sadly, 2006 also saw the departure of several long-term MSHR team members. In particular I would like to extend my gratitude to Dr Alex Brown who took up the new role of Director of the Baker Health Research Institute's Centre for Indigenous Vascular Health. Alex will be sorely missed but will continue to collaborate with MSHR on a number of projects.

We continued to improve our support services, working conditions, and professional development capacity. Our new Collective Bargaining Agreement was voted in with the support of more than 90 per cent of staff, we introduced a robust and transparent promotions process for academic staff, and drafted an Indigenous Employment Strategy which will be introduced in 2007. We currently have a workforce of just under 200 people, of whom one-third are Indigenous. Importantly, MSHR is in a strong financial position. Gross income was \$16.8 million – an increase of almost 6 per cent over 2005, and continues to represent a return of approximately \$3.50 for every dollar contributed by the NT Government. These factors all contribute to MSHR's reputation as a great place to work.

Looking to 2007 and beyond

We spent considerable time during the second half of 2006 developing our Strategic Plan for the next five years. This was a comprehensive process in which we sought input from all MSHR staff and a wide range of collaborators and friends, and held a two-day retreat in September. The Strategic Plan will be finalised in early 2007, but I can signal that there are two major themes: MSHR will continue all of the current excellent work that it does; and we have identified four new areas to develop as a priority. We will create a Division of Child Health, which will bring together many existing child health focused research groups, but also initiate a new agenda looking at the links between education and health, and novel approaches to delivering health care and other services to the next generation of Indigenous children. We will also create a Division of Healing and Resilience, bringing together activities in mental health care and prevention, substance misuse and exploring the determinants of wellness in Indigenous settings. We will strengthen our international activities through the creation of an International Division. And finally, but perhaps most importantly, we will revisit our strategies for working with Indigenous communities and organisations.



parliamentary question

On this last point, we are planning a series of initiatives. This includes developing a network of research "hubs" in remote communities, and I was pleased to explore this possibility during a visit to Galiwin'ku for their health festival in October. We will also bring a renewed focus on developing a workforce of Indigenous researchers and research leaders. And we intend to provide greater support and mentoring to our Indigenous staff through the creation of an Indigenous Development Officer.

The involvement of our Board in Strategic Planning was a highlight, and signals an intention of the Board to take an even greater interest in the activities of the School in the future. We were disappointed to lose Mr Robert Griew as a Board member at the end of 2006, but delighted to welcome Ms Ros Bracher who will take up a position in 2007. Another transition of note was the elevation of Dr Chris Burns, MLA, to the position of Minister for Health in the NT government. Dr Burns is a long-time friend of MSHR, having spent a number of years with us in the 1990's doing his PhD. His appointment can only signal a strengthening to our already-excellent links with NT policy makers and service providers.

Our fruitful collaboration with the Cooperative Research Centre for Aboriginal Health continues, including providing centre agent services, and we expect to develop even stronger links with the Centre for Remote Health in Alice Springs, which houses our Central Australian Unit. Overall, our continued growth and success will soon strain the limits of the John Mathews building in Darwin, so I expect that we will need to consider additional accommodation in the near future.

Let me finish with a word of thanks to the staff and Board of MSHR for making me feel welcome. It is wonderful to work with such dedicated and talented individuals. A Director is only as good as the people he directs, and it has been inspiring to see how everyone at MSHR has embraced our new vision. I feel confident that the next five years will be the most exciting and productive in the proud history of this School.

Professor Jonathan Carapetis, **Director**

Parliamentary Question – 18th October 2006

Question: Menzies School of Health Research

Member: Ms McCARTHY

To: MINISTER for HEALTH

"Will the minister outline to the House the recent success of the Menzies School of Health Research in gaining millions of dollars in additional funds for vital research in the Territory?"

ANSWER

Mr Acting Speaker, I thank the member for Arnhem for her question. It is an important question as there is no doubt the Menzies School of Health Research has been a success story in the Northern Territory. I pay tribute to the former government, who set up and supported the Menzies School of Health Research, and the member for Greatorex, who served on the board of the school for over six years, 1986 to 1992, and, as members may be aware, I was also a student and a researcher there.

They do have a national and international reputation in Aboriginal and tropical health. This year, in the latest round of National Health and Medical Research Council grants, which is a very competitive system, on average, across Australia, only 20% of grants get up. However, the Menzies School received 33% of their applications this year. It is a very important school. This year, they received a total of \$4.6m of funding from the National Health and Medical Research Council...

I am sure everyone in the House joins me in congratulating the Menzies School of Health Research in gaining these research grants under the new director Dr Jonathan Carapetis, who is obviously doing well, carrying on the very good work of their foundation director, Dr John Mathews.

I am proud to announce these grants today, and I know there is a lot of good work going on at the Menzies School of Health Research that benefits Territorians in general, and Aboriginal Territorians in particular.



assistant director for indigenous health report

It has been another entertaining year at Menzies, with the emphasis on change and exploring potential. Two of our senior Aboriginal research staff began new roles in the Communications unit, managing community relations in recognition of their extensive expertise in this area. Menzies has graduated their first Aboriginal PhD scholar, and our Aboriginal and Torres Strait Islander staff continues to contribute to new and successful programs in the lab, clinical work and fieldwork. And with the assistance of Mrs Maria Scarlett, our ethics co-ordinator, we have also managed to fill the remaining positions on the Aboriginal Ethics Sub-Committee and have appointed one of our senior community women as the Chair. Congratulations.

We have had a number of Indigenous staff move on from Menzies in order to pursue other pathways or progress their careers. I know I can take the liberty of thanking them for their valuable contributions to the work of Menzies, and wish them every happiness and success.

The coming year will see a number of new initiatives for our Indigenous staff and generous community partners. An Indigenous Development Officer (IDO) will be appointed to oversee the implementation of the Indigenous Employment Strategy. Primary tasks for the IDO will include facilitating the professional development of existing staff; contributing to the recruitment and retention of Aboriginal and Torres Strait Islander staff; and the facilitation of processes that will develop a culturally safe environment for all staff.

Dr Malcolm McDonald has proposed that each year we nominate a number of our national and international community partners and collaborators in order to honour them – in recognition of their generous and valuable contributions to the work of Menzies – with Community Research Fellows appointments. This will commence in 2007.

This year has seen consultation and strategic planning undertaken in order to identify institutional priorities, existing strengths, gaps and new challenges, particularly for the next five years. I was most happily surprised by several of the outcomes. Whilst Aboriginal health has always been recognised as our core business, the level of conviction and commitment to Aboriginal and Torres Strait Islander health and health research from all staff was unprecedented. Supporting and nurturing Indigenous leadership, and creating and maintaining independent Indigenous researchers as well as building non-Indigenous expertise in the sector was unequivocally identified as a priority for Menzies.

None amongst us underestimates how intensive (and sustained) our efforts will need to be, nor the difficulties that may arise during the course of our endeavours, however, the Menzies mob have spoken, and in doing so have articulated that if our core business is not working toward reducing disparities for Aboriginal and Torres Strait Islander peoples, then what business do we have in being here?

Again I would like to acknowledge the efforts of our Aboriginal and Torres Strait Islander staff, our community partners and their representatives, the CRAH and other Indigenous organisations, who, not only facilitate our research, but are the heart of our culturally rich environment – those who offer us generosity, trust and friendship above and beyond the workplace.

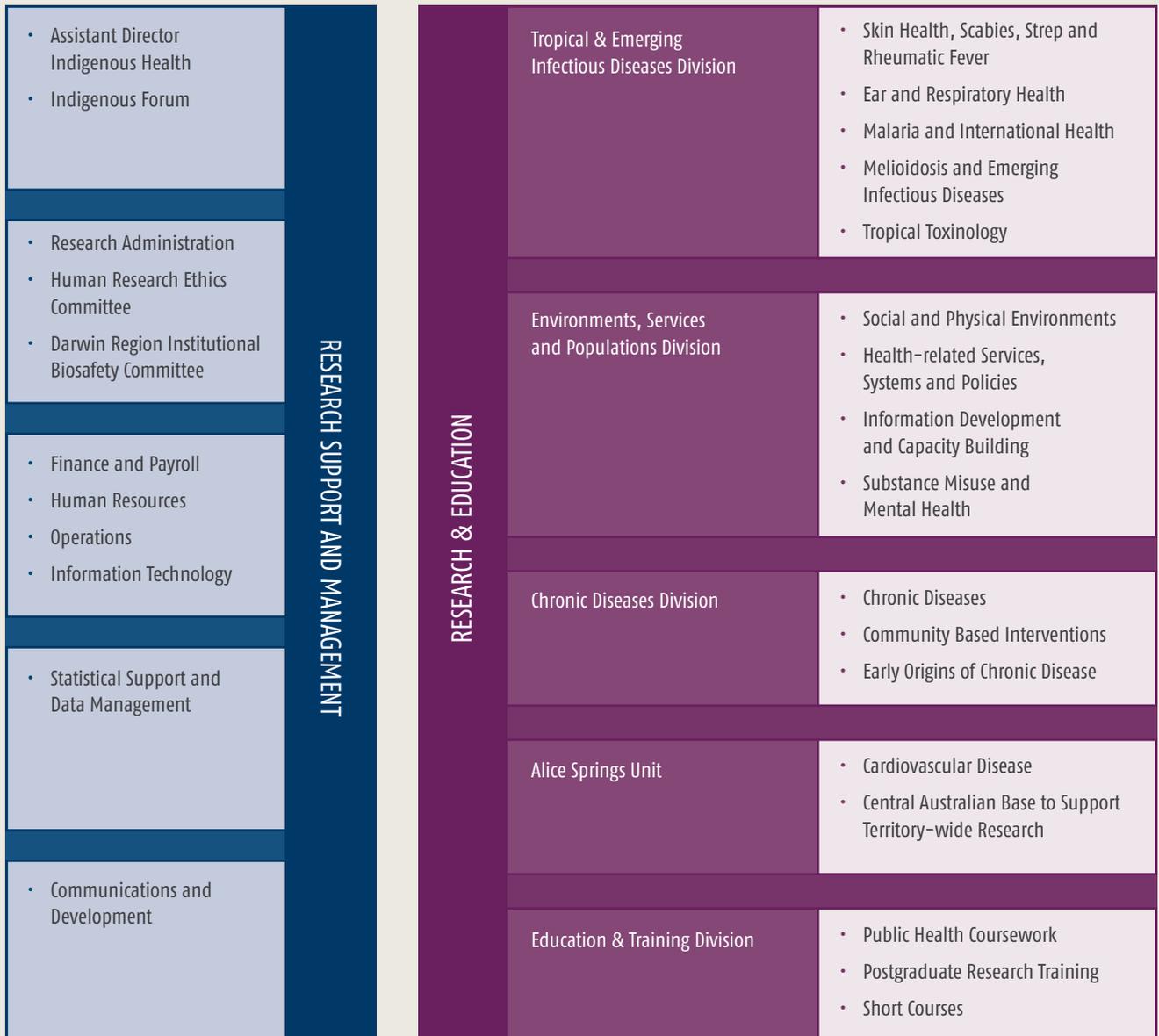
Dr Ngiare Brown

Assistant Director, Indigenous Health

organisational chart

BOARD

DIRECTOR



the future of menzies school of health research



Above: MSHR Lab Assistant, Yvette Emanuell.

Planning for the future was a major focus for MSHR during 2006. It started with the appointment of a new Director in April, was followed by a strategic planning retreat in September and culminated in the development of a draft strategic plan in December which was then approved by the MSHR Board in early 2007.

This new Strategic Plan marks the beginning of a new era for MSHR – a new era for our research, a new era for our staff and a new era for our partners and collaborators.

Many of the key research themes which have developed over the 21 year life of MSHR will remain. We will continue to focus our efforts on chronic and infectious diseases, international work will remain a major focus, and education will continue to be a key contributor to our growth.

However, the MSHR of the future will also see more emphasis placed on new areas of research. At the core of the Strategic Plan is MSHR's commitment to research, education and training, and translation of research outcomes into policy and practice.

Our research activities will be housed within six major, inter-disciplinary health research Divisions for the next five years.

These Divisions are:

- Child Health
- Healing and Resilience
- International Health
- Tropical and Emerging Infectious Diseases
- Preventable Chronic Diseases
- Services, Systems and Society

This Strategic Plan also addresses the urgent need to improve recruitment, development and retention of Indigenous research leaders.

MSHR will expand its collaborations with Indigenous communities and organisations, through a series of initiatives including developing a network of research "hubs" in remote communities. These will help us to improve our relationships with communities, gain a better understanding of their health research needs, and improve the participation of Indigenous communities in the health research process.

Health education and research training will continue to be part of the School's core business. By 2011, MSHR will have further strengthened its position as an innovative centre for public health training and research education, including a greater range of courses leading to tertiary qualifications through Charles Darwin University (CDU).

There are many challenges and opportunities over the next five years. The Strategic Plan is a blueprint to enable MSHR to achieve its vision and strategic objectives for research, health education and research training, and Indigenous research capacity.



Left: Healthy Skin Day at Gunyungara Community'
Photo courtesy of MSHR Healthy Skin Team.



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.

