

2003 Annual Report

Menzies School of Health Research



Menzies School of Health Research

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Our mission

To improve the health of people of northern and central Australia and regions to the near north through multidisciplinary research and education by:

- Promoting a broad understanding of health that reflects underlying socioeconomic, environmental, health system and biological factors as determinants of health and disease.
- Conducting high-quality multidisciplinary research, research training and public health education with a focus on Indigenous, remote and tropical health.
- Advancing the local, national and international application of research findings to improve health.
- Advocating for research that will contribute to better health for people of the region.
- Building strong partnerships with community groups, service providers, policy-makers, and other academic organisations.



Our logo

The Menzies School of Health Research logo reflects the School's broad research agenda.

The warm and fluid circle shapes symbolize both the sun – representing the School's physical location – and a human cell, the building block of life and the basis of MSHR's work.

The rhythmic edge of dots suggests the School's many Indigenous clients and collaborations.

The precise lines underscoring the 'm' of Menzies illustrates MSHR's rigorous scientific standards.

Menzies School of Health Research 2003 Annual Report

PHOTO COURTESY GALIWINKU
HEALTHY LIFESTYLE PROJECT, MSHR



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2003 has been a year of success, opportunity, challenge and change. We have continued to strengthen and grow at an exciting rate and have been increasingly recognised as a leader in Indigenous, remote and tropical health issues and education – both nationally and internationally.

Our 2003 Annual Report highlights areas of research excellence, giving a brief overview of our research priorities and achievements, our mutually supportive training and education programs, and our strong governance practices for the year ending 31 December 2003.

We encourage you to visit our website www.menzies.edu.au to view detailed information on our work and operations. Comprehensive reports available online include:

- **2003 Research & Education Report:** detailed listing of MSHR research projects and education programs
- **2003 Financial Statements:** complete audited financial statements

in celebration of excellence:

Grants & fellowships

- Assoc Prof Nick Anstey was awarded \$3.1 million over five years from the Wellcome Trust and NHMRC for collaborative work with the Indonesian Ministry of Health in Papua and the University of PNG on studies to reduce morbidity and mortality from malaria in Papua and PNG. This is the largest grant ever awarded to MSHR, and one of only eleven projects to receive funding in an initiative which aims to help improve the health of people throughout the Asia-Pacific region.
- International Health team was awarded \$1 million over five years from the US National Institutes of Health to work with the Indonesian Ministry of Health in understanding how and why people get severe malaria, with a focus on continuing our Papuan field studies on the role of nitric oxide.
- NHMRC awarded MSHR research team, led by Assoc Prof Joan Cunningham and Assoc Prof Ross Bailie, a \$2.4 million research grant to improve research into the health of Indigenous Australians.
- Assoc Prof Ross Bailie was awarded an NHMRC Senior Research Fellowship to commence in January 2004.
- PHERP (Public Health Education and Research Program) funding was granted for our Master of Public Health course for a further two years. During 2003, MSHR had 65 students enrolled each semester in the MSHR Public Health Coursework program.

Awards & recognition

- Prof Kerin O'Dea was awarded a Centenary Medal for services to research in Australian Indigenous health. The medal was created to honour those who have made Australia's first hundred years as a federal nation a success and those who have laid solid foundations for Australia's future.
- Prof Kerin O'Dea and Dr Sandra Eades were honoured in this year's Australia's 100 Smartest People in the October edition of *The Bulletin* magazine. They were chosen for their extraordinary contributions to research in the area of Indigenous health.
- Dr Malcolm McDonald's rheumatic fever project won the top Heart Foundation award for 'Best Project'.
- Menzies researcher, Dr Sandra Eades, was honoured with an appointment to the NHMRC's prestigious Research Committee.
- Dr Peter Morris was awarded the Rue Wright Memorial Award for his study 'Additional training in recommended hygiene practices for the prevention of bacterial cross-infection and respiratory illness in Australian child care centres: A randomised controlled trial' at the Annual Scientific Meeting of the Royal Australasian College of Physicians.
- PhD student, Yin Paradies was awarded a Fulbright Scholarship for one year's study at the University of California, Berkeley, USA.



- Dr Alan Cass and co-authors won the prestigious *Medical Journal of Australia*/Wyeth Award for the best research paper published in the *MJA* during 2002.
- MSHR Indigenous researcher (and TV chef!) Geoffrey (Jacko) Angeles was invited to be a member of the editorial board for the US-based *Pimatziwin Journal*, a publication highlighting Aboriginal and Indigenous community health.
- Dr Allen Cheng, PhD student at MSHR, was awarded the Murray-Will Fellowship for Rural Physicians by the Royal Australasian College of Physicians.
- Dr Graeme Maguire was awarded Best Public Health Paper at the Thoracic Society of Australia and New Zealand (TSANZ) conference held in Adelaide in April.
- Assoc Prof Joan Cunningham and Dr Amanda Leach both received NHMRC Career Development Awards.
- MSHR research projects involving scabies and skin health, and research into reversing Indigenous renal failure, were highlighted as examples of projects that made it 'From Bench to Bedside' in the December 2003 edition of the *Medical Journal of Australia*.

2003 highlights



PHOTO COURTESY PRIORITY PROJECT, MSHR

Special events

- The new look Menzies School of Health Research website (www.menzies.edu.au) was launched in May in a ceremony featuring dancers from the Galiwin'ku community. The website is an innovative interactive framework to communicate with researchers, research participants, policy-makers, service providers, students and the general community.
- The Menzies School of Health Research Building was officially named in honour of inaugural MSHR Director, Prof John Mathews AM, in appreciation of his leadership in building nationally and internationally recognised health research capacity in the Northern Territory. The ceremony held in August was officiated by then Commonwealth Minister for Health and Ageing, Senator The Hon Kay Patterson.
- The DRUID study, a study to determine the prevalence of diabetes and related conditions in an urban Indigenous population, was launched in September. Fifteen new staff, including 11 Indigenous people, were employed to work on the project.



Important visitors & partnerships

- MSHR formed a historic partnership with Charles Darwin University (CDU) to strengthen the health research and education capacity of CDU. The relationship allows Menzies to retain its autonomy, while at the same time being a Foundation School within Charles Darwin University's Institute of Advanced Studies.
- Renewed Commonwealth funding of \$23 million over seven years for the new Cooperative Research Centre for Aboriginal Health (CRCAH) has allowed us to enhance our strategic alliances with other organisations with an interest in Indigenous health.
- Signing of a Memorandum of Understanding with the University of Queensland to facilitate the recruitment of high-quality research students.
- The International Health team renewed their Memorandum of Understanding with their principal partner, Indonesia's National Institute of Health Research and Development in Jakarta. The Director and the Secretary of NIHRD signed the five-year MOU during a visit to Darwin in June 2003, enabling collaborative malaria and tuberculosis health research and training to continue in Papua province, with the potential to expand to other communicable and non-communicable diseases.
- International Expert on climate change, Professor Tony McMichael, Director of the National Centre for Epidemiology and Population Health at the Australian National University, was invited to teach students enrolled in MSHR's Public Health Coursework program.
- Prof Paul Zimmet, renowned international diabetes expert, who was in Darwin for the launch of the DRUID project, presented a seminar which delivered a powerful message on diabetes to a packed audience.
- Dr Barbara Starfield and Dr Neil Holtzman from John Hopkins University, USA, presented seminars on 'Achieving Equity in Clinical Practice' and 'Genetic Myths of Social Class and Race'. The presentations were co-hosted by MSHR and Charles Darwin University.
- As one of his last official appointments, The Hon John Anictonatis, Administrator of the Northern Territory, visited Menzies School of Health Research in October to meet staff and tour our facilities.

OPPOSITE PAGE: MSHR officially named its research facilities 'The John Mathews Building' at a ceremony in August. Left to right: MSHR Director Prof Kerin O'Dea, inaugural MSHR Director Prof John Mathews AM, Federal Minister for Health & Ageing Senator The Hon Kay Patterson, and MSHR Chairman Mr Richard Ryan AO.

THIS PAGE: Left: Torres Strait Islander dancers featured in the launch of the DRUID study in September, weaving through the crowd.

chairperson's report



In my final year as Chairman of the MSHR Board, I am honoured to present this Annual Report which highlights the achievements of the Menzies School of Health Research, an organisation which continues to be at the forefront of remote, Indigenous and tropical health research.

I am also proud to say that this Annual Report is the first of a new format where MSHR has implemented its commitment to utilising technology by using the MSHR website in conjunction with the printed Annual Report. There are many highlights in this report and on the website (www.menzies.edu.au). I urge you to take the time to read further about the health research and education which is carried out at MSHR.

2003 has been a year of challenge and great success. Under the leadership of Director Prof Kerin O'Dea and other talented staff, the number of research projects continues to grow. Highly competitive national and international funding has been awarded across a broad range of medical research, including scabies, rheumatic fever, tuberculosis, diabetes, malaria, kidney disease, lung disease and melioidosis, as well as research into a variety of social and economic factors affecting Indigenous health.

2003 has also brought many challenges as discussions took place around a controlled entity model to formalise links between MSHR and Charles Darwin University (CDU). Both the Board and staff were involved and consulted during this process. MSHR

has retained its independent Act of Parliament which guarantees MSHR's autonomy into the future. The changes to MSHR's status, which came into effect from 1 January 2004, will, in the medium- to long-term, ensure MSHR gains the benefits of increased access to funding for research infrastructure from the Commonwealth. The changes have also meant the establishment of a new Governing Board.

I would like to acknowledge the continuing support of the Menzies Foundation and the Northern Territory Government, whose ongoing financial commitment to MSHR allows the organisation to have a stable core funding base. Thanks also to the former Minister for Health and Community Services, The Hon Jane Aagaard MLA and her successors late in the year, The Hon Dr Peter Toyne MLA and The Hon Marion Scrymgour MLA.

I would also like to thank my fellow Board members, the Director of MSHR, Prof Kerin O'Dea, and all the staff and students for their hard work, commitment and support for the organisation through this challenging period of change whilst continuing to achieve significant research success.

Whilst I have finished my term as Chairman of the MSHR Board, I look forward to maintaining contact with MSHR in a different role. I know the organisation is in good hands and is destined for further future success. I also wish the new Board well in its endeavours.

Richard Ryan AO

director's report



It is no secret that the health of Indigenous Australians is among the poorest in the country. Indigenous populations suffer enormous social and economic disadvantage. In both remote and urban Indigenous communities the people are affected by chronic and infectious diseases and general poor health related to a range of factors, including poverty, overcrowded living conditions, and inadequate nutrition.

Australia's awareness of these important issues continues to grow and governments, as well as funding bodies, are now firmly acknowledging the vital importance of improving Indigenous health. MSHR is the only independent medical research institute in Australia with a primary focus on Indigenous health. Since being established in 1985, a major goal of MSHR has been to conduct research and education that makes a difference to people's lives, as well as promoting new findings which influence health policy and practice.

2003 has been a very successful year for MSHR as staff and students have built on past success and obtained significant funding for several new major research projects in Indigenous and tropical health.

During the year, MSHR was awarded almost \$10 million in NHMRC funding for project grants, scholarships and fellowships which will commence in 2004. This is a new record for MSHR and demonstrates the institution's reputation for excellence in research. As Director, I am very proud of this achievement.

Among this success, Assoc Prof Joan Cunningham and Assoc Prof Ross Bailie were awarded an NHMRC Capacity-Building Grant of \$2.4 million over five years to build capacity in policy relevant to quantitative, social analysis and research in Indigenous health. In addition, the NHMRC awarded Assoc Prof Ross Bailie a prestigious NHMRC Senior Research Fellowship.

MSHR has also increased its commitment to international health research and a number of international collaborations have been fostered during the year. The MSHR International Health team, led by Assoc Prof Nick Anstey was awarded \$3.1 million from the Wellcome Trust and NHMRC for collaborative work with the Indonesian Ministry for Health and the University of PNG to undertake research to help prevent and treat the most severe forms of malaria. This is the largest grant ever awarded to MSHR.

