

# ANNUAL REPORT 2016



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

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

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# Director and Chairman's message

2016 marked an important period of consolidation for Menzies. Our researchers continued to be recognised as leaders in their fields, receiving prestigious awards and funding for new and important projects.

We also received our most significant philanthropic support to date, with over \$4 million committed to sustain our research programs. In addition, the Northern Territory (NT) Government provided \$5 million of additional funding to support our work in the Territory.

In October, the *Menzies School of Health Research Act* was amended to include a move to a skills-based board. The new board structure and our new strategic plan, *Menzies 2021*, will position us as leaders in our sector.

## Highlights

Our work continued to inform and influence policy decisions and practices. Some of these include:

- Malaysia's national malaria treatment guidelines were updated based on findings from our recent malaria study in Sabah.
- The American College of Chest Physicians guidelines (2016-17) were updated to include results from a study on chronic cough in children led by Menzies.
- The first cohort of community-based researchers graduated with a Certificate II in Community Health Research.
- The Darwin Prospective Melioidosis Study recorded the 1000th consecutive case of melioidosis in the NT. The 27-year study has informed international guidelines for diagnosis and treatment of melioidosis.
- Our research informed the 2016 national campaign 'Don't make smokes your story'.
- We hosted the inaugural World Indigenous Cancer Conference (WICC) in Brisbane.

## Our priorities

Our new five-year strategic plan, *Menzies 2021*, will be launched in 2017. The plan will provide a strong foundation to ensure we continue to be regarded as leaders in Indigenous and tropical health research, achieve excellence in research translation and impact, and remain a strong and resilient organisation.

## Our people

Menzies' most vital asset is its people. Our staff are proof world-class research can be conducted in northern Australia, and the results translated to change health service delivery.

We thank the members of the Menzies Board who give generously of their time and expertise.

During the year, a number of longstanding members retired from the Board: The Honourable Clare Martin; The Honourable Justice Hilary Hannam; Professor David Celermajer AO; Professor Len Notaras AM; Professor Sharon Bell and Mr Robert Wells. We would like to acknowledge their significant contribution to Menzies. In October, we were pleased to welcome new Board member, Mr Trevor Riley, who brings a depth of expertise and enthusiasm as the former Chief Justice of the NT.

## Our thanks

During the year, our researchers published major findings which have the potential to transform global health outcomes. However, it is important to recognise that these results were not achieved by us alone.

One of our greatest strengths lies with our partnerships. Our engagement with Charles Darwin University (CDU), the NT Government, health services, and communities here in the NT and across the region is essential to our success.

We thank everyone who supported us throughout 2016 and welcome those of you who joined us for the first time. Your support of our programs is critically important.

We look forward to 2017 as we continue to work together to advance access to essential healthcare and improve health outcomes.

**Director, Professor Alan Cass  
Chair of the Menzies Board, Mr Peter Plummer**



Professor Alan Cass and Mr Peter Plummer.



# Our Board



**Mr Peter Plummer  
Board Chair**

Prior to retirement, Peter spent forty years working in the public service in Papua New Guinea (PNG) (16 years) and the NT (25 years).

He was founding Principal of Batchelor College and subsequently deputy secretary of Primary Industries and Fisheries then Industries and Development. Then followed appointments as chief executive officer of Mines and Energy, Health and Community Services, and finally Education.

He has also served on many boards and committees including Chair of Cullen Bay Management Committee, National Curriculum Corporation, CDU Council, and CDU Strategic Positioning Project.

He has also had significant experience within the government and private sectors of Malaysia, Indonesia, Thailand, Philippines, along with 'minerals and energy sectors' of the United States of America and France.



**Ms Donna Ah Chee  
Board Deputy Chair**

Donna is the chief executive officer of the Central Australian Aboriginal Congress Aboriginal Corporation, the Aboriginal community controlled primary health care service in Alice Springs.

She is a Bundjalung woman from the far north coast of New South Wales (NSW) and has lived in Alice Springs for over 25 years.

She has been actively involved in Indigenous affairs for many years, especially in the area of Indigenous adult education and Indigenous health.

She convened the Workforce Working Party under the NT Aboriginal Health Forum, was Chairperson of the Central Australian Regional Indigenous Health Planning Committee, a member of the NT Child Protection External Monitoring Committee and jointly headed up the NT Government's Alcohol Framework Project Team.

She currently sits on the National Drug and Alcohol Committee and at a local level, represents the Congress on the People's Alcohol Action Coalition.



**Mr Richard Ryan AO  
Board Treasurer**

Richard is currently director of a number of public and government boards including the NT Treasury, the Australian Government Solicitor's Advisory Board and the Adelaide Festival.

He is the Chairman of Editure, Chair of Aussep Holdings Ltd and Deputy Chancellor of CDU.

He is a member of the NT Treasury Corporation Advisory Board, Attorney Generals Audit and Risk Management Advisory Board and a director of several other public and private companies.

A recipient of the Australia Day Honours on three occasions, he was made a member of the Order of Australia in 1989 for Services to the Community and was made an Officer of the Order of Australia in 1998 for Services to Indigenous People.

He is a Fellow of the Institute of Chartered Accountants, a Companion of the Institution of Engineers Australia and a Companion of the Institute of Management (UK).



### Professor Alan Cass

Professor Cass has been the Director of Menzies since 2012.

He is currently a board member for Top End Health and Hospital Services, the NT Heart Foundation, Australian Clinical Trials Alliance and Australian Spinal Cord Injury Network.

He is a kidney specialist with a particular interest in the prevention and management of chronic disease and Indigenous health.

His research has focused on developing, implementing and evaluating effective strategies to improve health outcomes.



### Mr Ken Davies

Ken is currently the chief executive officer of Territory Families and a member of the CDU Council.

He has previously held chief executive officer roles with NT departments of Education; Lands, Planning and Environment; Housing, Local Government and Regional Services, and was the deputy chief executive of the Department of the Chief Minister.

He is a former chair of the NT Board of Studies, and former NT Principal's Association President. He has also held appointments to the boards of the Australian Children's Television Foundation, the Waterfront Development Corporation and the Land Development Corporation.



### Mr Rowan Johnston

Rowan is a Sydney-based corporate advisor and is currently the Managing Director of C42 Consulting, a private advisory firm.

He previously spent almost 30 years as an investment banker and corporate advisor in senior roles with Greenhill & Co. Australia (formerly Caliburn) and Deutsche Bank in Australia and Hong Kong.

He continues to advise a range of private and public sector clients on corporate and financial issues, including equity capital markets, and has advised a range of Australian and overseas governments and their agencies on strategic, infrastructure and financial matters, such as the NBN and the CBA3 and Telstra 3 sales.



### Professor Sharon Bell Until 7 March 2016

Professor Bell's background is as a senior academic administrator, a documentary filmmaker and an anthropologist.

Professor Bell holds a PhD from the University of Sydney in the discipline of Anthropology. She has worked with international agencies such as the World Bank, the Sri Lankan University Grants Commission and AusAid on institutional capacity building projects.

She is currently a recipient of an Australian Research Council Grant on Women in the Scientific Research Workforce. She also continues the research on post-colonial Sri Lanka that commenced with her doctoral studies in anthropology.



### The Honourable Clare Martin Until 30 June 2016

In 2001 Clare Martin led the Labor Party to its first ever victory in the NT. Clare was Chief Minister for over six years, and during that time held a number of ministries including Treasury, Police, Asian Relations and Trade, Arts and Museums, Indigenous Policy and Tourism.

Following her 13 years in politics, Clare was CEO of the Australian Council of Social Service, and then Professorial Fellow at the Northern Institute of CDU. During her years at CDU, Clare co-wrote, with Dr Mickey Dewar, 'Speaking for yourself', reflections from eight Territory leaders on the challenges of being a chief minister of a territory rather than a premier of a state.

Before entering politics, Clare was, for a period of 17 years, a broadcaster and journalist with the ABC in Sydney, Canberra and Darwin.

Clare is currently the principal of Clare Martin and Associates - a media business, director of a number of Territory and national organisations and businesses, and is slowly writing her second book on Territory politics.



### Professor David Celermajer AO Until 16 October 2016

Professor Celermajer AO has extensive experience in research in cellular/molecular biology, animal models of heart disease, clinical research, clinical trials, public health research and developing world research. He has active research collaborations in England, Finland, France, India, China, Indonesia and Africa.

His current positions are: Scandrett Professor of Cardiology and Head of Discipline of Cardiology, University of Sydney; Director of Echocardiography and Academic Cardiologist, Royal Prince Alfred Hospital; Director of Adult Congenital Heart Services, Royal Prince Alfred Hospital; Director of Pulmonary Hypertension Services, Royal Prince Alfred Hospital and Clinical Director, The Heart Research Institute, Sydney.



### Professor Simon Maddocks

Professor Maddocks is the Vice-Chancellor and President of CDU. He has extensive leadership experience at senior levels of both academia and government. He was formerly with the Department of Primary Industries & Regions, South Australian (SA) Research and Development Institute (2003-2014), most recently as Director Science Partnerships.

He has a strong record of working closely with industry partners, and has held both senior management and board positions on a number of national research bodies including Cooperative Research Centres, the national Primary Industries Standing Committee's (PISC) Research and Development Committee, and with organisations such as the Menzies Foundation and Menzies.



### Mr Trevor Riley Appointed 17 October 2016

Prior to retirement in 2016, Trevor was the Chief Justice of the Supreme Court of the NT.

He served on the Supreme Court for some 18 years. During his tenure as Chief Justice, he was outspoken about cuts to legal aid, high imprisonment rates and addressing alcohol abuse.

He was appointed as Queen's Counsel in 1989, sworn in as a judge in 1999 and was also the president of the NT Bar Association between 1993 and 1997.

His other roles include being a long term Director of St John Ambulance (NT), a member of the Board of the Foundation of Alcohol Research and Education and the Chair of the AFLNT Appeals Board.



### The Honourable Justice Hilary Hannam Until 16 October 2016

The Honourable Justice Hilary Hannam has practised as a solicitor in private practice, was a principal legal officer with the Commonwealth Director of Public Prosecutions for 13 years, and since 2000 has been a magistrate.

She presided in the Local Court of NSW from 2000 until August 2010 when she was appointed as the Chief Magistrate of the NT. Hilary has recently returned to NSW to preside in the Family Court of Australia, Parramatta Registry. She has a particular interest in therapeutic jurisprudence and problem-solving or solution focused courts, having travelled to the United States in 2002-2003 as a Churchill Fellow to investigate specialist courts, and having been the magistrate in the NSW Youth Drug and Alcohol Court for four years prior to her appointment in the NT.



### Professor Len Notaras AM Until 16 October 2016

Professor Notaras AM is the Executive Director of the National Critical Care and Trauma Response Centre. He was a strategic founder of the NCCTRC and was appointed to the position in 2009.

Professor Notaras was previously Chief Executive of the NT Department of Health, the largest single employer in the Northern Territory from 2014 to 2016.

Prior to this, Professor Notaras spent 15 years at Royal Darwin Hospital (RDH), first as Medical Superintendent (1994-2001) and then as General Manager (2001-2009). During this time, RDH dealt with a number of crises, including the evacuation of East Timor in 1999, the Bali bombings in 2002 and 2005, the 2004 Indian Ocean tsunami, the Ashmore Reef incident in 2009 and the retrieval and treatment of then President of Timor-Leste Dr Jose Ramos-Horta following the assassination attempt on his life in 2008. In 2002, RDH received nearly 100 victims of the Bali bombings, 70 of whom were critically injured. For his service in jointly coordinating the medical assistance provided by the RDH to the victims of the bombings, Professor Notaras was appointed a Member of the Order of Australia in 2003.



### Mr Robert Wells Until 16 October 2016

Robert Wells heads policy for research assets at the Sax Institute in Sydney. This role involves overseeing the management and development including the Secure Unified Research Environment (SURE) which provides capacity for researchers to access linked patient data for research purposes. He is also involved in programs to build links between researchers and policy makers and to enhance the availability of research knowledge in informing policy.

Prior to joining the Australian National University in 2004, Robert was a senior executive in the Federal Health Department for over 20 years. He held a wide range of policy areas over that time including programs for chronic disease, health workforce, rural health, health and medical research and private health insurance.

Robert has extensive experience in facilitating the take-up of evidence in developing sound policies. He advises government agencies, non-government organisations and the private sector in policy areas. He has represented Australia at meetings and conferences overseas and has established global research collaborations in health policy areas.

# Corporate governance

Menzies is an independent body corporate established under the *Menzies School of Health Research Act*, and has its own Board. Menzies is a controlled entity of CDU.

Menzies is required to present an annual report and audited annual financial statements to an annual general meeting.

Menzies financial statements are subject to audit by the Auditor-General of the NT.

In October 2016, the *Menzies School of Health Research Act* was amended. The amendments, amongst other things, transition Menzies to a skills-based board, requiring members to have skills in areas such as commerce, finance, accounting, law, marketing, philanthropy, scientific, biomedical or clinical health research.

Three standing committees assist the Board in carrying out its responsibilities:

- Risk and audit committee
- Finance committee
- Academic standing committee

Each committee has its own Charter which is reviewed on an annual basis.