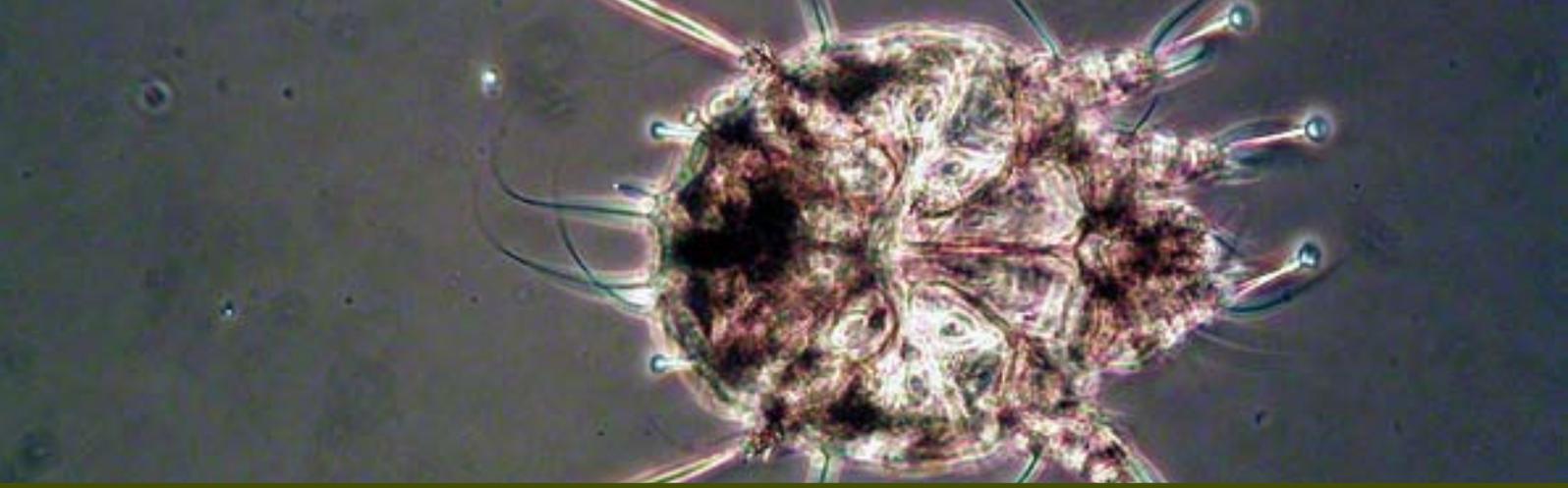
We focus on developing and assessing prevention and treatment methods by seeking a better understanding of the underlying disease processes. Epidemiology, clinical observations and basic laboratory work are interlinked, with evidence-based approaches undertaken when possible.



Professor Bart Currie,
Head of Division

Our programs areas span:-

- Skin Health, Scabies, Streptococci and Rheumatic Fever
- Tropical Toxinology
- Ear & Respiratory Health
- International Health
- Melioidosis and emerging infectious diseases



Above: The scabies mite. Scabies are widespread in many remote Aboriginal communities in northern and central Australia.

Skin Health, Scabies, Streptococci and Rheumatic Fever

Scabies and secondary streptococcal skin infections are widespread in many remote Aboriginal communities in northern and central Australia, with up to 60 per cent 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 focuses on locals, researchers and health workers joining forces to tackle scabies and skin infections. A strategy deployed for the third year in a row during 2006 involved community treatment days for scabies involving residents in East Arnhem Land, followed by regular monitoring of skin infections to treat new cases as they arose. This approach has been shown to reduce the spread of scabies, decrease skin bacterial infections and greatly impact on the health of community members.

Another significant area of MSHR's work in this area is the study of rheumatic fever and rheumatic heart disease. Acute rheumatic fever (ARF) is an autoimmune disease that attacks the heart which is triggered by group A streptococcal infection. Recurrent episodes of ARF can lead to the development of rheumatic heart disease (RHD) which can be serious enough to require heart surgery. Indigenous Australians have the highest rates of ARF and RHD in the world. These diseases mostly affect young people with approximately 45 per cent of people requiring surgery being under 25 years old.

Projects in 2006

- Controlling rheumatic heart disease in Australia and globally
- Can skin sores cause rheumatic heart disease?
- Identification and characterization of streptococcal pathogenicity factors
- Development of a diagnostic assay to identify acute rheumatic fever
- Healthy Skin Program
- Characterization 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
- Investigating the molecular basis of emerging drug resistance in scabies mites
- Molecular mechanisms of ivermectin resistance in scabies mites from northern Australia (student project)
- Development of an immunodiagnostic assay for scabies
- Molecular epidemiology of *Staphylococcus aureus* in NT
- Molecular epidemiology of *Trichophyton rubrum* in the NT
- Australian *Leishmania* lifecycle investigation.

"The launch of the national rheumatic heart disease guidelines is a significant step in attempts by Aboriginal people and the health sector to eradicate a preventable disease which causes many premature deaths every year in northern and central Australia."

Prof Jonathan Carapetis, Director, MSHR.

Right: Hon Chris Burns, Minister for Health, Mr Greg Hallen, CEO, National Heart Foundation of Australia, NT Division, Ms Lynette Hoffman, Prof Jonathan Carapetis, Director MSHR and Dr Marcus Ilton, Cardiologist, NT Cardiac Services. At the launch of the National Rheumatic Heart disease Guidelines. Photo courtesy of the CRC for Aboriginal Health.



tropical and emerging infectious diseases division

Achievements in 2006

- MSHR took the lead in the development of new national guidelines for the diagnosis and treatment of acute rheumatic fever (ARF) and rheumatic heart disease (RHD), published by the National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand.
- Work continued on the development of a diagnostic test to identify acute rheumatic fever (ARF). Almost 30 per cent of patients diagnosed with ARF have established rheumatic heart disease, indicating that they have been misdiagnosed on at least one previous occasion.
- A project investigating the linkages between skin sores and acute rheumatic fever (ARF) was completed in 2006. The findings supported the hypothesis that skin sores have a pathogenic role in ARF. Skin sores are very common in remote Top End communities and new strategies for control are being successfully applied. It was also found that the diversity of streptococcal strains does not bode well for the successful development of a type-specific vaccine in the near future.
- The 'Healthy Skin Program' gained further momentum in 2006 with the continuation of its successful 'Healthy Skin Treatment Days' in remote communities. Training in clinical diagnosis and treatment techniques were completed for Aboriginal community workers and health workers and further community workers were recruited in communities to help to implement the study.
- Key scabies mite recombinant antigens were identified that will facilitate the development of a rapid test to diagnose scabies. This will have a significant impact on the early identification of disease and subsequent treatment.
- Commencement of work investigating the molecular epidemiology of *Trichopyton rubrum* – the cause of fungal infections of the skin and nails which are common in remote Indigenous communities. The outcome of this work will lead to improved surveillance, diagnosis and treatment options for fungal infections such as tinea.
- The recent discovery of a previously unknown species of *Leishmania*, a parasite which can cause ulcerated skin lesions transmitted by sand flies. This discovery has resulted in the commencement of the 'Australian *Leishmania* Lifecycle Investigation'. Until the discovery of the parasite in the NT, Australia was considered to be one of the only continents in the world free of *Leishmania* parasites and suitable sand fly vectors. A sand fly trapping and testing program commenced in 2006 and significant training in *Leishmania* culture methodologies was undertaken.



Above: The MSHR Healthy Skin Program works with remote communities to provide education and training about skin health and hygiene. The mass treatment "Healthy Skin Day" forms an integral part of the program.



Above: A mildly venomous little spotted snake (*Denisonia punctata*). Photo courtesy of Bart Currie.

Tropical Toxinology

Across our land and along our coast lives a diverse and deadly range of venomous animals.

Our research monitors and documents clinical syndromes from snake, spider and jellyfish envenoming and investigating the body's reaction to venom and antivenom therapies. We also trial new treatment and first aid practices, in addition to monitoring the occurrence of envenomings to distribute timely public health warnings.

The Australian Snakebite Project, which MSHR coordinates, is a national first in multicentre collaboration in toxinology in Australia.

Projects in 2006

- The Top End Prospective jellyfish study
- A randomised control trial of hot water immersion versus ice packs for *Chironex fleckeri* stings
- The Top End Prospective Snakebite Study
- Australian Snakebite Project
- Pharmacological investigations of venom from the Northern Mouse Spider
- RAVE: Randomised controlled trial of antivenom treatment for redback spider bite; intravenous versus intramuscular antivenom
- An investigation of current pressure bandage methods for snake bites (student project).

Achievements in 2006

- A new species of jellyfish – *Chiropsella bart'* – was identified and found to be present in the waters off the Gove Peninsula during the months of May to October which has traditionally been considered as the 'safe' swimming season.
- Work continued to monitor the occurrence and type of box jellyfish stings in the waters off the Top End of the Northern Territory. Analysis of stings and sea water temperature has suggested that the Top End stinger season will become longer with global climate change and predicted rises in sea temperatures.
- A project which is trialling the use of hot water immersion versus ice packs for pain relief in the treatment of box jellyfish stings continued in 2006 and recruited 10 patients via the Royal Darwin Hospital.
- Work to document all snakebite envenomings in the Top End continued as well as monitoring the impact of cane toad invasion on the epidemiology of snakebites in the Top End. In particular, this work has focused on whether bites from taipans will become more common, as, unlike the other major Top End venomous snakes, taipans are not toad or frog eaters.
- Continued coordination of the Australian Snakebite Project (ASP), a 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 administration for envenoming from the major Australasian snakes.
- The development of new assays to detect venom of various dangerous Australian snakes. These assays will enable fine-tuning of antivenom dosing for each snake species.



Left: MSHR student Elizabeth Canale testing the effectiveness of pressure bandaging applied by NT snake catcher Rex Neindorf from the Alice Springs Reptile Centre.

Above: The newly identified *Chiropsella bart'* box jellyfish which was named after MSHR's Prof Bart Currie. Photo courtesy of Lisa Gershwin.

tropical and emerging infectious diseases division

- Involvement in a multicentre trial with ten emergency departments, to determine if intravenous antivenom is more effective than intramuscular antivenom for the treatment of redback spider bite.
- Commencement of a student project assessing the effectiveness of first aid and pressure bandaging following acute snakebites. This study uses a series of simulated snakebites to work out how likely it is that effective bandaging will be applied and which subset of the population – such as doctors, nurses, paramedics, snake catchers or the general public – are more likely to administer the correct pressure bandaging technique.

Ear and Respiratory Health

Aboriginal children experience the highest rates of chronic ear drum perforations (chronic suppurative otitis media, 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 Indigenous communities have normal hearing, with the remaining four out of every five children requiring follow up care from their local health clinic.

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

Over the past few years, MSHR have documented modest benefits for treating and preventing ear drum perforations in Aboriginal children. The 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 the vaccine has shown no overall benefit for perforations.

The use of antibiotics reduces the risk of ear perforation by 50 per cent, and clearance of ear discharge can be resolved in 40 per cent of children who have previously untreatable CSOM. These antibiotic therapies are only effective during intensive and long term use, which is difficult for families. The problem of bacteria becoming resistant is a concern, although this has been less common than expected.

We now look to embark on further studies which will build on these current findings, in order to achieve clinically useful results which will effectively prevent or treat ear drum perforations.

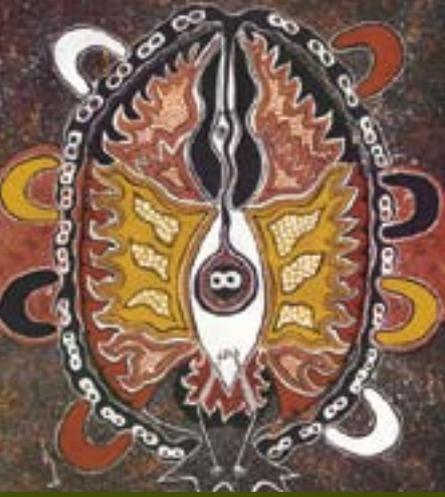
Our research showing the very early onset of ear infections in Indigenous children is the basis for a new study trialing maternal immunization – the “PneuMum Project”. The use of vaccines in pregnant and breastfeeding mums is a new idea that may increase the antibody protection transferred from mother to baby at birth and through breast milk.

Ongoing improvements in primary health care services in clinics and communities have the capacity to greatly improve child health in remote



Top: Participants in the 'PneuMum' project, Elizabeth Heenan and baby Joan sign the "Thank You" Day card at MSHR's Thank You Day celebrations.

Above: Members of the MSHR team visit the PNG Institute of Medical Research for the 42nd Medical Society Symposium.



Left: "Brolga Calling" was commissioned from NT artist and MSHR staff member Norma Benger (Chindanpee) for the 5th International Symposium on Pneumococci and Pneumococcal Diseases. It represents the Brolga from the North calling out to all delegates to travel to Alice Springs for the Symposium. The theme of the Symposium is contained in the heart of the Brolga and the piece is surrounded by the delegates and the Pneumococci. The background acknowledges the traditional owners of the country, and they too sit and watch the Brolga and his subject.

areas. That is why, over recent years, we have broadened our research scope to include the "Strong Teeth for Little Kids" study which will evaluate the effectiveness in preventing tooth decay of incorporating oral health into existing primary health care programs in remote communities.

Projects in 2006

- 5th International Symposium on Pneumococcal Diseases
- Reducing the burden of infectious disease in young Aboriginal children: An evidence-based multidisciplinary approach
- Otitis media in Indigenous and non-Indigenous children: Microbiological and immunological factors (WAHI)
- SPINICAR: *Streptococcus Pneumoniae*: Implications of Non-encapsulated Isolates for Carriage and Resistance
- MARS: Monitoring antibiotic resistance and serotypes
- BLOOM: Bacterial load on outcomes of otitis media
- CPPP: Community Pneumococcal Protection Project
- PARTI: Pneumococcal Antibody Response in Tiwi Infants
- VISIT: Vaccine Interactions Study in the Tiwi
- AATAAC: Azithromycin versus Amoxycillin for the treatment of acute otitis media in Aboriginal children
- C-SURE: Ciprofloxacin versus Sofradex in runny ears
- Microbiology consultancy in PNG: Randomized controlled trial of safety, immunogenicity and carriage outcomes of a neonatal Pneumococcal conjugate vaccine schedule
- Selective use of long-term antibiotics for chronic lung obstructive disease in Aboriginal adults
- Invasive *Acinetobacter* infection in the tropical NT
- Development and evaluation of a primary health care model to prevent dental decay in Aboriginal pre-school children – 'Strong Teeth for Little Kids'
- A prospective study of Aboriginal children with bronchiectasis or chronic moist cough with or without CXR infiltrates – an international multi-centre study (Bronchiectasis Observational Study – BOS)
- Immunizing Aboriginal mothers with Pneumococcal polysaccharide vaccine to prevent ear disease and carriage (PneuMum)
- The Australian Indigenous EarInfoNet.

