





In the spirit of respect, Menzies School of Health Research (Menzies) 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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Linda Viberg at work in Menzies' laboratory.

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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.



OUR VISION

To find enduring solutions to health problems that matter.



OUR PURPOSE

To achieve sustainable health improvements through excellence and leadership in research, education and capacity development.



WHERE WE WORK

Our headquarters are in Darwin, with offices in Alice Springs and Brisbane. We also collaborate with partners at the Papuan Health and Community Development Foundation in Timika, Papua Indonesia and the Infectious Disease Society in Kota Kinabalu, Malaysia. We partner with these organisations to design, implement, analyse and report research findings in these key overseas locations.

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

Our primary international partners are Indonesia and Malaysia. We also work in Timor-Leste, Ethiopia, Bangladesh, Bhutan, Nepal, Thailand, Vietnam, Myanmar and Tanzania.

Director and Chair's message



→
Mr Peter Plummer and Professor Alan Cass.

WE HAVE HAD MUCH TO REFLECT ON OVER THE LAST 12 MONTHS AS AN ORGANISATION WORKING TO ACHIEVE HEALTH EQUITY FOR PEOPLE LIVING IN AUSTRALIA AND THE ASIA-PACIFIC REGION.

This was a year of significant anniversaries for Indigenous Australians. It has been 50 years since the 1967 referendum, 20 years since the Bringing Them Home Report, and 10 years since the Northern Territory (NT) National Emergency Response.

These events have given us the opportunity to consider how far we have come – and how far we still have to go to close the health gap.

To set the course for our work, we launched the Menzies 2021 Strategic Plan.

This five-year plan affirms our commitment to undertaking research that makes a difference to the lives of people we work with.

Even as we plan ahead, we recognise our recent work that has influenced policy decisions and practice.

Some of the highlights of 2017 included:

- Our research directly informing national and international treatment guidelines and health policies for otitis media and malaria.
- Recognition of Associate Professor Gurmeet Singh's contribution to a National Health and Medical Research Council (NHMRC) project to protect premature babies from kidney disease as being among 10 of the best for 2016.
- Holding the Indigenous Patient Voices: Gathering Perspectives, Finding Solutions for Chronic and End Stage Kidney Disease symposium at the Australian and New Zealand Society of Nephrology (ANZSN) Annual Scientific Meeting in September.
- Being engaged by the Queensland (QLD) Government to develop and deliver B.strong, a culturally-appropriate health intervention training program to Indigenous community health and hospital workers across the state.

▸ Making changes to our own organisation through the establishment of the Gender Equity Committee and developing the Indigenous Employment Strategy.

The latter point is significant in recognising we can – and will do more to close gaps within our organisation to ensure all staff have fair and equal opportunities.

We value our people, who prove that world-class research with real impact can be conducted in northern Australia.

These results were not achieved alone. Our engagement with Charles Darwin University (CDU), the NT Government, health services, and communities here and across the region is essential to our success.

We are also grateful to the guidance provided by our Board. We were pleased to welcome two new Board members during the year, Professor Catherine Stoddart, chief executive officer (CEO) of the NT Department of Health and Olga Havnen, CEO of Danila Dilba Health Service. We look forward to working with them as we progress our new strategic plan.

We thank everyone who supported us throughout 2017 and look forward to 2018 as we continue to work together towards a healthier, more equitable future.

Director
Professor Alan Cass

Chair of the Menzies Board
Mr Peter Plummer

2017 Highlights

JUNE

Menzies 2021 Strategic Plan launched.



➤ Prof Gary Robinson at the launch of the Menzies 2021 Strategic Plan.

JULY

Our partnership with the newly launched Central Australia Academic Health Science Centre (CAAHSC) was announced in Alice Springs.

AUGUST



➤ HealthLAB team member Liam Hardcastle and NT Minister for Primary Industry and Resources Ken Vowles at Parliament House.

HealthLAB received a National Science Week grant to visit Bathurst Island, Parliament House, Kakadu National Park and Gunbalanya.

The B.strong Brief Intervention Training Program, to be delivered by Menzies, was launched by QLD Minister for Health and Ambulance Services, The Hon Cameron Dick.

Professor Ross Andrews was part of the Scabies Research team awarded the 2017 Eureka Prize for Infectious Diseases Research.

SEPTEMBER

NHMRC's 10 of the best for 2016 – *Protecting premature babies from kidney disease* featured Associate Professor Gurmeet Singh as a chief investigator.

OCTOBER



➤ CDU Provost and Vice-President Prof Sue Carthew and Dr Matthew Grigg.

Dr Matthew Grigg named the 2017 NT Young Tall Poppy Scientist of the Year in recognition for his research into *Plasmodium knowlesi*, a specific type of monkey malaria that is transmitted to humans via mosquitoes in Southeast Asia.

NHMRC announced the Centre for Research Excellence in Malaria Elimination which included our malaria experts, Professor Nick Anstey, Professor Ric Price and Dr Sarah Auburn.

NOVEMBER



↑
Assoc Prof Julie Brimblecombe with a student from Galiwin'ku at the launch of the GOOD TUCKER app.

The GOOD TUCKER App was launched by Minister for Indigenous Health, The Hon Ken Wyatt AM, MP in Canberra and at the Michael Long Learning and Leadership Centre in Darwin.

Our malaria team and Dr Gabrielle McCallum received the CDU Vice-Chancellor's Awards for Exceptional Research Team and Emerging Researcher Awards respectively.



↑
Dr Bo Remenyi was named NT Australian of the Year.

PhD student, Dr Bo Remenyi announced NT Australian of the Year for her contributions to the treatment of rheumatic heart disease (RHD).

.....
Professor Ian Anderson AO delivered the 2017 Oration.
.....

Professor Peter Morris awarded the 2017 Menzies Medallion for his significant contribution to improving child health in the NT through paediatric health service delivery and research.



↑
Prof Ian Anderson AO delivering the Menzies Oration.

2017

The first year of the HOT NORTH program (Improving Health Outcomes in the Tropical North: A multidisciplinary collaboration) funded 12 pilot projects, three early career fellowships, two career development fellowships, six PhD scholarships and two undergraduate scholarships.



➤
HOT NORTH team members Assoc Prof Heidi Smith-Vaughan, Catherine Martel, Prof Bart Currie, Assoc Prof Anna Ralph, Assoc Prof Louise Maple-Brown and Prof Nick Anstey.

Our impact

Our work addresses critical issues such as mental health, nutrition, substance abuse, child health and development, as well as chronic diseases such as cancer, kidney disease and heart disease. We also lead global research into life-threatening illnesses in the Asia-Pacific region, such as malaria, melioidosis and tuberculosis (TB).

RESEARCH FOCUS AREAS



CHILD HEALTH

Anaemia, child development and education, child protection, fetal alcohol spectrum disorder, ear health, lung diseases, nutrition, skin diseases, vaccinations, vitamin D, youth health.

GLOBAL AND TROPICAL HEALTH

Malaria, melioidosis, RHD, TB, hepatitis B (HBV), sexual health.

WELLBEING AND PREVENTABLE CHRONIC DISEASES

Cancer, addictive behaviours including smoking, alcohol, drugs, gambling and petrol sniffing, diabetes, kidney disease, mental health, nutrition, primary health care, suicide prevention.

150+ RESEARCH PROJECTS AND PROGRAMS

FOR EVERY DOLLAR INVESTED IN MENZIES THERE IS AN ECONOMIC AND HEALTH RETURN OF \$2.70

60+ REMOTE COMMUNITY PARTNERSHIPS ACROSS CENTRAL AND NORTHERN AUSTRALIA

PIONEERING GLOBAL AND TROPICAL HEALTH WORK EXTENDING INTO 20+ COUNTRIES ACROSS THE ASIA-PACIFIC REGION

Our Board

The Menzies Board has the ultimate responsibility for organisational strategy and performance and to oversee the governance of Menzies' activities.