I am pleased to report the MSHR Education and Training Division was successful in gaining Commonwealth funding for a further two years to support the Master of Public Health course through the PHERP program. Sixty-five students were enrolled at MSHR each semester in 2003 and this course continues to attract high-quality students who are interested in a career in public health.

2003 also saw the introduction of legislation to formalise links between MSHR and Charles Darwin University (CDU) with the primary incentive for MSHR being access to future Commonwealth research infrastructure funding. Notwithstanding this new link with CDU, MSHR retains an independent Act of Parliament which preserves MSHR's autonomy and independence.

I am grateful to those MSHR academic and administrative staff who were actively involved during the extensive negotiations with Charles Darwin University and the Northern Territory Government. I would also like to thank the MSHR Board for their support during this challenging time.

Whilst 2003 has been a year of significant research success for MSHR, our challenge is to maintain this momentum. We are determined to improve our fundraising capacity so as to better support our hardworking and talented researchers and maintain our position as a national leader in Indigenous, remote and tropical health research and education.

This 2003 Annual Report features our research progress, and highlights a year of exciting new grants, prestigious awards and recognitions, and numerous special events and visitors.

I hope you enjoy the Annual Report in its new format and I urge you to also visit our website for a closer look at the work carried out at the Menzies School of Health Research.

Professor Kerin O'Dea

MSHR | leaders in indigenous, remote & tropical health research

During 2003 there has been much media attention on the state of health of Australians and the health system within Australia. It is not enough that Australians are living longer than ever – we now expect to live long and healthy lives.

Yet, while most Australians can reasonably expect to live well into their seventies and eighties, Indigenous Australians, and those living in remote communities, cannot expect such longevity.

In the words of an Indigenous young person featured in an article by journalist Philip Adams: 'Superannuation is irrelevant to Indigenous people. We don't live that long!' (*The Weekend Australian Magazine*, May 24-25, 2003)

With our focus on Indigenous, tropical and remote health, MSHR is uniquely positioned to conduct research which can underpin improvements in the

health of Indigenous people and our neighbours to the near north in countries such as Papua New Guinea, East Timor and Indonesia. Located on the Royal Darwin Hospital Campus in Darwin's northern suburbs, MSHR also operates small units in Alice Springs and Gove.

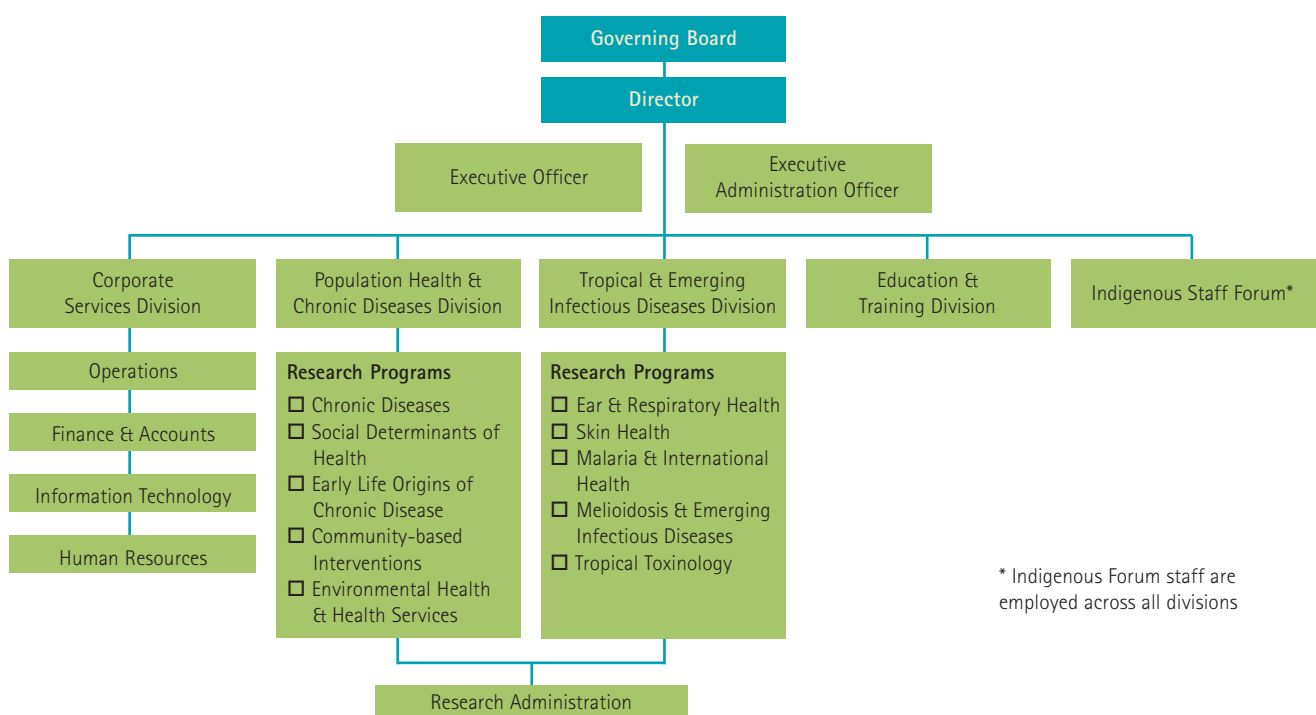
Since commencing operations in 1985, MSHR has developed a successful track record in producing high-quality research spanning infectious and non-communicable diseases, the social and environmental determinants of health, health systems and information systems.

We recognise the greatest health gains are to be made through exploring the intersections between priority health issues, determinants of health, and translation of research into practice and policy.

MSHR prides itself on its ability to work in close partnership with Indigenous



and remote communities to ensure research projects are of priority and relevance. Through our Indigenous Forum, Indigenous staff and colleagues at MSHR are invaluable in communicating health priorities and values of Indigenous people to non-Indigenous researchers, facilitating research projects in a culturally appropriate manner, and determining how research findings can be taken back to the communities in the form of practical health benefits.



* Indigenous Forum staff are employed across all divisions

infectious diseases division



PHOTO COURTESY PRIORITY PROJECT, MSHR

The Infectious Diseases Division comprises five research programs investigating health issues important for our region.

Studies are targeted at improving prevention and treatment of specific illnesses, generally through seeking a better understanding of the underlying disease processes. Epidemiology, clinical observations and basic laboratory work are involved, with evidence-based approaches undertaken when possible.

The emphasis for the division is on collaboration with local health colleagues and experts outside the Northern Territory, in addition to cooperation between disciplines and across professional and cultural boundaries.

Division Leader | Professor Bart Currie

□ Ear & Respiratory Health

The Ear and Respiratory Health program is made up of researchers from a variety of backgrounds, including Aboriginal health workers, doctors, nurses, laboratory scientists, and postgraduate students committed to researching causes, methods of prevention and treatment of severe respiratory conditions, particularly middle ear infections and chronic lung disease.

Middle ear infections (otitis media) are common among children in all populations. While the World Health Organization indicate that ear drum perforation greater than 4% represents a massive public health problem, the rate in most remote Aboriginal communities is dramatically higher.

In these children middle ear infection follows nasopharyngeal colonisation and persists throughout childhood, often progressing to perforation of the ear drum. Up to 60% of Aboriginal babies have perforations in the first year of life. Research conducted in 2001 by our Ear Team, spanning 29 communities in the Northern Territory, revealed further alarming results in children aged six months to 2.5 years:

25% of these children presented with perforated eardrums, and only 7% of children were identified as having normal middle ear status. In 2003 that rate had only fallen to 21%, despite pneumococcal conjugate vaccination.

It is not clear how many Aboriginal adults suffer significant hearing loss, (estimates range up to 40% in some communities), but childhood middle ear infections from pneumococcal bacteria are considered the main cause. Ongoing trials into the effectiveness of a new pneumococcal conjugate vaccine to prevent middle ear infection are currently an important focus of the Ear Team's work. Several research projects evaluating the impact of the vaccine Prevenar™ are continuing in Aboriginal communities from Central Australia to Katherine West, East Arnhem Land and the Tiwi Islands.

Chronic obstructive pulmonary disease (COPD) affects nearly 15% of Aboriginal Australians living in remote communities. COPD (often used to describe chronic bronchitis and



emphysema) is a progressive disease, with limited treatments available once lung damage becomes severe.

Although smoking, overcrowding and growth in early life are recognised factors contributing to COPD, repeated bacterial respiratory infections may also be an important, preventable factor in the establishment and progress of COPD within Aboriginal communities.

ABOVE: Certainly not shy, young Marie Assumpta shows the Menzies PRIORiTi Ear Team how saliva swabs should be taken! (Photo courtesy PRIORiTi Project, MSHR)

Key achievements

- A Territory-wide surveillance project has been established to monitor drug resistance to antibiotics traditionally used to treat pneumococcal infections. The study will also measure antibiotic prescription rates and pneumococcal conjugate vaccination uptake.
- Commenced a study to determine if antibiotic treatment or vaccine effectiveness is compromised by high levels of respiratory bacterial pathogens. The first phase of this project has confirmed important differences in the density (or concentration) and diversity of bacteria carried in the noses of children with severe ear disease.
- Successful randomisation of over 150 children in our first Territory-

wide controlled trial in a study evaluating the best treatment for Aboriginal children diagnosed with middle ear infection – single dose Azithromycin versus seven days Amoxicillin.

- Completed our second Territory-wide survey of ear disease as part of our studies investigating the impact of the new 7-valent conjugate pneumococcal vaccine Prevenar™.
- Completion of the first phase of an assessment of herd immunity following infant vaccination (pneumococcal vaccine Prevenar™) on pneumococcal carriage within an entire Aboriginal community.
- Developed a 'Train the Trainer' workshop for the Ear Video training package to assist Aboriginal

communities in the diagnosis and management of middle ear infection.

- Instigated community consultation and preliminary research in an Arnhem Land community in a project to gain a local perspective of how to make tuberculosis (TB) control intervention programs more effective. The aim of the project is to reduce the incidence of TB infection in this community where periodic TB outbreaks still occur. It is also anticipated this project will help increase local capacity to deal with other public health problems in Aboriginal communities.

MSHR 2003 Research & Education Report provides detail on all research projects and is available online at www.menzies.edu.au

□ Skin Health

Skin infections are quite common, and although they can cause unsightly, inconvenient and uncomfortable health problems, they are usually treatable with readily available medications.

Skin infections in Indigenous populations are far more insidious. Up to 60% of children in remote Aboriginal communities in northern and central Australia, are estimated to be infected with scabies – a skin disease caused by a tiny mite. The scabies mite burrows under the skin and breeds, often transmitted to others before diagnosis.

Scabies cause intense itching, resulting in open skin lesions. These sores often become infected with group A streptococcus (GAS) – a group of bacteria that thrive in the tropical environment of the Northern Territory and cause a massive range of diseases, including pharyngitis (strep throat), rheumatic fever, glomerulonephritis (a major kidney disease) and invasive diseases such as streptococcal toxic shock syndrome.

The Skin Health program focuses on researching skin infections and infestations endemic to Indigenous communities in the NT, such as scabies and topical streptococcal infections, and their relationship to kidney disease and rheumatic fever. This relationship is of interest as some remote communities in the Northern Territory suffer the highest rates of rheumatic fever and kidney disease in the world.

Our Skin Health team are also involved in an innovative collaboration with the Cooperative Research Centre for Aboriginal Health (CRAH), in a number of laboratory, clinical and public health projects known as the Healthy Skin initiative.



TOP: Phase contrast micrograph of an adult male *Sarcoptes scabiei* collected from an agile wallaby in the Northern Territory.

BELOW: The scabies mite burrows under the skin, causing intense itching which results in open lesions and allows a point for infections to enter the body. (Photos courtesy of Skin Health Program, MSHR)

Key achievements

□ Forty-three thousand scabies mite cDNA clones have been sequenced so far from a goal of 50,000 in an ongoing gene discovery project that aims to significantly advance the limited amount of molecular information available about the scabies mite.