Achievements in 2006

- The 5th International Symposium on Pneumococci and Pneumococcal Diseases took place in Alice Springs in April 2006. The symposium brought together over 600 international and Australian experts in a range of disciplines relevant to Pneumococcal research.
- The commencement of the 'PneuMum' project – a novel project which is vaccinating pregnant women and newborn babies against Pneumococcal ear disease. This randomized control trial aims to recruit 210 Aboriginal women aged 18-39 who have uncomplicated pregnancies. Each subject and their infant will be monitored to determine the effectiveness of the vaccine at one, two and seven months of age.
- Recruitment and training commenced for 'Strong Teeth for Little Kids' – a project which aims to develop, implement and evaluate methods of preventing dental decay amongst pre-school children in Aboriginal communities.
- Children were enrolled to take part in the 'BOS' study – a project which is investigating 'chronic moist cough' and which is identifying risk factors associated with its progression to bronchiectasis.
- The 'Australian Indigenous EarInfoNet' was developed during 2006 thanks to a funding boost from the Pratt Foundation and Variety Australia. This on-line 'one-stop-shop' for resources and information about Indigenous middle ear disease and associated hearing problems received over 5000 hits during 2006 and almost 100 people joined its 'e-network' to share information about ear disease in an Indigenous context. Plans are underway for the development of further 'InfoNets' in 2007.
- Members of the MSHR ear-team visited the Papua New Guinea Institute of Medical Research to work with the laboratory team there to establish standardized microbiological assessments for the pilot trial of neonatal Pneumococcal Conjugate Vaccine.

tropical and emerging infectious diseases division

International Health

The International Health Program at MSHR has been working with offshore partners to address some of the major health problems in our region. Each year, malaria affects over 500 million people globally, with up to 2 million deaths. Children and pregnant women are particularly affected. Tuberculosis (TB) affects 8 million people worldwide, contributing to 2 million deaths. Both diseases are major causes of morbidity and mortality in countries in our region, including eastern Indonesia, Papua New Guinea (PNG) and East Timor.

We have been collaborating with the Indonesian Ministry of Health's National Institute of Health Research and Development (NIHRD) for over 10 years. This is an exciting partnership that has focused on malaria and TB in Eastern Indonesia. For the last 6 years our research been based at our field site in Timika in Papua where drug-resistant malaria is a major problem. MSHR and NIHRD operate a joint research facility adjacent to Rumah Sakit Mitra Masyarakat (RSMM) Hospital. This facility employs over 15 research staff and includes a laboratory, offices and accommodation.

Our research program involves a wide range of community and hospital-based 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. These studies are undertaken in partnership with local health care providers and policy makers. Training at all levels is also a major focus of our work.

More recent regional collaborations include partners in Thailand, Singapore, East Timor, Tanzania and PNG.

The arrival of our new Director, Jonathan Carapetis, in 2006 has brought the opportunity to expand activities in maternal and child health and integrate our activities with his existing collaborations in the Pacific islands.

Research Projects in 2006

- Defining the epidemiology and burden of malaria in Papua, Indonesia
- New treatments for multidrug resistant strains of *Plasmodium falciparum* and *P. vivax* (Student Project)
- In vitro and molecular studies of multidrug resistant malaria
- Can arginine be used to help treat malaria? (Student Project)
- Does nitric oxide protect against lung damage in malaria?
- Genes protecting from severe malaria
- Severe disease from *Plasmodium vivax*
- Understanding the immune response to malaria

- Pulmonary disability in TB patients
- TB and health sector studies in Timor Leste
- Understanding the pathophysiology of sepsis
- Controlling rheumatic heart disease in Australia and globally.

Achievements in 2006

- Our researchers and students continue to work in partnership with the Indonesian Ministry of Health and other collaborators across our region.
- Work continues in improving treatment outcomes after completing the largest ever comparative trials of artemisinin-combination therapy in Indonesia, involving over 1000 patients with malaria. Results have led to the Ministry of Health decision to recommend widespread deployment of dihydroartemisinin-piperaquine (a new and relatively inexpensive artemisinin-containing combination antimalaria treatment) in the Timika region. The impact and cost-effectiveness of this policy change are being evaluated.
- Consolidation of 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 gathered from entomology, hospital admissions, pregnant women and laboratory records.
- Comprehensive studies were undertaken of the impact of malaria on maternal and child outcomes in Papua. The benefits of widespread deployment of better antimalarial combinations are being investigated.
- MSHR researchers took the lead in the first comprehensive *in vitro* characterization of *Plasmodium vivax* drug sensitivity from a region endemic for chloroquine-resistant vivax malaria and identifying novel molecular mechanisms for resistance to chloroquine and other antimalarials. We are utilising an optimized and quality-assured in vitro susceptibility assay to test the effectiveness of novel compounds and combination therapies against fresh clinical isolates of all human *Plasmodium* species.
- Measuring for the first time the functioning of endothelial cells lining blood vessels of malaria patients. Results show profound impairment in severe malaria. Reversibility with L-arginine demonstrates that the endothelium can be targeted for adjunctive treatment.



Above: The Menzies-NIHRD Research Building in Timika, Indonesia. This facility employs over 15 research staff and includes a laboratory, offices and accommodation. Photo courtesy of MSHR International Health Team.

- The first Wellcome Trust-NHMRC-funded trials of arginine supplementation in falciparum malaria were undertaken. These are aimed at increasing nitric oxide production, reducing blood vessel stickiness and improving outcome in severe malaria.
- Demonstrating that production of nitric oxide in the lung is low in severe malaria, which may contribute to the increased risk of lung injury.
- Identifying a major burden of severe malaria from *Plasmodium vivax*, previously thought to be a rare cause of severe disease.
- Undertaking detailed studies of immune responses in malaria and how these may contribute to protection and/or severe disease.
- Testing whether nutritional supplementation can improve treatment adherence and outcomes in patients with pulmonary TB.
- The commencement of studies examining mechanisms of disease in sepsis.
- Establishment of the World Heart Federation Global Centre for Excellence in Rheumatic Heart Disease (RHD), the world's first web-based resource for RHD control.
- Continuation of the highly successful Pacific Rheumatic Heart Disease control program with demonstration projects in Fiji and Samoa.



Above: Jonacanis, a 14 year old Fijian boy is examined following the replacement of two heart valves by the visiting cardiac surgery team. Jonacanis volunteered to allow doctors and nurses to listen to his new artificial heart valves during an Rheumatic Heart Disease training workshop at the main hospital in Suva in June 2006. Photo courtesy of Sara Noonan.

tropical and emerging infectious diseases division

Melioidosis and Emerging Infectious Diseases

Melioidosis is a potentially fatal, under-recognised 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 17 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, complete with links 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 and how it spreads from the environment to humans and animals, and how it has possibly spread within Australia and overseas. We have also successfully trialled a real-time PCR for use as a rapid diagnostic test for Melioidosis and for ongoing environmental studies.

We are involved in surveillance and clinical management of other emerging infectious diseases such as various mosquito-borne virus diseases, marine Vibrio infections and community methicillin-resistant *Staphylococcus aureus* (MRSA) infections.

Projects in 2006

- Melioidosis clinical and diagnostic studies in Thailand
- Melioidosis clinical and diagnostic studies in the Northern Territory
- Surveillance for emerging infectious diseases
- MRSA in the top end - clinical and epidemiological aspects
- Presence of Melioidosis bacterium in bore water in rural Darwin blocks
- Molecular studies of *Burkholderia pseudomallei*
- Using real-time PCR to detect the ecological niches of the Melioidosis bacteria *Burkholderia pseudomallei* in tropical Australia.

Top Right: 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. Frequent testing of water and soil is carried out by MSHR's Mark Mayo in the Darwin area during the wet season.

Bottom Right: From left; Dr. Apichai Tuanyok, Daniel Gal, Dr. Dave Wagner, Mark Mayo, Dr. Vicki Krause and Professor. Bart Currie during a Melioidosis Study Tour during November 2006. Photos courtesy of Professor Bart Currie.

Achievements in 2006

- Work underway to improve treatment protocols for Melioidosis continues to decrease mortality rates at the Royal Darwin Hospital.
- Testing for *B. pseudomallei* in bore water in rural blocks in the Darwin area confirmed that the bacterium was present in over 25 per cent of the bores sampled and that it was also present during the dry season.
- A new project commenced in 2006 which aims to determine if particular strains of *B. pseudomallei* are responsible for episodes of Melioidosis and establish whether there are geographical patterns of infection.
- A fast soil DNA extraction and real-time PCR assay for detection of *B. pseudomallei* in soil was developed in 2006 and over 1000 soil samples from the Darwin rural area were collected and screened.
- The commencement of a new project studying 'MRSA' (methicillin-resistant *Staphylococcus aureus*) - an infection which does not respond to standard antibiotic therapy and which is an important and increasing cause of morbidity in Australia and overseas.
- Completion of an historical analysis of Ross River virus infection in the Top End which demonstrated significant correlations between high rainfall and mosquito numbers.
- Documentation of a cluster of severe *Vibrio* infections in recreational fishermen in the Gulf of Carpentaria and an outbreak of necrotizing fasciitis in captive saltwater crocodiles.







Left: MSHR researcher, Dr Sheree Cairney, was awarded the ABC Science Media Fellowship in 2005 which resulted in Lynne Malcolm of ABC Radio National visiting the Top End in May 2006 to report on some of Dr Cairney's work. This included an interview with Aboriginal film star David Gulpilil for a report into 'Long grassers' – homeless, itinerant Aboriginal men living in the 'long grass' in the suburbs of Darwin.

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 significant impacts. 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 health care and related services are delivered.

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



**Associate Professor Joan Cunningham,
Head of Division**

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



Left: Ross Bailie and the ABCD team celebrate the final 'Chief Investigators meeting' ahead of moving onto the phase 2 of the ABCD project.

Social and Physical Environments

Social and physical environments are widely accepted as playing a significant role in the poor health of Aboriginal and Torres Strait Islander people living in urban, 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.

Projects in 2006

- Population-health-Environment: Improving hygiene and children's health in remote Indigenous communities (student project)
- The relationship between bushfire smoke and human health in the Australian monsoon tropics (student project)
- Household infrastructure improvements and child health study
- Socio-economic and environmental determinants of health in Indigenous communities in the NT (student project)
- Fluoridation of water supplies in remote Indigenous communities in the NT
- Social Determinants of Indigenous Health textbook
- Analysis and feedback of child health data in remote Indigenous communities (student project)
- Racism, stress and the health of Indigenous Australians (student project).

Achievements in 2006

- Completion of a project examining fluoridation of water supplies in remote Indigenous communities in the NT. Major findings include that fluoridation of remote communities is a feasible and affordable way to improve dental health. Policy and management implications of this require further investigation.
- Initial data collection for the determination of the impact of housing improvements on child health was completed and feedback to individual communities commenced. Further in-depth analysis of data and policy recommendations is to begin in 2007.
- Dr Yin Paradies, an Indigenous PhD student, whose thesis 'Racism, stress and the health of Indigenous Australians' passed without emendations and was hailed by his examiners as a work of the highest order.

- Publication of a textbook – 'The Social Determinants of Indigenous Health'. This textbook draws together the essence of discussions, seminars and short courses in which MSHR and the CRC for Aboriginal Health have been involved since 2002.
- Continuation of research investigating the relationship between bushfire smoke – the only significant source of air pollution in the Darwin area, and health outcomes such as respiratory and cardiovascular problems. Findings will contribute to the setting of national air quality standards and assist with fire management practices.

Health-Related Services, Systems and Policies

The main focus within this area of our work is the 'health' of Aboriginal health-related services, their organisation and delivery, and the policies that underpin these.

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

There is also particular interest in Aboriginal people's use of existing health services, and our researchers are seeking to identify and find ways to overcome barriers to accessing treatment and care.