During 2016, committee members were:

#### Risk and audit committee:

- Mr Bob Hudson (Chair)
- Mr Ken Davies (appointed 30 June 2016)
- The Hon Clare Martin (resigned 30 June 2016)
- Mr Robert Wells (term ended 17 October 2016)
- Mr Trevor Riley (appointed 17 October 2016)
- Professor Alan Cass
- Mr Ross Springolo
- Ms Sophie Cleveland
- Ms Louise Dutton
- Mr Peter Hopton (leave of absence)

#### Finance committee:

- Mr Richard Ryan AO
- Mr Rowan Johnston
- Mr Tom Ganley
- Ms Tracey Scott
- Professor Alan Cass

#### Academic standing committee:

- Professor Lawrence Cram
- Professor Alan Cass
- Professor John Chalmers
- Professor Ric Price

#### Development committee

*tasked with philanthropic fundraising:*

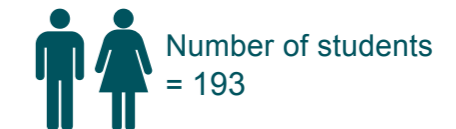
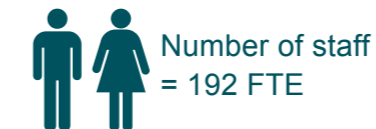
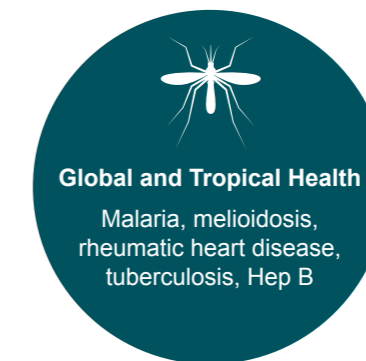
- Mr Rowan Johnston (Chair)
- Mr Richard Ryan AO
- Professor Alan Cass
- Ms Suzi Hullick
- Mrs Kate Russell
- Dr Richard Russell
- Mr Simon Schwarz
- Mr Colin Baillie

# Our organisation

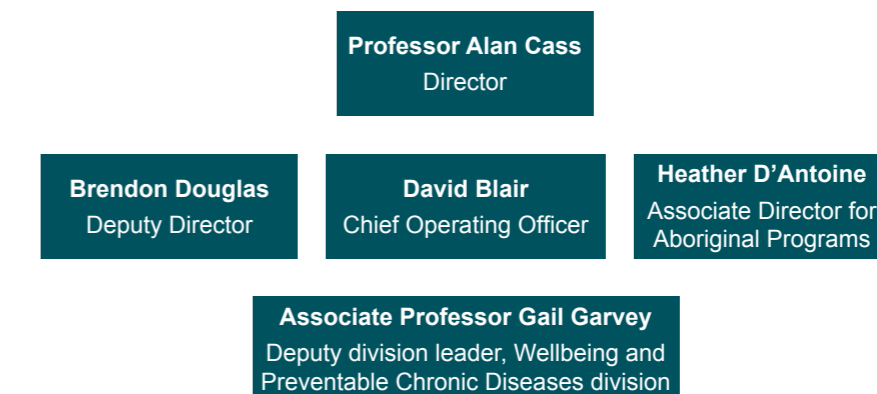
## Who we are

As one of Australia's leading medical research institutes dedicated to improving the health and wellbeing of Indigenous Australians and a leader in global research into life-threatening illnesses, we continue to translate our research into effective partnerships and programs in communities across Australia and the Asia-Pacific region.

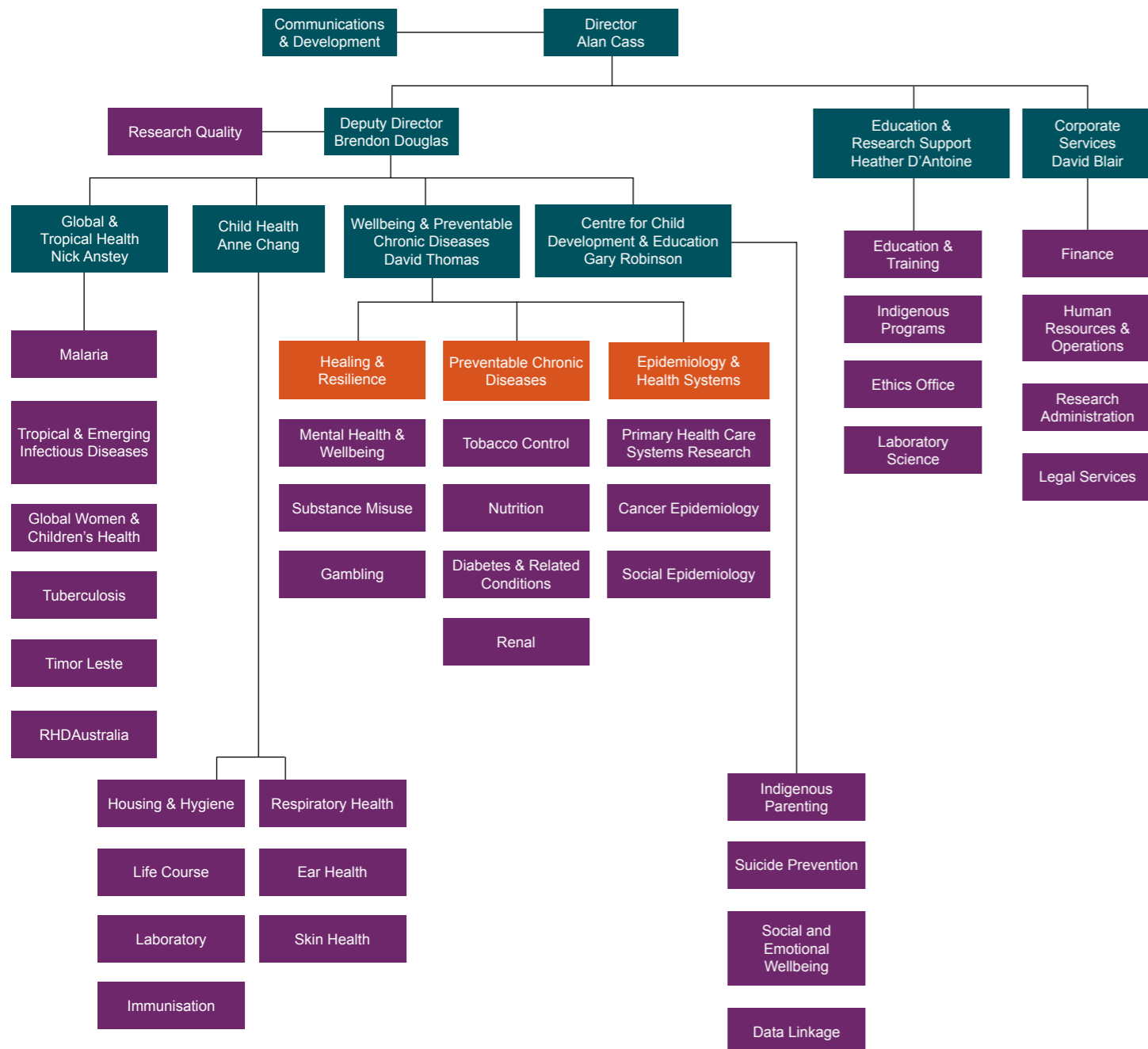
## Research focus areas



## Senior management team



# Organisational structure



# Our impact

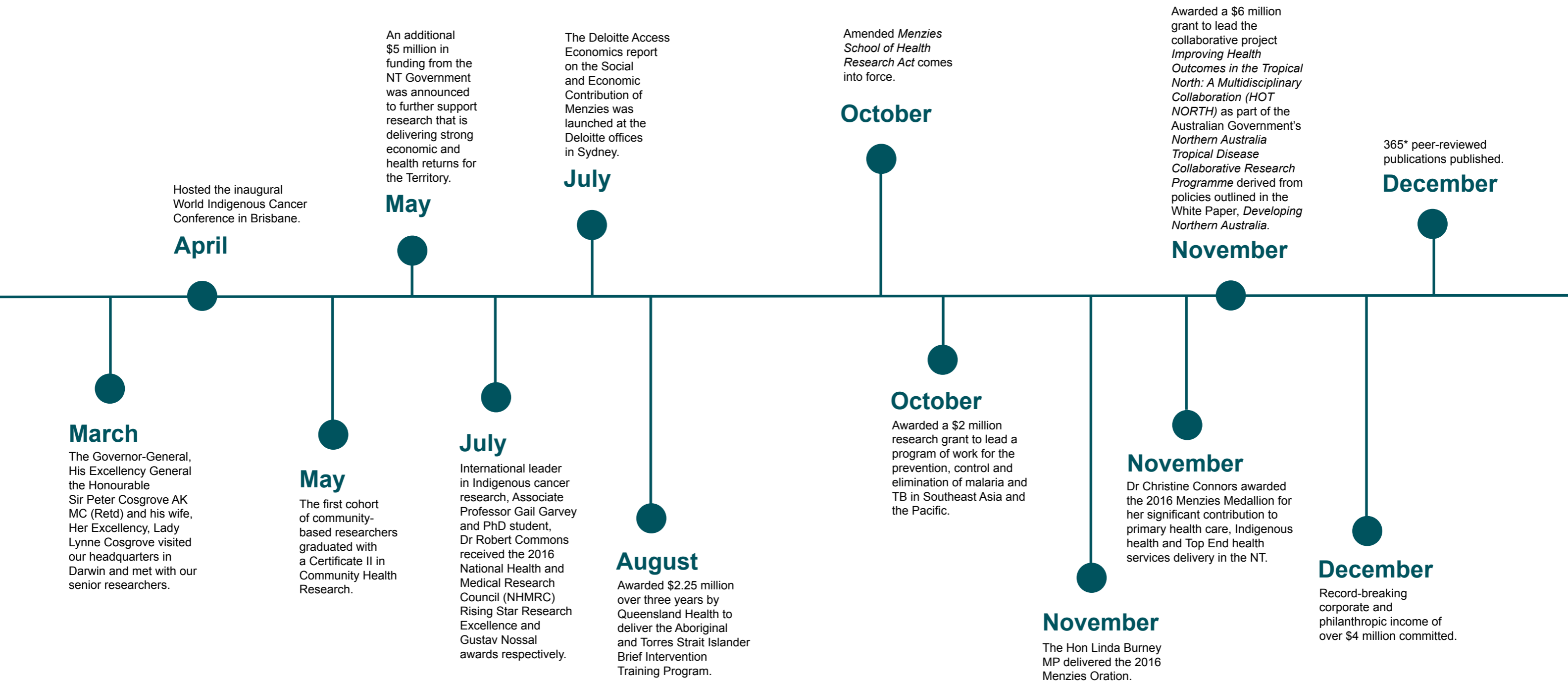
## Where we work

Our headquarters are in Darwin, with offices in Alice Springs, Brisbane, Melbourne, Timika (Indonesia) and Kota Kinabalu (Malaysia).

Our work spans central and northern Australia, and developing countries within our global neighbourhood.



# 2016 highlights



\*Preliminary data.

# How you have helped

Our key supporters, and the many people who quietly donate funds each year, continue to make an enormous difference to people's lives. Your support is crucial to driving our research and efforts to innovate and respond to major health problems. Every day you help Indigenous Australians and communities across our region exercise their right to good health.

We extend our gratitude to all of our donors and supporters. In 2016, over **\$4 million** was committed which has helped us to:



# Our research Centre for Child Development and Education

The Menzies Centre for Child Development and Education (CCDE) conducts research to improve the health, wellbeing and education of children, particularly Indigenous children, in the NT and beyond.

Last year, under the direction of Professor Gary Robinson, the Centre consolidated its ground-breaking work in the emerging field of linked data analysis and ventured onto the international stage, working with UNICEF to design and pilot a positive parenting program in Papua New Guinea (PNG).

## Suicide prevention for Indigenous children

CCDE continued to lead research informing public policy on the prevention of Indigenous suicide.

Statistically, Indigenous residents are at far greater risk of suicide than the general population with the NT having the highest rates of hospitalisation for suicidal behaviour and death by suicide in the country.

The Centre is studying NT residents who have been hospitalised for suicidal behaviour – one of the greatest risk factors for death by suicide. The study is examining the risk factors associated with repeat hospitalisation and death by suicide to highlight opportunities for prevention to enable young lives to be saved.

## Submission to 'Don Dale' Royal Commission

In 2016, the Centre provided a submission to the Royal Commission into the Detention and Protection of Children in the NT.

The submission addressed the critical importance and cost-effectiveness of early intervention targeting at-risk families and diverting children from criminal trajectories and imprisonment.

By drawing attention to research evidence, along with media coverage of its work, the Centre has contributed to an improved understanding of the complex issues within the Royal Commission.

## Case study

### PNG Parenting Program

The Centre, collaborating with UNICEF and the Catholic Church in PNG, is working to develop and implement a positive parenting program for remote communities.

The program, "Parenting for child development: Pasin bilong lukautim pikinini gut", aims to address the widespread corporal punishment and child maltreatment in the developing nation. It is an important element of PNG's child protection program.

The program was developed after consultation with approximately 400 people in remote locations in three provinces and is being piloted in 10 communities in Madang and the Western Highlands to test its feasibility and cultural appropriateness and its potential as a preventive program. Once the pilot findings are reviewed, the program will be extended to communities in four other remote provinces.





# Our research Child Health

**Our child health research team continued to investigate strategies to improve the health of Indigenous children. Early childhood illness affects a child's health as well as their ability to grow, develop and learn.**

## Fourth wave data released for ABC study

The Aboriginal Birth Cohort, or ABC Study has spent the last three decades checking for the earliest signs of chronic disease such as diabetes, heart and kidney disease, anxiety and depression in 686 Aboriginal infants born between 1987 and 1990 at the RDH.

The study is recognised as the largest and longest-running study of the lives of Indigenous babies born in Australia. It recently completed its fourth wave of data collection, with 71 per cent of living participants in over 40 locations across the Top End undergoing a comprehensive health assessment. The participants, now aged 22-27 years, were previously assessed in childhood (85 per cent aged 8-14 years) and adolescence (71 per cent aged 16-20 years).

Notably, data from the fourth wave revealed the dual burden of malnutrition: an increasing rate of overweight and obesity with continuing high rates of under-nutrition.

Encouragingly, the low prevalence of chronic disease markers in the cohort during young adulthood suggested there was a window of opportunity beyond childhood to target interventions aimed at reducing the high burden of chronic disease in this high risk population.

## Vaccines to improve school readiness for children at risk of ear disease

Educational and health outcomes of Indigenous children are extremely poor, particularly in remote areas.

High rates of ear disease, particularly 'runny ears' and 'glue ear', and hearing loss throughout early childhood impact on the development of speech and language and is linked to educational disadvantage and behavioural problems.

Our ear health team is conducting two consecutive randomised controlled trials to determine the best vaccination strategy for early prevention of infection in Indigenous children at high risk of otitis media and hearing loss. Additional studies, also funded by the NHMRC, have recently commenced including audiological and developmental milestone assessments throughout the first three years of life. Our aim is to extend the benefits of vaccination and design interventions to improve school readiness of Indigenous children.

Results from the trials have the potential to change Australia's National Immunisation Program schedule for pneumococcal conjugate vaccines in Indigenous and high-risk children.