Molecules of interest identified so far include similarities between scabies mite and house dust mite allergens, potential vaccine candidates, genes associated with drug resistance and potential drug targets in therapeutic studies.

□ Extended research using DNA fingerprinting techniques continued to identify the biological species classification of the scabies mite. Previous studies suggest a single gene pool, however, our molecular study demonstrated genetic differences between mites obtained from northern Australian dogs and those on people. This discovery had important implications in scabies control programs for Aboriginal communities.

Further clarification of genetic variation and understanding of the interbreeding between mite populations is important for disease and resistance control.

□ Publication of seven papers and an additional two invited reviews in press resulting from our study into antigens, allergens and immune responses to normal and crusted scabies.

□ Recent developments leading to expression and purification of scabies mite recombinant antigens now provides an exceptional opportunity to obtain a clearer

outline of immune responses important in normal scabies and to assess differences in those with severe infestation (crusted scabies).

□ Recent studies reveal tea tree oil could be used as a new topical treatment for scabies. Results demonstrated that tea tree oil was highly effective in killing the scabies mite in the laboratory.

□ MSHR research team, in collaboration with international researchers in America, England and Germany have demonstrated that the group A streptococcus population in tropical Northern Australia is more diverse than elsewhere in the temperate world.

□ An important study to determine if group A streptococcus (GAS) skin infection leads to acute rheumatic fever (ARF) is under way in two Aboriginal communities.

GAS throat infections are traditionally thought to be the only cause of ARF. However, GAS is uncommonly found in the throat of Indigenous people in the NT, even though Aboriginal communities suffer the highest reported rate of ARF in the world. Results of this study could therefore have important implications for prevention and vaccine development of ARF around the world.

□ Exciting preliminary results suggest new diagnostic blood tests may improve the accuracy of diagnosis of rheumatic fever.

MSHR 2003 Research & Education Report provides detail on all research projects and is available online at www.menzies.edu.au

□ Malaria & International Health

Each year, malaria affects over 300 million people internationally, with up to two million deaths. Children and pregnant women are particularly vulnerable. Malaria is a major cause of morbidity and mortality in Eastern Indonesia and Papua New Guinea.

The social consequences of this tropical disease are enormous. In countries where malaria occurs, the burden extends beyond the individual and their family, it impedes economic development.

An international health collaboration was established in 1996 between MSHR

and the Indonesian Ministry of Health's National Institute of Health Research and Development. This collaborative program addresses the prevention and management of tropical diseases of importance to the region, with a number of studies being undertaken in Eastern Indonesia. A new collaboration has also been established with Papua New Guinea.

Our research aims to improve the diagnosis, treatment and prevention of malaria and tuberculosis. Skills exchange and training are an important part of the research.



LEFT: MSHR International Health Program Clinician Dr Enny Kenangalem explains lung function testing to a patient with severe malaria at RSM Hospital, Timika, Papua.

BELOW: Mimika TB Program Director Dr Ardian Muhammad demonstrates his X-ray reading skills to (from left) Dr Graeme Maguire (MSHR), Assoc Prof Nick Anstey (MSHR), Dr Paul Kelly (MSHR), Pak Erens (Depkes Timika) and Dr Tjandra Handojo (RSM). (Photos courtesy of International Health Program, MSHR)



Key achievements

- Renewal of our Memorandum of Understanding (MOU) with our principal partner in international health research, Indonesia's National Institute of Health Research and Development (NIHRD) in Jakarta. The Director and the Secretary of NIHRD signed the five-year MOU during a visit to Darwin in June 2003. This will enable collaborative malaria and tuberculosis health research and training to continue in Eastern Indonesia.
- Award of a major five-year grant to MSHR, NIHRD and University of PNG from the Wellcome Trust and NHMRC to undertake research and training to reduce morbidity and mortality from malaria in Papua (Indonesia) and PNG.
- MSHR's International Health team, as part of a collaboration with the University of Utah and Duke University in the USA, and Herbert Kariuki University in Tanzania, discovered that a natural substance may help fight the most severe forms of malaria. It is believed arginine, a simple amino acid found in the body and in some foods, may have potential as a new treatment for malaria by increasing the amount of a protective molecule, nitric oxide. Trials of arginine as an adjunctive treatment of malaria are planned to commence in 2004.
- Assembled a collaborative network in a new study to evaluate the extent of antimalarial drug resistance and its impact on malaria morbidity and mortality in the Timika region of Papua.
- Preparation of studies to evaluate whether widespread deployment of artemisinin-combination therapies can reduce the rate of incidence and death from multidrug resistant malaria in Eastern Indonesia.
- Patient enrolment commenced in a multicentre trial coordinated by the Wellcome Unit in Thailand to discover if artesunate treatment can reduce mortality from severe malaria. Artesunate is known to kill malaria parasites faster than quinine (the traditional treatment for malaria), but it is not yet known if it can reduce the risk of death from severe malaria. The trial is expected to enrol 2000 patients at sites in South and South-East Asia, making it the largest severe malaria trial ever performed.
- A study investigating how malaria affects the lungs has shown that gas transfer in the lungs of patients with severe malaria is lower than that in uncomplicated malaria, due to reduced lung blood flow and reduced gas transfer across the air sac membranes.

Tens of thousands of adults with severe malaria die as a result of malaria making their lungs 'leaky' – causing them to fill with fluid. Knowledge gained from this study will better inform attempts to design specific treatments for this grave complication of severe malaria.
- Work in a study that aims to investigate the genetic mechanisms in the malaria parasite that are assumed to result in drug resistance, has found that the Pfmdr1 gene is the most important determinant of response to selected antimalarial drugs. Studies are now investigating the relevance of this gene to resistance of other antimalarial drugs, and seek to determine factors that facilitate and prevent the emergence of resistance. This work is of particular importance as the formidable rise of multidrug resistant strains of malaria pose a major threat to tropical countries, with some of the worst multidrug resistance found in South-East Asia.
- Significant progress in a new project aiming to determine if tuberculosis (TB) contributes to permanent lung damage in patients in countries with a high rate of TB and a lack of healthcare resources. Both TB patients and a control group of patients from the Mimika district in PNG have been enrolled in the study with examinations to occur over 12 months.
- Drug resistance is one of the major threats of TB globally, with multiple-drug-resistant TB practically incurable in poorly resourced countries due to the cost of alternative treatments. Studies of drug resistance in our region aim to assist public health authorities to better plan and manage TB treatment.

MSHR 2003 Research & Education Report provides detail on all research projects and is available online at www.menzies.edu.au

□ Melioidosis & Emerging Infectious Diseases

Melioidosis is a potentially fatal disease caused by infection from the bacterium *Burkholderia pseudomallei*. The bacteria can be found in soil and surface water in tropical areas, usually after heavy rainfall.

Reported incidence of melioidosis is on the rise within endemic regions of South-East Asia and throughout Australia's Top End. In the Northern Territory, up to 40 people are infected each year, usually during the monsoonal wet season, causing death in one-fifth of all cases.

Those most likely to contract melioidosis have specific risk factors which affect their immunity. The most important risk factor is diabetes, followed by heavy alcohol intake, chronic lung disease, such as seen in heavy smokers, and chronic kidney disease.

The high mortality rate from this disease, combined with the increase in the number of diagnosed cases, makes it vitally important that our understanding of this serious tropical disease is improved.

Better recognition and treatment of melioidosis through our research over recent years has resulted in the death

rate being halved in northern Australia – from 40% to 18%. The work of our team will continue to advance knowledge of the incidence, distribution

and control of melioidosis, to further improve preventative measures, early diagnosis and effective treatment methods.

Key achievements

- Demonstrated a strong link between heavy monsoonal rain and increased severity of melioidosis. The study, which examined rainfall data and cases of melioidosis that occurred in the Top End over a 12-year period, found that patients admitted with melioidosis one to two weeks after heavy monsoonal rainfall and high winds were more ill and 2.5 times more likely to die.
- Research in the Top End into the importance of potable water as a source of melioidosis has confirmed that melioidosis bacteria is not uncommonly present in bore water.
- Use of new DNA fingerprinting methods developed specifically for the melioidosis bacteria to better understand why melioidosis can be such a severe disease and how it spreads from the environment to humans and animals. This new project will hopefully result in new primary preventative measures.
- Continued research in the use of G-CSF (a naturally occurring substance produced by humans and animals in response to infections) for use as an adjunct to antibiotics in the treatment of severe melioidosis.
- Publication of a proposed scoring system to help clinicians identify patients at risk of death from melioidosis.

This same study suggests that the more severe cases of melioidosis seen after heavy rains and winds may be from people inhaling the bacteria directly into their lungs, resulting in pneumonia and blood poisoning. This is of particular interest as most cases of melioidosis are thought to be acquired when the bacteria enters the body through soil or surface water contamination of cuts and sores.

□ Tropical Toxinology

The climate, landscape and lifestyle of the tropics lures residents and visitors to enjoy the great outdoors. While enjoying our land and coast, it's important to remember we share this environment with some of the deadliest wildlife in the world.

Toxinology research at MSHR is currently undertaking work involving jellyfish and venomous snakes which are common to Australia's Top End.

With the assistance of Royal Darwin Hospital Emergency Department and Gove Surf Life Saving Club, we continue to monitor the occurrence and type of

jellyfish in the waters of the Top End of the Northern Territory. This data is important to ensure distribution of timely public health warnings.

We also continue to update our collection of snakes and document all snakebite envenomings in the Top End. Clinical symptoms of each of the Top End's dangerous snake species have been defined to allow accurate and expedite identification of snakebites.

MSHR 2003 Research & Education Report provides detail on all research projects and is available online at www.menzies.edu.au

Key achievements

- A new treatment for Irukandji jellyfish stings using intravenous magnesium has been successfully used at the Royal Darwin Hospital following its first use in Queensland.
- Description of stings from a new jellyfish species found on the Gove Peninsula.
- Elucidation of the 'brown snake paradox' – why neurotoxicity is uncommon despite the presence of a potent neurotoxin in brown snakes.

population health & chronic diseases division

PHOTO COURTESY GALIWINKU
HEALTHY LIFESTYLE PROJECT, MSHR



The Population Health and Chronic Diseases Division undertake collaborative research involving a wide range of disciplines, including epidemiology, biostatistics, sociology, anthropology, biochemistry, nutrition and clinical medicine.

There is a strong focus on Indigenous populations and health problems which impose a significant burden of disease. We are interested in better understanding the causal pathways to diseases such as diabetes, kidney and heart disease, including the impact of social disadvantage across the life course.

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.

Division Leader

Assoc Prof Joan Cunningham (until April 2003)

Prof Kerin O'Dea (from April 2003)

□ Chronic Diseases

In an alarming trend, rates of lifestyle-related chronic diseases, such as diabetes, continue to soar throughout Australia, particularly in Indigenous communities.

Relative to the overall Australian population, Indigenous Australians have 15 to 20 years shorter life expectancy. Diabetes and related conditions, such as

heart and kidney disease, are major contributors to this reduced longevity. Disturbing statistics reveal Indigenous people experience up to four times greater prevalence of cardiovascular disease, more than 10 times the prevalence of diabetes in the 20 to 50 years age group, and develop end-stage renal disease at up to 30 times the rate of non-Indigenous people.

In short, Indigenous people are dying at a younger age from diseases which are mainly preventable.

The Chronic Diseases program focuses on investigating lifestyle-related chronic diseases, largely in Indigenous populations, to contribute evidence on which to build positive models of health.



THIS PAGE: MSHR Project Officer Maria Scarlett prepares serums for transportation from Galiwin'ku to MSHR for further testing.