Projects in 2006

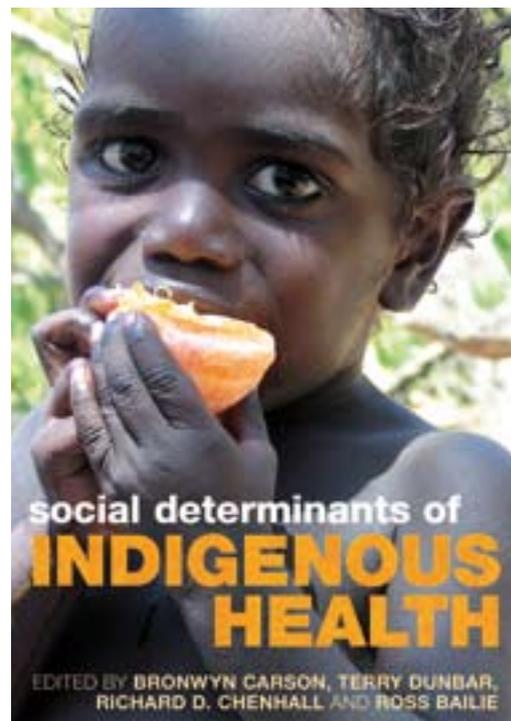
- Changing health centre systems for better diabetes care in Aboriginal communities in the NT (student project)
- Assessing changes in public health research: an ethnography of an Indigenous public health research institute (student project)
- Community engagement in government services (student project)
- Polycystic Ovarian Syndrome in Indigenous women (student project)
- Implementing Aboriginal Health Policy in Australia: A case study of the NT preventable Chronic Disease Strategy (student project)
- The Aboriginal and Torres Strait Islander health check: Is it an appropriate strategy towards health equity in remote areas (student project)
- The DRUID Study: Diabetes and related conditions in urban Indigenous people in the Darwin region
- IMPAKT: Improving Indigenous patients' access to kidney transplantation
- The prevalence of cancer-causing genotypes of Human Papillomavirus in Australian Indigenous and non-Indigenous women
- An epidemic of vulvar cancer in young women – investigating the role of Human Papillomavirus and genetic susceptibility

environments services and populations division

- Vaccination of Aboriginal and Torres Strait Islander people in Australia
- Reconstructing Maternal care services: birthing in Timor Leste (student project)
- Factors that influence research uptake: A case study of ABCD (student project)
- Proposal to provide facilitation services to selected Aboriginal Community Controlled Health Services
- Audit and Best Practice for Chronic Disease (ABCD) project (Phase 1)
- Audit and Best Practice for Chronic Disease (ABCD) Extension (Phase 2)
- Australian Primary Health Care Research Institute Stream Four: Systematic Literature Review.
- Education and information resources produced for health professionals about Polycystic Ovarian Syndrome (POS) – a condition which can cause infertility and increase a woman's risk of developing diabetes and possibly heart disease.
- An intensive review of the international literature on maternity waiting homes was conducted in 2006 along with a systematic review of the evidence for their impact upon pregnancy outcomes with a view to conducting further investigations and field trips to several remote villages in Timor-Leste during 2007.
- Completion of a project reviewing the evidence base for interventions to address the common problem of poor growth in early childhood in the Indigenous population. This problem is an important underlying factor in many other causes of health and poor learning ability. Improving the evidence base for services to address this problem has significant benefits for the physical, social and emotional well-being of Indigenous Australians.
- The development of an 'Adult Health Check' capacity building program for remote nurses and Aboriginal health workers as a pre-cursor to further work to evaluate its effectiveness in a remote community setting.

Achievements in 2006

- Over the past four years, the 'ABCD' project has seen the roll-out of a continuous quality improvement (CQI) process in 12 primary care services in Aboriginal communities in the Top End. The project has contributed significantly to the development of a major initiative of the Australian Department of Health and Ageing – the \$102 million 'Healthy for Life' program. This will see the take-up of ABCD 'CQI' tools at over 50 primary health care services across Australia as part of the 'ABCD-Extension' program.
- As part of the 'IMPAKT' study, an in-depth study of Indigenous and non-Indigenous end-stage renal disease patients' knowledge, attitudes, education and decision-making concerning transplantation commenced in 2006. Interviews were conducted with over 100 staff and over 250 patients from renal units in Queensland, South Australia, Western Australia, New South Wales and the Northern Territory.
- A series of seminars and presentations were conducted in 2006 to inform participants, project staff, steering group members, health service organisations and academic fora to inform them of outcomes of the 'DRUID' project.
- A student project investigating barriers to the effective implementation of Indigenous health policy collected data from 35 in-depth interviews with policy directors, doctors, nurses, Aboriginal Health Workers and researchers across the Northern Territory.
- Research published in 2006 found that the very high incidence of cervical cancer in Northern Territory Indigenous women has fallen by half since the early 1990s, partly as a result of increased participation in Pap Test screening.
- Significant recruitment of participants for a project which will measure the prevalence of cancer-causing genotypes of Human Papillomavirus (HPV) in Indigenous and non-Indigenous women.



Above: The *Social Determinants of Indigenous Health* text book discusses issues that are common to all Indigenous people as well as examples from rural and urban locations.

Information Development and Capacity Building

We 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.

Projects in 2006

- Capacity Building in Indigenous Policy-relevant Health Research: 'CIPHER'
- Exploring the characteristics of the Aboriginal Health Research Workforce (student project)
- Developing, improving, evaluating and using health information to inform policy and practice
- Information Atlas Project (student project)
- Priorities for Indigenous health relevant systematic reviews in health promotion and public health.

Achievements in 2006

- A highly influential paper published showing positive trends in numbers of Indigenous deaths from chronic disease in the NT. This paper has changed many peoples thinking about the level of, and prospects for, improvements in Indigenous health.
- 'CIPHER' student, Dr Yin Paradies, became MSHR's first Indigenous student to earn a PhD. Dr Paradies is now a 'CIPHER' post-doctoral fellow.
- In 2006 researchers commenced the analysis of data from the National Aboriginal and Torres Strait Islander Social and Health surveys collected by the Australian Bureau of Statistics. The results will be used to help inform policy and practice in Indigenous health at a range of levels.
- MSHR researchers were heavily involved in advising Governments and peak bodies about social and economic issues surrounding Indigenous health.

- A student project which is 'researching the researchers' in the field of Indigenous health was completed in 2006. Over a thousand researchers were identified as working in this field, and a diverse range of issues was highlighted. Among the key results were the diversity of the workforce, the clear need for mentoring and professional networking for students and early stage career researchers and the importance of 'politics' as a potential disincentive to working in this field.



Above: The 'CIPHER project team' – Dr John Condon, Dr Yin Paradies, Prof Joan Cunningham, Dr David Thomas, Damin Si, Kalinda Griffiths and Alice Rumbold.

environments services and populations division

Substance Misuse and Mental Health

MSHR has an expanding research program investigating the health and social effects of petrol sniffing, kava, cannabis, alcohol and multi-substance abuse as well as mental health in Indigenous communities.

We are undertaking studies to increase our understanding of brain dysfunction resulting from substance abuse and mental illness and how to assess cognitive function and mental health appropriately in Indigenous people. We are also looking at the relationships between cognitive dysfunction, psychosocial wellbeing and the development of chronic disease.

Educational posters and flipcharts developed by MSHR have provided some of the first educational material available to Aboriginal people to communicate the biomedical and behavioural consequences of substance abuse and mental illness in a culturally appropriate manner.

MSHR continues to be a key partner in the Australian Integrated Mental Health Initiative (AIMHI) which is focused on Indigenous mental health promotion working in close collaboration with service providers. The collaboration and consultation between stakeholders and AIMHI NT has led to development of a range of multi media resources in Indigenous mental health, and AIMHI resources are being trialled in a range of interventions targeting relapse prevention, Indigenous mental health literacy, Indigenous mental health outcome measurement, and workforce development.

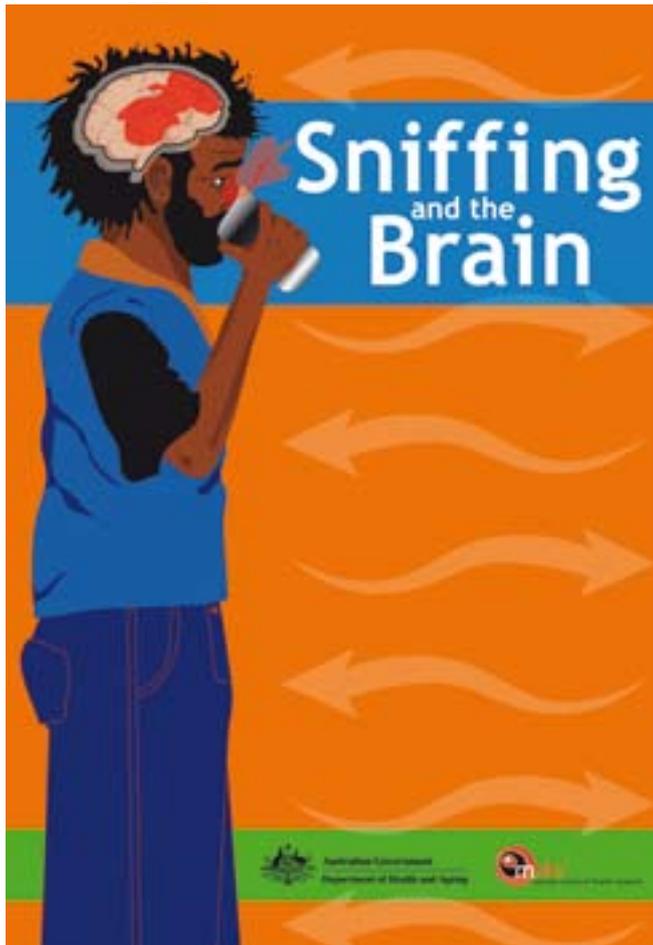
Projects in 2006

- Cannabis and depression in three Aboriginal communities in Arnhem land
- The social impacts of substance abuse within isolated townships and the public health implications (student project)
- How do you learn the intricate 'community development' dance in changing cannabis behaviours of young people in a remote community (student project)
- A study of Danshukai and other alcohol misuse and self help groups in Japan
- Best practice guidelines for evaluating Indigenous residential alcohol and drug programs
- Cognitive and mental health assessment at the Darwin Correctional Centre
- Sniffing and the brain – Resource Development
- Brain Recovery after petrol sniffing
- A prospective evaluation of a community driven initiative to intervene in harmful patterns of substance misuse in a remote locality in the NT

- The Mental Health Brain story: resource development
- Family fighting – domestic violence in a remote Aboriginal community (student project)
- AIMHI NT mental health story telling project
- AIMHI NT care plan training trial
- AIMHI NT Indigenous mental health outcome measurement – a link with AIMHI North Queensland
- Audits of best practice in mental health – a link with the ABCD project
- Relapse prevention in remote Indigenous mental health (student project)
- Strong Souls Study.

Achievements in 2006

- The 'Strong Souls' study – which is examining the relationships between social, emotional and spiritual well-being and cardiovascular risk factors – visited 25 communities and successfully followed up 333 members of the original Aboriginal Birth Cohort.
- A culturally appropriate assessment tool – the 'Strong Souls' checklist – was used extensively during 2006 and was found to be highly acceptable amongst young Indigenous people in remote communities where English is their second, third or even fourth language.
- Continuation of collaborative work with Darwin Correctional Centre to develop a culturally-appropriate cognitive and mental health assessment tool to assess brain function and determine the proportion and patterns of mental illness with a particular focus on those related to substance abuse. In 2006 data were collected from over 90 inmates.
- Commencement of a two-part project assessing short and long term damage of petrol sniffing on the brain. A previous study found that there was some recovery of petrol-related brain damage after two years of abstinence. These new studies will examine longer term implications as well as the benefits of rehabilitation services.
- Collection of data from three remote communities in Arnhem Land was completed as part of a five year follow-up looking at cannabis use and mental health. The results from the data analysis were fed back to the communities involved.



- Educational resources were developed to show a 'brain' model of mental health. The resource describes how chemical imbalances in the brain underlie the symptoms of mental illness and presents options that people can choose in their lifestyle to improve these imbalances and consequently reduce the symptoms of mental illness.
- One of MSHR's researchers, Dr Richard Chenhall, was awarded a scholarship at Sophia University, Tokyo to undertake a year long study of Danshukai. Danshukai are a Japanese self-help group for people suffering from alcohol misuse.
- AIMHI NT continued to develop multi media resources and completed two new educational resources. 'Yarning about mental health' is a pictorial flip chart which assists in Indigenous mental health assessment, care planning and outcome measurement.
- AIMHI NT completed the 'Yarning about mental health manual' which is a training and educational resource for primary care and remote service providers working with Indigenous people with mental illness.
- The relapse prevention trial completed 12 month follow up measures of people with mental illness in two remote communities – with preliminary data showing acceptability of the intervention, high rates of retention of clients in the trial, and improved outcomes resulting from the intervention.

Above: 2006 saw the continued roll-out of the successful 'Sniffing and the Brain' flipchart which was developed by MSHR researchers thanks to funding from the Australian Government.



Left: The 'AIMHI NT' project has resulted in the development of a range of multi-media resources including 'Marvin' – an animated Indigenous character.

*environments,
services and
populations division*



*Above: Numbulwar Community Government Council were participants in MSHR's Housing Improvement and Child Health Project during 2006.
Photo courtesy of MSHR's 'Housing Improvement and Child Health' project.*





Left: MSHR's "ABC" Project sort out participants in Wadeye in 2006.

Photo courtesy of MSHR's 'ABC team'.

chronic diseases division

The Chronic Diseases Division focuses on building knowledge and evidence of the complex causal pathways to chronic disease 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.

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

The work of MSHR's Central Australian Unit – based in Alice Springs – is presented alongside the Chronic Disease Division as Cardiovascular disease is the primary thrust of the Unit's work.



The Chronic Disease Team

Our research encompasses:-

- Chronic disease (population based prevalence and evidence, and clinical interventions)
- Community based interventions
- Early origins of chronic disease



Above: Charlie – One of the participants in the 'Fish and Fruit' study at Nightcliff Renal Unit tucks into some delicious fresh fruit. Photo courtesy of MSHR fish and fruit team.

Chronic Disease

In 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 Australia population. Diabetes and related conditions, including heart and kidney disease are major contributors to this reduced longevity; and cardiovascular diseases remain one of the leading contributors to ill-health and death amongst Indigenous Australians.

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.