## Asthma app to be released in language

Popular asthma flipcharts produced by our child health respiratory team will soon be available as an app.

The flipcharts, used extensively for asthma education and health promotion, will be adapted into multilingual digital platforms with voiceovers in local Indigenous languages.

The asthma app can improve knowledge in the community by increasing access to health education, once limited to being delivered in health centres, and usability.

The app, funded through a National Asthma Research Grant, aims to reduce language and context barriers faced by Indigenous people in rural or remote settings.

## Menzies' HealthLAB beneficiary of Rotary Ladies Long Lunch

Menzies' HealthLAB, an innovative, interactive and educational travelling health program which measures biomedical risk factors for chronic diseases from a mobile laboratory, is continuing to deliver its landmark program as the beneficiary of the Rotary Club of Darwin's second Ladies Long Lunch fundraiser.

HealthLAB engages participants in discussions about their own biomedical measures and risk factors and empowers them to make healthy lifestyle decisions now, for better outcomes in the future. HealthLAB visits urban, rural and remote schools and public spaces to demonstrate how to 'own your health'. At the end of 2016, HealthLAB reached 4,000 Territorians.

## Case study

### Improving hearing outcomes through I HEAR BETA study

Indigenous children living in remote areas of the NT are prone to a severe middle ear disease known as chronic suppurative otitis media (CSOM), or runny ears.

Although disease rates have decreased over the years, it is estimated that 15 per cent of children still live with CSOM. It can result in hearing loss, which negatively impacts the child's future.

The I HEAR BETA study, carried out in 24 communities, aimed to discover if antibiotics and Betadine ear washes could fix chronic runny ears.

***"Many families were happy to come on board with the study," said project coordinator, Christine Wigger.***

***"We had one mum with six kids, at least two of whom had ears leaking pus; she felt optimistic about being part of the study because standard treatments were just not working."***

Ms Wigger said participating families felt supported through visits by trained community workers and regular phone calls from the study nurses.

More than 200 children have already been enrolled in the study to trial different treatment combinations and help determine which works best.

The results of the trial will become the best available evidence to guide future medical management of CSOM in high-risk children.



I HEAR BETA project coordinator, Christine Wigger uses a Betadine ear wash on Mabel Miller.

# Case study

## Evaluation of anaemia management in three remote Indigenous communities in the Katherine East region, NT

Health practitioners in the remote Katherine East region are not sure why anaemia in young children is so common in Indigenous communities.

What they do know is low haemoglobin levels in children under the age of two years can cause delays in cognitive development, which then affects their schooling and health.

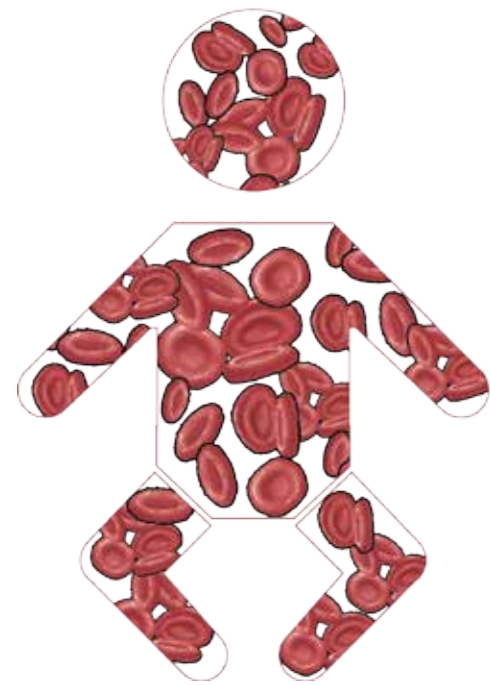
A health organisation successfully rolled out an anaemia prevention program in one community, and wants to identify the key components of this program to replicate it in other communities.

Our Child Health division was tasked with performing this program evaluation. We will identify the major contributors to the development of anaemia, and potentially change best practice guidelines when it comes to anaemia prevention.

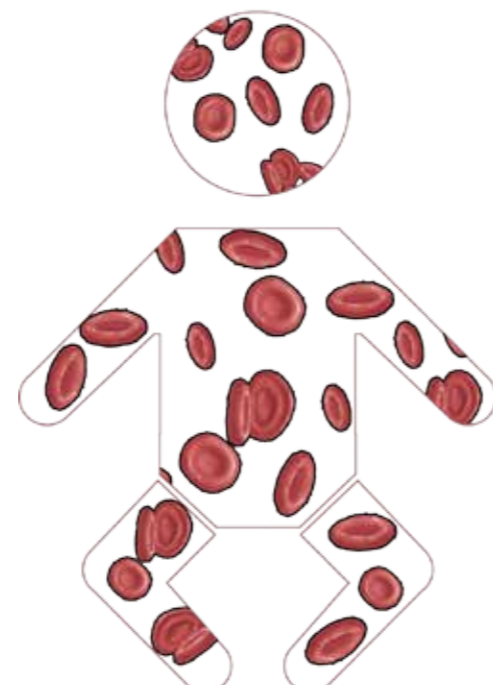
***“If we identify the major contributors to childhood anaemia, we will then be able to develop local and targeted interventions that are specific to the NT population,” said lead investigator, Dr Therese Kearns.***

***“A quarter of the children in most remote Indigenous communities are anaemic by six months of age, and we want to identify what causes this and prevent it from happening in the future.”***

Two particular areas of interest are the prevention of anaemia in pregnant mothers, and the use of oral iron supplementation in children under six months of age.



Non-anaemic child



Anaemic child

Anaemia results from a lack of red blood cells in the body.

# Our research RHDAustralia

**Australia has the highest recorded rate of acute rheumatic fever (ARF) and rheumatic heart disease (RHD) in the world, despite it being completely preventable. Almost all of the 6000 people on Australian RHD registers are Indigenous. In the NT, 58 per cent of cases are children aged between 5 and 14 years old.**

**RHDAustralia is the National Coordination Unit for the Australian Government's Rheumatic Fever Strategy. It aims to prevent and reduce ARF and RHD through education, access and use of quality data and national engagement. RHDAustralia works with partners to translate research findings into evidence-based policy.**

### Data collection system improves care for ARF and RHD patients

The first report generated from the RHDAustralia Data Collection System was submitted to the Commonwealth Department of Health on 30 June 2016, marking a significant milestone for the program.

The new system is the central repository for the collection of ARF and RHD data provided by participating Australian jurisdictions.

RHDAustralia director, Professor Bart Currie said that the availability of accurate public health data was vital in ensuring best practice care for those living with ARF and RHD.

***“The data generated is robust and directly relevant to best patient care, both from a clinical and a public health perspective,” Professor Currie said.***

### App improves international ARF diagnosis

Timely and accurate diagnosis is a key factor in improving outcomes for those living with ARF. However, disease identification can be problematic for health professionals with little previous exposure to, or knowledge of, the illness.

The ARF diagnosis calculator, initially developed to assist Australian clinicians with this complex diagnosis, was updated in 2016 for use on a global scale. Through an improved algorithm that draws from a wider range

of potential diagnosis criteria, the app assists disease awareness and minimises the chances of under-diagnosing the disease.

RHDAustralia clinical director, Associate Professor Anna Ralph said patients who should be referred for specialist investigation could be sent home due to the difficulty in diagnosis and the lack of disease awareness.

***“The thing about ARF diagnosis is there is no definitive diagnostic test. The only way to diagnose ARF is to put together a whole constellation of signs and symptoms to see if a patient has the disease,” Associate Professor Ralph said.***

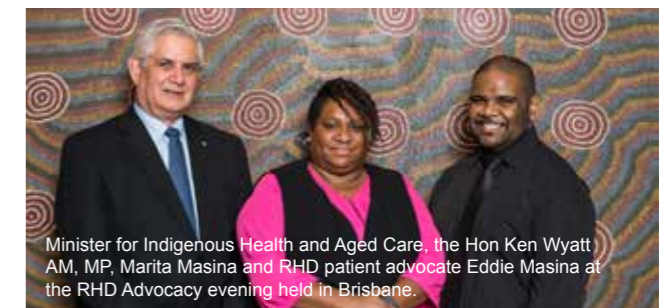
The free RHDAustralia Diagnosis Calculator App is a key tool for clinicians to promptly and accurately diagnose ARF. The app can be downloaded at [www.rhdaustralia.org.au](http://www.rhdaustralia.org.au)

### Education and advocacy events in QLD and the NT

As a key strategy to prevent and reduce ARF and RHD, RHDAustralia held a series of education and advocacy events in Brisbane and Darwin in 2016.

Targeted workshops provided more than 280 health professionals an opportunity to learn best practice approaches to prevention, treatment and management of ARF and RHD and to hear the latest developments in RHD control.

Advocacy events followed the workshops, providing a forum for patient advocates to share their stories and voice concerns. Eddie Masina, a Djiru man from Mission Beach in Far North Queensland, shared his RHD journey which started at age five and the impact the disease has had on his life, including his survival after five open-heart surgeries and two strokes. His story highlighted the importance of early detection and diagnosis.



# Our research

## Wellbeing and Preventable Chronic Diseases

**Our Wellbeing and Preventable Chronic Diseases division seeks to advance the health of Indigenous Australians by researching the causes, prevention and treatment of chronic disease, and translating the results into practical solutions.**

**Our research examines the many environmental factors that shape behaviour over the life course and contribute to the development and progression of chronic disease. We strive to inform policy and practice through conducting 'real world' research that demonstrates the most effective solutions to chronic disease.**

### Inaugural World Indigenous Cancer Conference (WICC) hosted by Menzies

In 2016, Menzies partnered with the International Agency for Research on Cancer to host the WICC in Brisbane.

The conference celebrated Indigenous cultures through its theme, 'Connecting, communicating, collaborating'. It provided opportunities for delegates to network and build partnerships with a focus on improving cancer outcomes for Indigenous peoples around the globe.

More than 300 researchers, public health practitioners, clinicians, nurses, advocacy groups, allied health professionals, consumers, Indigenous community groups and leaders from 15 countries attended the conference.

Presentations from the conference can be viewed at [www.menzies.edu.au/WICC2016](http://www.menzies.edu.au/WICC2016)

### Report reveals petrol sniffing on decline

A national evaluation of the introduction of low aromatic fuel (LAF) in Indigenous communities affected by petrol sniffing found sniffing rates have decreased significantly.

The study, 'Monitoring trends in the prevalence of petrol sniffing in selected Australian Aboriginal communities 2011-2014' was commissioned by the Australian Government. Led by Menzies' Professor Peter d'Abbs, the findings showed that over this period, the number of people sniffing petrol in the 41 communities examined fell by 29 per cent.

Over the longer term, the study found the decline in petrol sniffing was even more marked. In 17 communities from the study, comparable data was also available from 2005-06, revealing sniffing incidence rates fell by 88 per cent.

In addition, community members were interviewed to understand how they felt about the introduction of LAF. In most communities the introduction of LAF was widely supported, although in some places this was qualified by frustration regarding the continuing availability of regular unleaded petrol from other outlets.

Overall, the findings show that improvements to community programs and services, combined with the effectiveness of LAF in preventing petrol sniffing, have helped to improve the health and wellbeing of young people.

### Determining the effect of fruit and vegetable discounts in remote stores

The SHOP@RIC trial is one of four studies worldwide to provide evidence of population health interventions needed to create healthier food environments.

The study tested the impact of a 20 per cent discount on fruit, vegetables, bottled water and diet drinks in 20 remote stores across the Territory. The discount was made available and promoted for 24-weeks, with an in-store consumer education strategy also implemented in ten of the stores.

Our research shows that a price discount can nudge consumers in remote communities to purchase more fruit, vegetables and bottled water. In addition, consumer education helped achieve a further small increase in vegetable purchases, confirming that creating healthier food environments can enable healthier food choices.

### Indigenous women missing timely Pap test follow-up

The first results published by the National Indigenous Cervical Screening Project have confirmed Indigenous women living in Queensland (QLD) had lower screening participation and a higher prevalence of high-grade abnormal Pap tests compared to non-Indigenous women in cervical screening.

Recent results from the study, published in the Medical Journal of Australia, showed that 34 per cent of Indigenous women living in QLD with abnormal Pap test results followed up in two months compared to 47 per cent of non-Indigenous women.

Lead author, Menzies research fellow, Dr Lisa Whop, said the key contributor to Indigenous women's higher cervical cancer incidence and mortality, however, was their lower participation in cervical screening. The findings from QLD show that any changes to the renewed National Cervical Screening Program, due to be rolled-out in 2017, need to appropriately address the needs of Indigenous women.

## Case study

### Story-sharing builds care relationships in Alice Springs

Kidney disease affects many Indigenous families in Central Australia. People are forced to leave their home communities to access life-maintaining dialysis treatment in major towns like Alice Springs.

The social, cultural, emotional and financial impact of this dislocation on people and their families is devastating, while the health system strains at this interface to effectively provide culturally safe care.

A consumer-led project involving people from four indigenous language groups in Alice Springs offered a transformative experience for them and the mainly non-Indigenous workforce involved in their care.

A group of Indigenous people with kidney disease, and dialysis nurses from diverse cultures, worked together to increase cultural understanding and transform care relationships using a participatory action research approach that aligned with traditional ways of learning and knowing

*"Sharing stories about personal experiences of kidney disease, living apart from family and having dialysis was central to the project," said project facilitator Samantha Togni.*

*"The nurses told us that hearing these stories really had a big impact and helped them to better understand the experience of people they were caring for."*

Samantha said in turn, feedback received from patient co-researchers was that they felt listened to and developed stronger relationships with the nurses.



Co-researchers Irene Nangala and Eileen Bonney with drawings they used to tell their stories of their lives and being on dialysis in the project workshops.

## Case study

### Improving wellbeing through brief interventions

Health and wellbeing self management has become more accessible through the availability of apps.

The Stay Strong app developed by Menzies is a unique electronic resource for clinicians or case workers to use with clients. It was developed with culture in mind and can be adapted for different organisations to use in a range of settings.

The app takes clients through care planning steps in a visual, interactive and engaging way and has helped break down communication barriers between healthcare workers and clients.