OPPOSITE PAGE: Richard Batumang has his blood pressure and pulse rate recorded by MSHR Project Officer Joe Fitz as part of the Galiwin'ku Healthy Lifestyle Project. (Photos courtesy Galiwin'ku Healthy Lifestyle Project, MSHR)

Key achievements

Diabetes, kidney and heart disease in the Indigenous people of Darwin

- Commenced a five-year study that aims to identify how many Aboriginal and Torres Strait Islander people living in Darwin, Palmerston and the Darwin rural area have diabetes and related conditions (such as heart and kidney disease).

Known as DRUID (Diabetes and Related conditions among Urban Indigenous people in the Darwin region), this project also seeks to discover which people are at greatest risk of getting diabetes and its associated conditions, and how prevention strategies and health services for these conditions might be improved. We are also planning a lifestyle intervention for those who do not yet have clear-cut disease but are deemed to be at high risk.

Kidney disease

- Completed and published a national cohort study of all patients starting dialysis treatment in Australia during 1993–98. This study revealed that Indigenous patients received kidney transplants at approximately one-third of the rate of non-Indigenous patients. We also found Indigenous patients faced barriers to get onto waiting lists and in moving from a waiting list to receiving a transplant.

This is highly significant as, compared to long-term dialysis, transplantation usually results in better quality of life, longer life expectancy and lower cost to the health care system.

We are currently developing protocols for a study aimed at uncovering key barriers to accessing kidney transplants for Indigenous people with end-stage renal disease.

Comparison of diabetes and heart disease in different Australian populations

- Recently completed a 10-year follow-up of deaths from cardiovascular disease among Australian-born Melbourne residents and migrants from Mediterranean countries. In contrast to Indigenous Australians, Greek migrants have a lower than average death rate from coronary heart disease. Given that they have maintained important aspects of their traditional Mediterranean diet, we are examining whether this diet gives protection from heart disease and stroke by lessening the impact of risk factors, such as diabetes, high blood pressure and high cholesterol. These findings could have important implications for Indigenous populations.
- Commenced collaboration with the AusDiab Study Group at the International Diabetes Institute in Melbourne to look at the relationship of body mass index to health in different Australian populations.
- A study examining the associations between body mass index and mortality rates in Aboriginal people in the Northern Territory has found an excess risk of death related to low body weight. These findings are of great public health concern and will need to be thoroughly investigated in future research. They highlight the different pathways to ill health in very poorly nourished communities.
- We are using our extensive database to identify the range of body mass index most consistent with prevention of diabetes and related conditions in Aboriginal and Torres Strait Islander populations.

Clinical studies of diabetes and heart disease in Indigenous populations

- Detailed clinical assessment of the complications of diabetes in a remote East Arnhem Land community indicated very high rates of heart disease risk (smoking, high blood pressure, kidney disease, and high blood fats). However, in this remote clinic there was also very good primary care in detection and follow-up clinical management.
- We are investigating the use of a number of non-invasive techniques to look for early signs of heart disease in Indigenous and non-Indigenous people with diabetes – estimating thickening and stiffness of artery walls. The work is helping us gain insight into how diabetes and other risk factors contribute to the onset of heart disease. The technique may also be used to monitor whether interventions, such as exercise, diet or medications, are having a positive effect on the cardiovascular health of those with diabetes or high blood fats.



MSHR 2003 Research & Education Report provides detail on all research projects and is available online at www.menzies.edu.au

□ Environmental Health & Health Services

Inadequate housing and health infrastructure in remote Indigenous communities is distressingly common, and a serious underlying cause of ill health.

The Environmental Health and Health Services team focus on the organisation and delivery of primary health care services, including environmental health and health-related infrastructure, to meet the immediate and ongoing needs of people living in Indigenous communities.

The team's research is generally conducted in close collaboration with community organisations, service providers and policy-makers. We place high importance on addressing issues of high priority for community residents and service providers and on making our research findings directly relevant to government and non-government service and policy agencies.



Housing is widely recognised as an important determinant of health. This year, MSHR commenced the Housing Improvement and Child Health Study in remote Indigenous communities to evaluate aspects of housing that affect child health. (Photo courtesy of HICH Project, MSHR)

Key achievements

□ Assessed health centre systems and clinical services in 12 health centres across the Top End in the first stage of a project aimed at improving the quality of primary care for people with chronic disease living in remote communities.

Work over the next three years will focus on developing systems with health centre staff to support chronic disease care and introduce a process of continuous quality improvement of these systems.

□ Established agreement with 10 remote communities across the Northern Territory to participate in a project aimed at assessing the impact of household infrastructure improvements on child health in remote Aboriginal communities.

While housing is widely recognised as an important determinant of health, there is currently a lack of information on how to get the best value, in health terms, from housing programs. Information gathered from this project over the next two years will be essential in developing housing programs to ensure they have the greatest possible impact on health.

□ Continued our study into the feasibility, cost and impact of introducing small-scale water fluoridation technology into two remote communities. Plants were installed in late 2003 with changes in children's dental health over a two-year period to be monitored.

This project also continues to map levels of natural fluoride and the status of dental health in remote communities across the Northern Territory.

□ Preliminary analysis of data collected from a wide range of organisations that hold administrative, census and survey data pertaining to Indigenous people living in communities in the Northern Territory.

This project is drawing together a wide range of routinely collected data to examine data quality and explore the relationship between a range of socio-economic and environmental factors (such as health service access and utilisation) and health outcomes. It will aid government and non-government agencies to focus efforts on the most important underlying determinants of health and determine the relative need of communities and regions.

□ Final analysis is under way in a quality audit involving records of over 1500 children aged less than five years in the NT Department of Health and Community Services Growth Action and Assessment surveillance system. Improved data quality is important for health program evaluation and to accurately plan for future health care needs.

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□ Foetal & Early Life Origins of Chronic Disease

The Aboriginal Birth Cohort (ABC) Study was the first birth cohort of an Indigenous population in the world. The ABC was established between 1987 and 1990 by neonatologist Dr Sue Sayers who was concerned about the long-term risks to the health of the small babies being born to many Aboriginal mothers. It was established before David Barker's research on the foetal origins of adult disease had ignited world-wide interest in this field.

The children in this cohort come from a wide range of backgrounds, from both urban and remote populations. Thus, the ABC allows for exploration of the causal pathways to diabetes, renal disease and cardiovascular disease in this high-risk population. Over time, it will also enable examination of intergenerational effects.



Key achievements

- Ongoing analysis of Wave 2 data is continuing in the ABC Study – a prospective longitudinal study examining the influences of maternal health and birth size on childhood growth, nutrition, morbidity and risk factors for chronic diseases in childhood.
- Initial findings from follow-up examinations of children aged 10 to 12 years show this birth cohort had poor postnatal growth with no relationship between birth weight and the potential markers of chronic adult disease.



TOP: With the majority of MSHR research conducted throughout remote communities of the Northern Territory, it's important to understand that if you can't carry it – don't take it! Here MSHR staff of the ABC Study carry research equipment from an airstrip to a community. Most of their field trips require the equivalent of four large suitcases of research equipment.

ABOVE: MSHR PhD student Gurmeet Singh performs a renal ultrasound on the verandah of a local clinic as part of the ABC Study. (Photos courtesy ABC Study, MSHR)

MSHR 2003 Research & Education Report provides detail on all research projects and is available online at www.menzies.edu.au

□ Social Determinants of Health

It is increasingly accepted that health and wellbeing are not merely determined by biological and genetic factors, but through a complex interaction of these factors and a range of economic, environmental and social determinants.

Our research seeks to meet the growing demand from policy-makers and government bodies to build an evidence base for policy and practice.

Key achievements

- Awarded a \$2.4 million grant from NHMRC to improve research into the health of Indigenous Australians. Led by Assoc Prof Joan Cunningham, this project will mentor young researchers to create a critical mass of Indigenous health specialists to advance the quality and capacity of research aimed at improving the health of Indigenous people.
- A report was submitted to the Australian Sports Commission identifying indicators to monitor the impact of sport and recreation programs in Indigenous communities. Indicators which reflect program viability and sustainability, community participation and health and social outcomes were developed.
- Data collection involving 180 participants in a study examining heavy cannabis use in two remote Aboriginal communities in Arnhem Land was completed early in 2003. Findings include diverse and dynamic patterns of substance use in the region and a recent rise in cannabis use. Education interventions are now under way with follow-up interviews of participants planned for 2004.
- A review of literature concerning stress in Indigenous people and people in lower socio-economic circumstances is continuing. The final report aims to identify available literature which relates specifically to stress and the development and management of chronic disease, and will summarise interventions taking place at an individual and population level.

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□ Community-based Interventions

Poor nutrition is one of the main factors causing high rates of diabetes and heart disease in Aboriginal and Torres Strait Islander people. Obesity is one of the main risk factors for diabetes and cardiovascular disease and it is associated with poor diet, lack of exercise and many social factors.

This program aims to develop a framework for the implementation and evaluation of sustainable and transferable community-based interventions to reduce the risk and/or impact of diabetes, and renal and vascular disease in Indigenous communities. The focus of the interventions is to improve the quality of diets, increase physical activity and reduce smoking, and to provide comprehensive primary health care, including pharmacotherapy of people with, or at risk of, chronic disease.

The interventions are based on a culturally acceptable model of a traditional hunter-gatherer diet and lifestyle: a high quality

diet derived from a wide variety of highly palatable, minimally processed plant and animal foods, with physical activity built into daily routines, and with strong community support and a rich spiritual life. The interventions need to be directed not only at improving knowledge of what constitutes a healthy diet and lifestyle, but also at the environmental determinants of chronic diseases (food supply, opportunities for exercise, smoke-free areas/policies). There is strong evidence that interventions can only be successful over the long term if they are fully embedded in community structures. This requires building capacity at the community level.



TOP: Maintaining traditional food sources and practices (in this case hunting for fish) creates opportunities for exercise, and of course, can net quite a catch!

LEFT: MSHR, Prof Kerin O'Dea, takes a walk around Timmy Galulingu's garden. The Burwa Natha Home Garden project is just one of the interventions under way in Galiwin'ku as part of the Healthy Lifestyle Project. (Photos courtesy of Galiwin'ku Healthy Lifestyle Project, MSHR)

Key achievements

□ Community-based interventions to address health problems in the East Arnhem Land community of Galiwin'ku are currently being trialed in the Galiwin'ku Healthy Lifestyle Project. This project has the primary aim of identifying ways of reducing the risk of cardiovascular disease and diabetes in Indigenous Australians. Interventions under way include a household garden project, exercise programs and a collaboration with the local store and takeaway outlet to increase availability of fresh fruit and vegetables. Baseline screening was conducted in 2002, with two-

year follow-up screening planned for June 2004.

□ Continued investigations into the role of diet in protecting against cardiovascular disease as part of a project studying biochemical markers of dietary intake and their links to risk of chronic disease. The study has discovered high levels of markers indicating blood vessel damage in association with very low blood levels of antioxidants in a number of Indigenous communities – indicative of very low intakes of fresh fruit and vegetables.

□ Work is currently under way to assess how perceived mastery and control of one's destiny within a community affects the implementation, success and sustainability of diabetes intervention strategies. This study seeks to understand how psychological and social responses to intervention programs affect behavioural changes.

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education & training division

The Education and Training Division provides postgraduate education and training opportunities to health professionals. MSHR expertise in Aboriginal, remote and tropical health is reflected in the education and training offered by or supported through the Division.

The Division is responsible for:

- coordination of the Public Health Coursework program comprising the Graduate Certificate, Graduate Diploma, Master's and Professional Doctorate;
- oversight of postgraduate research students studying at MSHR and providing specific skills training to postgraduate research students; and
- organisation of short courses for the benefit of MSHR staff, students and the wider community of health professionals.

Public Health Coursework

The Public Health Coursework program is accredited through Charles Darwin University (formerly Northern Territory University) and enjoys an excellent reputation, with particular emphasis on the support given to students. MSHR is also a member of the Australian Network of Academic Public Health Institutions (ANAPHI), a national organisation of 19 universities and

public health institutes delivering public health coursework programs.