BOARD CHAIR MR PETER PLUMMER

Prior to retirement, Peter spent 40 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. He also held appointments as CEO of Mines and Energy, Health and Community Services, as well as Education.

He has also served on many boards and committees including as the Chair of Cullen Bay Management Committee, National Curriculum Corporation, CDU Council, and the CDU Strategic Positioning Project. He has also had significant experience within the government and private sectors of Malaysia, Indonesia, Thailand and the Philippines, in addition to the minerals and energy sectors of the United States of America (USA) and France.



BOARD DEPUTY CHAIR MS DONNA AH CHEE

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

She is a Bundgalung 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 areas of adult education and 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, representing the Congress on the People's Alcohol Action Coalition.



**BOARD
TREASURER
MR RICHARD
RYAN AO**

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 Chair of Editure, Chair of Auspep Holdings Ltd and Deputy Chancellor of CDU.

He is a member of the NT Treasury Corporation Advisory Board, and the Attorney-General's Audit and Risk Management Advisory Board.

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.



**MR KEN
DAVIES**

Ken is currently the CEO of Territory Families and a member of the CDU Council.

He has previously held CEO 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.



**PROFESSOR
ALAN CASS**

Alan has been the Director of Menzies since 2012.

He is currently a board member for 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 strategies to improve health outcomes.



**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 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.



PROFESSOR SIMON MADDOCKS

Simon 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 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 Research and Development Committee, and with organisations such as the Menzies Foundation.



THE HON TREVOR RILEY

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

He served on the Supreme Court for 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.



MS OLGA HAVNEN

Appointed
24 October 2017

Olga has been CEO of Danila Dilba Health Service since 2013. She is of Western Arrernte descent and grew up in Tennant Creek.

She has held a range of senior public and private sector roles at the Australian Red Cross, the Northern Land Council, the NT Department of the Chief Minister and The Fred Hollows Foundation.

Olga has served as a Director at the Indigenous Land Corporation, Voyages Indigenous Tourism Australia, NT Primary Health Care and as the deputy chair of Aboriginal Medical Services Alliance Northern Territory (AMSANT).

She is currently a member of the NT Community Justice Council and is a Director on the AMSANT, National Aboriginal Community Controlled Health Organisation (NACCHO), MJD Foundation and Stars Foundation Boards.



PROFESSOR CATHERINE STODDART

Appointed
24 October 2017

Catherine commenced as the CEO of NT Health in March 2017. She was previously the deputy chief executive and chief nurse at Oxford University Hospitals Foundation Trust in the National Health Service in the United Kingdom.

She has held positions across health including chief nurse and midwifery officer of Western Australia (WA), regional director for the Kimberly region, WA Country Health Service (WACHS), executive director nursing and midwifery WACHS, and director clinical reform WA Health.

She was the 2011 Telstra WA Business Woman of the Year. In 2013, she received the Public Service Medal in recognition of her contribution to health.

Corporate governance

Menzies was established in 1985 as a body corporate of the NT Government under the *Menzies School of Health Research Act 1985*. The Act was amended in 2004 and again in 2016. 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.

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 2017, committee members were:

Risk and audit committee:

- Mr Bob Hudson (Chair)
- Professor Alan Cass
- Ms Sophie Cleveland
- Mr Ken Davies
- Ms Louise Dutton
- Mr Peter Hopton
- Mr Trevor Riley
- Mr Ross Springolo (ex officio member)

Finance committee:

- Mr Richard Ryan AO
- Professor Alan Cass
- Mr Tom Ganley
- Ms Tiziana Hucent (appointed 24 July 2017)
- Mr Rowan Johnston

Academic standing committee:

- Professor Alan Cass
- Professor John Chalmers
- Professor Lawrence Cram
- Professor Gail Garvey

Development committee:

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

SENIOR EXECUTIVE TEAM

Professor Alan Cass
Director

Brendon Douglas
Acting deputy director

David Blair
Chief operating officer

Heather D'Antoine
Associate director for Aboriginal Programs

Professor Gail Garvey
Deputy division leader, Wellbeing and Preventable Chronic Diseases division

Professor Gary Robinson
Director, Centre for Child Development and Education

2021 Strategic Plan

Menzies 2021 redoubles our efforts to build and strengthen our Indigenous health research workforce.

LAUNCHED IN JUNE 2017, OUR NEW FIVE-YEAR STRATEGIC BLUEPRINT – MENZIES 2021 – BUILDS ON OUR PROUD HISTORY OF ACHIEVEMENT AND POSITIONS OUR INSTITUTION AS:

- 1** A recognised innovator and leader in Indigenous and tropical health and wellbeing.
- 2** Achieving excellence in research translation and impact.
- 3** A strong and resilient organisation.



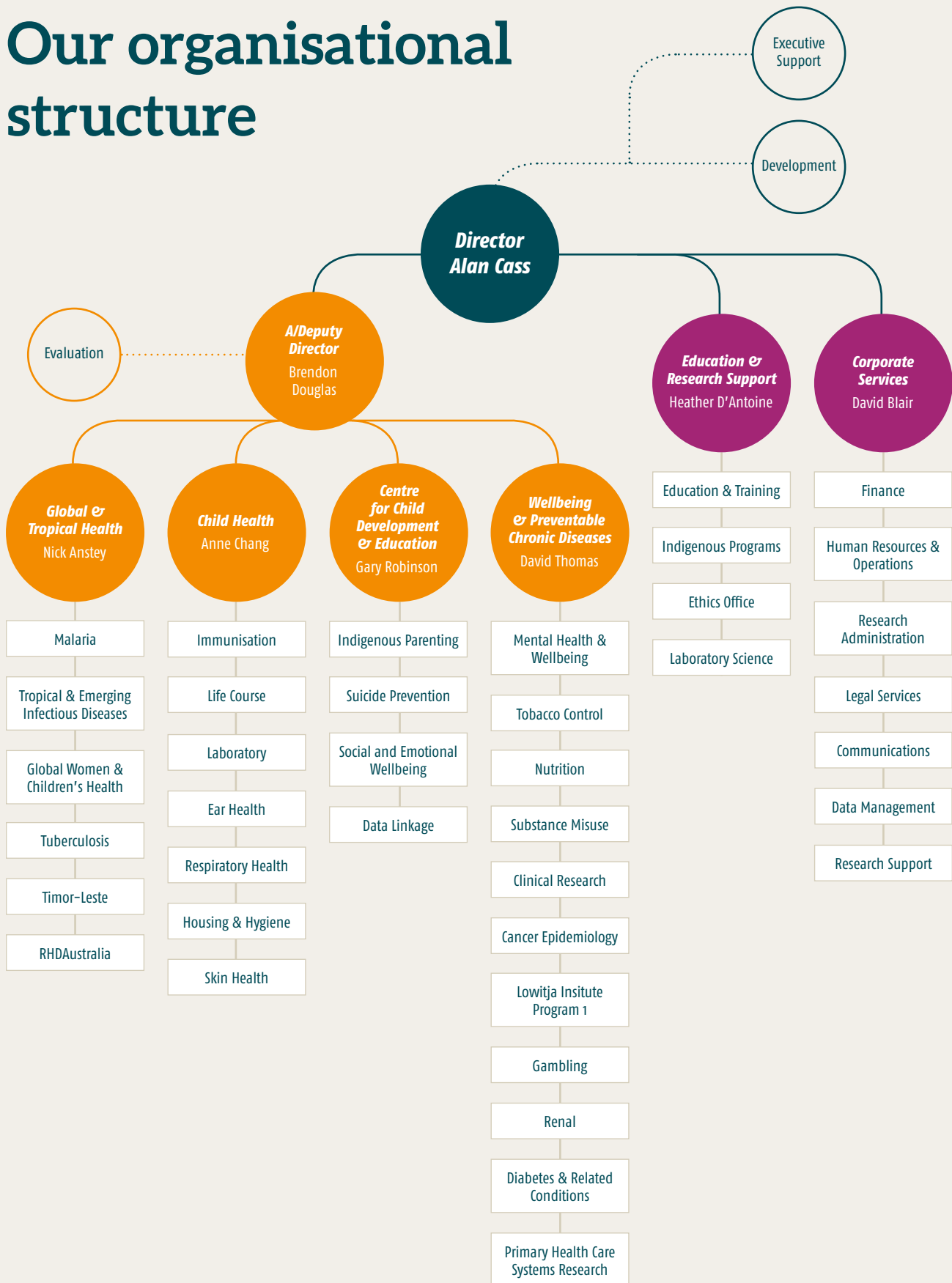
Menzies 2021 demonstrates our commitment to undertake research that is world-class, translatable, and that makes a difference to the lives of people throughout Australia and across the region. Headquartered in the NT, we are a multi-site institution with state-of-the-art laboratory facilities. We are therefore optimally positioned to provide the evidence base to address the health problems that face Australia's north and the neighbouring Asia-Pacific region, as well as having the capability to manage programs nationally.