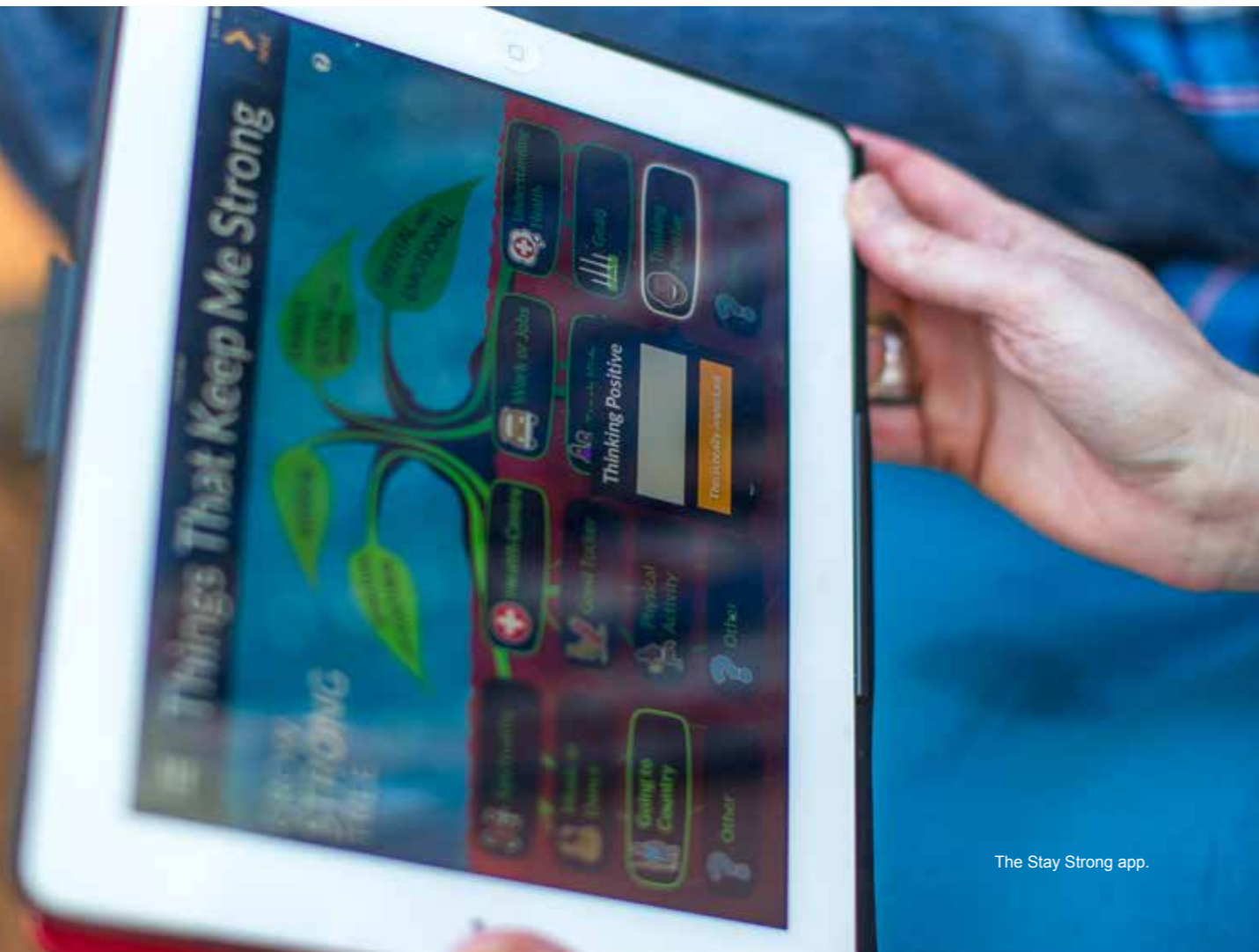
Practitioners have given the feedback that the app is a good conversation aid. It operates on a strengths-based approach, which encourages positive engagement.

***“Clients feel like they have more of a say in their care plans, and can outline their priorities – this isn’t always an easy conversation to have when you both don’t have the same first language,” said a youth worker based in the NT.***

In the last year, more than 300 people based in over 20 organisations in the NT have been trained in the use of the app.

Menzies researchers are now evaluating the training to find out how the Stay Strong app is used within different settings and how organisations implement digital mental health tools.

The Stay Strong app is available for download on iTunes and the Google Play Store.



The Stay Strong app.

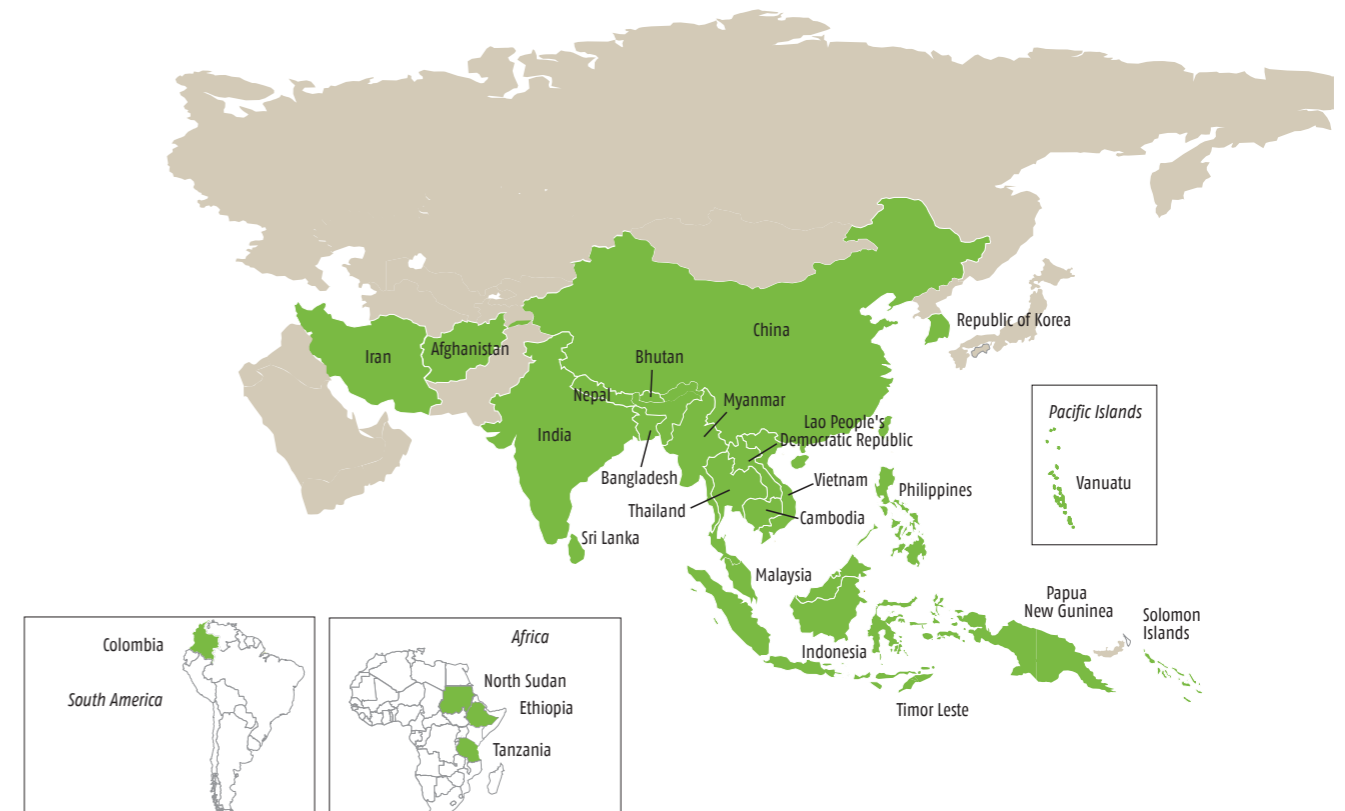
# Our research Global and Tropical Health

Our global and tropical health research spans central and northern Australia, and the developing countries within our global neighbourhood.

The Asia-Pacific region is home to over 50 per cent of the world’s population. Many still live in poverty and are vulnerable to malnutrition, infectious and vector-borne diseases. We are committed to tackling key areas of public health concern, and aim to find meaningful and locally relevant ways to improve the health and wellbeing of people in this region.

A major focus of our work in the region is the prevention and clinical management of malaria, TB, rheumatic fever, RHD and melioidosis.

In tropical northern Australia, the focus is on melioidosis, *Staphylococcus aureus* and *Streptococcus pyogenes*, bacteria that cause skin disease, scabies, rheumatic fever and RHD and other infectious diseases including influenza and hepatitis B (HBV).



### Study to understand the impact of hepatitis B

Our research has shown that Indigenous Australians living in the NT with HBV suffer from a particularly aggressive strain of the virus - HBV/C4. But despite a deep understanding of the HBV/C4 virus, little is known about how it affects people.

The CHARM study, which recently enrolled its 200th patient, is investigating the natural history of this unique strain to understand if the virus is causing high rates of liver damage in a real world setting.

The study, which has a target of 250 participants, will inform NT and national HBV guidelines for Indigenous Australians and is due for completion in 2019.

### Multiple studies examine the effectiveness of malaria treatment regime

A multicentre clinical trial across four continents is close to completing enrolment of 1900 patients. The study is examining the effectiveness of primaquine regimens to prevent relapse of the hidden liver stage of the parasite causing vivax malaria.

An additional trial in Timika, Papua Indonesia also began the recruitment of participants. Papua is a region which has one of the highest rates of multi drug-resistant vivax malaria in the world.

There is also a concern that primaquine can cause severe anaemia in some patients. Data from a large meta-analysis of 46 clinical trials is also being examined to define the risk-benefit of primaquine to cure vivax malaria.

### Improving treatment for Staphylococcal blood stream infections

Bacterial infections are a major cause of illness and death in tropical Australia. Sepsis, particularly, one of the main causes of death in children worldwide, is a burden largely carried by Indigenous children in northern Australia.

The CAMERA-2 project, a major trial across Australia and Singapore which aims to improve the treatment for Staphylococcal blood stream infections, is on track to meet the study's recruitment target with the enrolment of its 150th patient this year.

The project uses the randomised control trial methodology to generate high quality scientific evidence to help guide the care of people with severe infections.

### Genomic sequencing reveals link between STIs and leading cause of infectious blindness

Menzies researchers have shown that contrary to previous expectations, Chlamydia can readily exchange DNA and that the acquisition of just one or two gene variants can change an STI causing strain into one associated with trachoma, the world's leading infectious cause of blindness.

The clinical implications of this *C. trachomatis* genomic sequencing study is that trachoma re-emergence may be more likely than previously thought, particularly if Chlamydia STI remains common. The study, using resuscitated chlamydia bacteria that had been frozen for 30 years, also demonstrates the value of storing clinical and biological material to be re-analysed as technology advances.



Menzies researchers Dr Patiyon Andersson and Associate Professor Phil Giffard led the genomic sequencing study.

## Case study

### Menzies hosts healthy skin workshop for public health professionals

It is estimated that more than 16 000 children suffer from impetigo (skin sores) across northern Australia at any one time, a far higher incidence than is reported elsewhere globally.

Childhood infections can be extremely serious and can have long-lasting and devastating effects, including the development of ARF and RHD.

Our research demonstrated the widespread and frequent transmission of skin pathogens both within and between households in Indigenous communities.

The relationship between the high incidence of skin sores and overcrowding in remote communities is one factor underpinning the need to improve the provision of appropriate accommodation across northern Australia.

In 2016, we hosted a Healthy Skin Workshop to share information with stakeholders from across the public health spectrum to enable an effective and coordinated approach to skin health in the Top End.



Menzies researcher Dr Gabrielle McCallum with Yasmina Day and her children, Joel and Haylee Versteegh.

## Case study

### Melioidosis study improves patient outcomes

Our research continued to put Menzies at the centre of better melioidosis patient outcomes through improved diagnosis and treatment.

In August 2016, the Menzies melioidosis team contributed to 17 abstracts at the World Melioidosis Congress, held in Cebu, in the Philippines. Professor Bart Currie and Mark Mayo, co-managers of the melioidosis programs, are on the executive committee of the International Melioidosis Society, which coordinates the congress.

Our long-running Darwin Prospective Melioidosis Study (DPMS) also achieved a significant milestone, recording the 1000th consecutive case of melioidosis from the Top End of the NT. The study has been running for 27 years and has informed international guidelines for diagnosis and treatment of melioidosis. Mortality from melioidosis currently stands at 10 per cent, in comparison to more than 30 per cent when we commenced the DPMS in 1989.

Menzies also houses a large prospective clinical and bacterial dataset, which enabled us for the first time to link specific genes present only in certain strains of *Burkholderia pseudomallei* to more severe disease in patients infected with those strains. Our bacterial genomics has also found a new melioidosis strain in Darwin which originated in Asia rather than Australia. We are now searching for why it has appeared in Darwin.



Melioidosis project manager, Mark Mayo collecting a water sample at the Jingili Water Gardens in Darwin.

# Research translation

Beyond our commitment to research excellence, we set our sights on solutions - using our research findings to kick-start and sustain positive change.

We are committed to ensuring our research is put into practice and policy by health care providers, governments and other key stakeholders to achieve practical and tangible health outcomes.

## Research translated into Malaysia's national malaria treatment guidelines

Malaysia's national malaria treatment guidelines have been updated as a result of the ground-breaking findings from our recent knowlesi malaria study in Sabah.

The clinical trial of people diagnosed with monkey malaria found a key combination of antimalarial drugs works well in curing the infection.

The monkey parasite, an emerging infection called *Plasmodium knowlesi*, has become the most common cause of human malaria in Malaysia and is also found throughout Southeast Asia.

Menzies clinical researcher, Dr Matthew Grigg, said the evaluation of the impact of policy implementation showed a six-fold reduction in the rate of death from knowlesi malaria, in parallel with improved diagnosis, early referral and the early usage of intravenous artemisinin-combination therapy.