Although the majority of our students are Territorians, the coursework program continues to attract high-quality public health practitioners to the Territory. As many local students are employed by the NT Department of Health and Community Services, the Education and Training Division fulfils a significant professional development role for health service providers in the NT. MSHR is also well placed to attract Indigenous students and support study opportunities through our partnerships with the Cooperative Research Centre for Aboriginal Health and Charles Darwin University.

There was consistent growth in the coursework program with an increase in enrolments overall, particularly at the Graduate Certificate level and in the international (full-fee paying) category. Sixty-five students were enrolled in the coursework program, including 27 new enrolments in semester 1 and 19 in semester 2. Of the eight international students, four are studying full time in Darwin with the remainder studying part time from their home country. Thirty students graduated in 2003, including a record 18 graduands at the end of semester 1.

MSHR offers both coursework and coursework-plus-treatise options for the

Master of Public Health. In 2003, two students were undertaking their treatise in the Master of Public Health, and three students graduated from the Master of Public Health (Coursework and Treatise).

Postgraduate research study

Postgraduate research students are supervised by senior academic staff at MSHR in collaboration with researchers at other institutions when appropriate. Student research topics span the wide research interests of MSHR from molecular biology to population health and health services research.

In 2003, there were 14 new students, including three international students with a total of 36 students enrolled at seven Australian universities. There were five PhD graduates and two graduates from the Honours program in 2003.

Short courses

Organisation and delivery of short courses continues to be streamlined and improved. In addition to attracting participants from the wider health professional community, short courses play an important role in MSHR staff recruitment and retention, and professional development.

Four successful and well attended short courses were offered during 2003.



Key achievements

- Awarded a further \$210,000 to support innovation and flexible delivery of the Public Health Coursework program in 2004–05 from Public Health Education & Research Program Innovations. Funding from this source to MSHR covering the period 2001–05 now stands at \$1.79 million.
- Ms Annie Villeseche was awarded MSHR Val Asche Prize for academic excellence in 2003.
- Conducted induction session for new research students. This annual session provides new students with relevant institutional information and introduces key MSHR staff.
- Finalised Memoranda of Understanding with University of Queensland, Centre for Remote Health and Flinders University to address key financial arrangements and academic processes, including coursework teaching and research activities. A similar agreement is being finalised with Charles Darwin University.
- Involvement in a collaboration with the University of Melbourne, Queensland University of Technology and Flinders University to develop an appropriate methodology for evaluating the Population Health Education & Research Program (PHERP). In providing a feedback mechanism to the Commonwealth Government, this project considers the impact of ANAPHI as a larger network, comprising many diverse institutions and individual academics and researchers. It will also contribute to informing the next review of PHERP as well as providing a useful tool for advocacy.
- Continued use of online facilities, with the coursework program offering seven units online through the Charles Darwin University Learnline (Blackboard) system. All units will be enhanced by online teaching in 2004.
- Four course units were re-written for delivery in 2003.
- Developed a database to record student evaluations of units and short courses. This allows evaluation forms to be scanned into the database, ensuring easy access to records and the production of reports with summarised student comments. Such reports are invaluable to the planning of education activities.
- Offered a series of three data management workshops to research students for professional development.
- Commenced negotiations with Charles Darwin University for access to the student record system Callista. Introduction of the system in 2004 will allow MSHR to fully manage the admissions and enrolment processes for coursework students.
- Initiated changes to education timetables and course structures as a result of formalised links between MSHR and Charles Darwin University.

ABOVE: Students participate in tutorial sessions during residential week, as part of the Public Health Coursework program. Sixty-five students were enrolled in the program in 2003 (photo courtesy of Education & Training Division, MSHR).

MSHR 2003 Research & Education Report provides detail on all research projects and is available online at www.menzies.edu.au

indigenous forum



Norma Bengler, Interim Convenor
of the Indigenous Forum.

Menzies School of Health Research established the Indigenous Forum to provide a framework for enhanced representation, support and participation of its Indigenous staff and students. The Forum meets regularly to promote the involvement of Indigenous staff in all MSHR activities, and provides targeted professional development opportunities for its members.

The group provides an understanding of local Indigenous history and culture to ensure our research outcomes will be readily accepted by Indigenous communities, and ultimately, to improve the health of Aboriginal people.

This is particularly important, as despite numerous initiatives and programs to improve the health of Indigenous people living in remote communities, there are still major ongoing health problems and disadvantages in health care.

This failure to improve Aboriginal health often stems from a lack of awareness or

knowledge of distinct cultural, language, environmental and economic differences between remote Aboriginal communities and urban Australia. Instead, Indigenous people tend to be viewed as 'non-compliant' to certain available treatments that have been used effectively in urban settings – whereas, in reality, different cultural values and lifestyles means the delivery of these treatments may not work as effectively in an Indigenous setting.

Through the Indigenous Forum, MSHR actively fosters participation and collaboration with Indigenous people throughout the research process. Our aim is to have optimal Indigenous involvement in the design, conduct and participation of research projects that focus on Aboriginal health. Indigenous employees, particularly in research roles, and strong linkages with Indigenous communities are key components of what makes MSHR a unique research organisation.

corporate services division

In a year that generated over 20% increase in research grant income, the Corporate Services Division's challenge was to underpin research efforts with innovative, robust and cost-effective administrative and support services. Our finance, human resources, information technology and operations staff rose to this task to ensure the ongoing operational effectiveness of MSHR.

Key achievements

- In addition to a significant increase in competitive grant income, careful management of funds resulted in a 42% increase in income from interest and dividends.
- Streamlined organisation ensured administration and operational expenses as a percentage of total expenditure were maintained.
- Accurate and timely account processing and production of financial status reports for over 100 research projects to all users of financial information, including research staff and various agencies.
- Commenced decommissioning of selected laboratory space to increase scarce office space for accommodation of project teams.
- Installation of new uninterrupted power supply to manage the power requirements of server/communications equipment.
- Introduction of IPOS: an electronic purchase-ordering module.
- Development of a number of information technology policies to effectively manage IT requirements.
- Management of the ever-present virus threat within MSHR computer systems.
- Development and rollout of a cyclical replacement strategy for desktop, server, network and storage hardware.
- Implementation of a new payroll and human resources system, Aurion, to enhance MSHR's ability to manage our growing complex workforce.
- Improved processes for recruitment and management of workforce. Full-time staff equivalents grew from 79 to 95 in 2003 with employment expenses representing 65% of total expenditure.

collaborations & major partners

In order to advance our research and health education programs, MSHR fosters collaborative links and partnerships with numerous Indigenous stakeholders, health services, Territory and Commonwealth Governments, as well as other research institutions and universities. We collaborate with colleagues and organisations located locally,

interstate and overseas.

Collaborations strengthen the capacity of MSHR to carry out laboratory studies, community-based lifestyle intervention studies, develop effective strategies for training health staff and improving health promotion, as well as work towards prevention and treatment strategies.

MSHR major partners and affiliations include:

☐ Charles Darwin University

Charles Darwin University (CDU), based in Darwin, is a university which addresses issues of particular relevance to the Northern Territory. As of 1 January 2004, MSHR will formalise links with CDU and become a school within the CDU Institute of Advanced Studies, and a controlled entity of the University.

☐ Cooperative Research Centre for Aboriginal Health

MSHR is a core partner and Centre Agent of the CRC for Aboriginal Health (CRAH), a major Commonwealth Government-funded initiative. The CRAH aims to promote high quality research through the development of research partnerships, increased Aboriginal participation and control, as well as offering formal research training opportunities for Aboriginal people.

☐ The Sir Robert Menzies Memorial Foundation

The Sir Robert Menzies Memorial Foundation is a non-profit, non-political organisation created in 1979 to promote excellence in health research, education and postgraduate scholarships for Australians. The Menzies Foundation played a major role in the establishment of MSHR and continues to provide ongoing financial support as well as representation on the MSHR Board.

☐ Northern Territory Government – Department of Health and Community Services

The NT Government provides substantial core funding support to MSHR as well as being an important collaborator on research projects and in the education program.

Acknowledgement of MSHR collaboration partners may also be found on our website at www.menzies.edu.au.

governance

Menzies School of Health Research was established as a cooperative endeavour between the Menzies Foundation, Northern Territory Government and the University of Sydney.

In November 1985 the Northern Territory Parliament passed the *Menzies School of Health Research Act*. This legislation established the School as an independent body corporate, under the control of a governing board. In accordance with the Act, 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 and to an Annual General Meeting of the School. As already noted, the Act was amended in 2003 to reflect formal links with Charles Darwin University, as a controlled entity.

Governing Board



Richard Ryan AO
Chair
(Nominee of the Governing Board)

Mr Ryan is a Fellow of the Institute of Chartered Accountants in Australia, and a Companion of the Institution of Engineers, Australia. He is Chancellor of Charles Darwin University, Chairman of the Northern Territory Tourist Commission Board and a Director of a number of public companies.



Simon Maddocks
BAGSc(Hons) PhD
MAIAST
Deputy Chair
(Nominee of the Menzies Foundation)

Professor Maddocks is the South Australian Chief Scientist, SARDI Livestock Systems, Roseworthy Campus, University of Adelaide. His research interests are in reproductive immunology and cell biology.

Professor Maddocks is a Director of the Board of the Sir Robert Menzies Memorial Foundation, and is the Deputy Chief Executive Officer of the Cooperative Research Centre for Pest Animal Control and a member of its board.



Peter Plummer BSc
GDipMgt GAICD
Treasurer
(Nominee of the NT Minister for Health & Community Services)

Mr Plummer was appointed Chief Executive Officer of the Northern Territory Department of Education, Employment and Training in May 2000. Prior to that Peter was CEO of Territory Health Services for three and a half years. He was previously CEO of NT Mines and Energy after having held senior executive positions in two other economic development departments in the NT. Before coming to the NT he lived and worked in Papua New Guinea for 16 years in the secondary and tertiary education sectors.



Robert Griew
(Nominee of the NT Minister for Health & Community Services, from February 2003)

Mr Griew is Chief Executive Officer of the Northern Territory Department of Health and Community Services and was previously Deputy Director General of the NSW Department of Ageing, Disability and Home Care.

His public service background spans both health and community services – from children's services, disability and aged care to public health and Aboriginal health. He has worked extensively in the Commonwealth Departments of Community Services and Health.



Andrew Coats
MADM (Oxon.) MBBChir
(Cantab.) FRACP FRCP
FESC FACC FAHA MBA
(Nominee of University of Sydney from March 2003)

Professor Coats is currently the Dean of Medicine at the University of Sydney. He is also Chair of the NSW Ministerial Advisory Council on Medical and Health Research and Chair of the Australian Health Information Council. His most recent previous appointments are Director of Cardiology at Royal Brompton Hospital, London, and Viscount Royston Professor of Clinical Cardiology at the National Heart and Lung Institute, Imperial College of Science, Technology and Medicine, London.

Professor Coats was a member of the

Council, British Society of Heart Failure, member of the Cardiology Training Committee, North Thames (West), and part of the Medical Subcommittee of the Hypertrophic Cardiomyopathy Association.



L Valerie Asche AM
MSc PhD FASM MAIBiol
CBiol

(Nominee of the
Governing Board)

Dr Asche, a microbiologist, has been a university academic, an industrial consultant and head of a diagnostic unit. In the Northern Territory she was Head of the Microbiology Unit at the Menzies School of Health Research from 1986–94, a consultant for the Northern Territory Department of Health and Community Services, and is at present editor of *Recent Advances in Microbiology*.

She is also a Board Member of the National Heart Foundation, member of the Darwin Region Institutional Biosafety Committee, Commissioner of Legal Aid, member of the Council of the Ageing, President of ASEA-Rehab, and President of CWA NT. She was previously Chair of the Taskforce into Illicit Drugs in the NT.