Menzies 2021 redoubles our efforts to build and strengthen our Indigenous health research workforce. This is fundamental to achieving improvements in the health and wellbeing of Indigenous Australians today and into the future. We will achieve this by strengthening health research pathways through Vocational Education and Training (VET), Higher Education and Higher Degree Research, as well as increasing our Indigenous workforce and representation on our Board.

Guiding **Menzies 2021** is the goal of achieving equality in health between Indigenous and non-Indigenous Australians. This is an urgent national priority and must be backed by ongoing, meaningful action.

The full plan is available on our website menzies.edu.au/Menzies2021

Our organisational structure



Our research

Creating and sharing knowledge is a large part of what we do at Menzies. Of equal importance to us is the translation of our research into practicable and everyday applications. This has meant listening to and working collaboratively with key stakeholders, partners, and governments to design and implement strategies that can lead to effective and sustainable change.



Research translation

INFORMING CHANGES TO GLOBAL MALARIA TREATMENT POLICIES

Our malaria team continued to work towards eliminating the mosquito-borne infectious disease through informing the updating of the World Health Organisation's (WHO) malaria treatment policy.

In both Ethiopia and Malaysia, where malaria remains endemic, our research has directly influenced the amendment of their respective national treatment guidelines during the year. A collaborative study in Ethiopia affirmed supervised dosages of primaquine combined with existing treatment regimens could significantly reduce relapses and further transmission of *Plasmodium vivax* malaria (vivax malaria).

The treatment of vivax malaria is complicated by the parasite's ability to form dormant liver stages, which results in recurrent infection.

Treating the liver stages of the infection with primaquine is critical to eliminating and reducing the effects of recurrent infection, which can include severe anaemia, impaired neurodevelopment and death.

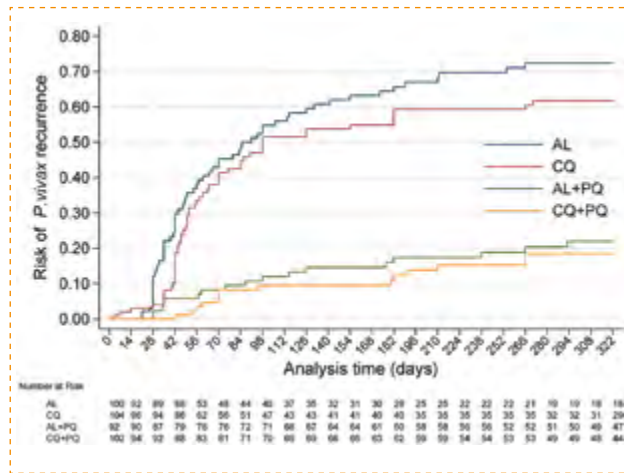
Meanwhile, *Plasmodium knowlesi* malaria continued to cause severe and sometimes fatal disease across Southeast Asia.

As a result of our research in Malaysia, malaria treatment guidelines were amended to endorse artemisinin-combination therapy (ACT) as the primary treatment for all malaria infections.

The most commonly-used ACT for malaria, artemether-lumefantrine, was evaluated for the first time in a randomised controlled trial for uncomplicated knowlesi malaria.

Researchers found it was more effective than chloroquine, clearing parasites at a faster rate and enabling earlier hospital discharge for patients.

These results were presented at a WHO meeting in March, facilitating a global treatment policy change to artemether-lumefantrine as the preferred first-line treatment for malaria.



Data showing the cumulative risk of vivax malaria recurrence under all treatment options over the 12-month follow-up period.

WORKING WITH CLINICIANS TO IMPROVE RENAL SERVICES

Five years ago, we established a partnership with NT Renal Services to form a Renal Research Group with the aim of improving service delivery and health outcomes through research. Since then, we have continued to support research training and capability within renal services in the NT.

In 2017, the group hosted the Australia and New Zealand Society of Nephrology Annual Scientific Meeting in Darwin, bringing 500 delegates to the NT. Members of the group presented 23 original research abstracts, and two of our delegates received prestigious national awards recognising research excellence.

The success of the conference was an endorsement of the work we have been doing over the past few years, which includes attracting more than \$6 million in funding for research projects, providing mentoring to medical, nursing and allied health professionals including medical students, renal registrars, post-graduate and post-doctoral clinician researchers.

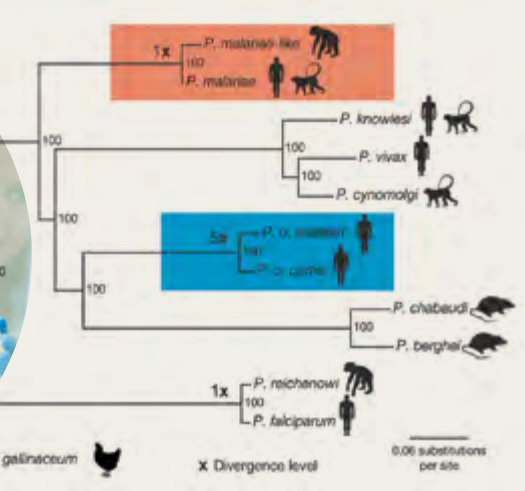


Kidney researchers Dr Paul Lawton and Prof Alan Cass received the ANZSN Rural Science Award and Clinical Science Award, respectively, at the society's 53rd Annual Scientific Meeting in Darwin.

Case study



Melioidosis researcher Jessica Webb in Menzies' laboratory.



A family tree illustrating the relationship between malaria species.

BUILDING GENOMICS EXPERTISE IN THE NT

Menzies is investing and developing expertise in the emerging research area of genome sequencing.

In the past year, we took the lead in a number of national and international collaborative programs investigating the genomics of tropical pathogens, and host immune responses.

This has reinvigorated research into *Chlamydia trachomatis*, which causes trachoma, the main infectious cause of blindness.

In a recent discovery, a scientific collaboration revealed the global population structure of *C. trachomatis*. The study also confirmed important recent findings linking genes to persistent eye infections.

These findings will underpin better public health interventions for trachoma and sexually transmitted infections.

Another research highlight during the year was the discovery of a major genetic risk factor in immune responses, resulting in genetic susceptibility to RHD.

Researchers noted despite many people getting infected with Group A streptococci which can trigger RHD, only a small proportion of people – often within the same family – developed it.

A multi-disciplinary team of researchers, including Heather D'Antoine and Associate Professor Steve Tong from Menzies, performed detailed mapping of the human genome that determines immune responses.

They found the major genetic risk factor in Indigenous Australians was the variation at a specific point in the DNA (deoxyribonucleic acid) chain which is important for immune responses.

These findings emphasised the need for stronger steps to reduce the incidence and transmission of streptococcal infections within affected households and communities.