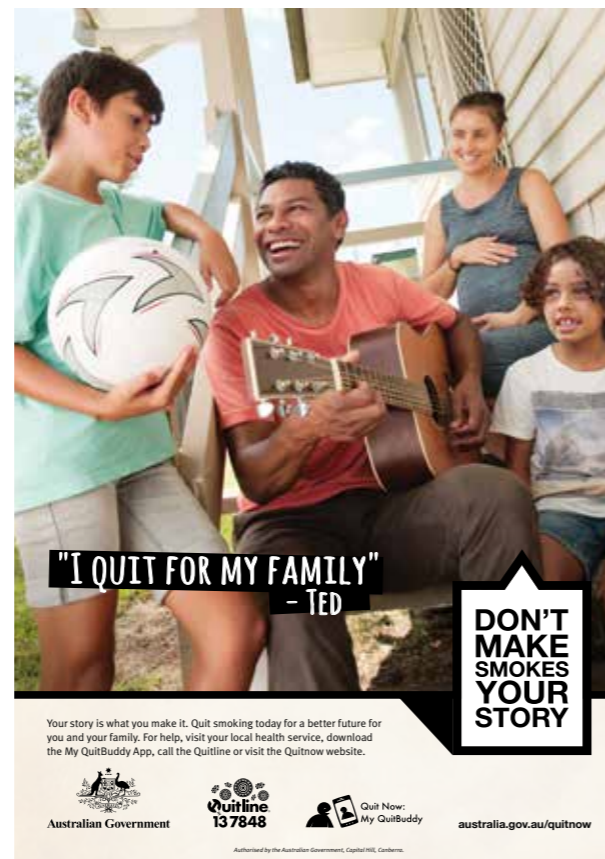
Malaria PhD student, Steven Kho, at work in the lab.

## Research informs national anti-tobacco campaign

Mass media anti-tobacco campaigns have been a crucial element in reducing smoking internationally. In Australia, statistics show smoking contributes 23 per cent of the health gap between Indigenous and non-Indigenous Australians.

Menzies research was used to inform the 2016 national Indigenous campaign 'Don't make smokes your story'. The Talking About The Smokes project generated important evidence about Indigenous smokers' attitudes, localised and Indigenous-specific advertising, and the importance of messages about the impact of smoking on others.

**"Based on our advice and evidence from our research, the new campaign material can be adapted by local communities," Associate Professor David Thomas said.**



The 'Don't make smokes your story' campaign.

# Case study

## High-quality evidence informs chronic cough guidelines

Results from the first multicentre randomised controlled trial on chronic cough in children led by our child health respiratory team were incorporated into the updated American College of Chest Physicians guideline (2016-17). The NHMRC-funded trial found that managing children with chronic cough in accordance with a standardised algorithm improved clinical outcomes through improved quality of life and enhanced cough resolution.

**"In children with cough lasting more than four weeks, wet and productive cough is common. Compared with the 2006 Cough Guidelines, our trial has provided high-quality evidence for management of chronic wet cough in specialist settings," explained Menzies' lead respiratory researcher, Professor Anne Chang.**

Data from the trial will also be incorporated into the 2017 National Guide to a Preventive Health Assessment for Aboriginal and Torres Strait Islander peoples.



Lung researcher, Dr Gabrielle McCallum with Mabel Miller and William Hughes.

# Research at a glance

Menzies has again achieved a remarkable outcome in the current very competitive area of Australian Competitive Grants. Although project grants have become harder to achieve, Menzies was again above the Australian average.

In 2016, we earned an outstanding success rate in the targeted Northern Australian Tropical Disease Collaborative Research Programme being the only institution to be successful in two distinct applications - this is a 100 per cent success rate and establishes Menzies as a significant centre for northern Australian research.

## Specialised Grants - Northern Australia Tropical Disease Collaborative Research Programme

Chief investigator **Professor Bart Currie** - *Improving Health Outcomes in the Tropical North: A Multidisciplinary Collaboration (HOT NORTH)*.

Chief investigator **Professor Nick Anstey** - *Strengthening regional research collaboration in the prevention and containment of multidrug-resistant tuberculosis and malaria*.

## Project grants

Chief investigator **Professor Peter Morris** - *Rapid ferric carboxymaltose infusion (Ferinject) for iron deficiency anaemia in Aboriginal children: a randomised controlled trial*.

Chief investigator **Professor Amanda Leach** - *Otitis media, hearing loss and school readiness of Indigenous children followed from birth in two randomised controlled trials of novel pneumococcal conjugate vaccine schedules (VOICES. Vaccines to prevent Otitis media In Children Entering School)*.

## Fellowships

**Professor Amanda Leach** – Amanda has been awarded a further year on her prestigious research fellowship to continue her work on Hearing for Learning program of research.

**Dr Emma McMahon** – in this fellowship Emma will provide real-time feedback on diet quality in remote Indigenous communities. This will help to support policy makers and other key stakeholders in making decisions to improve food supply and access in remote Indigenous communities.

**Dr Paul Lawton** – in the fellowship Paul will continue work in the area of chronic kidney disease in Indigenous Australians and utilise existing data to improve health outcomes.

**Dr Nikki Percival** – through this fellowship Nikki will improve linkages for chronic disease prevention in Indigenous communities using a quality improvement approach.

**Dr Jane Davies** – this fellowship will allow Jane to continue to improve outcomes from hepatitis B infection in Indigenous people in northern Australia.

## Postgraduate Scholarship

**Ms Stefanie Puszka** – this scholarship will assist Stefanie with her studies in livelihoods of Indigenous People displaced from remote communities to urban centres for dialysis treatment.

## NHMRC grants awarded to Menzies

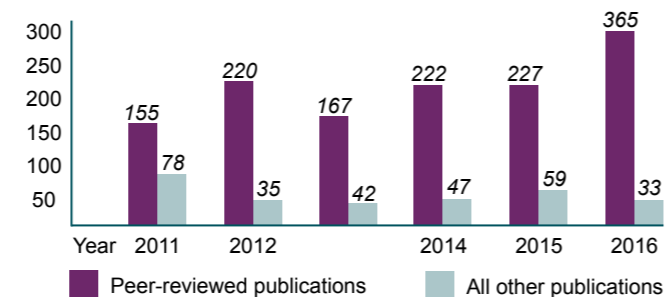
	Research support grants	People support grants
2011	14	14
2012	10	7
2013	7	6
2014	6	7
2015	10	10
2016	4	6

## Funding source category 2016

Research income \$ (AUD millions)



## Publications authored by Menzies researchers 2011-2016\*



# Capacity building

In addition to our cutting-edge laboratory-based and biomedical research, we strive to increase the capacity of communities, health service providers, Indigenous health workers, health professionals, and researchers – to help them deliver better services based on evidence about what works, and what doesn't.

## Empowering communities to implement rheumatic fever prevention strategies

For two decades, we have been at the forefront of research into rheumatic fever. The drivers of high rheumatic fever rates are understood by clinicians and researchers; however, major barriers to translating this information to affected communities and empowering them to take steps to reduce their risk still exist.

On Track Watch, a community-based participatory action research project, addresses this challenge in a sustainable way. To begin, more than ten community members are commencing Menzies' Certificate II in Community Health Research.

As part of the course, trainees learn about and implement rheumatic fever prevention strategies. These include better health literacy through to stronger self-management and recognising and treating the streptococcal infections which drive rheumatic fever.

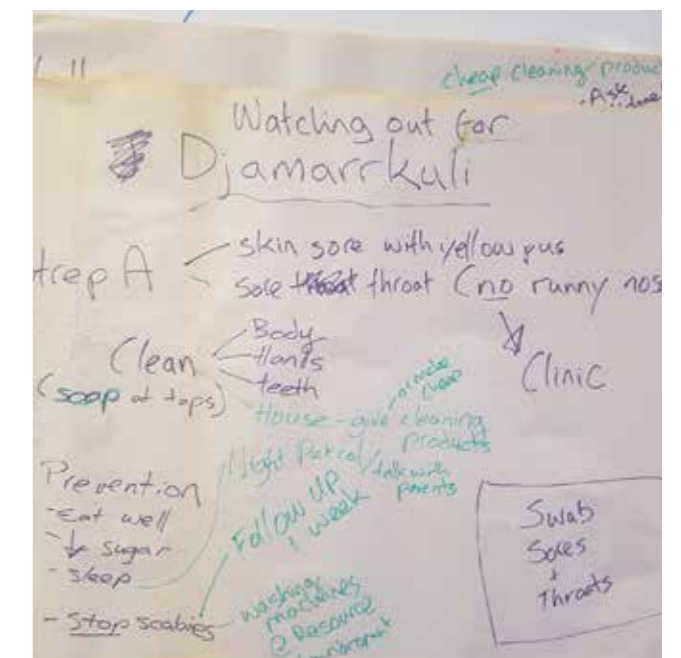
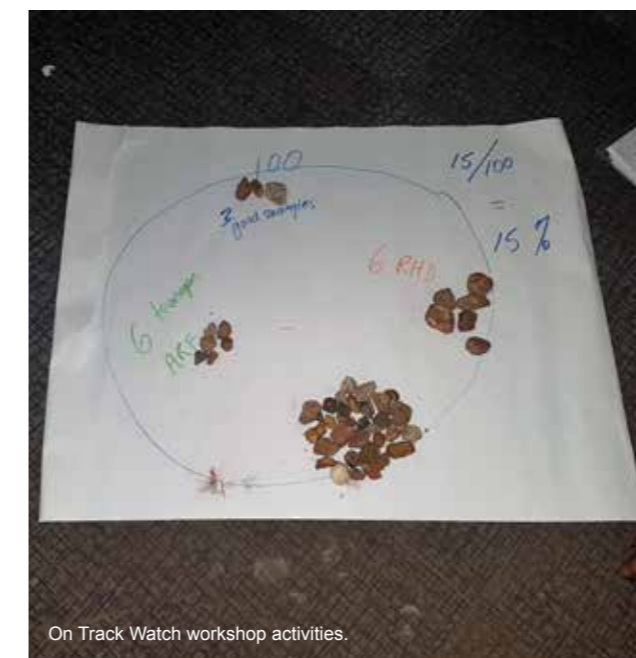
## Providing a training ground for health professionals

2016 saw our Child Health division hosting Indigenous trainees, students and visiting scientists as well as the appointment of the inaugural Sue Sayers Bursary placement.

Indigenous trainee, Susanne Munkara from the Tiwi Islands, joined medical, nursing, dietetic and science students to work with the Menzies HealthLAB while completing her Certificate III in Health and Community Services.

Indigenous trainee, Erin Gargan studied microbiology and molecular biology, hosted by the child health laboratory team. This enabled her to complete her Certificate III in Laboratory Skills before commencing a science degree in 2017. The team also hosted CDU students, Angela Rumaseb and Niko Tsangaris for their placements units.

Vietnamese scientists, Hoan Pham and Thuy Nguyen spent six weeks working with the child health laboratory team as part of an exchange with the Pasteur Institute in Ho Chi Minh City. Associate Professor Heidi Smith-Vaughan and Child Health laboratory manager, Jemima Beissbarth in turn spent time in Ho Chi Minh City training a larger group of scientists.



# Indigenous capacity building

**Our Indigenous Capacity Building Unit (ICBU) aims to build and sustain a highly-skilled Indigenous workforce through employment, training and professional development opportunities which welcome, value and provide a safe environment for Indigenous staff.**

**Key activities for the unit in 2016 included delivering cultural training workshops, a mentoring program, the continuation of the Indigenous Traineeships Program and the graduation of four community-based researchers through CDU. The unit also completed Reconciliation Australia's Reconciliation Action Plan Impact Measurement Questionnaire report and celebrated Close the Gap day as well as Reconciliation and NAIDOC weeks.**

**In addition, the team promoted Menzies at the Barunga Festival and Darwin Careers Expo and delivered a presentation about the Pathways Program at the Lowitja Institute's International Indigenous Health and Wellbeing Conference.**

## **Indigenous mentoring program a success**

In 2016, the unit delivered an Indigenous mentoring program to a number of Brisbane staff.

Four mentors participated in the program and worked with two Indigenous mentees keen to further develop their skills and knowledge to achieve their goals.

The program provided an opportunity for mentors to learn and develop new leadership skills and mentees to improve their self-confidence.

The program received positive feedback with both mentees and their mentors indicating they would informally continue the mentoring relationship.

## **Menzies' first community-based researchers graduate**

In 2016, the first Indigenous community-based researchers graduated from the Certificate II in Community Health Research.

Based in Galiwin'ku, Elcho Island, the four senior Indigenous graduates, George Gurruwiwi, Roslyn Dhurrkay, Djilliri Garawiritja and Veronica Gondarra were able to attend the graduation ceremony in Darwin as a result of funding sourced by the ICBU.

In addition, the graduates completed mentor training to enable them to mentor less-experienced community-based researchers in the workplace.



Senior community-based researchers at their graduation ceremony, George Gurruwiwi, Veronica Gondarra, Djilliri Garawiritja and Roslyn Dhurrkay.

## Case study

### Inspiring Indigenous researcher

Sian Graham is an Indigenous woman from the Balladong area near Perth and One Arm Point community out of Broome.

Born and raised in Darwin, Sian has strong links throughout the NT and Western Australia (WA) where she has lived and worked in remote communities.

In 2009, Sian commenced her career as a researcher at Menzies. After three years, she was inspired to build on her career. She found she had the knowledge, connection and skills, but no documentation to back up her skillset. In 2013, she ignited her education journey by enrolling in a Certificate IV in Indigenous Research Capacity Building.

A year later, Sian commenced a Bachelor of Applied Science in Indigenous Community Health degree at Curtin University, WA.

***"This was one of the scariest things I had ever done in my life but I was determined to battle my demons and to pursue a higher education," Sian said.***

In 2016, Sian completed her degree and is enrolled in an Honours degree at CDU. But she won't stop there; her goal is to complete a Masters, followed by a PhD. She hopes to lead her own qualitative research and manage an all-Indigenous research team at Menzies.

Sian is passionate about working with her people. She has a strong commitment to Indigenous health issues and takes great satisfaction in knowing that she is working towards better health outcomes and stronger futures for her mob.



Sian Graham with NT Diabetes in Pregnancy Partnership (PANDORA) participant, Nataria O'Keefe and her baby, Bill.