Ros Anne Moriarty
(Nominee of the
Governing Board)

Ms Moriarty is Managing Director of The Jumbana Group, an Indigenous design and brand strategy consultancy. Previous career positions include research and administrative posts with the Department of Aboriginal Affairs, The Overseas Service Bureau and Radio Australia.

She has held Board positions with the National Gallery of Australia, the Australian Academy of Design and Australian Major Events.



Bruce Armstrong
AM, FAA, B Med Sc
(Hons), MB BS (Hons),
DPhil (Oxon), FRACP,
FAFPHM
(Ex-officio, Nominee
of the Vice Chancellor
of University of
Sydney)

Professor Armstrong is Associate Dean, Faculty of Medicine, Head of the School of Public Health, and a Medical Foundation Fellow at The University of Sydney.

He graduated in biochemistry and medicine from the University of Western Australia, trained as a physician at the Royal Perth Hospital and as an epidemiologist with Sir Richard Doll at the University of Oxford.

Bruce Armstrong has variously been Professor of Epidemiology and Cancer Research at the University of Western Australia, Commissioner of Health for Western Australia, Deputy Director of the International Agency for Research on Cancer, Director of the Australian Institute of Health and Welfare, and Director of Cancer Research and Registers at The Cancer Council NSW.



Ron McKay BSc PhD
GDIPCOMP GDIPBUS
FAIM
(Nominee of the NT
Minister for
Education)

Professor McKay was Vice-Chancellor of the Northern Territory University from 1996–2002, following a six-year term as Deputy Vice-Chancellor.



Kerin O'Dea BSc PhD
(ex-officio, Director
of Menzies School of
Health Research)

Professor O'Dea is the Director of the Menzies School of Health Research and holds the Chair of Robert Menzies Professor at the University of Sydney. She also has appointments as Honorary

Professor at the University of Melbourne, the University of Queensland, Monash University, and Flinders University. She graduated initially in biochemistry and pharmacology (University of Melbourne). Her current research on lifestyle-related chronic diseases (diabetes, obesity, cardiovascular disease and renal disease) extends from the laboratory to the population, and has a strong emphasis on early intervention.

At the national level, she is a member of numerous committees, including the Council of the National Health and Medical Research Council, Food Standards Australia and New Zealand Board, the Diabetes Research Consultative Committee, the National Diabetes Strategy Group, CSIRO Health Sector Advisory Council, and the Consultative Committee for the National Centre for Epidemiology and Population Health at the Australian National University.

Observers on the Board

SECRETARY TO THE BOARD

Mr Keith White (from Nov 2003)

Mr David Morgan (until Nov 2003)

CRCAH DIRECTOR

Prof Tony Barnes

STAFF REPRESENTATIVE

Dr Peter Fagan

Board committees

The Governing Board was assisted by the following committees:

Finance Committee

Mrs Jane Large (Chair)
Mrs Sue Bradley
Mr Peter Plummer
Mr Brian Slatter
Mr Richard Ryan AO
Prof Kerin O'Dea
Mr David Morgan
(Secretary until
Sept 2003)
Mr Keith White
(Secretary from
Nov 2003)

Audit Committee

Mrs Sue Bradley
(Chair)
Mr Richard Ryan AO
Prof Kerin O'Dea
Mr Peter Plummer
Mr Brian Slatter
Mr David Morgan
(Secretary until
Sept 2003)
Mr Keith White
(Secretary from
Nov 2003)

Darwin Region

Institutional

Biosafety Committee

Mrs Susan Hutton
(Chair)
Dr Valerie Asche
Asoc Prof Karen Gibb
Mr Lodi Hoeben
Dr Gary Lum
Dr Lorna Melville
Dr Anna Padovan
Ms Claire Stretten
(proxy for Karen
Gibb)

Ms Pamela Trotman
Dr Shelley Walton
Miss Gabrielle Falls
(Secretary)

Human Research Ethics Committee of DHCS and MSHR

Ms Jill Huck (Chair)
Ms Jenny Abdilla
Assoc Prof Nick
Anstey
Prof David Brewster
Ms Robyn Cooke
Mr Ian Hillock
Dr Murray Seiffert
Mr Peter Thomsen
Ms Denise Walsh

Dr Shelley Walton
Mr Bob Whitehead
Miss Gabrielle Falls
(Secretary)
Mr Jack McTaggart
(until June 2003)
Ms Brydget Barker-
Hudson (until Aug
2003)
Rev Richard Wallace
(until Dec 2003)

Aboriginal Ethics Subcommittee

Mr Peter Thomsen
(Chair)
Mrs Norma Benger
Mrs Terry Dunbar
Dr Sandra Eades (from
Nov 2003)
Mr Shane Houston
(from Oct 2003)
Mr Shane Motlap
(from Sept 2003)
Ms Joanne
Garnggulkpuy
Dr Michael Lowe
Ms Sandy Kitching
(until April 2003)
Ms Allison
Chamberlain (until
April 2003)

Patrons & members

Official Patron

His Honour Mr John
Anictomatis AO,
Administrator of the
Northern Territory

Patrons

NORTHERN TERRITORY
The Hon Austin Asche AC QC
Mr Djerrkura OAM*

QUEENSLAND
Mr Ron Archer AM

VICTORIA
Sir Gustav Nossal AC CBE
Mr Charles Goode

SOUTH AUSTRALIA
The Hon John Dawkins
Prof Lowitja O'Donoghue
CBE AM
Mr William Scammell CBE

TASMANIA
Dr John Hargrave AO MBE

MSHR Medallion

Recipients

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

Life Members

Dr Keith Fleming
Dr Ella Stack CBE

*Deceased

MSHR honorary appointments

Name	Years	Dates	Details	Level
Bastian, Dr Ivan	3	1/12/2002–1/11/2005	IMVS facilities and expertise in research projects in East Timor and Indonesia	SRF
Cass, Dr Alan	3	5/12/2003–4/12/2006	Research into renal disease in Indigenous populations	SRF
d'Abbs, Dr Peter	3	1/03/2002–1/02/2005	Collaboration on substance abuse	SRF
Daniel, Assoc Prof Mark	3	1/01/2002–1/12/2004	Collaborative links on community-based diabetes project	SRF
Hoy, Prof Wendy	3	5/09/2003–1/08/2006	Renal disease and Indigenous populations	Prof Fellow
Lumb, Mr Richard	3	1/12/2002–1/11/2005	Mycobacteriology at IMVS and IMVS Laboratories for Research in East Timor	RF
Maguire, Dr Graeme	3	1/12/2002–1/11/2005	Continuing collaboration	RF
Price, Dr Ric	3	1/06/2002–1/05/2005	Tropical infectious diseases	SRF
Sayers, Dr Sue	3	1/10/2001–1/09/2004	Aboriginal birth cohort study	SRF
Sriprakash, Dr KS	3	1/06/2001–1/05/2004	Streptococcal vaccine	SRF
Tjitra, Dr Emiliana	3	1/03/2002–1/02/2005	Strengthen ties with Indonesia on infectious diseases	SRF
Wang, Dr Zhiqiang	3	1/02/2003–1/01/2006	Collaborative research on epidemiology	SRF
Weeramanthri, Dr Tarun	3	1/12/2002–1/11/2005	Preventable chronic diseases program in the NT	SRF
White, Dr Neville	3	1/10/2001–1/09/2004	Research Yolngu people of East Arnhem Land	SRF
Yonovitz, Dr Al	3	1/03/2001–1/02/2004	Audiology	RF

publications

1 January – 31 December 2003

Refereed journal articles

Ambrosini GL, Mackerras D, de Klerk NH, Musk AW. Comparison of an Australian food-frequency questionnaire to diet records: Implications for nutrition surveillance. *Public Health Nutrition* 2003;6:415–22.

Bailie RS, Togni SJ, Si D, Robinson GS, d'Abbs PHN. Preventive medical care in remote Aboriginal communities in the Northern Territory: A follow-up study of the impact of clinical guidelines, computerised recall and reminder systems, and audit and feedback. *BMC Health Services Research* 2003;3:15.

Binks M, McMillan DJ, Sriprakash KS. Genomic location and variation of the gene for CRS, a complement binding protein in the M57 strains of *Streptococcus pyogenes*. *Infect Immun* 2003;71:6701–6.

Boutlis CS, Hobbs MR, Marsh RL, Misukonis MA, Tkachuk AN, Lagog M, Booth J, Granger DL, Bockarie MJ, Mgone CS, Levesque MC, Weinberg JB, Anstey NM. Inducible nitric oxide synthase (NOS2) promoter CCTTT repeat polymorphism: relationship to in vivo NO production/NOS activity in a malaria-endemic population. *Am J Trop Med Hyg* 2003;69:569–73.

Boutlis C, Tjitra E, Maniboey H, Misukonis MA, Saunders JR, Suprianto S, Weinberg JB, Anstey NM. Nitric oxide production and mononuclear cell nitric oxide synthase activity in malaria-tolerant Papuan adults. *Infect Immun* 2003;71:3682–9.

Boutlis CS, Lagog M, Chaisavaneeyakorn S, Misukonis MA, Bockarie MJ, Mgone CS, Wang Z, Morahan G, Weinberg JB, Udhayakumar V, Anstey NM. Plasma interleukin-12 in malaria-tolerant Papua New Guineans: Inverse correlation with *Plasmodium falciparum* parasitemia and peripheral blood mononuclear cell nitric oxide synthase activity. *Infect Immun* 2003;71:6354–7.

Boutlis CS, Fagan PK, Gowda DC, Lagog M, Mgone CS, Bockarie MJ, Anstey NM. Immunoglobulin G (IgG) responses to *Plasmodium falciparum* glycosylphosphatidylinositols are short-lived and predominantly of the IgG3 subclass. *J Infect Dis* 2003;187:862–5.

Cairney S, Clough AR, Maruff P, Collie A, Currie BJ. Saccade and cognitive function in chronic kava users. *Neuropsychopharmacology* 2003;28:389–96.

Cairney S, Maruff P, Clough AR, Collie A, Currie

J, Currie BJ. Saccade and cognitive impairment associated with kava intoxication. *Human Psychopharmacology: Clinical & Experimental* 2003;18:525–33.

Cass A, Cunningham J, Snelling P, Wang Z, Hoy W. Renal transplantation for Indigenous Australians: Identifying the barriers to equitable access. *Ethnicity & Health* 2003;8:111–19.

Cass A, Cunningham J, Snelling P, Ayanian JZ. Late referral to a nephrologist reduces access to renal transplantation. *Am J Kidney Dis* 2003;42:1043–9.

Cass A, Cunningham J, Snelling P, Wang Z, Hoy W. Urban disadvantage and delayed nephrology referral in Australia. *Health and Place* 2003;9:175–82.

Cheng AC, Stephens DP, Currie BJ. Granulocyte colony stimulating factor as an adjunct to antibiotics in the treatment of pneumonia in adults (Protocol). *Cochrane Database of Systematic Reviews* 2003;issue 3.

Cheng AC, Hanna J, Norton R, Hills SL, Davis J, Krause VL, Dowse G, Inglis TJ, Currie BJ. Melioidosis in northern Australia, 2001–02. *Communicable Diseases Intelligence* 2003;27:272–7.

Cheng AC. 'Self-experimentation' in vulnerable populations. *Med J Aust* 2003;178:471.

Cheng AC, Hanna J, Norton R, Hills SL, Davis J, Krause VL, Dowse G, Inglis TJ, Currie BJ. Melioidosis in northern Australia, 2001–02. *Communicable Diseases Intelligence* 2003;27:272–7.

Clough AR, Wang Z, Bailie RS, Burns CB, Currie BJ. Case-control study of the association between kava use and pneumonia in eastern Arnhem Land Aboriginal communities (Northern Territory, Australia). *Epidemiol Infect* 2003;133:627–35.

Clough AR, Jacups SP, Wang Z, Burns CB, Bailie RS, Cairney SJ, Collie A, Guyula T, McDonald SP, Currie BJ. Health effects of kava use in an eastern Arnhem Land Aboriginal community. *Internal Medicine Journal* 2003;33:336–40.