The malaria parasite is a leading cause of illness and death in the regions to Australia's north.

During the year, our malaria research team successfully described the complete gene sequence of two less common malaria types, *Plasmodium malariae* and *Plasmodium ovale*.

The isolates were collected from patients, including one returning from Africa, who presented to the Royal Darwin Hospital (RDH) for treatment.

The analysis highlights some key differences in these parasites that will inform future research on how they evade host immunity and potential drug targets.

A final research highlight was that whole genome sequences of 469 *Burkholderia pseudomallei* isolates from 30 countries, collected over 79 years, were used to explore the global spread of melioidosis.

The data confirmed Australia as the origin of the melioidosis bacterium, with spread from Australia to Southeast Asia calculated to have occurred during the last ice age, subsequently spreading to Africa, then most recently from Africa to the Americas.

Geographically-distinct gene variants were also identified for a minority of Australian and Southeast Asian isolates, with potential links to regional differences in the severity and clinical manifestations of melioidosis.

Research at a glance

Menzies has again achieved a remarkable outcome in the current very competitive space of Australian Competitive Grants. Together with success above the Australian average with NHMRC project grants, Menzies was successful in the international field with a joint NHMRC and UK National Institute for Health (NIHR) Collaborative Research Grant. This recognises the unique skills that our researchers bring to clinical and social research across broad areas of health concern.

PROJECT GRANTS

Chief investigator **Dr Michael Binks** – *Vitamin D supplementation to prevent respiratory infections among Indigenous children in the NT: a randomised controlled trial.*

Chief investigator **Professor Anne Chang** – *Preventing early-onset pneumonia in Indigenous infants through material immunisation: a multi-centre randomised controlled trial.*

Chief investigator **Associate Professor Gurmeet Singh** – *Early life and contemporary influences on body composition, mental health, and chronic disease risk markers in the Aboriginal Birth Cohort (ABC).*

Chief investigator **Associate Professor Julie Brimblecombe** – *Healthy Stores 2020: Reducing retail merchandising of discretionary food and beverages in remote Indigenous community stores.*

FELLOWSHIPS

Professor Nicholas Anstey – Research Fellowship (accepted) and Practitioner Fellowship. *Pathophysiology and treatment of malaria in our region.*

Dr Anna Ralph – Career Development Fellowship. *Towards the elimination of TB and RHD in northern Australia and our region.*

Dr Matthew Grigg – Early Career Fellowship. *Risk factors, mechanisms, and treatment of knowlesi malaria.*

Dr Lisa Whop – Early Career Fellowship. *Reducing disparities in cervical cancer incidence for Aboriginal and Torres Strait Islander women through screening and vaccination.*

POSTGRADUATE SCHOLARSHIPS

Jemima Beissbarth – *Vaccine and antibiotic selective pressures on the microbiology of otitis media in Aboriginal and Torres Strait Islander children in northern Australia.*

Dr Anna Wood – *Diabetes and cardiovascular risk among Indigenous women after pregnancy complicated by hyperglycaemia.*

Dr Simon Smith – *A prospective study of the aetiology, associations, clinical features and outcomes of community-acquired pneumonia in children and adults in tropical Australia.*

NIHR AND NHMRC RESEARCH GRANT

Professor Anne Chang – *Prophylactic antibiotics to prevent recurrent lower respiratory tract infections in children with neurological impairment (PARROT) study.*

NHMRC GRANTS AWARDED TO MENZIES

	Research support grants	People support grants
2012	10	7
2013	7	6
2014	6	7
2015	10	10
2016	4	6
2017	5	8

MENZIES RESEARCH INCOME BY FUNDING SOURCE CATEGORY 2017

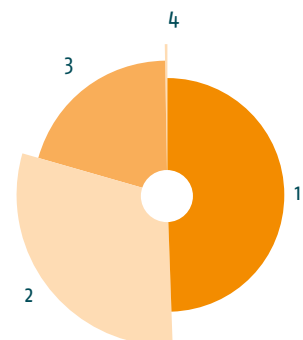
Research income \$ (AUD)

Category 1 \$13,578,690
Australian Competitive Grants.

Category 2 \$8,142,657
Other public sector income including tenders, contracts, consultancies and grants.

Category 3 \$5,548,146
Australian contracts, consultancies, philanthropic grants, donations and international competitive grants and consultancies.

Category 4 \$61,905
Cooperative Research Centres.



Our research: Centre for Child Development and Education

Our Centre for Child Development and Education (CCDE) is committed to improving the lives of children through research to support better health, education and wellbeing. The research we perform is designed to help children reach their developmental potential.

Throughout 2017, we continued to examine social and economic factors affecting the long-term health, learning and wellbeing of children in the NT and in the Asia-Pacific region. As with previous years, we engaged with government and decision-makers to inform policy development and service delivery.

RISKY DRINKING HABITS OF YOUNG AUSTRALIANS INVESTIGATED

During the year, we consolidated data from a national research project examining risky drinking patterns among young Australians aged 14 to 19 years.

From the data in the Young Australians' Alcohol Reporting System (YAARS), our team identified 86 high-risk drinkers in the NT.

Notably, data showed respondents in the NT drank up to four times the national low-risk drinking limits.

This investigation of trends over time will help us identify patterns of problematic alcohol use and associated harms, which will in turn inform policy, prevention and treatment initiatives.

SCHOOL PROGRAM TO BUILD RESILIENCE EXPANDED

A social-emotional learning program taught in middle schools to children from remote Indigenous communities as part of a program of research into resilience and suicide was expanded this year.

We expect that by 2018, more than 700 students from four remote NT schools and one boarding college in Darwin would have participated in the Skills for Life program.

Through the program, the children were introduced to innovative measures of resilience, strengths and life stressors. Data was then fed back to schools to inform school support for student wellbeing and social-emotional learning.

PROFESSOR SVEN SILBURN RETIRES AFTER EIGHT YEARS AT MENZIES

As the year drew to a close, we celebrated the career and contributions of Professor Sven Silburn to Menzies.

Prof Silburn, who has been with us since 2009, was actively involved in securing funding for the establishment of the CCDE.

During his time at Menzies, he engaged with governments on strategies such as the NT Department of Education's 'Strong Start Bright Futures' remote schools education strategy and the Australian Medical Association's Indigenous Health Report Card 'The Healthy Early Years - Getting the Right Start in Life'.

Prof Silburn and CCDE director, Professor Gary Robinson also worked together on the national consultation and drafting of the National Aboriginal and Torres Strait Islander Suicide Prevention Strategy.

More recently, he collaborated with Dr Steve Guthridge to develop the NT's capacity for data linkage research. The system will enable more effective use of administrative data in the Territory for policy and scientific research.



➤ Bonnie Moss and Prof Sven Silburn at his retirement celebration.

Our research: Child Health

Our focus is on prevention and treatment of early childhood illness, which impedes the ability of children to grow, develop, learn and thrive. This year saw the continuation of ongoing investigations into improving the health outcomes of Indigenous children in the first few years of life.

BREATHING EASY THROUGH PREVENTION PROGRAMS AND IMPROVED TREATMENT

Dr Gabrielle McCallum's studies into children's lung health aim to improve health outcomes for them into adolescence and adulthood.



A study led by Dr Gabrielle McCallum found the implementation of a peer-led asthma and smoking prevention program in two Darwin schools with a significant Indigenous student cohort to be feasible. The program used a student-centred approach where senior students delivered lessons to year 7 students.

The study also identified high airway inflammation and suboptimal asthma management in students, highlighting the need for community-based studies to improve asthma management.

During the year, the respiratory team also completed a multicentre study to determine the best antibiotic treatment for children with flare-ups of bronchiectasis. In collaboration with other researchers from Brisbane, Perth and NZ, 370 episodes were captured. The results of this study are expected to influence future treatment guidelines in Australia and NZ.