Projects in 2006

- Comparison of the quality and outcomes of secondary prevention for Indigenous and Non-Indigenous patients after Acute Coronary Syndromes (ACS) in the Northern Territory. The Central Australian Secondary Prevention of ACS (CASPA) Study
- Men, Hearts and Minds : Exploring the Links between Psychosocial Stress, Depression and Coronary Heart Disease in Indigenous Men from Central Australia
- Predicting heart disease in Aboriginal and Torres Strait Islander peoples
- Community explanations of cardiovascular outcomes
- Improving health outcomes for Aboriginal Australians with chronic disease through strategies to reduce systems barriers to necessary care
- A randomised trial of increased fish and fruit consumption and survival of Aboriginal people with end stage renal disease
- Non-invasive assessment of Cardiovascular Disease in Indigenous Australians: impact of diabetes and components of the metabolic syndrome (student project)
- Healthy Country: Healthy People.



Achievements in 2006

- Work continued during 2006 in determining how well the health care system – from hospital to the community – provides care for Indigenous people with heart disease. The 'CASPA' study aims to fill information gaps and develop indicators for the measurement of process and outcomes of cardiovascular care in the Northern Territory.
- Continuation of the 'Men, Hearts and Minds' project. This work aims to explain why higher levels of cardiovascular disease are found amongst Indigenous populations and assess the contribution of risk factors, poorer access to health care, psychological stress and depression.
- The Central Australian component of a collaborative project assessing the utility of conventional risk factors in predicting coronary heart disease outcomes continued in 2006. Data was collected for over 600 participants and analysis and communication of key findings to participating communities was commenced.
- The commencement of a new project which seeks to examine and compare biomedical and cultural explanations of heart health. This will include the production of complementary 'stories' of heart health which will be useful in health promotion in Indigenous communities.
- Staff recruitment was completed and community and partner consultations commenced for a series of new projects which aim to improve health outcomes in Aboriginal people with chronic vascular and chronic kidney disease through strategies of care that address health systems or service barriers. This will involve a series of discrete but interrelated projects in close collaboration with local partners in metropolitan, rural and remote communities in NSW, NT and QLD.
- Further recruitment of participants in the 'Fish and Fruit' study was undertaken in 2006. This study is examining whether a dietary intervention of fish and fruit three times a week will improve survival of Aboriginal people with end stage renal disease. Interim analysis of results commenced in early 2007 and it is hoped that the results will inform policy on the nature of diets provided for haemo-dialysis at renal units.
- In response to calls from Indigenous communities for an investigation into the links between Natural Resource Management and improved health status, the 'Healthy Country: Healthy People' project completed field work in 2006 with analysis of data to commence in 2007.

Left: 2006 saw the departure of Dr Alex Brown from MSHR's Central Australian Unit and his appointment as Director of the Centre for Indigenous Vascular Health at the Baker Research Institute. Alex will be sorely missed but will continue to work closely with MSHR.

chronic diseases division

Community Based Interventions

MSHR has been working alongside communities at home and overseas to develop community based interventions to reduce the risk and impact of diabetes and related chronic diseases in domestic Indigenous communities and to improve the treatment outcomes for tuberculosis in Papua, Indonesia.

The goal of the team has been to bolster communities as 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 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.

Projects in 2006

- 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 (student project)
- Yolngu Life: Yolnguy Walngakum. Building Healthy Communities in remote Australia
- Nutritional interventions to improve Tuberculosis treatment outcomes in Papua, Indonesia and related studies.

Achievements in 2006

- The fieldwork component of a study investigating the socio-cultural conditions influencing people's access to healthy food and perceived barriers to attaining a healthy diet was completed in 2006. This research, which is in collaboration with Galiwin'ku community and food-related businesses, aims to provide greater insight into the relationships between food related policy, store practices and dietary patterns. The findings of this research, which will be published in 2007, will be used to identify actions to improve the capacity of food related businesses to facilitate sustained dietary change.
- MSHR researchers supported the 'Yalu Marnggithinyaraw' group of East Arnhem Land in the development of a 'Healthy Lifestyle Festival' which involved the use of traditional dancing and cultural practices to educate the community about how to maintain a healthy lifestyle.
- The commencement of the 'Building Healthy Communities' project which will support community capacity in Eastern Arnhem Land to raise awareness and develop a community environment which is supportive of healthy eating and physical activity to prevent the onset of diabetes and cardiovascular disease in young to middle aged people. Findings from this project will inform the development of future approaches to community level nutrition improvement and physical activity.
- The Papua area of Indonesia has very high rates of tuberculosis (TB) and a new study is investigating whether the addition of arginine-rich foods into the diet can improve TB treatment outcomes. Extensive consultation with stakeholders in Jakarta, Timika and Australia took place during 2006.



Above and Right: The promotion of a balanced diet was a key message at the Galiwinku Healthy Lifestyle Festival. Photos courtesy of MSHR's health lifestyle team.



Above: Dr Sue Sayers – the founder of the ABC project.

Early Origins of Chronic Disease

MSHR has tracked the health of 686 babies born at Royal Darwin Hospital since birth, forming the oldest and largest birth cohort of any Indigenous population in the world.

Now that the Aboriginal Birth Cohort (ABC) “babies” are young adults, their current physical and mental health may hold important new insights into the dynamics of heart disease, diabetes and kidney disease.

To date, the ABC team have collected information on the ‘ABC babies’ at birth, the health and lifestyle of their mothers during pregnancy, and their growth and health at 11 and 18 years of age.

The study is now in its 21st year and 2006 was devoted to the third phase of data collection.

A severe lack of health information regarding the 16–24 year old Aboriginal population, especially in the men, means that this is a crucial phase of the project. In fact, this could be the most significant round of health checks yet as it is possible that the analysis of longitudinal data collected may provide important insights into the life course 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.

The diverse ABC study team provided a range of expertise in 2006, including clinical, dental, nutritional and behavioural sciences. The team has successfully travelled to over 25 different localities in the Top End despite hurdles such as cyclones and civil unrest.

The young men and women of the ‘Clan Cohort’ examined during 2006 were involved in a staggering array of pursuits and occupations – from studying at NIDA in Sydney, bull riding, working at a local brick factory, parenting, participating in traditional hunting to working as apprentices in the fields of hospitality and mechanics.

Projects in 2006

- Wave 3 follow up of ‘ABC’ adolescents
- Strong Souls Study
- 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.

Achievements in 2006

- The ABC study celebrated its 21st birthday!
- The ABC team successfully examine over 400 ABC participants in more than 30 different localities in the Top End. Some communities recorded a staggering 90 per cent follow-up rate.
- The ‘Strong Souls’ study became a part of ABC assessments in order to assess the social and emotional well-being of participants and help to establish if the adverse psychological environment in which many Aboriginal Australians live can contribute to the high incidence of and deaths from cardiovascular disease.
- Fasting blood samples were collected from ABC participants in over 30 different communities in order to examine the risk factors of type 2 diabetes.
- Measurements – including carotid intimal thickness – taken from ABC participants in order to assess cardiovascular risk factors.
- Dental examinations of 327 ABC study participants in order to provide insights into factors that contribute to Aboriginal adolescent oral health.

“The catch-cry of study founder, Dr Sue Sayers – “On, On” – has become the surrogate motto for the ABC study team. Indicative not only of the perseverance of all involved but also of the greater objective of this salient longitudinal study – following the cohort over the life course.”

Gurmeet Singh, ABC project Leader



Above: Measurements being taken in the field as part of the ABC study. Photo courtesy of MSHR’s ABC team.

chronic diseases division



*Above: The "ABC" Project has tracked the health of 686 babies born at Royal Darwin Hospital. The project celebrated its 21st birthday in 2006 and many of the 'ABC Babies' now have children of their own.
Photo courtesy of Norma Bengler.*



Doubler
400

ADC

 CORBETT
RESEARCH

 HERULETT
HILLIARD
Herulett

Left: During 2006 there were six MSHR Research Graduates over a range of Indigenous and International Health disciplines.

education and training division



**Dr Kate Senior,
Head of Division**

The Education and Training Division offers a unique range of training and education options focussed primarily on Indigenous and tropical health. The programs attract students locally, nationally and internationally from a range of backgrounds which adds to the multicultural and diverse flavour of the courses on offer.

Areas of expertise include:-

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



education and training division

Above: Belinda Hosking and Catherine Richardson – the first point of contact for information about MSHR education and training courses. Give them a call on 08 8922 8196 to discuss getting involved and learning more about MSHR's unique focus on Indigenous and tropical health.

Education and Training Division

Students locally, nationally and internationally are attracted to the unique focus on Indigenous and international health which MSHR's training and education programs offer. Our programs are taught by active researchers who deliver topical and stimulating content to a diverse range of participants.

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 Graduate Diploma, Master of Public Health and Professional Doctorate.
- Our coursework is accredited through Charles Darwin University, and MSHR's 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.

"Menzies is a great place to study and I have no hesitation recommending the programs to other students."

Gary Moriarty, Director of Licensing for the NT and MSHR Graduate

Achievements in 2006:

- Twenty-four students graduated throughout 2006 across all coursework programs, and 2006 saw steady numbers in the public health coursework programs, with 12 new students in Semester One and 15 in Semester Two and 159 unit enrolments for the year.
- Over 20 lecturers participated in the delivery of coursework in 2006 with the support of seven visiting lecturers contributing to the activities during the residential weeks.
- The Education and Training Division offered a scholarship opportunity for the Master of Public Health (Coursework and Treatise). In 2006 scholarships were awarded to Dr Tom Clemens and Dr Elizabeth Dent.

- A five-year coursework 'Action Plan' was developed which aims to strengthen the unique Indigenous health focus of our units and introduces two distinct specialisations for students – Indigenous Public Health and Tropical and International Public Health.
- A range of stimulating and topical short courses were delivered in 2006 which focused on the development of skills for the Indigenous public health workforce – from policy makers to service providers.
- During 2006, there were four new research students including three international students making a total of 38 students from Honours to Doctor of Philosophy (PhD) enrolled through five universities.
- There were 6 research graduates in 2006 – 4 PhD, 1 Master of Science (MSc) and 1 Advanced Medical Science (AMS) student.
- An agreement with the Dept of Paediatrics/University of Melbourne was developed to cover students enrolled through the University of Melbourne who are conducting their research at MSHR under the supervision of MSHR researchers in Darwin.
- The Batchelor Institute of Indigenous Tertiary Education (BIITE) Public Health course was delivered in 2006 with BIITE students attending a week long residential at MSHR in March and August. Staff from MSHR provided guest lectures during the residential to further expose students to the type of research undertaken at MSHR and promote possible future career opportunities.
- The textbook *Social Determinants of Indigenous Health* was completed in late 2006 and will be published in 2007. This text is the result of a collaborative effort by highly respected Indigenous health professionals and researchers and is considered to be essential reading for anyone working in Indigenous health.
- Following the resignation of Assoc Prof Paul Kelly, Dr Kate Senior acted in the position of Head of the Education and Training Division as well as continuing to coordinate the public health coursework program.
- Dr Richard Chenhall commenced a one year postdoctoral fellowship through the Australian Academy of Science with the Department of Social Services at the Sophia University in Tokyo, Japan and will return to MSHR and the teaching program in 2008.

Right: The Val Ashe Prize for academic excellence in the Public Health Coursework Program for 2006 was awarded to Dr Tom Clemens. This award recognises the achievement of a student whose academic performance has been outstanding in the public health coursework program.



research support and management

Research Support and Management Report

There were significant changes to the management of MSHR's research and executive support functions in 2006 with the appointment of Dr John Condon as MSHR Deputy Director with responsibility for Corporate Services, Mr Brendon Douglas as Executive Officer and Mrs Julie Carmichael as Communications and Development Manager.

MSHR continued to expand its staff, projects and budgets in 2006 but the management and research support functions continued to operate efficiently.

Research Administration

Research Administration Officers were involved in the preparation and submission of 87 applications in which MSHR was named the administering institution. Twenty-seven of these were successful, representing a 31 per cent success rate. Staff also assisted in the preparation of a number of applications to be administered at other institutions, and assisted researchers with a myriad of tasks – from manuscript preparation to ensuring grant and institutional reporting requirements were met. At the organisational level, research administration staff facilitated the MSHR seminar series and participated in strategic planning, policy development and enterprise bargaining activities throughout 2006.

Administrative support for the Human Research Ethics (HRE) and Institutional Biosafety Committees was increased to one full-time position in early 2006. The Ethics Administration Officer and HRE Committee members participated in trialing the new National Ethics Application Form (NEAF) and have agreed to accept applications using the form from early 2007.

Financial Services

2006 was a busy year for Financial Services, there was a major upgrade of the key financial system 'SunSystem'. Finance also had a large turnover of staff including both bookkeepers and accountant. A new management structure was implemented with finance now coming directly under Deputy Director. Dr Jon Condon. Streamlining of a number of processes including travel took place in cooperation with the Operations Manager and work continues on automated real time financial reporting.

Human Resources

With the appointment of our new Director, Professor Jonathan Carapetis, a number of new or re-energised HR initiatives were introduced at MSHR. This in turn saw the development of new and important roles, and significant appointments including the Deputy Director and the Chair of Disaster Response and Preparedness.

As an outcome of the strategic planning processes, Indigenous staff capacity development became a focus, and identified the need to recruit an Indigenous Development Officer in 2007. This position will be responsible for fostering and mentoring the careers of Indigenous staff, increasing Indigenous recruitment and developing better Indigenous networks.



Above: Research project participants at Numbulwar community. Photo courtesy of MSHR's Housing Improvement and Child Health Project team.

In 2006, MSHR management and staff were successful in negotiating a robust salary scale and employment conditions as a result of Enterprise Agreement bargaining. As part of this, a strong commitment was given to staff to enhance their professional development opportunities, with an aim to ensuring excellence in all MSHR activities. And in response to a number of issues raised throughout the negotiation processes, a number of new human resources policies emerged.

Operations

All areas of the Operations function performed well during 2006. New procedures were implemented for travel and accommodation bookings, the laboratory facilities were maintained to a high standard and Office of the Gene Technology Regulator (OGTR) accreditation was received.