Clough AR, Bailie RS, Currie BJ. Liver function tests abnormalities in users of aqueous kava extracts. *J Toxicol-Clin Toxicol* 2003;41:821–9.

Condon JR, Armstrong BK, Barnes A, Cunningham J. Cancer in Indigenous Australians: A review. *Cancer Causes and Control* 2003;14:109–21.

Currie BJ. Editorial: Snakebite in Australia: Moving from anecdotes to prospective studies. *Emerg Med* 2003;15:406–8.

Currie BJ, Jacups SP. Intensity of rainfall and severity of melioidosis, Australia. *Emerg Infect Dis* 2003;9:1538–42.

Currie BJ, Clough AR. Kava hepatotoxicity with Western herbal products: Does it occur with traditional kava use? *Med J Aust* 2003;178:421–2.

Currie BJ. Marine Antivenoms. *J Toxicol-Clin Toxicol* 2003;41:301–8.

Currie BJ. Melioidosis: An important cause of pneumonia in residents of and travellers returned from endemic regions. *European Resp J* 2003;22:542–50.

Davis JS, Currie BJ, Fisher DA, Huffam SE, Anstey NM, Price R, Krause VL, Zweck N, Lawton PD, Snelling PL, Selva-Nayagam S. Prevention of opportunistic infectious in immunosuppressed patients in the tropical Top End of the Northern Territory. *Communicable Diseases Intelligence* 2004;27:526–32.

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Edwards ML, Fagan PK, Smith-Vaughan H, Currie BJ, Sriprakash K. Strains of *Streptococcus pyogenes* from severe invasive infections bind HEp2 and HaCaT cells more avidly than strains from uncomplicated infections. *J Clin Microbiol* 2003;41:3936–8.

Elliott JH, Currie BJ. *Burkholderia pseudomallei* mycotic aneurysm. *Int J Med* 2003;33:323–4.

Elliott JH, Carson P, Currie BJ. Images In Medicine: *Burkholderia pseudomallei* mycotic aneurysm. *Intern Med J* 2003;33:323–4.

Fischer K, Holt DC, Wilson P, Davis J, Hewitt V, Johnson M, McGrath A, Currie BJ, Walton SF, Kemp DJ. Normalization of a cDNA library cloned in lambda ZAP by a long PCR and cDNA reassociation procedure. *Biotechniques* 2003;34:250–4.

Fischer K, Holt DC, Harumal P, Currie BJ, Walton SF, Kemp DJ. Generation and characterization of cDNA clones from *Sarcoptes scabiei* var *hominis* for an expressed sequence tag library: Identification of homologues of house dust mite allergens. *Am J Trop Med Hyg* 2003;68:61–4.

Harumal P, Morgan M, Walton SF, Holt DC,

- Rode J, Arlian LG, Currie BJ, Kemp DJ. Identification of a homologue of a house dust mite allergen in a cDNA library from *Sarcoptes scabiei* var *hominis* and evaluation of its vaccine potential in a rabbit/*S scabiei* var *canis* model. *Am J Trop Med Hyg* 2003;68:54–60.
- Hoy WE, Douglas-Denton RN, Hughson MD, Cass A, Johnson K, Bertram JF. A stereological study of glomerular number and volume: Preliminary findings in a multiracial study of kidneys at autopsy. *Kidney Int Suppl* 2003;S31–S37.
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- Li S, Cass A, Cunningham J. Cause of death in patients with end stage renal disease: Assessing concordance of death certificates with registry reports. *Aust NZ J Public Health* 2003;27:419–24.
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- McDonald SP, Maguire GP, Hoy WE. Renal function and cardiovascular risk markers in a remote Australian Aboriginal community. *Nephrol Dial Transplant* 2003;18:1555–61.
- Piers LS, Walker KZ, Stoney RM, Soares MJ, O'Dea K. Substitution of saturated with monounsaturated fat in a 4-week diet affects body weight and composition of overweight and obese men. *Brit J Nutr* 2003;90:717–27.
- Piers LS, Rowley KG, Soares MJ, O'Dea K. Relationship of adiposity and body fat distribution to body mass index in Australians of Aboriginal and European ancestry. *Eur J Clin Nutr* 2003;57:956–63.
- Robinson G, d'Abbs P, Togni S, Bailie RS. Aboriginal participation in health service delivery: Coordinated Care Trials in the Northern Territory of Australia. *Int J Healthcare Technology Et Management* 2003;5:45–62.
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- Rowley KG, Lee AJ, Yarmirr D, O'Dea K. Homocysteine concentrations lowered following community-based dietary intervention among Aboriginal people. *Asia Pacific J Clin Nutr* 2003;12:92–5.
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- White J, Warrell D, Eddleston M, Currie BJ, Whyte IM, Isbister GK. Clinical toxicology: Where are we now? *J Toxicol-Clin Toxicol* 2003;41:263–76.
- In press**
- Cheng AC, Jacups SP, Anstey NM, Currie BJ. A proposed scoring system for predicting mortality in melioidosis. *Trans Royal Soc Trop Med Hyg*
- Cheng AC, Mayo MJ, Gal D, Currie BJ. Chlorination and pH of drinking water do not correlate with rates of melioidosis in the Northern Territory, Australia. *Trans Royal Soc Trop Med Hyg*.
- McCarthy JS, Kemp DJ, Walton SF, Currie BJ. Scabies: More than just an irritation. *Postgrad Med J*.
- Walton SF, McKinnon M, Pizzutto S, Dougall A, Williams E, Currie BJ. Acaricidal activity of *Melaleuca alternifolia* (tea tree) oil: In vitro sensitivity of *Sarcoptes scabiei* var *hominis* to terpinen-4-ol. *Arch Dermatol*.

Books

- Robinson G, Bailie R, Wang Z, Snelling P, Kondalsamy-Chennakesavan S. A Follow-up Study of Outcomes of the Tiwi Renal Treatment Program. Darwin: NTUniprint, Northern Territory University, 2003.

Book chapters

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- Currie BJ, McGougan BK. Skin infections and infestations. In: Couzos S, Murray R eds. *Aboriginal Primary Health Care: An Evidence-Based Approach*, Melbourne: Oxford University Press, 2003;369–83.

In press

- Currie BJ. Melioidosis and Glanders. In: Mandell Bennett P, Dolin Elsevier D eds. *Principles and Practice of Infectious Diseases*.

Reports

- Clark LA, Bettison PK. Connecting Youth: Snapshot of Vocational Education Participation by Indigenous Youth in Remote NT. Darwin: Menzies School of Health Research, 2003.
- Hii J, Anstey NM, D'Souza L. The Agusan del Sur Malaria Control and Prevention Project: Report of IV Project Review. AusAID, Canberra, November 2003.
- Thomsen P. Using Your Senses . . . to Make Sense. Darwin: Cooperative Research Centre for Aboriginal and Tropical Health, 2003;1–20.
- Currie B. Tropical Health in the Top End: An

introduction for health practitioners. Top End Division of General Practice, 2003.

Walton SF. *Sarcoptes scabiei* var *hominis* Acaricide Sensitivity Testing: A report for Cawarra Cosmetics Pty Ltd. Darwin: Menzies School of Health Research, 2003.

Letters

Laming A, Currie BJ. Letter: Trachoma: Response to Ewald et al. (Med J Aust;178:65–8). Med J Aust 2003;179:117.

Gruen R. Letter: Indigenous surgical admissions. ANZ J Surg 2003;73:1061.

Hobbs MR, Levesque MC, Anstey NM, Granger DL, Weinberg JB. Letter: Increased nitric oxide production and protection from malaria [authors' reply]. Lancet 2003; 361:610–11.

Non-refereed journal articles

McDonald M. Rheumatic fever and streptococcal pyoderma: Searching for a link. The Northern Territory Disease Control Bulletin 2003;10:11–12.

Currie B. Environmental hazards and the field naturalist. Northern Territory: Newsletter. Nature Territory–NT Field Naturalists Club June 2003:8–10.

Significant invited presentations

Anstey N. The drug resistance crisis: What treatment regimens are affordable in the Asia-Pacific region? Annual Scientific Meeting: Australasian Society for Infectious Diseases, Canberra, March 2003.

Anstey N. Arginine: A new treatment for malaria? Institute of Child Health Research, Adelaide, December 2003.

Anstey N. Nitric Oxide NOS2, arginine and malaria. Victorian Malaria Research Network, Melbourne, November 2003.

Anstey N. Lung injury in malaria. Department of Medicine, University of Melbourne, Melbourne, November 2003.

Anstey N. Recent advances in the pathophysiology and treatment of severe malaria. National Institute of Health Research and Development, Jakarta, Indonesia, August 2003.

Anstey N. Recent advances in the pathophysiology of severe malaria. IX National Congress of the Indonesian Association Tropical and Infectious Diseases, Mando Indonesia, August 2003.

Baillie RS. IHousing improvements and child health in remote Indigenous communities. International Meeting on Housing and Health Research, University of Otago Medical School, Wellington, New Zealand, 12 February, 2003.

Brown A. The context of Indigenous cardiovascular diseases. Reducing time to care for patients with AMI. Cardiac Society of Australia and New Zealand/National Heart Foundation of Australia, Melbourne, November, 2003.

Condon J. Cancer in Indigenous Australians. First Nations Cancer Research and Surveillance Workshop, Ottawa, Canada, October, 2003.

Currie B. Antibiotic prescribing in the Top End: Why is it different? Antimicrobials 2003 Conference, Melbourne, 2 May, 2003.

Currie B. Global warming, environmental change and infectious disease in tropical northern Australia. Public Health Department Grand Rounds, Emory University, Atlanta Georgia, USA, 8 October, 2003.

Currie B. An update of melioidosis and the Darwin prospective melioidosis study. Meningitis and Special Pathogens Branch, National Centre for Infectious Diseases, Centres for Disease Control, Atlanta, Georgia, USA, 9 October, 2003.

Currie B. Melioidosis, cryptococcosis and tigers in tropical northern Australia. Infectious Diseases Grand Rounds, Duke University Medical Centre, Durham, North Carolina, USA, 3 November, 2003.

Currie B. Infectious diseases, Indigenous health and global warming in tropical Australia. Grand Rounds, University of Minnesota Medical School, Minneapolis, USA, November, 2003.

Currie B. Emerging infectious diseases in tropical Australia. Grand Rounds, Walter Reed Army Medical Center, Washington DC, USA, 12 December, 2003.

Fagan P. Shifting sands: Problems in understanding group A streptococcal disease in tropical Australia. MicroNZ 2003, Auckland, New Zealand, September 2003.

O'Dea K. Approaches to risk reduction and prevention: Australia and Asia. International Diabetes Federation Workshop, Type 2 Diabetes in the Adolescent: the evolving epidemic, Santa Monica, California, USA, 7–9 February, 2003.

O'Dea K. Diet and the prevention of vascular disease. National Endocrinologist and Nephrologists Meeting, Sydney, 25–27 July, 2003.

O'Dea K. Guidelines for the prevention of type 2 diabetes: Gaps in the knowledge. Australian Centre for Diabetes Strategies, Guidelines Gaps Workshop, Sydney, 3 February, 2003.

O'Dea K. Epidemiology of diabetes in the Aboriginal population. University of Manitoba Diabetes Symposium, Winnipeg, Manitoba, Canada, 13–17 May, 2003.

Price R. What is new in the chemoprophylaxis of malaria? Annual Meeting of the Australasian Society for Infectious Disease, Canberra, 23 March, 2003.

Price R. Artemisinin derivatives: The role of combination therapy. 8th Conference of the International Society of Travel Medicine, New York, USA, 8 May, 2003.

Price R. Therapeutic options in malaria treatment. Symposia on 'Malaria Insurance for the World's Travellers': 8th Conference of the International Society of Travel Medicine, New York, USA, 9 May, 2003.