# Youth engagement strategy

**Our Youth Engagement Strategy is designed to attract more young people to consider a career in health, science, research and corporate areas.**

**The strategy provides opportunities for young Territorians to interact with leading health researchers through a number of programs and activities, including school student visits, work experience, career expos and traineeships.**

## Successful traineeships

In 2016, we hosted four trainees who successfully completed their Certificate III requirements before securing positions at Menzies or progressing to further study. Corporate services trainees, Stephanie Lyons and Clarissa Carter, completed the Certificate III in Business before securing administrative positions at Menzies. Child health trainee, Susanne Munkara, worked with the Menzies HealthLAB team while completing her Certificate III in Health and Community Services. In 2017, she will commence a Bachelor of Health Science at Monash University.

After completing the Certificate III in Laboratory Skills, our fourth trainee commenced a Bachelor of Forensics at Flinders University in Adelaide.

Three of the trainees were part of the Indigenous Youth Traineeship Program funded by the Department of the Prime Minister and Cabinet's Indigenous Advancement Strategy.

## Skills and Employment Careers Expo

Our trainees represented Menzies at the 2016 Skills and Employment Careers Expo held at the Darwin Convention Centre.

The two-day expo provided them the opportunity to interact with school students about their traineeship experience, including their vocational education and training course. They spoke about the support received from Menzies staff and Group Training NT, as well as the work they were involved with as part of the on the job component.



Susanne Munkara



Stephanie Lyons



Clarissa Carter

# Award winners

## Child Health

- Jemima Beissbarth was a finalist in the Group Training NT Supervisor of the Year Award for her remarkable work in training nine Menzies trainees over the last four years.

## Wellbeing and Preventable Chronic Diseases

- Associate Professor Gail Garvey received the highly competitive 2016 Bupa Health Foundation Emerging Health Researcher Award.
- Associate Professor Gail Garvey was also awarded the NHMRC Rising Star Award as the top ranked Indigenous Early Career Fellowship recipient in recognition of her work to raise both the research and health services profile regarding the cancer disparities facing Indigenous Australians.
- Associate Professor Gail Garvey also received the Lowitja Institute Research Leadership award in recognition of her outstanding leadership and excellence within the Indigenous community.
- Dr Lisa Whop received the Lowitja Institute Aboriginal and Torres Strait Islander Student Award for excellence in her PhD study, focusing on research in Indigenous Australian women and cervical cancer prevention and cervical cancer outcomes.
- The Menzies nutrition team was named joint winner of the Exceptional Research Team award as part of CDU's Vice-Chancellor's Awards for their leadership and innovation, and the continued dedication of Menzies teams to conduct the highest quality, directly relevant research to address critical issues in tropical and Indigenous health.

## Global and Tropical Health

- Dr Robert Commons was awarded the Gustav Nossal Award as the highest ranked applicant for an NHMRC Postgraduate Scholarship in the field of medical and dental research for his project to tackle the global burden of malaria.
- The Menzies melioidosis team was named joint winner of the Exceptional Research Team award as part of CDU's Vice-Chancellor's Awards for their leadership and innovation, and the continued dedication of Menzies teams to conduct the highest quality, directly relevant research to address critical issues in tropical and Indigenous health.
- Former PhD student Rini Poespoprodjo received the Humanitarian Award at the Australia Indonesia Awards.

## Internal awards

- The 2016 Menzies Medallion was presented to Dr Christine Connors for her significant contribution to primary health care, Indigenous health and Top End health services delivery in the NT.
- The 2016 Ryan Family Prize was awarded to Joanne Bex for her outstanding, ongoing commitment to her role as laboratory manager.
- The 2016 Harry Christian Giese Research Into Action award was won by Dr Jaqui Hughes. Dr Hughes will use the award to support translation of her research findings of effective treatment for people on dialysis who have contracted melioidosis into medical interventions.
- The 2016 Val Asche Prize for academic excellence was awarded to Emma Grimes (Master of Public Health) and Jodi Phillips and Leigh Moore (Graduate Diploma in Health Research).



2016 Menzies Medallion recipient, Dr Christine Connors.

# Long service awards

Our long service awards provide the opportunity to reflect on the contributions of those that have been instrumental to Menzies' development, growth and success.

Recognised in 2016 for their long-standing contributions were:

## 20 years

- Professor Joan Cunningham
- Professor Nicholas Anstey

## 15 years

- Christine Wigger
- Dr Matthew Stevens
- Dr Susan Pizzutto

## 10 years

- Associate Professor David Thomas
- Associate Professor Julie Brimblecombe
- Linda Quall
- Associate Professor Louise Maple-Brown
- Rachael Gorie
- Professor Ross Andrews
- Dr Thérèse Kearns

## 5 years

- Alana Gall
- Christel van den Boogaard
- Christina Spargo
- Associate Professor Gail Garvey
- Hayley Williams
- Dr Helen Harper
- Jason Chin

- Jodi Phillips
- Jennifer Roberts
- Jennifer Wong
- Kathryn Bright
- Dr Lisa Whop
- Nina Downie
- Dr Patiyan Andersson
- Dr Rebekah McWhirter
- Stefanie Puszka
- Dr Tegan Harris
- Vanessa Rigas
- Veronica Matthews



10 year award winners Assoc Prof David Thomas, Assoc Prof Louise Maple-Brown and Linda Quall with Director, Prof Alan Cass.



Associate Professor Gail Garvey at the Bupa Health Foundation awards night. Image courtesy of Bupa Foundation.

## Associate Professor Gail Garvey

### Feature award winner

Associate Professor Gail Garvey's star shone brightly among Menzies researchers last year, taking home three major national awards recognising research excellence.

Assoc Prof Garvey, who leads two large national grants, has a widely-recognised leadership role in Indigenous cancer research.

In her work, she has brought together key cancer researchers, clinicians and Indigenous people to identify cancer research priorities with the aim of closing the health gap.

In July, Assoc Prof Garvey was awarded the NHMRC Rising Star Award. She was recognised as the top ranked Indigenous Early Career Fellowship recipient for her work in raising awareness of the cancer disparities facing Indigenous Australians.

Later in the year, she was awarded the Lowitja Institute Research Leadership award in recognition of her outstanding leadership and excellence within the Indigenous community.

Just over a week later, Assoc Prof Garvey received the highly competitive 2016 Bupa Health Foundation Emerging Health Researcher Award.

The year was a big one for our Brisbane-based researcher, who also successfully hosted the world's first Indigenous cancer conference in April.

# Education and training

## 2016 saw the graduation of nine higher degree by research (HDR) students and the continual development of the CDU postgraduate coursework and VET programs taught by Menzies.

Our research academics supervised an exceptional cohort of HDR students with a strong completion and scholarship success record. Last year's PhD graduates produced significant research contributions in Indigenous health, with a focus on cancer care, cervical screening, hepatitis B and smoking prevention; epidemiological studies of melioidosis, chronic kidney disease and survival analysis as well as anthropological studies of female reproduction and child malnutrition.

Our enrolments in the postgraduate courses of Master of Public Health and the Graduate Diplomas in Public Health and Health Research continued to strengthen. The fact that more than half of our students are NT residents also bodes well for local impact on public health practice and health research. In addition, student confidence to move between coursework and higher degrees by research has grown with the increased participation in research methods units and research projects.

In preparation for the launch of the Master of Public Health to international students in 2017, we visited potential collaborators in Hong Kong and Malaysia with the aim of enhancing academic programs for prospective students.

In 2016, we celebrated the graduation of the first cohort of Certificate II in Community Health Research (10513NAT) students. The six community-based researchers were the first to complete the course after it received national accreditation in 2015, with Menzies as the CDU Registered Training Organisation. A further 19 community-based researchers are on track to complete the course in 2017.

At the end of the year, we farewelled our long-serving academic administrator, Catherine Richardson as she embarked on her retirement after 17 years of outstanding contribution to Menzies.

## Master of Public Health Graduates completing with a research thesis

- Emily Bowden: Strongyloidiasis: A nested, matched, case-control study.

## HDR graduates in 2016

- Sarah Ireland (PhD): Paperbark and Pinard: A cultural and historical exploration of female reproduction in one remote northern Australian Aboriginal Town.
- Anna Szava (PhD): Explaining child malnutrition in two villages in south-west Ethiopia: Local views and local opportunities.
- Associate Professor Gail Garvey (PhD): Psychosocial aspects of cancer care for Indigenous Australians.
- Jane Davies (PhD): Hepatitis B in Australia's Northern Territory: Understanding the true story.
- Yaofeng Vincent He (PhD): Long Term Health Outcomes of Indigenous and Non-Indigenous Australians in the NT After Serious Illness: A Survival Analysis Approach.
- Paul Lawton (PhD): The incidence and outcomes of chronic kidney disease amongst Indigenous Australians.
- Evan McRobb (PhD): *Burkholderia pseudomallei* in northern Australia: Sequencing approaches to better biogeographical and epidemiological understanding.
- Anna Nicholson (PhD): On target: Health information recall and effects in Aboriginal and Torres Strait Islander smokers.
- Lisa Whop (PhD): Indigenous women and cervical screening in QLD. The first comprehensive study on Indigenous Australian women's inequalities in cervical screening; a QLD record-linkage study.



Sarah Bukulatjpi, Graduate - Certificate II in Community Health Research and Dr Jane Davies at the 2016 CDU graduation ceremony.

## HDR scholarships announced in 2016

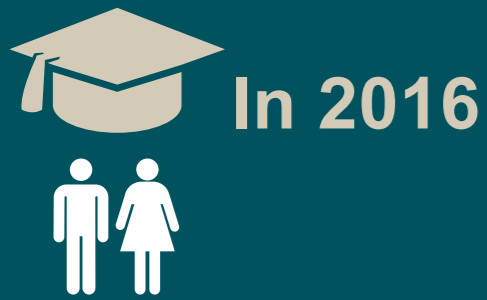
- Alana Gall (Master by Research): Indigenous Australian gynaecological cancer patients' use of and disclosure of Complementary and Alternative Medicine (CAM) and/or Traditional Medicine (TM). Discover -TT CRE scholarship.
- Abbey Diaz (PhD): The effect of comorbidity on cancer screening, diagnosis, survival and supportive care needs in Australian Indigenous and non-Indigenous peoples. Discover -TT CRE scholarship.
- Josie Povey (PhD): Developing a new e-mental health resource: The Aboriginal and Islander Mental Health Initiative for Youth (AIMhi-Y). Research Training Program (RTP) Stipend Scholarship.
- Saji Sebastian (PhD): Evaluation of the impact of the QLD Health indigenous Brief using continuous quality improvement techniques. Research Training Program (RTP) Stipend Scholarship.
- Allison Gray (PhD): The 'Communicate' Study: Audit and intervention to improve intercultural communication in healthcare. Research Training Program (RTP) Stipend Scholarship.

- Jessica Webb (PhD): Characterisation of antibiotic resistance mechanisms in *Burkholderia pseudomallei*, the causative agent of melioidosis. The Barbara Hale Fellowship.
- Lyndall Warton (Master by Research): Systematic review to improve parents' ability to shape healthful eating and physical activity behaviours in Indigenous children. Research Training Program (RTP) Stipend Scholarship.

## (Professional) Doctor of Public Health / Doctor of Health Graduates completing with a research thesis

- Jiunn-Yih Su (Doctor of Public Health): Collecting and analysing testing data to improve the surveillance of sexually transmissible infections in the NT.
- Caroline Greenstein (Doctor of Health): Collecting and analysing testing data to improve the surveillance of sexually transmissible infections in the NT.

## HDR and Coursework Student Numbers (2012 – 2016)



Year	HDR Student Enrolments	HDR Graduates	Coursework and Professional Doctorate	Coursework Graduates
			Equivalent full time student load (EFTSL)	
2012	66	4	32.125	31
2013	71	6	29.75	32
2014	64	7	39.75	15
2015	58	8	46.875	28
2016	56	9	47.88	35

## 2016: 10513 NAT Certificate II in Community Health Research (first year)

Year	Enrolments	VET Graduands
2016	25	6

# Community engagement

### 2016 Menzies Oration delivered by The Honourable Linda Burney MP

The first elected Indigenous woman in the House of Representatives, Shadow Minister for Human Services, The Hon Linda Burney MP delivered a powerful, inspiring and moving Menzies Oration to over 200 guests at the Darwin Convention Centre.

Ms Burney's presentation, 'Truth Telling and Generosity: Healing the Heart of a Nation' focused on the importance of narrative in the reconciliation process, the recognition of First Peoples in the constitution and the current governments' Indigenous Affairs policy.

In addition to Ms Burney's presentation, the crowd was entertained by singer-songwriter Leah Flanagan.



The Hon Linda Burney MP delivers the 2016 Oration.

### HealthLAB tours the Top End during National Science Week

Assisted by a National Science Week grant, HealthLAB visited four remote Top End communities throughout August.

The HealthLAB team engaged community members in Bathurst Island, Mataranka, Katherine and Batchelor to conduct their own health tests and find out what the results mean for their general wellbeing.

*Below images: Students from Jilkminggan school near Mataranka enjoy learning about their health with HealthLAB.*



# Our donors and supporters

Last year, the Menzies Development team introduced a number of new supporters to the work of Menzies and continued to build on our strong foundation of established community and corporate relationships.

Our combined corporate and philanthropic committed for 2016 was over \$4 million, and we extend our gratitude to our donors, collaborators and supporters who enabled us to continue our work.

We would like to thank Richard Ryan AO, Rowan Johnston, Dr Richard Russell, Kate Russell, Simon Schwarz and Suzi Hullick from the Menzies Development Committee, who give many hours of their time each year to provide advice and expertise to the Executive and Development Team.

## Engagement events

Three events were sponsored and hosted for Menzies during the year in Melbourne, Sydney and Brisbane. This provided an opportunity for business and philanthropic leaders to hear from Menzies staff working at the coalface of Indigenous health research.

We thank our hosts: Suzi Hullick (National Head of Indigenous Business, Commercial Banking - Westpac); Keith Jones (Chairman - Deloitte Australia); Maryjane Crabtree (Partner - Allens); John Hedge (Partner - Allens) and Stuart Giles (Founding Chairman - Icon Cancer Care).

## Ambassador events

Our ambassadors joined us for two events to discuss ways to increase our public profile, extend our community impact and ensure sustainable future income.