Planning commenced for a major refit of the executive support section of the John Matthews building in order to accommodate the projected increases in MSHR staff over the coming months and years. Discussions are also underway with the Northern Territory Government regarding a possible building extension to accommodate the large numbers of new staff associated with the new organisational structure and new priorities developed in the 2005–2010 Strategic Plan.

Information Technology

2006 saw the roll-out of new hardware to 97 per cent of MSHR staff. Helpdesk functionality throughout the year ran to a high standard and systems developed for data and records management and archiving functioned extremely effectively with 100 per cent of project records now archived off site.

Biostatistics and Database Management

MSHR is currently conducting more than 40 health-related projects. These projects focus on a wide range of topics, including malaria, Melioidosis, otitis media, the associations between child health and housing and the relationship between low birth weight and chronic disease in later life all of which require robust statistical analyses to provide meaningful results. MSHR also offers courses in biostatistics and epidemiology within the Public Health coursework program, conducts in-house training (using the statistical package Stata) and assists in study design and implementation in co-operation with health professionals working at the Royal Darwin Hospital and other agencies outside MSHR. Our biostatistician is a member of the group set up to formulate and implement a data management policy for the School.

Communications and Development

It was a very busy year for MSHR on the communications front with the appointment of Julie Carmichael to the newly developed role of Communications and Development Manager and a renewed focus across the organisation on effective communication with our stakeholders.

The Communications and Development team grew from being one part time member of staff to a team of six including two Indigenous team members focusing on improving relationships and communication with Indigenous communities, groups and individuals.

In addition to a number of successful media drives and positive media mentions, 2006 saw commencement of the development of an overarching communications and fundraising strategy which will be implemented across the organisation in 2007. This will bring with it the development of a range of communications and marketing material including a promotional DVD with supporting fact sheets, external and internal newsletters and the redevelopment of the MSHR website.

2007 will also see the appointment of a full-time External Relations Officer to develop and manage fund raising activities and relationships.



Above: Planning for fundraising activities stepped up a notch in 2006 and it is hoped that 2007 will see MSHR reap the rewards of a more coordinated fundraising effort.

governance

Governance

The 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 (CDU).

Menzies School of Health Research is required to furnish an annual report and audited financial statements to an Annual General Meeting of the School, with financial results consolidated within those of CDU.

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.

The MSHR Board



CHAIRMAN
Prof Simon Maddocks
Chief Scientist, South Australian
Research & Development Institute.



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



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



Prof Helen Garnett
Vice Chancellor,
Charles Darwin University.



Prof Jonathan Carapetis,
Director, Menzies School of
Health Research (from April 2006).



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



Mr Robert Wells,
Co-Director of the Menzies Centre
for Health Policy and Executive
Director of the College of Medicine
and Health Sciences at the
Australian National University,
Canberra (from August 2006).



Prof Bruce Armstrong AM
Director of Research, Sydney
Cancer Centre & Professor of
Public Health and Medical
Foundation Fellow
The University of Sydney.



Mr Robert Griew
Chief Executive Officer, Department
of Health and Community Services,
Northern Territory
(until November 2006).



Ms Margaret Banks
Chief Executive Officer,
Department of Education,
Employment and Training,
Northern Territory.



Prof Shane Houston
Assistant Secretary
System Performance and
Aboriginal Policy
Department of Health and
Community Services and
Adjunct Professor Health Sciences
Curtin University.



Ms Kate George
Principal Advisor Aboriginal Issues
Department of the Attorney
General, Western Australia.



Prof Bart Currie
Interim Director,
Menzies School of Health Research
(until March 2006).

OBSERVERS OF THE BOARD

Secretary to the Board

Ms Louise Clarke
(from February until August 2006)

Ms Karen Drayton
(until January 2006)

Mr Brendon Douglas
(from September 2006)

CRAH Chief Executive Officer

Mr Mick Gooda

MSHR Staff Representative

Mrs Jill Albion
(until November 2006)

Ms Melita McKinnon
(from November 2006)

BOARD COMMITTEES

The Governing Board was assisted by the following committees.

Finance Committee

Mr Michael Martin (Chair)
Mrs Sue Bradley
Prof Jonathan Carapetis (from April 2006)
Mr Peter Carew
Prof Bart Currie (until May 2006)
Mr David Morgan (Secretary)

Academic Standing Committee

Prof Jonathan Carapetis (Chair from April 2006)
Prof Bruce Armstrong
Prof Bart Currie (Chair until March 2006)
Prof Terry Dwyer (from March 2006)
Prof Michael Good (from March 2006)
Prof Bob Wasson

Research Committee

Prof Bruce Armstrong
Prof Ross Bailie
Prof Jonathan Carapetis (from July 2006)
Prof Bart Currie
Prof Bob Wasson

governance

Human Research Ethics Committee

The Very Reverend Dr Michael Nixon (Chair)
Ms Jenny Abdilla
Ms Colleen Atkinson (proxy for Robyn Cooke from December 2006)
Ms Robyn Cooke
Dr Deborah Holt
Assoc Prof Paul Kelly (until January 2006)
Miss Celia Kemp (from December 2006)
Dr Michael Lowe
Mr Ray Matthews (until January 2006)
Mr Stewart Potten (from April 2006)
Mr David Pryce (from April 2006)
Ms Joy Pulley (until April 2006)
Ms Maria Scarlett (Secretary from March 2006)
Ms Helen Spiers
Dr Michel Tchan (from June 2006 until December 2006)
Mr Gene Truan (until May 2006)
Dr Alan Walker (until October 2006)
Ms Linda Ward (Secretary until March 2006)
Mr Bob Whitehead (proxy for Robyn Cooke until August 2006)
Ms Helen Wodak (from December 2006)
Major Geneen Wright (from December 2006)

Aboriginal Ethics Subcommittee

Ms Joanne Garnggulkpuy (Chair from March 2006)
Mrs Norma Bengier (until March 2006)
Dr Ngiare Brown
Ms Terry Dunbar
Dr Julie Graham (Scientific Advisor from September 2006)
Dr Shane Motlap (Acting Chair until March 2006)
Mr Peter Pangquee
Ms Diane Walker (from November 2006)
Ms David Woodroffe (from November 2006)

Darwin Regional Institutional Biosafety Committee

Mrs Susan Hutton (Chair)
Dr Valerie Asche
Mr Lodi Hoeben
Dr Gary Lum
Mr Neil Ludvigsen
Dr Lorna Melville
Dr Anna Padovan
Mrs Maria Scarlett (Secretary from March 06)
Ms Pamela Trotman
Dr Shelley Walton
Ms Linda Ward (Secretary)

Laboratory Safety Committee

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

PATRONS AND MEMBERS

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

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
Mrs Susan Hutton
Prof David Kemp FAA
Prof John Matthews AM
Mr Ray Norman AM
Dr Brian Reid
Dr KS Sriprakash

Life Members

Dr Keith Fleming
Dr Ella Stack CBE

* Deceased

Honorary Members

Dr Ivan BASTIAN	IMVS facilities and expertise in research projects in East Timor and Indonesia	Honorary Senior Research Fellow
Dr Alan CASS	Research into renal disease in Indigenous populations	Honorary Senior Research Fellow
Dr Allen CHENG	Collaborative research on tropical disease, particularly melioidosis	Honorary Senior Research Fellow
Dr Christine CONNORS	Collaboration on remote area chronic disease	Honorary Research Fellow
Assoc Prof Nigel CURTIS	Collaborative research into host factors responsible for rheumatic fever pathogenesis	Honorary Principal Research Fellow
Dr Peter D'ABBS	Collaboration on substance abuse	Honorary Senior Research Fellow
Assoc Prof Mark DANIEL	Collaborative links on community based diabetes project (public health, including chronic disease and epidemiology)	Honorary Senior Research Fellow
Mr Peter EBSWORTH	Collaborative research in international health projects	Honorary Research Fellow
Dr Peter FAGAN	Collaborative research into Streptococci	Honorary Research Fellow
Prof Wendy HOY	Renal disease in Indigenous populations	Honorary Senior Principal Research Fellow
Dr Matthew JOSE	Collaborative research into renal disease	Honorary Senior Research Fellow
Assoc Prof Paul KELLY	Collaborative research in international health projects	Honorary Principal Research Fellow
Dr Vicki KRAUSE	Collaborative research into Infectious Diseases	Honorary Principal Research Fellow
Mr Richard LUMB	Mycobacteriology at IMVS and IMVS labs for research in East Timor	Honorary Research Fellow
Dr Stephen McDONALD	Renal disease in Indigenous populations	Honorary Research Fellow
Dr Dorothy MACKERRAS	Chronic Disease collaboration	Honorary Principal Research Fellow
Dr Graeme MAGUIRE	Lung disease collaboration	Honorary Research Fellow
Dr Joao MARTINS	Collaborative research efforts in public health	Honorary Principal Research Fellow
Prof John MATTHEWS	Collaborative research and mentorship	Honorary Senior Principal Research Fellow
Dr Barbara PATERSON	Collaborative research and teaching	Honorary Research Fellow
Dr Ric PRICE	Malaria	Honorary Senior Research Fellow
Prof Karl RIECKMANN	Collaborative research into tropical disease, particularly malaria	Honorary Senior Principal Research Fellow

governance

Dr Sue SAYERS	Aboriginal Birth Cohort study	Honorary Senior Research Fellow
Dr Sue SKULL	Collaborative research into child health	Honorary Senior Research Fellow
Dr Emiliana TJITRA	Strengthening ties with Indonesia, especially in malaria collaboration	Honorary Senior Research Fellow
Dr Tarun WEERAMANTHRI	Preventable Chronic Disease program in the NT	Honorary Senior Research Fellow
Dr Neville WHITE	Research involving Yolngu people of East Arnhem Land	Honorary Senior Research Fellow
Dr AI YONOVITZ	Audiology	Honorary Research Fellow

Pending Applications

Dr Sri SRIPRAKASH	Streptococci
Ms Samantha COLQUHOUN	International child health and rheumatic heart disease
Dr Craig BOUTLIS	Infectious diseases: Staphylococcus, malaria and pneumonia
Assoc Prof Kate CONIGRAVE	Epidemiology and substance misuse
Dr Alan CLOUGH	Substance misuse
Assoc Prof Simon BROWN	Toxinology
Dr Bridie O'REILLY	Public health coursework and teaching
Assoc Prof Beverly SIBTHORPE	Primary healthcare and evaluation
Assoc Prof Russell GRUEN	Population health and epidemiology
Dr Yvonne CUNNINGHAM	Healthy for life and clinical audit protocols

Refereed Journal Articles

Anuntagool N, Wuthiekanun V, White NJ, Currie BJ, Sermswan RW, Wongratanacheewin S, Taweechaisupapong S, Chaiyaroj SC, Sirisinha S. Short Report: Lipopolysaccharide heterogeneity among *Burkholderia pseudomallei* from different geographical and clinical origins. *Am J Trop Med Hyg* 2006; 74(3):348–352.

Bailie RS, Robinson GW, Kondalsamy-Chennakesavan S, Halpin S, Wang Z. Investigating the sustainability of outcomes in a chronic disease treatment program. *Soc Sci Med* 2006; 63:1661–1670.

Bailie RS, Wayte KJ. A continuous quality improvement approach to Indigenous housing and health. *Environmental Health* 2006; 6(1):34–39.

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Bailie RS, Connors C. Chronic Disease: Key Issues for Prevention and Management in Primary Care. National Public Health Partnership Meeting, Darwin 2006.

Bailie RS, Dowden M. ABCD Project Update Improving Primary Care Services for the Prevention and Management of Chronic Disease. CRC for Aboriginal Health Showcase, Darwin 2006.

Bailie RS. Update on child health research projects: ATSI child health audit tool; Oral health fluoride projects; Housing and child health; and Systematic Review. National Community Child Health Council,

Holiday Inn Darwin, Esplanade. Friday, 28th April, 2006.

Bailie RS. Optimising impact: the impact of research on the users of research. 2006 Plenary presentation at the General Practice and Primary Health Care Research Conference, Perth 2006.

Bailie RS. Housing improvement and child health study: animals in household settings. Keynote Address at the Dog People Conference, Darwin 2006.

Bailie RS. Fluoridation of public water supplies in remote Aboriginal communities: a feasibility study. Keynote Address. Australian Dental and Oral Health Therapists Association: Lessons From The Past – Shaping Our Future, Darwin 2006.

Bailie RS. Continuous quality improvement as a strategy for guideline implementation. Plenary speaker: Strategies: What's known? Finding the right implementation strategy. Using Evidence, Using Guidelines Symposium, National Institute of Clinical Studies, Melbourne, 19–20 October, 2006.

Bailie RS. Improving chronic illness care in Aboriginal communities. Discussion session four: Adapting strategies for local populations and setting. Using Evidence, Using Guidelines Symposium, National Institute of Clinical Studies, Melbourne, 19–20 October, 2006.

Bailie RS. NT Experience of water fluoridation in Indigenous communities. Plenary presentation: Queensland Health Water Fluoridation Workshop, Cairns, 20 November, 2006.

Carapetis J, Detecting and Controlling Rheumatic Heart Disease – Global Priorities World Congress of Cardiology 2006, Barcelona, Spain, September 2006.

Carapetis J, Practical management of Rheumatic Fever and Rheumatic Heart Disease – Management issues: an interactive panel discussion, World Congress of Cardiology 2006, Barcelona, Spain, September 2006.

Carapetis J, The importance of Aboriginal child health research CDU Public Lecture, Darwin, NT, October 2006.

Carapetis J, Controlling rheumatic fever and rheumatic heart disease in Australia", First World Heart Federation and World Health Organization Workshop on Rheumatic Heart Disease in the Pacific, Nadi, Fiji, October 2006.