Price R. New drugs and drug combinations in

malaria. 9th National Congress of Tropical and Infectious Diseases, Manado, Indonesia, 10 August, 2003.

Other major conference presentations

Currie BJ. Marine Envenoming in Tropical Australia. Australian College for Emergency Medicine: Winter Symposium: Clinical risk management toxicology update. Melbourne, Hotel Sofitel, 19–21 June, 2003.

Currie BJ. The molecular epidemiology of melioidosis in tropical Australia. 58th International Conference on Diseases in Nature Communicable to Man, Northern Arizona University, 2–6 August, 2003.

Gruen RL, McDonald EL, Morris PS, Baillie RS. Global evidence and global relevance: The double-bind in systematic reviews. Annual Cochrane Colloquium, Barcelona, Spain, October, 2003.

Mackerras D, Singh GR. Are haemoglobin and haematocrit interchangeable indicators of anaemia prevalence in Australian Aboriginal adolescents? INACG Symposium, Marrakech, Morocco, 6–7 June, 2003.

Maguire G, Gal D, Dasari P, Pond J, Nasir M, Currie B. The role of bacterial infection in Indigenous Australians with COPD living in remote communities. Thoracic Society of Australia and New Zealand, 4–9 April, 2003.

Morris PS, Leach AJ, Wilson C, Baillie RS. The effect of additional hygiene practices on rates of bacterial cross-infection and respiratory illness in Australian child care centres: A randomised controlled trial. 15th Conference of the International Society for Environmental Epidemiology, Perth, Western Australia, 23–26 September, 2003.

Morris PS, Leach AJ, Wilson C, Baillie R. Additional training in recommended hygiene practices for the prevention of bacterial cross-infection and respiratory illness in Australian child care centres: A randomised controlled trial. 8th International Symposium on Otitis Media, Hobart, October, 2003.

Schupp J, Cardon M, Pearson T, Huynh L, Smith K, Robinson R, Currie B, Okinaka R, Deschazer D, Keim, P. *Burkholderia pseudomallei* multilocus VNTR analysis: Development and analysis of globally and locally distributed isolates. 58th International Conference on Diseases in Nature Communicable to Man, Northern Arizona University, 2–6 August, 2003.

research funding

Competitive Research Grants awarded during 2003

Details of ongoing MSHR funding is available online at www.menzies.edu.au

Funder	Chief investigator(s)	Grant type	Title	Term funded	Total funds
Australian Tuberculosis Research Group	GRACE Jocelyn; KRAUSE Vicki	Project	Reasons for non-starting, non-acceptance and non-compliance with latent tuberculosis infection (LTBI) treatment in a remote Aboriginal community in the Northern Territory	1/07/2003– 30/06/2004	\$17,003
CardioVascular Lipid (Pfizer)	BROWN Alex; CURRIE Bart; WEERAMANTHRI, Tarun	Project	Comparison of the quality and outcomes of secondary prevention for Indigenous and non-Indigenous patients after acute coronary syndromes in the Northern Territory	1/01/2004– 31/12/2004	\$50,000
Channel 7 Children's Research Foundation of SA	FAGAN Peter; CURRIE Bart	Project	Screening of a human heart cDNA library using sera from a patient with rheumatic fever	1/07/2003– 30/06/2004	\$38,000
Community Health and Tuberculosis Australia	KELLY Paul M; ANSTEY Nicholas M; MAGUIRE Graeme	Project	The Mimika pulmonary disability in TB patients study (Year 2)	1/01/2004– 31/12/2004	\$42,550
Department of Health & Community Services	BAILIE Ross S	Project	Housing Improvement and Child Health Study (HICH)	20/04/2004– 16/04/2004	\$59,344
National Health & Medical Research Council	BAILIE Ross S	Fellowship	Fellowship in Indigenous Environmental Health and Health Services Research	1/01/2004– 31/12/2008	\$571,250
National Health & Medical Research Council	CAIRNEY Sheree	Training Fellowship	The development of culturally appropriate cognitive assessments with applications in substance abuse and mental health with Indigenous clients	1/07/2004– 30/06/2008	\$259,000
National Health & Medical Research Council	CUNNINGHAM Joan; ANDERSON Ian; BAILIE Ross; LEWIS Jennifer; BARNES Anthony	Capacity Building	Building capacity in policy relevant, quantitative, social analysis and research in Indigenous health	1/01/2004– 31/12/2008	\$2,437,000
National Health & Medical Research Council	CUNNINGHAM Joan	Career Development Award	Social and system determinants of Indigenous health	1/01/2004– 31/12/2008	\$467,500
National Health & Medical Research Council	EADES, Sandra	Training Fellowship	Utilisation of complex epidemiological studies and advanced statistical methods, to explore causal pathways to illness and health among Indigenous children and adolescents	1/01/2004– 31/12/2007	\$291,000
National Health & Medical Research Council	GADIL Edna	Scholarship	Chronic suppurative otitis media in Aboriginal children: Opportunities for improved health outcomes	1/01/2004– 31/12/2005	\$58,978
National Health & Medical Research Council	LEACH Amanda J	Career Development Award	Reducing the burden of infectious disease in young Aboriginal children: An evidence-based, multidisciplinary approach	1/03/2004– 28/02/2009	\$426,250
National Health & Medical Research Council	LLOYD Jane	Scholarship	Designing and trialling health interventions with an urban Indigenous population	1/01/2004– 31/12/2006	\$61,452
National Health & Medical Research Council	MAPLE-BROWN Louise	Scholarship	Non-invasive assessment of vascular function in urban, rural and remote-dwelling Indigenous Australians: Impact of diabetes and dyslipidaemia	1/07/2003– 30/06/2004	\$56,864
National Health & Medical Research Council	NAGEL Tricia	Scholarship	Development of a relapse prevention protocol for Indigenous people with chronic mental illness in remote communities	1/01/2004– 31/12/2006	\$88,467
National Health & Medical Research Council	O'DEA Kerin; SNELLING Paul; CASS Alan	Project	A randomised trial of fish and fruit to improve survival of Aboriginal people with end-stage renal disease	1/01/2004– 31/12/2006	\$487,500
National Health & Medical Research Council	SMITH-VAUGHAN Heidi C	Training Fellowship	Applying molecular public health in Indigenous communities: Linking research to outcomes	1/01/2004– 31/12/2007	\$129,500
National Health & Medical Research Council	WALTON Shelley; McCARTHY James; CURRIE Bart; HOLT Deborah	Project	Investigating the molecular basis of emerging drug resistance in scabies mites	1/01/2004– 31/12/2006	\$506,625
National Health & Medical Research Council	WALTON Shelley; O'HEHIR Robyn; KEMP David; CURRIE Bart; ROLLAND Jennifer	Project	Characterisation of immune responses to <i>Sarcoptes scabiei</i> cysteine proteases, group 1 allergen homologues, in scabies	1/01/2004– 31/12/2006	\$465,750
National Health & Medical Research Council & Wellcome Trust	ANSTEY Nicholas M; TJITRA Emiliana; PRICE Ric; HARIJANTO Paul; SLY Peter; KEVAU Isi	Collaborative Research	Research and training to reduce morbidity and mortality from malaria in Papua (Indonesia) and Papua New Guinea	1/01/2004– 31/12/2008	\$1,649,830
National Heart Foundation	McDONALD Malcolm; CARAPETIS, Jonathon; BENGER Norma; CURRIE Bart	Project	Towards a new prevention strategy for rheumatic fever: The role of streptococcal skin infection in the pathogenesis of rheumatic heart disease	1/01/2004– 31/12/2005	\$1,502,089
National Heart Foundation	BROWN Alex	Scholarship	Men, hearts and minds: Exploring the links between psychosocial stress, depression and coronary heart disease in Indigenous men from Central Australia	1/01/2004– 31/12/2005	\$100,000
The Clive and Vera Ramaciotti Foundations	CUNNINGHAM Joan	Equipment	DRUID equipment package	1/01/2004– 31/12/2004	\$60,609
					\$22,822

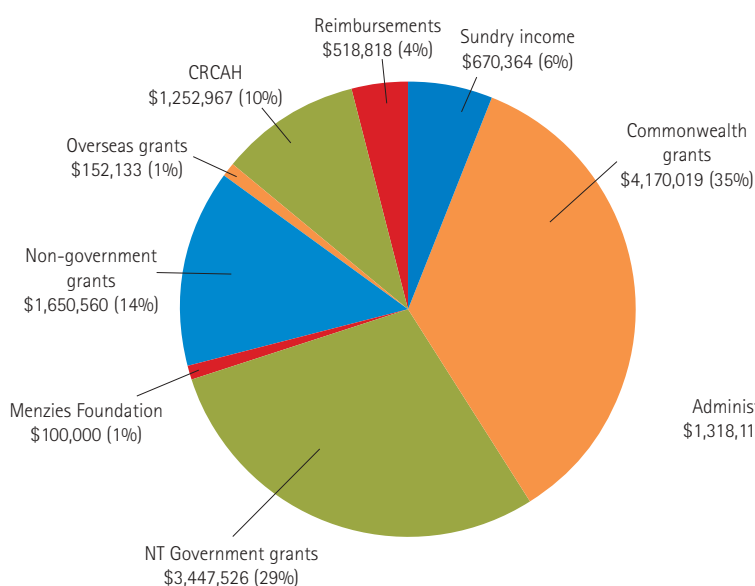
financial overview

1 january 2003 – 31 december 2003

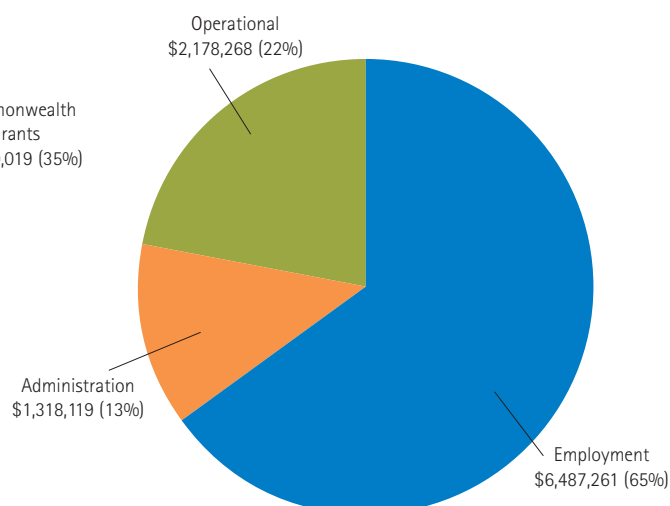
	2003	2002	% Change	Notes
Income	\$11,968,593	\$9,941,384	20.39%	1
Expenditure	\$9,983,649	\$8,425,127	18.49%	2
Net surplus	\$1,984,944	\$1,516,257	30.91%	3
Net assets	\$7,900,364	\$5,818,042	35.79%	
Staff (full-time equivalents)	95	79	20.25%	2

- 1 Increase in income is attributable to a 21.5% increase in grant income. In accord with our accounting policy, all income is recognised in the year of receipt, not the year in which it is to be expended.
- 2 Increase is directly related to increase in grant income.
- 3 Audited net surplus includes revenue received for research projects that have a life beyond the end of the financial year.

Income



Expenditure



Donations

Estate of the late Mr Charles McKay	\$20,000
Tudor Foundation	\$15,175
Mr & Mrs Maple-Brown	\$5,000
Mrs Sheila Frey	\$1,000
Reserve Bank of Australia	\$1,000
Dr Val Asche	\$150
Anne Hayward	\$100
Dr Ella Stack	\$100

Copies of the Menzies School of Health Research audited 2003 Financial Statements are available at our website: www.menzies.edu.au or by phoning Menzies School of Health Research on 08 8922 8196

For further information

Professor Kerin O'Dea	Director	(08) 8922 8605
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Amelia Turner, Untitled, 2003, acrylic on canvas,
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