VITAMIN D SUPPLEMENTATION TRIAL TO REDUCE RESPIRATORY INFECTIONS

Towards the end of the year, NHMRC Early Career Researcher and Child Health program leader Dr Michael Binks was successful in obtaining funding for a proposed study.

Dr Binks' team will determine whether daily vitamin D supplementation given to pregnant mothers and their infants reduces the incidence of serious respiratory infections in the infants' first 12 months of life.

The trial will also attempt to determine the effects of supplementation on infant immune function and whether a family history of vitamin D metabolism would influence outcomes.

The trial will be the first to involve Indigenous Australians and guide best practice for vitamin D supplementation in pregnancy and infancy to prevent respiratory infections.



FUNDING SECURED FOR ABC STUDY

The ABC study led by Associate Professor Gurmeet Singh secured NHMRC funding for its fifth wave to study the onset of the early chronic disease signs in 686 Aboriginal infants born between 1987 and 1990 at RDH.

During the year, the research team attended the World Congress of Developmental Origins of Health and Disease in Rotterdam where they presented findings from the fourth wave of the study. They met investigators from other cohort studies, including the Young Finns Study in Finland and England's Thousand Families Study to plan ongoing collaborations.

RECRUITMENT COMMENCED FOR IRON INFUSION CLINICAL TRIAL

One of the highlights of the year was the commencement of recruitment of participants for the Rapid Iron Infusion Study led by Professor Peter Morris. The study is a world first and the largest clinical trial of rapid iron infusions in children with anaemia.

It aims to assess whether an intravenous infusion of ferric carboxymaltose given in children prior to their discharge from hospital will improve haemoglobin levels and reduce the risk of further anaemia.

The results of the trial will become the best available evidence to guide the use of rapid iron infusions in children under six years of age. If this intervention is shown to be effective, it is likely to be used routinely in hospitals and inform the management of iron deficiency anaemia in children in an outpatient setting.



The results of the rapid iron infusion clinical trial will inform treatment guidelines for iron deficiency anaemia in young children.



Case studies



Otitis media can cause hearing loss in children which impacts their school readiness.

IMPROVING EDUCATION OUTCOMES THROUGH VACCINATION

High rates of perforated eardrums and hearing loss in Indigenous children living in remote communities has been linked to poor school attendance, social and behavioural problems, as well as exclusion from employment later in life.

Otitis media is caused by multiple strains of two bacterial pathogens, *Streptococcus pneumoniae* and non-typeable *Haemophilus influenzae* (NTHi).

Our ear health team investigated the best vaccination strategy for infants to improve school readiness of children at high risk of otitis media and hearing loss during their first three years of life.

The first trial completed in September showed a combination early schedule of two different vaccines gives babies early and broad immune protection.

A second trial of a booster dose, with hearing tests and developmental milestones recorded, is ongoing and results from both trials will potentially change Australia's National Immunisation Program.

BETTER LONG-TERM CHILD LUNG HEALTH

Indigenous children living in remote communities with chest and lung conditions are a key priority for our child health respiratory team.

To identify what can be done to improve their lung health and how their respiratory conditions can be better managed, the team extended previous studies run in the NT, NZ and Alaska between 2015 and 2017.

"The long-term outcomes of these children's health is a major public issue," Dr Gabrielle McCallum, project lead, said.

"We want to look at clinical predictors that significantly impact the lung health of Indigenous children and identify intervention targets."

Dr McCallum said identifying and potentially minimising risk factors would lead to better lung health into adolescence and adulthood.



Identifying and potentially minimising risk factors affecting child lung health is a priority for our child health team.

Our research: Wellbeing and Preventable Chronic Diseases

The work done within the Wellbeing and Preventable Chronic Diseases division aims to provide practical solutions to prevent and treat long-term diseases among Indigenous populations, while also informing policy and practice.

To do this, we examine the environmental and behavioural factors that contribute to the development and progression of chronic illnesses or harmful long-term habits, including problem gambling and excessive alcohol consumption.

REDUCING GAMBLING- RELATED HARMS IN COMMUNITIES

Over the years, there has emerged strong evidence of disproportionately high rates of gambling-related problems in Indigenous communities in the NT.

There is also a gap in services addressing gambling addiction and other associated harms, including food insecurity, child neglect and family violence.

To better understand and potentially identify intervention strategies, Menzies and the Australian National University formed a partnership with Amity Community Services.

Throughout 2017-18, Amity will pilot a health promotion activity to reduce gambling harms in three Indigenous communities, which will be continuously evaluated.

Baseline data collected revealed that harms from another person's gambling are 4.7 times higher and problem gambling 30 times higher than 2015 estimates for the NT adult population. This highlights the need for services to address gambling-related problems in Indigenous communities.



→
*Card games are one form of
problem gambling in Indigenous
communities in the NT.*

EXPANDING MENTAL HEALTH DATA COLLECTION IN LANGUAGE

For many Indigenous Australians with kidney disease, haemodialysis can take its toll physically and mentally. In addition, the gathering of information in a single language – usually English – is challenging for many who may not speak English as a first language.

In recognising this, our mental health team expanded the

collection of data about participants' mental wellbeing to five central Australian and six Top End languages.

Supported by Indigenous research officers, our team worked with the Aboriginal Interpreter Service and an app developer to create a data collection app incorporating audio and graphical elements to measure wellbeing.

The team is using this to assess the effectiveness of our e-mental health treatment app, the AIMhi Stay Strong app, for improving wellbeing, quality of life and treatment adherence for Indigenous patients on haemodialysis in the Wellbeing Intervention for Chronic Kidney Disease (WICKD) study.



→
The Stay Strong app.

NEW TOOL DEVELOPED TO ASSESS CHILDREN'S DIETS

A healthy diet in early life is critical to optimising growth and development. To assist with gathering information about and assessing the diets of children in remote NT communities, our nutrition team launched the Menzies Remote Area Short item Dietary Assessment Tool (MRSDAT).

Developed together with Menzies' Pregnancy and Adverse Neonatal Diabetes Outcomes in Remote Australia (PANDORA) team, the tool is the first of

its kind to assess diets of both children and adults in remote Indigenous communities.

During the year, community researchers Veronica Gondarra and Roslyn Dhurrkay as well as Aboriginal health practitioner Yalurr Dhanarrandji validated the MRSDAT with families in the community of Galiwin'ku in Elcho Island.

The MRSDAT is currently being used in the PANDORA study, and further studies by two other research teams. This has paved the way for collaboration with other institutions and validates its relevance and importance.

LANDMARK URBAN INDIGENOUS DIABETES STUDY FOLLOW-UP CONCLUDES

During the year, we published findings from the follow-up of the Darwin Region Urban Indigenous Diabetes (DRUID) study.

The team found that nearly a third of heart disease among its 1000 participants were attributable to diabetes. It also highlighted the importance of regular blood sugar and urine tests for kidney disease in addition to tests for blood fats and blood pressure.

The study was the first of its kind to investigate the impact of diabetes and related conditions such as heart disease and kidney disease in people living in an urban rather than a remote setting.

Researchers are now combining DRUID data with other Australian studies to develop the Cardiovascular Disease Risk in Indigenous People (CRISP) study which aims to improve heart disease risk assessment for Indigenous Australians.

Case studies

USING FACEBOOK TO HELP PEOPLE QUIT SMOKING

A Territory-wide partnership is aiming to identify how social media can be used to reduce smoking rates among Indigenous people.

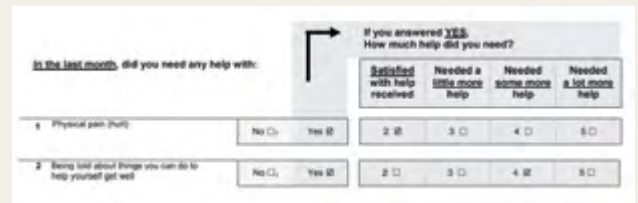
Through the partnership, a team of community-based researchers is working to understand the type of information people share online as well as how to develop useful content and implement social media strategies.