Carapetis J, "Balance between primary, secondary and tertiary prevention of rheumatic heart disease", First World Heart Federation and World Health Organization Workshop on Rheumatic Heart Disease in the Pacific, Nadi, Fiji, October 2006.

Carapetis J, "World Heart Federation rheumatic heart disease programme", First World Heart Federation and World Health Organization Workshop on Rheumatic Heart Disease in the Pacific, Nadi, Fiji, October 2006.

Carapetis J, "Rheumatic fever and rheumatic heart disease: understanding disease burden, First World Heart Federation and World Health Organization Workshop on Rheumatic Heart Disease in the Pacific, Nadi, Fiji, October 2006.

Carapetis J, "A rheumatic fever guideline for Australia Launch of National Heart Foundation of Australia guidelines on rheumatic fever and rheumatic heart disease, Sydney, NSW and Darwin, NT, June and November 2006.

Clucas D, The East Arnhem Regional Healthy Skin Program – The Burden of Scabies and Skin Sores in Two Remote Aboriginal Communities in the Northern Territory, AMS Conference Royal Children's Hospital, May 2006.

Danielle Clucas, The East Arnhem Regional Healthy Skin Program – The Burden of Scabies and Skin Sores in Two Remote Aboriginal Communities in the Northern Territory, MIGIH Seminar, Royal Children's Hospital, March 2006.

Clucas D, Burden of Scabies and Skin Sores Among Children in Remote East Arnhem Aboriginal Communities of the Northern Territory, AEA Conference, The University of Melbourne Law School, Melbourne, VIC, September 2006.

Condon JR., Human Papillomavirus, cancer and Indigenous Australians, Australian Institute of Medical Scientists Regional Scientific Meeting, Darwin, NT, June 2006.

Invited Presentations continued.

Condon JR., Human Papillomavirus, cancer and Indigenous Australians in the Northern Territory, Royal Australian and New Zealand College of Obstetrics and Gynaecology Annual Conference, Perth, WA, 2006.

Condon JR., Is Indigenous health really getting worse? Mythology and lazy science, Royal Australasian College of Physicians (NT Branch) Annual Scientific Meeting, Alice Springs, NT, October 2006.

Condon JR, Barnes A, Cunningham J, Smith L Indigenous mortality and demographic characteristics in the Northern Territory: changes over four decades, National workshop on Indigenous mortality statistics and related data methods, Australian Bureau of Statistics, Canberra, ACT, November 2006.

Cooper D, Mass casualty management. Seminar in emergency preparedness World Health Organization, Geneva Switzerland, February 2006.

Cooper D, Managing the unthinkable: a terrorist attack in Sydney, Leadership in a Crisis Conference, International Society for Quality in Health Care, Sydney, NSW, February 2006.

Cooper D, Epidemiology of terrorist bombing attacks, Homeland Security Australia Conference, Institute for International Research, Sydney, NSW, February 2006.

Cooper D, Planning for disasters in NSW, St John Ambulance State Conference, Sydney, March 2006.

Cooper D, Health management of terrorist attacks, NSW Engineers Conference, Sydney, April 2006.

Cooper D, Terrorist bombings, managing the unthinkable in Australia, (keynote address), Innovations in the management of patients involved in disasters, Change Champions, Brisbane, March 2006.

Cooper D, Are Australian hospitals able to cope in a terrorist event? Trauma 2006, Combined conference of the Australasian Trauma Society and Early Management of Severe Trauma Committee, Royal Australian College of Surgeons, Gold Coast, QLD, September 2006.

Cooper D, Yogyakarta earthquake disaster medical assistance team Chief Medical Officer's conference on disaster management, Sydney, NSW, September 2006.

Cooper D, Terrorist events and disasters, Spring Seminar in Emergency Medicine, (hallmark address), Australasian Society for Emergency Medicine, Byron Bay, NSW, October 2006.

Cooper D Managing a terrorist attack in the Sydney CBD, National Security 2006, Institute for International Research, Sydney, NSW, October 2006.

Cooper D, Pandemics Spring Seminar in Emergency Medicine, Australasian Society for Emergency

Medicine, Byron Bay, NSW, October 2006.

Cooper D, Implementation of national disaster plans, Australasian College for Emergency Medicine Annual Scientific Meeting, Sydney, NSW, November 2006.

Cooper D, Yogyakarta earthquake deployment, National Disaster Medical Assistance Team workshop, Perth, WA, November 2006.

Cooper D, Planning for the unplannable: strategy for developing an adaptable disaster plan, (keynote address) Counter Disaster and Continuum of care Conference, Institute for International Research, Melbourne, VIC, December 2006.

Cooper D, Is the Australian hospital system prepared for a potential crisis/disaster?, Counter Disaster and Continuum of Care Conference, Institute for International research, Melbourne, VIC, December 2006.

Cunningham J, The Darwin Region Urban Indigenous Diabetes Study, Invited presentation to the Australian Institute of Medical Scientists Regional Scientific Meeting, Darwin, NT, June 2006.

Bart Currie, Tropical and emerging infectious diseases in northern Australia, MacFarlane Burnet Institute for Medical Research, Melbourne, VIC, March 2006.

Bart Currie, "Snakes, Jellyfish & Spiders, Infection and Immunity in Children 2006, Keble College,

Oxford, Oxford, United Kingdom, June 2006.

Currie B, Global warming and health in the tropical north – from bat viruses to jellyfish stings, Cutting Edge Science Lecture Series, Term 3 2006 – Darwin CSIRO Science Education Centre, Browns Mart Community Arts Centre, Darwin, NT, September 2006.

Currie B, Infectious Diseases North Queensland Physicians Conference 2006, Cairns Base Hospital, Cairns, QLD, September 2006.

Bart Currie, Emerging infectious diseases in the tropical north, Charles Darwin Symposium 2006: Prepare for the Impact! When People and Environment Collide in the Tropics, Darwin, NT, May 2006.

Kearns T & La Vincente S, Healthy Skin Program, Practical Paediatrics, Gove District Hospital, Gove, NT, November 2006.

Leach AJ, Important Microbiological Health Problems in Indigenous Children in Remote Australia Australian Institute for Medical Scientists Annual Scientific Meeting 2006; Conference Proceeding, Invited Speaker, Hobart, TAS, 2006.

Leach AJ, The burden of respiratory infection in indigenous populations. ICAAC Clinical and Management Excellence program "Acute Otitis Media: Global Burden and Prevention Strategies" 2006 American Academy of Pediatrics. CME program, Invited Speaker San Francisco, USA, 2006.

publications

2006

Leach AJ, Expanded protection – GlaxoSmithKline's pneumococcal candidate vaccine, International Conference on Infectious Diseases, Lisbon, Portugal, 2006.

Leach AJ, Can we identify children at risk of Invasive Pneumococcal Disease. Save Our Children Launch of Prevenar in SE Asia 2006, Singapore, 2006.

Leach AJ, Microbiology of acute otitis media with perforation in Indigenous children, Lancefield International Symposium on Streptococci and Streptococcal Diseases, Lancefield, 2006.

Maple-Brown L, Increased carotid intima-media thickness in remote and urban Indigenous Australians: impact of diabetes and components of the metabolic syndrome, Australian Diabetes Society (ADS) Young Investigator Award, Annual Scientific Meeting of the ADS, Gold Coast, QLD, August 2006.

Marsh R, Molecular Characterisation of pneumococcal serotype 16F: Established predominant carriage and otitis media serotype in post-Prevenar era, International Symposium on Pneumococci and Pneumococcal Diseases, Alice Springs, NT, April 2006.

Rumbold AR, Clinical Trials Workshop Presentation, Invited Topic: Australian Collaborative Trial of Supplements with vitamin C and vitamin E for the prevention of pre-eclampsia International Society for the Study of Hypertension in

Pregnancy, 15th World Congress, Lisbon, Portugal. July 2006.

Rumbold AR, Vulvar pathology in the NT, presentation for the NT Midwifery 'refresher' training course, NTDHCS, Darwin, NT, June 2006.

Rumbold AR, Vulvar pathology in the NT, presentation to Prof Ian Frazer & NTDHCS staff, NTDHCS Darwin, NT, August 2006.

Senior K, 'The good, the bad and the indifferent-feedback from the PCDS evaluation' (with Jane Lloyd and Michael Lowe), Preventable chronic disease workshop, Darwin, NT, July 2006.

Senior K, Community perceptions of chronic disease in Arnhem Land and Cape York, Chronic disease network conference, Darwin, NT. September 2006.

Senior K, Dogs and people in Aboriginal communities: exploring the relationship within the context of the social determinants of health (with Richard Chenhall), Dog People Conference, Darwin, NT, July 2006.

Thomas D, Anderson I, Briggs V, Cunningham J, Social determinants of smoking in Indigenous Australians 4th International Society for Equity in Health Conference, 'Creating healthy societies through inclusion and equity', Adelaide, SA, September 2006.

Thomas D, Condon J, Li SQ, Halpin S, Anderson I, Guthridge S, Cunningham J, Encouraging signs in the trends of NT Indigenous deaths for six common chronic diseases.

4th Annual Chronic Diseases Network Conference, 'health is everyone's business – everybody's choice', Darwin, NT, September 2006.

Thomas D, Anderson I, Briggs V, Cunningham J., Who smokes? Social determinants of Aboriginal smoking and quitting. Aboriginal Health Promotion Forum, Collaborative Centre for Aboriginal Health Promotion, Sydney, NSW, October 2006.

Research Funding

Grant ID	Funding Body	Chief Investigators	Grant Type	Funding Initiative	Title	From	To	Total Award \$
862	Australian Academy of Science	CHENHALL Richard	Fellowship	Japan Society for the Promotion of Science Postdoctoral Fellowship in Japan	A study of Danshukai and self help groups in Japan	01-11-06	31-10-07	\$42,366.46
932	Australian Academy of Science	BOYLE Jacqueline	Supplementary Scholarship	Douglas and Lola Douglas Scholarship in Medical Science	Polycystic ovary syndrome, reproductive health and metabolic abnormalities in Indigenous women in the Northern Territory	01-01-06	31-12-06	\$7,000.00
1016	Australian Academy of Science	BAR-ZEEV Naor	Supplementary Scholarship	Douglas and Lola Douglas Scholarship in Medical Science	Vaccination strategies to reduce ear disease in Aboriginal and Torres Strait Islander children in the Northern Territory	01-01-07	31-12-07	\$7,000.00
922	Channel 7 Children's Research Foundation of SA Inc	SINGH Gurmeet	Project		Prevalence of iodine deficiency in NT Aboriginals of reproductive age	01-01-07	31-12-07	\$27,000.00
923	Channel 7 Children's Research Foundation of SA Inc	LEACH Amanda	Project		Implications of nonencapsulated Streptococcus pneumoniae carriage for maintenance of antibiotic resistance genes and the efficacy of pneumococcal conjugate vaccine (Prevenar) for pneumococcal disease	01-01-07	31-12-07	\$42,000.00
925	Channel 7 Children's Research Foundation of SA Inc	WALTON Shelley	Project		An immunodiagnostic assay for scabies	01-01-07	31-12-07	\$45,000.00
996	Charles Darwin University	DARCY Christabelle	Scholarship	Australian Postgraduate Awards	Measurement of plasma dimethyl-arginine in patients with sepsis and malaria	01-07-07	30-06-10	\$58,848.00

research funding

Grant ID	Funding Body	Chief Investigators	Grant Type	Funding Initiative	Title	From	To	Total Award \$
	Charles Darwin University	LAWRANCE Megan	Scholarship	Australian Postgraduate Awards	Mental Health Policy Evaluation	01-01-07	31-12-09	\$58,848.00
950	Commonwealth Dept of Health and Ageing	MORRIS Peter; HOPKINS Susie	Contract	Targeted Health Interventions	Initial funding for Australian Indigenous earInfoNet project	01-01-06	30-06-06	\$26,000.00
928	Commonwealth Dept of Health and Ageing	CAIRNEY Sheree; FITZ Joe	Project		Development and production of petrol sniffing flipcharts for men and women	01-07-06	15-09-06	\$28,435.00
1006	Commonwealth Dept of Health and Ageing	CONDON John; CLARK Louise	Contract	Building Healthy Communities in Remote Australia	Yolngu Life : Yolnguy Walngakum. Building Healthy Communities - Phase 3	31-10-06	30-06-08	\$284,059.00
863	Community Health and Anti-Tuberculosis Association	KELLY Paul; MAGUIRE Graeme; ANSTEY Nicholas; MORRIS Peter; BASTIAN Ivan	Project	Harry Windsor	Nutritional intervention to improve Tuberculosis treatment outcome in Timika Indonesia	01-01-06	31-12-06	\$51,000.00
933	Emergency Medicine Research Foundation	ISBISTER Geoffrey;	Award	The Morson Taylor Research Award	A randomised controlled trial of hot water (45oC) Immersion versus ice packs for Chironex fleckeri stings	30-05-05	30-06-06	\$9,722.50
1008	Menzies Foundation	CARAPETIS Jonathan; DOUGLAS Brendon	Strategic Research		Strengthening Indigenous health research capacities	01-12-06	31-05-07	\$50,000.00
872	National Heart Foundation	TOWERS Rebecca; FAGAN Peter; CURRIE Bart; CARAPETIS Jonathan	Project	Grant in Aid	Investigation of human heart antigens identified by screening a cDNA library using ARF sera	01-01-07	31-12-08	\$30,000.00
844	NHMRC 383519	THOMPSON Carolyn	Travel	Short Term Exchange / Study Funding Scheme	AIMHI presentation at the American Psychiatric Association Annual Meeting in May, 2006	16-05-06	30-05-06	\$8,163.00
909	NHMRC 436006	WALTON Shelley; CURRIE Bart	Project		An Immunodiagnostic Assay for Scabies	01-01-07	31-12-09	\$364,500.00