We extend our gratitude to our event hosts, Michele Levine (Roy Morgan Research) and Ben McLaughlin (Baker & McKenzie), and to all of our Patrons and Ambassadors for their ongoing support: Helen Coonan; Daniel Gilbert; Brandon and Nicky Carp; Dean Rioli; Belinda Gibson; Richard and Kate Russell; Suzi Hullick; Les Trudzick; Maryjane Crabtree; Rebecca McGrath; Allan Vidor; Michael Rose; Jason Eades; Rosemary Calder; Charlie King; Lesley Braun; Simon McKeon; Susan Alberti; Bronwyn Pike; Michele Levine; Ian Kew; John Cossons and Mark Carnegie.

## Garma Festival

In July 2016, Menzies participated in the Garma Festival, a gathering hosted by the Yolngu people of Northeast Arnhem Land.

Menzies Director Professor Alan Cass chaired a forum on Indigenous health and hosted a fireside chat discussing our collaborative model for supporting Indigenous-led, whole-of-community health planning and service reorientation.

Menzies' HealthLAB was a highly visible element of the festival measuring the health of more than 250 local guests and local community members across four days.

This mobile interactive and educational health assessment laboratory travels to urban, rural and remote communities around the NT to give people a snapshot of their current health picture, highlighting any risk markers for future chronic disease and providing important health information to help people make healthier choices going forward.

We are grateful to the organisations which supported our attendance at Garma: Developing East Arnhem Limited; Westpac; Australian Unity; Dreamedia Creative; Zip Print and Boab Design.

## Whole-of-Community Health Needs Assessments

In 2016, we launched two new projects in two remote Indigenous communities. The Whole-of-Community Health Needs Assessments will support local Indigenous peoples to achieve significant improvements in the health and wellbeing of their entire community, utilising an innovative, community-led, integrated planning process and implementation strategy.

We are working with Medibank and the McArthur River Mine Community Benefits Trust to support the communities to set their own health agendas and to be active participants in co-creating, implementing and coordinating the health services and initiatives that meet their health priorities.

# Major donors and partners

We are grateful to the following donors and partners for their generous support in 2016:

## Major donors

Andrew Israel  
A McLaren Barrister and Solicitor  
Dr Anna Ralph  
Belinda Gibson  
Bhisminder Lutherr  
Brian Martin  
Catherine Turner  
Chris and John Collingwood  
Christopher Chen  
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McArthur River Mine annual charity golf day tournament  
McDonalds Katherine  
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Addis Continental Institute of Public Health (ACIPH), Ethiopia  
Agency for Clinical Innovation (ACI) NSW  
Airthorth  
Alaska Native Tribal Health Consortium  
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Auckland University  
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Australasian Society for Infectious Diseases Clinical Research Network  
Australian Academy of Science  
Australian and New Zealand Dialysis and Transplant Registry  
Australian Army Malaria Institute  
Australian Broadcasting Corporation  
Australian Federation of Graduate Women  
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Australian Government Department of Families, Housing, Community Services and Indigenous Affairs  
Australian Government Department of Foreign Affairs and Trade  
Australian Government Department of Health  
Australian Government Department of Industry and Science  
Australian Government Department of the Prime Minister and Cabinet  
Australian Government Department of Social Services  
Australian National University  
Australian Red Cross Society  
Australian Regional and Remote Community Services  
Australian Society for HIV Medicine  
Australian Unity  
Baker & McKenzie  
Baker Heart and Diabetes Institute  
Baniyala Garrangali School  
Bawinanga Aboriginal Corporation

Berrimah Veterinary Labs  
BeyondBlue  
Bila Muuji Upper Sector Consortium NSW  
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Canadian Partnership Against Cancer  
Cancer Council Australia  
Cancer Council NSW  
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Cancer Council WA  
Cancer Institute NSW  
Catholic Education NT  
Center for Tropical & Emerging Global Diseases, University of Georgia, Athens, GA, USA  
Central Adelaide Local Health Network  
Central Australian Aboriginal Congress  
Central Australian Health Service  
Central West Hospital and Health Service  
Centre for Disease Control (CDC)  
Centre for Remote Health  
Centre for Tropical Medicine and Global Health, Oxford University  
Centro Internacional de Entrenamiento e Investigaciones (CIDEIM), Colombia  
Channel 7 Children's Research Foundation  
Charles Darwin University  
Collier Charitable Fund  
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CSIRO  
Danila Dilba Health Service  
Deakin University  
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Deloitte Access Economics  
Deloitte Australia  
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Department of Homeland Security, USA  
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Goodman Fielder  
Griffith University  
Group Training NT  
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Gurriny Yealamucka Health Service Aboriginal Corporation  
Hanako Foundation  
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Healthy Living NT  
Heart Foundation Australia  
Heart Foundation NSW  
Heart Foundation QLD  
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Lowitja Institute  
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Aboriginal Corporation  
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University of Columbia, USA  
Malaria Atlas Project (MAP), Oxford  
Big Data Institute,  
University of Oxford  
Malaysia Ministry of Health  
Mallee District Aboriginal  
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Mamu Health Service Limited  
McArthur River Mine  
Community Benefits Trust  
McMaster University  
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Group of Australia  
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Medicines for Malaria Venture  
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Memorial University, Newfoundland  
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Monash University  
Mulungu Aboriginal Corporation  
Primary Health Care Service  
Mura Kosker Sorority Inc  
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Yalu Marnghithyraw  
Yothu Yindi Foundation  
Zip Print



*We wish to thank the many individuals and communities who granted permission to use photographic images of themselves and their children throughout this publication.*

Michelle Woody with daughter Maria on the Tiwi Islands.

# Featured publications

Our researchers are committed to conveying their research findings to a wide audience. In 2016, 398\* publications, including 365\* peer-reviewed articles were published. This ensures our research is effectively translated, leading to better outcomes for Indigenous and non-Indigenous Australians, as well as disadvantaged populations in our global neighbourhood. Below is a selection of highlighted publications from 2016.



In 2016  
398\* publications,  
including  
365\* peer-reviewed  
were published

Chang, A.B., Upham, J.W., Masters, I.B., Redding, G.J., Gibson, P.G., Marchant, J.M., & Grimwood, K. (2016). State of the Art: Protracted bacterial bronchitis: the last decade and the road ahead. *Pediatric Pulmonology*, 51(3), 225-42.

*Protracted bacterial bronchitis is a diagnostic entity first recognised by Chang and colleagues in 2006. This state of the art review summaries how the field has progressed since the world's first description, including recognition of the condition by all the major respiratory societies in the world.*

Leach, A.J., Wigger, C., Beissbarth, J., Woltring, D., Andrews, R., Chatfield, M.D., et al. (2016). General health, otitis media, nasopharyngeal carriage and middle ear microbiology in Northern Territory Aboriginal children vaccinated during consecutive periods of 10-valent or 13-valent pneumococcal conjugate vaccines. *International Journal of Pediatric Otorhinolaryngology*, 86, 224-32.

*This paper is the third in a sequence of publications on the risk factors and high prevalence of otitis media in Indigenous children living in NT remote communities during three pneumococcal conjugate vaccine (PCV) eras. Importantly the work draws on potential significance of using a novel schedule of two PCVs to provide maximum coverage of OM pathogens – 13 predominant pneumococcal strains and almost all non-typeable Haemophilus influenzae (NTHi) strains - the major pathogens in children with acute and chronic perforation tympanic membranes ("runny ears"). The results strongly support our concurrent randomised trials which are evaluating combined PCV schedules.*

Juonala, M., Davison, B., van Schilfgaarde, K., Skilton, M., Sabin, M., Cheung, M., et al. (2016). Childhood metabolic syndrome, inflammation and carotid intima-media thickness. The Aboriginal Birth Cohort Study. *International Journal of Cardiology*, 203, 32-6.

*Metabolic Syndrome in childhood is associated with subclinical atherosclerosis in Australian Indigenous adolescents and the effects appear to be mediated by increased inflammation. Improvement in metabolic status was associated with some amelioration of atherosclerosis.*

Marsh, R.L., Kaestli, M., Chang, A.B., Binks, M.J., Pope, C.E., Hoffman, L.R., & Smith-Vaughan, H.C. (2016). The microbiota in bronchoalveolar lavage from young children with chronic lung disease includes taxa present in both the oropharynx and nasopharynx. *Microbiome*, 4(1), 37.

*In young children who do not cough up phlegm, upper airway sampling is often used to provide a surrogate measure of lower airway bacteria. This study demonstrated that for young children optimal surrogate measures of lower airway microbiota are achieved by sampling both the nose and throat, as opposed to just the throat (the method recommended for adults). These results inform best practice for studying lung microbiota in young children.*

Binks, M.J., Smith-Vaughan, H.C., Marsh, R., Chang, A.B., & Andrews, R.M. (2016). Cord blood vitamin D and the risk of acute lower respiratory infection in Indigenous infants in the Northern Territory. *Medical Journal of Australia*, 204(6), 238.

*The first study to longitudinally describe vitamin D among pregnant Indigenous mothers and their offspring. We found a high proportion of cord blood vitamin D <50nmol/L (vitamin D deficiency cut-off in adults) which was associated with a higher risk of infant respiratory infection hospitalisation.*

Whop, L., Garvey, G., Baade, P., Cunningham, J., Lokuge, K., Brotherton, J.M., et al. (2016). The first comprehensive report on Indigenous Australian women's inequalities in cervical screening: A retrospective registry cohort study in Queensland, Australia (2000-2011). *Cancer*, 122(10), 1560-9.

*This paper was the first to report population-based estimates of Indigenous Australian women's cervical screening participation compared to other Australian women (in QLD) and to report time trends and variations by age, geography and socioeconomic status. Indigenous Australian women showed lower participation in cervical cancer screening (33.5% vs 55.7%), and this did not appear to change over time.*

Maple-Brown, L.J., Hughes, J.T., Ritte, R., Barzi, F., Hoy, H., Lawton, P.D., et al. (2016). Progression of kidney disease in Indigenous Australians: The eGFR Follow-up Study. *Clinical Journal of the American Society of Nephrology*, 11(6), 993-1004.

*This longitudinal follow-up of 550 Indigenous participants across over 20 sites, reported albuminuria as the strongest predictor of kidney damage progression.*

McMahon, E.J., Clarke, R., Jaenke, R., & Brimblecombe, J. (2016). Detection of 12.5% and 25% Salt Reduction in Bread in a Remote Indigenous Australian Community. *Nutrients*, 8(3), 169.

*This study demonstrates that 25 per cent salt reduction in one of the top-selling breads in remote Indigenous communities was not detectable to consumers, and has led to a larger study testing whether salt reduction affected sales of the bread. The aim of this research is to reduce the salt intake in the remote Indigenous food supply, providing a cost-effective, low-burden approach to improving population health outcomes in remote Indigenous communities.*

Puszka, S., Dingwall, K.M., Sweet, M., & Nagel, T. (2016). E-Mental Health Innovations for Aboriginal and Torres Strait Islander Australians: A Qualitative Study of Implementation Needs in Health Services. *JMIR Mental Health*, 3(3), e43.

*Analysis of interviews with 32 senior NT health service professionals led to in depth understanding of the potential for e-mental health in practice. The resulting publication concluded with recommendations for practitioners, developers, health services and government which included Indigenous consumer consultation, community collaboration in resource development, service adaptation of relevant policies and procedures, and government support for e-mental health training.*

Thomas, D.P., & Hefler, M. (2016). How to reduce adolescent smoking in low and middle income countries. *Lancet Global Health*, 4(11), e762-763.

*This invited commentary describes how best to reduce adolescent smoking in low and middle income countries as the tobacco epidemic moves to these countries from high-income countries. It may be more strategic to focus on established whole-of-population measures rather than those targeting adolescents, and we need to continue to expose and combat the political influence of tobacco companies in these countries.*

Andersson, P., Harris, S.R., Seth Smith, H.M.B., Hadfield, J., O'Neill, C., Cutcliffe, L.T., et al. (2016). Chlamydia trachomatis from Australian Aboriginal people with trachoma are polyphyletic composed of multiple distinctive lineages. *Nature Communications*, 7, 10688.

*This reports the first genome sequencing of Australian trachoma strains. The study has significant public health implications.*

Davis, J.S., Sud, A., O'Sullivan, M.V., Robinson, J.O., Ferguson, P.E., et al for the CAMERA study group and the ASID Clinical Research Network. (2016). Combination of vancomycin and  $\beta$ -lactam therapy for methicillin resistant Staphylococcus aureus bacteremia: A pilot multicentre randomized controlled trial. *Clinical Infectious Diseases*, 62(2), 173-80.

*This study has bridged the "bench to bedside" gap by testing combination treatment in a clinical setting for the first time. It showed a strong signal of efficacy and justifies a larger clinical trial with more patient-centred endpoints.*

McGuinness, S.L., Whiting, S.E., Baird, R., Currie, B.J., Ralph, A.P., Anstey N.M., et al. (2016). Nocardiosis in the tropical Northern Territory of Australia, 1997-2014. *Open Forum Infectious Diseases*, 3(4), ofw208.

*This large case series provides the first detailed account of the spectrum of nocardiosis in Australia's tropical north.*

Bowen, A.C., Harris, T., Holt, D.C., Giffard, P.M., Carapetis, J.R., Campbell, P.T., et al. (2016). Whole genome sequencing reveals extensive community-level transmission of group A Streptococcus in remote communities. *Epidemiology and Infection*, 144(9), 1991-8.

*Whole genome sequencing technology has been applied to demonstrate the widespread and frequent transmission of skin pathogens both within and between households in Indigenous communities. Strategies to prevent future transmission will require whole of community interventions.*

Ralph, A.P., Read, C., Johnston, V., de Dassel, J.L., Bycroft, K., Mitchell, A., et al. (2016). Improving delivery of secondary prophylaxis for rheumatic heart disease in remote Indigenous communities: study protocol for a stepped-wedge randomised trial. *Trials*, 17, 51.

*This large randomised stepped-wedge trial enrolled ten communities across the NT. It tested whether a health systems strengthening intervention using continuous quality improvement could improve delivery of preventative penicillin injections for people who have had rheumatic fever. Findings from the study are currently being analysed and provide important lessons for the future of rheumatic fever control.*

Pearson, R.D., Amato, R., Auburn, S., Miotto, O., Almagro-Garcia, J., Amaratunga, C., et al. (2016). Genomic analysis of local variation and recent evolution in the Plasmodium vivax population. *Nature Genetics*, 48(8), 959-964.