The researchers were supported to complete a Certificate II in Community Health Research as part of their work. Thirteen researchers were awarded the certificate and a further seven were awarded certificates of attainment for specific units.

The organisations that form the partnership are Menzies, Miwatj Health Aboriginal Corporation in Nhulunbuy, Danila Dilba Health Service in Darwin, Central Australian Aboriginal Congress in Alice Springs and AMSANT.



↑ A video produced with Danila Dilba as part of the 'Social Media to Enhance Indigenous Tobacco Control' project. It shows Tackling Indigenous Smoking Senior Project Officer Jenon Batty explaining the effects of smoking on blood vessels.



↑ The SCNAT-IP tool is available for download from the website.

ASSESSMENT TOOL IDENTIFIES INDIGENOUS CANCER PATIENTS' NEEDS

Indigenous Australians with cancer face poorer treatment and survival outcomes compared to non-Indigenous Australians due to a complex array of factors.

To identify the needs of Indigenous Australians with cancer, we developed the Supportive Care Needs Assessment Tool for Indigenous People (SCNAT-IP). The tool comprises 27 questions relating to physical and psychological needs, hospital care, information and communication, as well as practical and cultural needs.

During the year, through a grant from Cancer Australia, our team trained health professionals at three sites around Australia in the use of the tool, with a further two workshops planned.

The implementation of the tool into routine cancer care will be evaluated in 2018.

A website, scnatip.org, has been launched and an online training module is being developed with the goal of making the tool more widely available.

Our research: RHDAustralia

RHDAustralia produces and disseminates evidence-based resources to patients and families living with acute rheumatic fever (ARF) and RHD and the health professionals who support them.

During the year, we continued to work with researchers, health professionals, communities, patients and their families to produce numerous valuable educational material and resources.

FILM SHOWING CONSIDERATIONS OF RHD IN PREGNANCY RELEASED



➤
A still from the short film,
Sharing a Heartbeat.

A key highlight during the year was the launch of *Sharing a Heartbeat*, a short film about love, relationships, family formation and pregnancy, and living with RHD.

The film was developed, written and directed by Indigenous Australian women. It provides young women, their partners and families with health information in a way that makes sense to them.

The film's production was informed by the Australian Maternity Outcomes Surveillance System RHD in Pregnancy study. The results of the study confirmed that for Indigenous Australian women, there were many misconceptions around RHD and how it can impact their pregnancies.

One of the researchers on the study and *Sharing a Heartbeat* executive producer, Associate Professor Suzanne Belton, said,

"During the study, it became very clear that despite having contact with the health system since they were children and again as they were growing up, (these women) knew very little about their disease or what that meant for their pregnancy and how they could take care of themselves."

Sharing a Heartbeat can be viewed at rhdaustralia.org.au

Alongside the film, we also created a suite of resources for midwives. This included a proposed ARF and RHD curriculum for undergraduate midwifery courses that incorporated a framework for national dissemination and integration.

STAYING ON SCHEDULE WITH NEW TREATMENT TRACKER APP

During the year, RHDAustralia launched a new app to help young people with ARF and RHD keep track of their required schedule of penicillin injections.

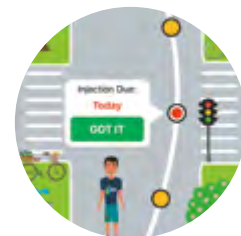
The free Treatment Tracker app reminds people of when their injections are due or when they have an appointment for their injection.

Its use of colours, graphics and game elements motivate people to get their injections on time. It can also be used by carers of a person with ARF or RHD.

The development of the app was informed by focus groups that included ARF and RHD patients and young people within the targeted age group of five to 14 years.

The app was well-received within the first two months of its launch and downloaded almost 100 times.

Feedback from health professionals and parents of young people with RHD has also been favourable, with one nurse sharing that one of her patients, a nine-year-old Indigenous boy "begs mum to come into the clinic" so he can collect points on his app.



*The app can be downloaded
at rhdaustralia.org.au*

Our research: Global and Tropical Health

The research performed within the Global and Tropical Health division spans a wide geographical area, from central to northern Australia to much of the Asian continent. We have partnerships in the USA and in Africa, among others.



In 2017, we strengthened our commitment to finding meaningful ways to improve health and wellbeing in our region, particularly for those who are disadvantaged by poverty and access to services.

We observed emerging themes of treatment adherence as well as improved intercultural communication in healthcare, and will continue to concentrate our efforts in bridging these gaps.

HOT NORTH TEACHING WORKSHOPS TAKE OFF

Menzies is the lead institution of the \$6 million NHMRC collaborative project HOT NORTH.

We ushered in the second half of 2017 with the inaugural teaching workshop in Broome, WA.

More than 90 participants came together over the two-day period to share their work being performed on a local level while identifying areas of shared interest for future collaborations.

The HOT NORTH program of work was also introduced, covering the research agenda with a focus

on health issues in the Kimberley and a discussion of issues affecting health practitioners and researchers, such as racism in healthcare.

The multi-institutional project aims to improve health outcomes in the tropical north and the Indo-Pacific region through cross-disciplinary collaboration.

Dr Lydia Scott, Prof Bart Currie, Prof Juli Coffin, Prof Jonathan Carapetis and HOT NORTH program coordinator, Kevin Williams at the Broome workshop.



STUDY FINDINGS HIGHLIGHT NEED FOR GOOD TRIAL DESIGN

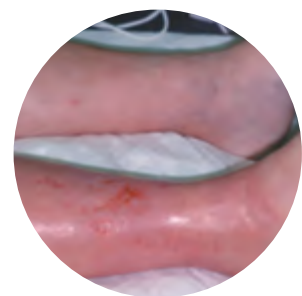
In 2017, our researchers debunked the findings of the only previous randomised controlled trial which compared treatment of uncomplicated cellulitis with ibuprofen versus a placebo.

We used a double-blind randomised clinical trial to prove that regular use of non-steroidal anti-inflammatory drugs does not significantly improve cellulitis treatment compared to a placebo treatment.

Cellulitis is a skin infection caused by the *Staphylococcus* and *Streptococcus* bacteria.

It can spread to the tissues beneath the skin and can become life-threatening.

The previous study, which asked the same question, was neither truly blinded nor randomised and our findings reiterated the importance of good trial design to get accurate answers.



A patient with cellulitis on the lower leg.

MALARIA STUDY HIGHLIGHTS NEED FOR RADICAL CURE

Our malaria research team continued to investigate the effective treatment of vivax malaria.

Vivax malaria is notoriously difficult to cure as it can remain dormant in the liver.

Presently, the drug primaquine is the most commonly-prescribed treatment for vivax malaria. However, it works best when administered with supervision over a number of weeks.

During the year, we published the findings of a nine-year study in Papuan Indonesia, which showed that when administered according to current WHO guidelines, unsupervised primaquine dosage resulted in reducing the risk of recurrence by only 12 per cent.

The findings highlighted the need for new strategies for the effective radical cure of vivax malaria in resource-poor settings.



In regions where health services are overcrowded and supervision is limited, such as Timika in Papua Province, Indonesia, it is difficult to effectively supervise treatment.



Case studies



Plasmodium knowlesi malaria is a type of monkey malaria transmitted to humans via mosquito vectors.

TACKLING MONKEY MALARIA IN MALAYSIA

Malaysia's national malaria eradication program has successfully reduced infections associated with *Plasmodium falciparum* and vivax malaria. to the point where these species may realistically be eradicated by 2020.

Plasmodium knowlesi malaria is now the most common cause of malaria. It is a type of monkey malaria transmitted to humans via mosquito vectors.