Grant ID	Funding Body	Chief Investigators	Grant Type	Funding Initiative	Title	From	To	Total Award \$
902	NHMRC 436009	CHENG Allen; MATHEWS John; LEACH Amanda; CARAPETIS Jonathan; CURRIE Bart	Project		Mathematical modelling of bacterial carriage in children	01-01-07	31-12-08	\$409,750.00
915	NHMRC 436011	SINGH Gurmeet; MACKERRAS Dorothy	Project		Aboriginal Birth Cohort Study: from childhood to adulthood	01-01-07	31-12-09	\$481,275.00
910	NHMRC 436012	CLOUGH Alan; CONIGRAVE Katherine; SANSON-FISHER Robert; EADES Sandra; GIBBERD Robert; IVERS Rowena	Project		Community action for smoking cessation in remote Aboriginal communities	01-01-07	31-12-11	\$1,105,450.00
912	NHMRC 436013	CONDON John; RUMBOLD Alice; GARLAND Suzanne; STANKOVICH Jim; BROWN Ngiare	Project		An epidemic of vulvar cancer in young women: Investigating the role of Human Papillomavirus and genetic susceptibility	01-01-07	31-12-08	\$476,625.00
913	NHMRC 436014	CONDON John; JELFS Paul; RODER David; CUNNINGHAM Joan; COORY Michael; THRELFALL Tim	Project		Health system performance and outcomes for Indigenous Australians with cancer: A national study	01-01-07	31-12-09	\$393,688.00
919	NHMRC 436023	MORRIS Peter; LEACH Amanda; SMITH-VAUGHAN Heidi; CHANG Anne; VALERY Patricia; TORZILLO Paul	Project		Azithromycin versus placebo in the treatment of asymptomatic acute otitis media in young Aboriginal children: A RCT	01-01-07	31-12-10	\$1,290,125.00
954	NHMRC 436031	DAVIS Joshua	Scholarship	NHMRC Postgraduate Research Scholarship (Clinical)	Endothelial function and adjuvant therapies in sepsis	01-01-07	31-12-09	\$94,266.00

research funding

Grant ID	Funding Body	Chief Investigators	Grant Type	Funding Initiative	Title	From	To	Total Award \$
958	NHMRC 436033	TONG Steven	Scholarship	NHMRC Postgraduate Research Scholarship (Clinical)	Community-associated methicillin-resistant Staphylococcus aureus: Epidemiology, emergence and treatment	01-01-07	31-12-09	\$94,266.00
948	NHMRC 436034	TOWERS Rebecca	Training Fellowship	Aboriginal and Torres Strait Islander Health Research Fellowship	Investigation of cardiac autoantigens identified by screening a cDNA library with acute rheumatic fever sera	01-01-07	31-12-10	\$274,000.00
955	NHMRC 436038	SNELLING Thomas	Scholarship	Training Scholarship for Indigenous Australian Health Research	Rotavirus gastroenteritis in the Aboriginal population and the effect of immunisation	01-01-07	31-12-09	\$94,266.00
959	NHMRC 436039	BAR-ZEEV Naor	Scholarship	Training Scholarship for Indigenous Australian Health Research	Vaccination to reduce ear disease in Aboriginal and Torres Strait Islander children in the Northern Territory	01-01-07	31-12-09	\$94,266.00
971	NHMRC 436041	DINGWALL Kylie	Scholarship	Training Scholarship for Indigenous Australian Health Research	Comprehensive cognitive assessment in Aboriginal people	01-01-07	31-12-09	\$65,598.00
962	NHMRC 436045	BROWN Ngiare	Scholarship	Training Scholarship for Indigenous Australian Health Research	Integrating human rights and public health to improve Aboriginal health outcomes	01-Jan-07	31-Dec-09	\$94,266.00
999	NHMRC 467217	FALLS Gabrielle	Equipment	Standard Equipment Grant	NHMRC Equipment Grant - 2006	01-11-06	30-06-07	\$103,223.00
947	Variety Club of Australia	HOPKINS Susie	Project	Pratt Foundation	The Australian Indigenous EarInfoNet - An Ear Health and Hearing Web Resource and Network	01-10-06	31-03-09	\$356,077.12

\$6,567,083.08

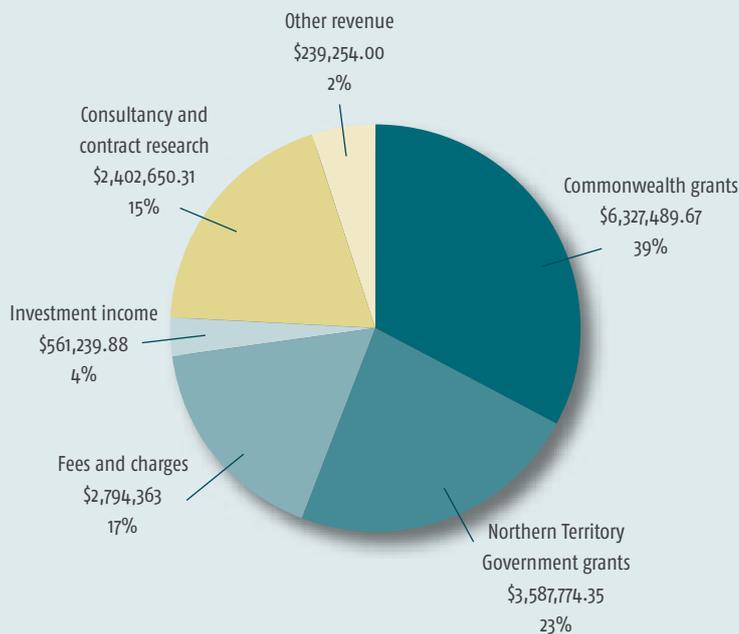
financial overview

1 January 2006 – 31 December 2006

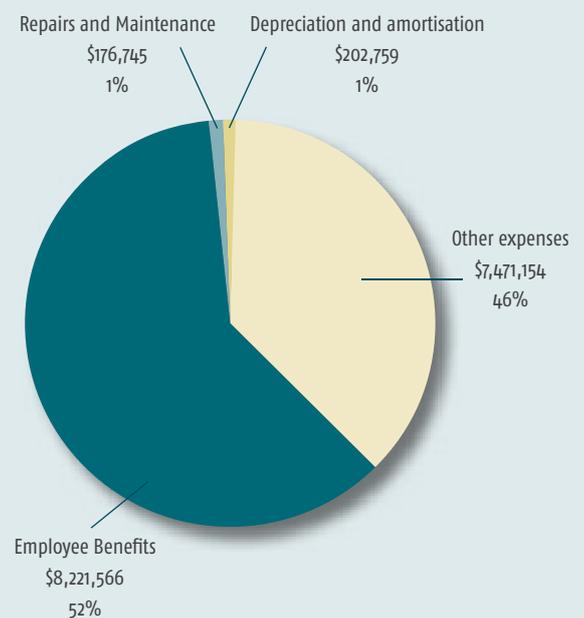
	2006	2005	2004	Percentage change 2006-05	Notes
Income	\$16,716,740	\$15,912,771	\$13,656,526	5%	1
Expenditure	\$14,690,559	\$16,049,179	\$12,058,220	(8.5%)	2
Net surplus/(Deficit)	\$ 1,941,139	(\$ 136,408)	\$ 1,598,306		3
Net assets	\$11,321,948	\$ 9,413,968	\$ 9,573,735	20%	4
Staff (full-time equivalents)	120	116	95	3.4%	5

1. Increase in income is attributed to a increase in competitively awarded research grant funding and research grants transferred to MSHR on employment of new researchers.
2. Decrease is related to the late commencement of new research projects.
3. Audited net surplus 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 a general increase in staffing numbers across all activity areas.

Income



Expenditure



OUR COLLABORATORS

Within Australia

Aboriginal Medical Services
Alliance of the Northern Territory
(AMSANT), NT

Alice Springs Hospital, NT

Ambulance Service, NSW

Army Malaria Research Institute, QLD

Australian Biosecurity Cooperative Research
Centre for Emerging Infectious Disease

Australian Bureau of Statistics

Australian Centre for Control of Iodine
Deficiency Disorders, NSW

Australian Government Department of
Health and Ageing

Australian Government Bureau of
Meteorology

Australian Government Emergency
Management Australia

Australian Institute of Health and
Welfare, ACT

Australian National University, ACT & NT

Australian Research Centre for Population
Oral Health – University of Adelaide, SA

Batchelor Institute of Indigenous Tertiary
Education, NT

Broome Hospital, WA

Cairns Base Hospital, Qld

Cancer Council of South Australia, SA

Cancer Institute, NSW

Central Australian Aboriginal Congress
Inc, NT

Centre for Military and Veterans Health, Qld

Centre for Remote Health, NT

Charles Darwin University, NT

Charles Sturt University, NSW

CogState Ltd, Vic

Collaborative Research Centre for
Aboriginal Health, NT

CSIRO – Atmospheric Research

Danila Dilba Health Services, NT

Department of Health, NSW

Department of Health, WA

Department of Health & Community
Services, NT

Department of Infrastructure, Planning
& Environment, NT

Department of Primary Industry, Fisheries
and Mines, NT

Deakin University, Vic

Dr Ella Stack

Flinders University Northern Territory
Clinical School, NT

Flinders University, SA

Food Standards Australia New Zealand

Forensic Services,
Central Australia, NT

George Institute for International
Health, Vic

GlaxoSmithKline

Gove Hospital, NT

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Hunter Area Pathology Services, NSW

Institute of Medical & Veterinary Science, SA

James Cook University, QLD

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Katherine Hospital, NT

Kimberley Public Health Unit, WA

La Trobe University, Vic

La Trobe Regional Hospital, Vic

Land and Water Australia

Maningrida Health Board, NT

Menzies Research Institute, TAS

Monash University, Vic

Murdoch Children's Research Institute, Vic

Newcastle Mater Hospital, NSW

NT General Practice Training
& Education, NT

Princess Alexandra Hospital, QLD

Queensland Cancer Fund, QLD

Queensland Health, QLD

Queensland Institute of Medical
Research, QLD

Royal Adelaide Hospital, SA

Royal Brisbane Hospital, QLD

Royal Children's Hospital, VIC

Royal Darwin Hospital, NT

Royal Prince Alfred Hospital, VIC

Royal Women's Hospital, VIC

Sax Institute, NSW

St Vincent's Breast Clinic, QLD

St Vincent's Hospital, QLD

Telethon Institute for Child Health
Research, WA

Territory Housing, NT

Tropical Public Health Unit, QLD

University of Adelaide, SA

University of New South Wales, NSW

University of Queensland, QLD

University of Sydney, NSW

University of Technology, QLD

University of Technology, NSW

University of Western Australia, WA

University of Wollongong, NSW

Western Australia Cancer
Registry, WA

Westmead Hospital, NSW

Wyeth Pharmaceuticals

International

Arctic Investigations Program, Centers for
Disease Control, Alaska, USA

Centers for Disease Control and
Prevention, USA

Centers for Disease Control,
Atlanta, USA

Centre for Vaccinology & Tropical Medicine,
Oxford University, UK

Dept of Pediatrics and Communicable
Diseases, University of Michigan Medical
School, Michigan, USA

Dept of Psychology, University of
Connecticut, USA

Duke University, North Carolina, USA

Eijkman Institute,
Jakarta, Indonesia

Faculte de medecine, Universite de
Montreal, Canada

Ministry of Health, Fiji

School of Medicine, Fiji

Harvard School of Public Health, USA

Herbert Karuiki Memorial
University, Tanzania

Imperial College, St Mary's
Campus, UK

INDOOR Biotechnologies Inc, VA USA

Institute of Parasitology, McGill
University, Canada

John Radcliffe Hospital, UK

Liverpool School of Tropical Medicine, UK

Mahidol University, Thailand

Ministry of Health, Indonesia

National Center of Zoonotic, Vectorborne
and Enteric Diseases, Centers for Disease
Control and Prevention, Atlanta, USA

National Institute of Health Research and
Development, Indonesia

National Institutes of Health, USA

National University of Singapore

North Arizona University Center
for Microbial Genetics and Genomics, USA

Institute of Medical Research,
Papua New Guinea

Rumah Sakit Mitra Masyarakat, Timika,
Papua, Indonesia

Université de la Méditerranée,
Marseille, France

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University of California, USA

University of Michigan, USA

University of Otago, USA

University of Ottawa, Canada

University of Oxford, UK

University of Utah, USA

University of Washington, USA

US Army Medical Research
Institute, USA

Wellcome Trust–Oxford
University, UK

Wellington School of Medicine and
Health Sciences, NZ

World Association for Disaster and
Emergency Medicine, Madison, USA

World Health Organization, Manila
and Geneva

World Heart Federation, Geneva

Wright State University, Ohio, USA

SUPPORTERS AND DONORS

Ms Alison Ratcliff

The Australian Academy of Science

The Australian Government

Bunnings Warehouse

Channel Seven Children's Research
Foundation

Charles Darwin University

Community Health and Anti-Tuberculosis
Association

Dr Ella Stack

Emergency Health Research Foundation

Mr Mayo Mark

The Menzies Foundation

The Northern Territory Government

The National Heart Foundation

The Pratt Foundation

Mrs Sheila Frey

The Tudor Foundation

Top End Mental Health Services

Variety Club of Australia

Western Diagnostic Pathology

Wyeth Pharmaceuticals



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This Annual Report was produced by the Communications and Development Department of the Menzies School of Health Research with input and much welcomed assistance from the staff and students of MSHR.

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