*A high profile publication on the genomics of P. vivax that will lead to a better understanding of the parasite's biology.*

Grigg, M.J., William, T., Menon, J., Dhanara, P., Barber, B.E.B., Wilkes, C.S., et al. (2016). Artesunate-mefloquine versus chloroquine for treatment of uncomplicated Plasmodium knowlesi malaria in Malaysia (ACT KNOW): an open-label randomised controlled trial. *Lancet Infectious Diseases*, 16(2), 180-188.

*An important clinical trial that shows that artemisinin combination therapy is a better treatment option for P. knowlesi, with earlier discharge from hospital.*

Barber, B.E., William, T., Grigg, M.J., Piera, K.A., Chen, Y., Wang, H., et al. (2016). Nitric oxide dependent endothelial dysfunction and reduced arginine bioavailability in vivax malaria but no greater increase in intravascular haemolysis in severe disease. *Journal of Infectious Diseases*, 214(10), 1557-1564.

*A study that provides further insights into the ways in which vivax malaria causes severe disease.*

Auburn, S., Serre, D., Pearson, R., Amato, R., Sriprawat, K., To, S., et al. (2016). Genomic analysis reveals a common breakpoint in amplifications of the Plasmodium vivax multidrug resistance 1 locus in Thailand. *Journal of Infectious Diseases*, 214(8), 1235-1242.

*A new finding, demonstrating an easy genetic test to identify drug resistant vivax malaria parasites.*

Lee, H.G., William, T., Menon, J., Ralph, A.P., Ooi, E.E., Hou, Y., et al. (2016). TB meningitis is a major cause of mortality and morbidity in adults with central nervous system infections in Kota Kinabalu, Sabah, Malaysia: an observational study. *BMC Infectious Diseases*, 16, 296.

*This paper highlights a major burden of TB meningitis in Sabah Malaysia, highlight the importance of novel strategies to prevent and treat TB.*

\*Preliminary data

# Financial summary

## STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME FOR THE YEAR ENDED 31 DECEMBER 2016

	NOTE	2016 \$	2015 \$
<b>INCOME FROM CONTINUING OPERATIONS</b>			
Australian Government financial assistance			
National Health and Medical Research Council	2	11,687,385	12,451,542
Other government agencies	2	3,986,501	4,899,826
NT Government financial assistance	3	9,787,331	4,640,060
Fees and charges	4	3,501,465	3,916,103
Investment income	5	769,509	706,971
Consultancy and contract research	6	9,408,806	6,668,651
Other revenue	7	3,944,465	3,491,095
<b>TOTAL REVENUE FROM CONTINUING OPERATIONS</b>		<b>43,085,462</b>	<b>36,774,248</b>
Gain on disposal of assets	8	8,000	8,901,734
<b>TOTAL INCOME FROM CONTINUING OPERATIONS</b>		<b>43,093,462</b>	<b>45,675,982</b>
<b>EXPENSES FROM CONTINUING OPERATIONS</b>			
Employee related expenses	9	(23,335,161)	(22,584,391)
Depreciation and amortisation expense	10	(2,556,646)	(2,366,006)
Repairs and maintenance	11	(1,178,544)	(1,122,791)
Direct research costs	12	(5,695,057)	(5,799,455)
Other expenses	13	(6,466,987)	(5,857,493)
<b>TOTAL EXPENSES FROM CONTINUING OPERATIONS</b>		<b>(39,232,395)</b>	<b>(37,730,136)</b>
<b>OPERATING RESULT FROM CONTINUING OPERATIONS</b>		<b>3,861,067</b>	<b>7,945,846</b>
<b>OPERATING RESULT ATTRIBUTABLE TO MEMBERS</b>		<b>3,861,067</b>	<b>7,945,846</b>
Revaluation of investment	23	5,967	5,003
<b>TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO MEMBERS</b>		<b>3,867,034</b>	<b>7,950,849</b>

The above Statement of Profit or Loss and Other Comprehensive income should be read in conjunction with the notes included in the audited 2016 financial statements

## STATEMENT OF FINANCIAL POSITION FOR THE YEAR ENDED 31 DECEMBER 2016

	NOTE	2016 \$	2015 \$
<b>ASSETS</b>			
<b>CURRENT ASSETS</b>			
Cash and cash equivalents	14	10,645,929	5,526,088
Trade and other receivables	15	596,372	1,285,006
Other financial assets	16	24,727,000	22,727,000
Other non-financial assets	18	658,795	231,835
<b>TOTAL CURRENT ASSETS</b>		<b>36,628,096</b>	<b>29,769,929</b>
<b>NON-CURRENT ASSETS</b>			
Other financial assets	16	34,744	27,745
Property, plant and equipment	19	2,364,712	2,905,960
Intangible assets	17	30,027,832	31,717,832
<b>TOTAL NON-CURRENT ASSETS</b>		<b>32,427,288</b>	<b>34,651,537</b>
<b>TOTAL ASSETS</b>		<b>69,055,384</b>	<b>64,421,466</b>
<b>LIABILITIES</b>			
<b>CURRENT LIABILITIES</b>			
Trade and other payables	20	594,160	544,697
Provisions	22	4,424,968	3,463,251
Other liabilities	21	120,852	378,464
<b>TOTAL CURRENT LIABILITIES</b>		<b>5,139,980</b>	<b>4,386,412</b>
<b>NON-CURRENT LIABILITIES</b>			
Provisions	22	494,420	481,104
<b>TOTAL NON-CURRENT LIABILITIES</b>		<b>494,420</b>	<b>481,104</b>
<b>TOTAL LIABILITIES</b>		<b>5,634,400</b>	<b>4,867,516</b>
<b>NET ASSETS</b>		<b>63,420,984</b>	<b>59,553,950</b>
<b>EQUITY</b>			
Reserves	23	6,831,863	6,077,224
Retained earnings	24	56,589,121	53,476,726
<b>TOTAL EQUITY</b>		<b>63,420,984</b>	<b>59,553,950</b>

The above Statement of Financial Position should be read in conjunction with the notes included in the audited 2016 financial statements



**STATEMENT OF CHANGES IN EQUITY  
FOR THE YEAR ENDED 31 DECEMBER 2016**

2016	NOTE	RETAINED EARNINGS	RESERVES	TOTAL
		\$	\$	\$
Balance at 1 January 2016		53,476,726	6,077,224	59,553,950
Operating result for the year	25	3,861,067	-	3,861,067
Net revaluation gain on investments	23	-	5,967	5,967
<b>TOTAL COMPREHENSIVE INCOME</b>		<b>57,337,793</b>	<b>6,083,191</b>	<b>63,420,984</b>
Transfers	24	(748,672)	748,672	-
Balance at 31 December 2016		56,589,121	6,831,863	63,420,984
2015	NOTE	RETAINED EARNINGS	RESERVES	TOTAL
		\$	\$	\$
Balance at 1 January 2015		44,929,749	6,814,786	51,744,535
Operating result for the year	25	7,945,846	-	7,945,846
Net revaluation gain on investments	23	-	5,003	5,003
<b>TOTAL COMPREHENSIVE INCOME</b>		<b>52,875,595</b>	<b>6,819,789</b>	<b>59,695,384</b>
Distributions to owners	24	(141,434)	-	(141,434)
Transfers	24	742,565	(742,565)	-
Balance at 31 December 2015		53,476,726	6,077,224	59,553,950

The above Statement of Changes in Equity should be read in conjunction with the notes included in the audited 2016 financial statements.

**ANALYSIS OF NET SURPLUS**

The surplus for the year ended 31 December 2016 includes revenue received for research projects that have a life beyond the end of the financial year. Revenue received for these projects is recognised in the year of receipt. Future commitments for these projects will extend beyond the year the income was received for those projects.

The research investment funding (\$5m) received from the NT Government is one-off funding to be used strategically to fund research that delivers strong economic and health return for the Territory.

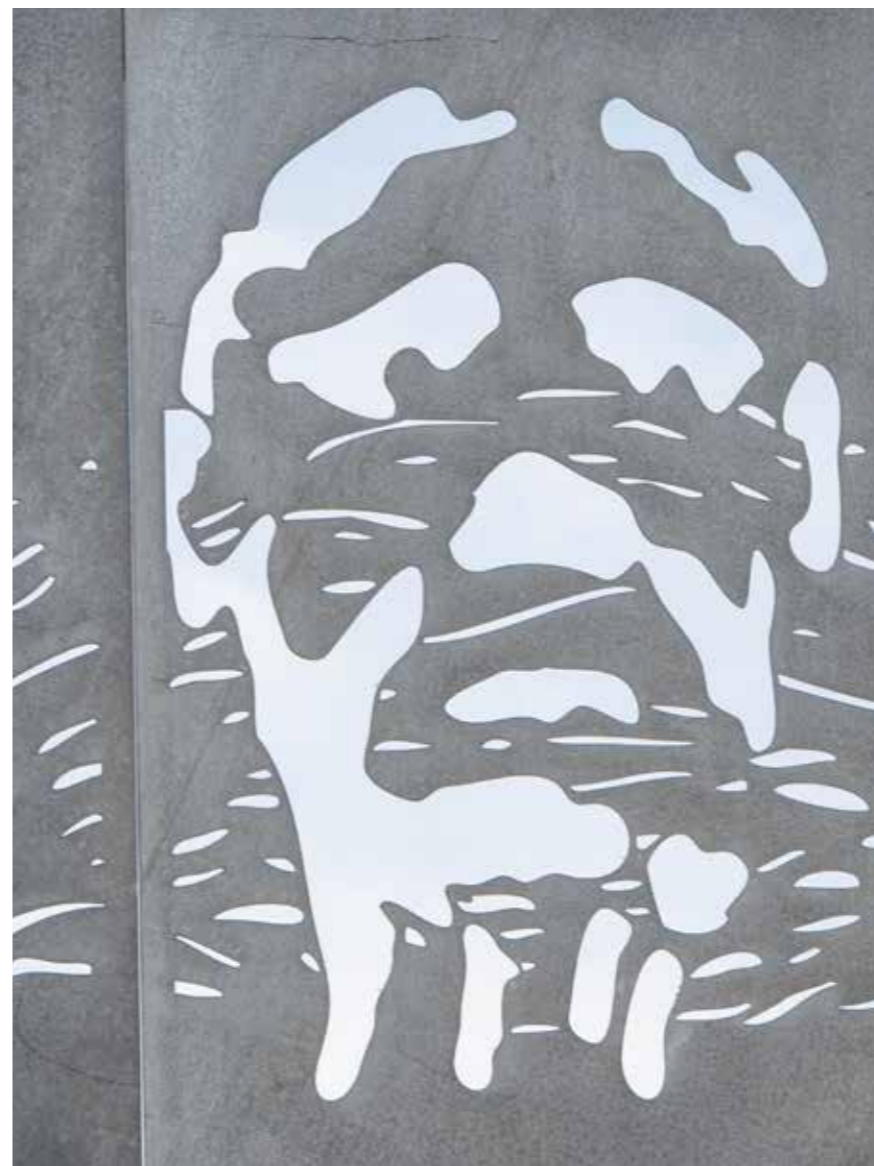
The gain on disposal of assets in the 2015 year is mainly due to the difference between building refurbishment costs of \$8.4m subsequently transferred to the NT Government Department of Health, and the recognition of an intangible asset at fair value of \$17.3m in respect of the right to use that refurbished building at a peppercorn rent.

**STATEMENT OF CASH FLOWS  
FOR THE YEAR ENDED 31 DECEMBER 2016**

	NOTE	2016 \$	2015 \$
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>			
Australian Government grants		16,093,962	20,190,631
NT Government funding		9,787,331	4,640,060
Fees and charges		3,501,465	3,916,103
Interest received		768,478	706,971
Consultancies and contract research		9,408,806	6,668,651
Other receipts		3,662,621	4,656,188
Payments to suppliers		(12,619,736)	(17,292,687)
Payments to employees		(23,165,688)	(22,203,428)
<b>NET CASH GENERATED FROM OPERATING ACTIVITIES</b>	27	<b>7,437,239</b>	<b>1,282,490</b>
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>			
Proceeds from sale of plant and equipment		8,000	500
Purchase of property, plant and equipment		(325,398)	(2,004,083)
Charles Darwin University – Menzies investment funds		(2,000,000)	(22,727,000)
<b>NET CASH USED BY INVESTING ACTIVITIES</b>		<b>(2,317,398)</b>	<b>(24,730,583)</b>
<b>NET INCREASE / (DECREASE) IN CASH AND CASH EQUIVALENTS HELD</b>		<b>5,119,841</b>	<b>(23,448,093)</b>
<b>CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR</b>		<b>5,526,088</b>	<b>28,974,181</b>
<b>CASH AND CASH EQUIVALENTS AT END OF FINANCIAL YEAR</b>	14	<b>10,645,929</b>	<b>5,526,088</b>

The above Statement of Cash Flows should be read in conjunction with the notes included in the audited 2016 financial statements.

	2016 \$	2015 \$
<b>RECONCILIATION OF TOTAL NET SURPLUS / (DEFICIT)</b>	<b>3,861,067</b>	<b>7,945,846</b>
Represented by:		
Capital Funding - interest earned	1,294	20,355
Plus / (Minus)		
Research and Education surplus	1,203,690	1,716,083
Non-research surplus	204,729	(326,321)
NT Government research investment funding	5,000,000	-
Depreciation and amortisation	(2,556,646)	(2,366,005)
Gain on disposal of assets	8,000	8,901,734
	<b>3,861,067</b>	<b>7,945,846</b>



## Our Larrakia art project

In 2013, we commissioned Larrakia Nation to create artwork in the form of the panels that are seen on the exterior of our RDH campus building.

The artwork incorporates the themes of community, health, research, learning, teaching, listening and the Larrakia story, combining elements of the research undertaken by Menzies, with the location of our headquarters within Larrakia land.

**Larrakia artists:** Dotty Fejo, Denise Quall and Kenny Reid

**Roper River artist:** James Gaston

*This artwork embodies traditional ritual knowledge of the Larrakia Community. It was created with the consent of the custodians of the Community.*

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