Traditional farmers working the land in Sabah, Malaysian Borneo have been identified in a study as the cohort most likely to be infected by a strain of malaria transmitted to humans from monkeys.

The findings of this study have informed the Malaysian Ministry of Health policy for malaria control in the short term.

The results also highlighted the differences in risk between zoonotic knowlesi malaria and traditional human-only malaria species, emphasising the need to design and test strategies to prevent and eliminate further infections.

INDIGENOUS RESEARCHERS GO NORTH TO ALASKA

A team of community-based researchers from Elcho Island made the long journey to Anchorage, Alaska to present their work at the World Indigenous Peoples' Conference on Viral Hepatitis in August.

For the three Indigenous researchers – Sarah Bukulatjpi, George Gurruwiwi and Roslyn Dhurrkay – it was also their first time overseas.

"It's not just our people that have hepatitis; it's all over the world," said Sarah.

"In Galiwin'ku, people feel shame about HBV. People all over the world have this problem and are working on it."

HBV infections can lead to liver failure and liver cancer. Up to 20 per cent of the Indigenous population of the NT are infected with HBV.



Paula Binks, Roslyn Dhurrkay, Sarah Bukulatjpi, Melita McKinnon and George Gurruwiwi on a glacier ice cruise in Alaska.

Featured publications

In 2017, 341 publications, including 326 peer-reviewed articles, were published. Below is a selection of highlighted publications.

McDonald, E.L., Bailie, R.S., & Morris, P.S. (2017). Participatory systems approach to health improvement in Australian Aboriginal children. *Health Promotion International*, 32(1), 62–72.

This paper describes the methods used to identify the underlying factors of poor child health in remote Indigenous NT communities. This work has led to the development of indicators and tools within a continuous quality improvement programme.

Hare, K., Leach, A., Smith-Vaughan, H., Chang, A., & Grimwood, K. (2017). Streptococcus pneumoniae and chronic endobronchial infections in childhood. *Pediatric Pulmonology*, 52(12), 1532–1545.

The role of Streptococcus pneumoniae (pneumococcus) in chronic lung infections has received little attention. We review what is known about pneumococci in protracted bacterial bronchitis, chronic suppurative lung disease and bronchiectasis. Antibiotic treatments, particularly long-term azithromycin therapy, are discussed together with antibiotic resistance and the impact of vaccines.

Sayers, S.M., Mackerras, D., & Singh, G.R. (2017). Cohort Profile: The Australian Aboriginal Birth Cohort (ABC) study. *International Journal Of Epidemiology*, 46(5), 1383–1383f.

The cohort profile of the ABC study provides an in depth overview of the study, methods, key measures, findings and publications from this cohort now followed for 30 years.

Hare, K.M., Smith-Vaughan, H.C., Chang, A.B., Pizzutto, S., Petsky, H.L., McCallum, G.B., & Leach, A.J. (2017). Propensity of pneumococcal carriage serotypes to infect the lower airways of children with chronic endobronchial infections. *Vaccine*, 35(5) 747–756.

Chronic endobronchial infections in children are responsible for a high disease burden. Streptococcus pneumoniae is frequently isolated; however, few publications have described serotypes associated with non-invasive lower airway infection. We found that most nasopharyngeal carriage serotypes have a similar propensity to cause lower airway infection in children with suppurative lung diseases.

McCallum, G.B., & Binks, M.J. (2017). The Epidemiology of Chronic Suppurative Lung Disease and Bronchiectasis in Children and Adolescents. *Frontiers in Pediatrics*, 5(27).

This systematic review found that paediatric Chronic Suppurative Lung Disease (CSLD) remains a disease of poverty among Indigenous populations and low-middle income countries. Delayed diagnosis was common, as was severe disease. CSLD continues to be a neglected disease globally in terms of research priority and funding.

Whop, L.J., Baade, P.D., Brotherton, J.M.L., Canfell, K., Cunningham, J., Gertig, D., et al. (2017). Time to clinical investigation for Indigenous and non-Indigenous Queensland women after a high grade abnormal Pap smear, 2000–2009. *Medical Journal of Australia*, 206(2), 73–77.

This study found that Indigenous women are less likely to undergo clinical investigation within the recommended two months of a high grade abnormal Pap smear result; by six months the follow-up rate was similar for Indigenous and non-Indigenous women. Improving timeliness of follow-up and increasing participation in cervical cancer prevention is important for reducing the higher burden of cervical cancer among Indigenous women.

Australian Bureau of Statistics. (2017). *Aboriginal and Torres Strait Islander Peoples: Smoking Trends, Australia, 1994 to 2014–15*. Canberra, Australia: Australian Bureau of Statistics (ABS).

Menzies collaborated with the ABS on this major report which summarises 20-year trends, showing improvements in Indigenous smoking prevalence, smoking initiation and quitting smoking. This research has been used to justify continued government investment in the Tackling Indigenous Smoking program.

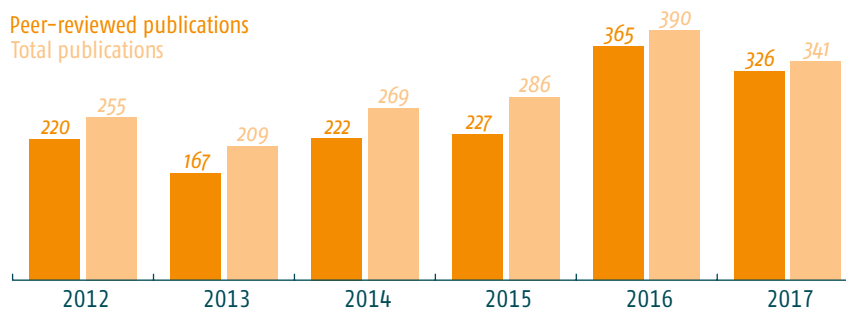
Brimblecombe, J., Ferguson, M., Chatfield, M.D., Liberato, S.C., Gunther, A., Ball, K., et al. on behalf of the SHOP@RIC research collaborative. (2017).

Effect of a price discount and consumer education strategy on food and beverage purchases in remote Indigenous Australia: a stepped-wedge randomised controlled trial. *Lancet Public Health*, 2(2), e82–e95.

This study found a 20 per cent price discount on fruit and vegetables increased sales of fruit and vegetables by 13 per cent in remote Indigenous communities. Harnessing retail expertise to utilise merchandising strategies to support healthy food choices may play a role alongside pricing strategies to achieve marked dietary improvements in remote communities.

PUBLICATIONS AUTHORED BY MENZIES RESEARCHERS 2012–2017*

Peer-reviewed publications
Total publications



* Preliminary data

Kirkham, R., Whitbread, C., Connors, C., Moore, E., Boyle, J., Richa, R., et al. (2017). Implementation of a Diabetes in Pregnancy Clinical Register in a complex setting: findings from a process evaluation. *PLOS ONE*, 12(8), e0179487.

We describe the introduction of the NT Diabetes in Pregnancy Clinical Register and its contribution to significant increases in reported prevalence of diabetes in pregnancy (an 80 per cent increase among Indigenous women). These improvements are likely due to improved awareness, screening and reporting of diabetes in pregnancy. Key strengths of the clinical register relate to its use as a research and quality assurance tool.

Dingwall, K.M., Gray, A.O., McCarthy, A.R., Delima, J.F., & Bowden, S.C. (2017). Exploring the reliability and acceptability of cognitive tests for Indigenous Australians: a pilot study. *BMC Psychology*, 5(1), 26.

This pilot study explored the psychometric properties and acceptability of four cognitive tests in an Indigenous adult population. Interview data suggested that the tests demonstrate face validity but language, social situations and convalescence were potential impacts on performance. This study informed a selection of tests for a subsequent randomised controlled trial and the development of Indigenous language resources to aid data collection.

Barber, B.E., Grigg, M.J., William, T., Piera, K.A., Boyle, M., Yeo, T.W., & Anstey, N.M. (2017). Effects of Aging on Parasite Biomass, Inflammation, Endothelial Activation, Microvascular Dysfunction and Disease Severity in Plasmodium knowlesi and Plasmodium falciparum Malaria. *Journal of Infectious Diseases*, 215(12), 1908–1917.

Parasite biomass, endothelial activation, and microvascular dysfunction were independently associated with severe malaria and likely contribute to pathogenesis. The association of each of these processes with ageing may account for the greater severity of malaria observed in older adults in low-endemic regions.

Davies, J., Li, S.Q., Tong, S.Y., Baird, R.W., Beaman, M., Higgins, G., et al. (2017). Establishing contemporary trends in hepatitis B sero-epidemiology in an Indigenous population. *PLOS ONE*, 12(9), e0184082.

A comprehensive analysis of over 80 000 HBV blood tests collected over 20 years gives important new insights into HBV epidemiology in the NT.

Devine, A., Parmiter, M., Chu, C.S., Banccone, G., Nosten, F., Price, R.N., et al. (2017). Using G6PD Tests to Enable the Safe Treatment of Plasmodium vivax Infections with Primaquine on the Thai–Myanmar border: a Cost–Effectiveness Analysis. *PLOS Neglected Tropical Diseases*, 11(5), e0005602.

Primaquine can cause adverse effects in some patients with G6PD enzyme deficiency. It is important to test patients prior to giving the drug but in reality this is rarely done in endemic countries. This economic analysis shows in Thailand, it is more economical to test and avoid complications rather than not test and risk adverse events. The study provides an online tool for policy makers to adapt the analysis to their own environment.

Grigg, M.J., William, T., Barber, B.E., Rajahram, G.S., Menon, J., Schimann, E., et al. (2017). Artemether–lumefantrine versus chloroquine for the treatment of uncomplicated Plasmodium knowlesi malaria (CAN KNOW): an open–label randomised controlled trial. *Clinical Infectious Diseases*. Epub ahead of print.

The first randomised clinical trial evaluating the efficacy of artemether–lumefantrine, the world's most commonly used antimalarial for treatment of knowlesi malaria. The drug was well tolerated, and had faster parasite clearance and earlier hospital discharge compared to chloroquine. The findings have changed national treatment guidelines and global knowlesi treatment policy.

Ralph, A.P., Lowell, A., Murphy, J., Dias, T., Butler, D., Spain, B., et al. (2017). Low uptake of Aboriginal interpreters in healthcare: exploration of current use in Australia's NT. *BMC Health Services Research*, 17(1), 733.

This paper demonstrated important barriers to intercultural communication in healthcare, forming the basis for advocacy which has led to the creation of a position for a hospital–based interpreter coordinator.

Ralph, A.P., Rashid Ali, M.R.S., William, T., Piera, K., Parameswaran, U., Bird, E., et al. (2017). Vitamin D and activated vitamin D in tuberculosis in equatorial Malaysia: a prospective clinical study. *BMC Infectious Diseases*, 17(1), 312.

This paper provides new insights into the metabolism of vitamin D in TB, and shows a potential role of activated vitamin D as a biomarker of response to TB treatment.

Trimarsanto, H., Benavente, E.D., Noviyanti, R., Utami, R.A.S., Getachew, S., Kim, J.Y., et al. (2017). VivaxGEN: A Platform for Comparative Analysis of Short Tandem Repeat Genotyping Data in

Plasmodium vivax Populations. *PLOS Neglected Tropical Diseases*, 11(3), e0005465.

This study highlights the development of an online data sharing platform for researchers from across the Asia–Pacific region to analyse and share genetic information on malaria parasites. It will help identify transmission hot spots and movement of parasites and ultimately track emerging drug resistant strains.

Viberg, L.T., Sarovich, D.S., Kidd, T.J., Geake, J.B., Bell, S.C., Currie, B.J., & Price, E. (2017). Within–host evolution of Burkholderia pseudomallei during chronic infection of seven Australian cystic fibrosis patients. *mBio*, 8(2), e003356–17.

This report is the first to describe the genetic evolution of B. pseudomallei, the melioidosis–causing bacterium, in patients with cystic fibrosis who become chronically infected. The bacteria show remarkable adaptation, becoming less virulent, more able to survive in the patients' lungs and to avoid being killed by host defences and antibiotics. The bacterial evolutionary pathways revealed provide potential avenues for more–targeted treatment of chronic, recalcitrant infections.

Vino, T., Singh, G.R., Davison, B., Campbell, P.T., Lydeamore, M., Robinson, A., et al. (2017). Indigenous Australian household structure: a simple data collection tool and implications for close contact transmission of communicable diseases. *PeerJ*, 5, e3958.

This collaboration with the ABC and modelling groups describes structures and implications for the transmission of diseases in Indigenous Australian households. This paper quantifies the extent of crowding in Indigenous households, particularly in remote areas. The findings will be incorporated into future models to understand the transmission of Group A Streptococcus and potentially other pathogens in remote communities.

Giffard, P.M., Lilliebridge, R.A., Wilson, J., Murray, G., Phillips, S., Tabrizi, S., et al. (2017). Contaminated fingers: a potential cause of Chlamydia trachomatis positive urine specimens. *Sexually Transmitted Infections*, Epub ahead of print.

This paper reports that if a carer assisting a child to provide a urine specimen for sexually transmitted infection testing has Chlamydia–contaminated fingers, this has a potential to lead to a positive Chlamydia test, even if the child is not infected. The paper also suggests strategies for preventing this from occurring.



Our people

Our successes would not be possible without the expertise, passion and dedication of our people. We value their expertise as well as potential, and believe in equipping them with the skills and confidence to pass their knowledge on to others.

We also recognise the achievements of staff and students, and encourage them to continue pursuing excellence through awards.



Capacity building

Our mission is to break the cycle of disease and improve health outcomes for people in Australia, particularly in Indigenous communities, and in the Asia-Pacific region. We do this primarily through excellence and leadership in research, education and capacity development.

During 2017, we continued to strengthen the knowledge and confidence of our collaborators and encourage their agency in making decisions that best suit their needs and circumstances.

RAMPING UP TB PREVENTION IN TIMIKA

The prevention and treatment of TB in Timika, Indonesia, has been ramped up under the influence of HOT NORTH PhD scholar Dr Trisasi Lestari.

Through a collaborative partnership funded by the Australian Department of Foreign Affairs and Trade (DFAT), Dr Lestari helped significantly increase TB preventive treatment for children living in TB-affected households from zero to 22 children in the first three months of the project.

This has been achieved by developing partnerships with the district health office, local non-government organisations and clinicians involved in TB care, sourcing a supply of TB prevention medication for the province and providing hands-on education.

Dr Lestari and Menzies' TB experts also hosted the first of what will become regular quarterly continuous quality improvement cycles.

In coming years, HOT NORTH investigators will continue to seek DFAT support to maintain the trajectory of Dr Lestari's work and examine ways to ensure treatment adherence in vulnerable groups, including infants and children.



→ Dr Trisasi Lestari delivering training to staff from the Timika healthcare and clinic centres.

EMPOWERING COMMUNITIES TO OWN THEIR HEALTH

During the year, our HealthLAB team adopted a new approach in the delivery of health promotion in remote community schools.

Our team of scientists and medical staff trained student ambassadors in two schools to operate stations as part of our mobile HealthLAB, in which they measured blood pressure, upper body strength and body composition.

The students became competent and confident in using medical technology such as ultrasound machines and carbon monoxide breath monitors to take measurements as well as delivering relevant health messages in language.

They were engaged and interested in how they can keep their bodies strong and make healthy lifestyle choices, including quitting smoking, exercising more and eating more fresh fruit, vegetables and bush tucker.

Since its inception, HealthLAB has delivered health promotion messages to more than 6000 people across the NT. In 2017 alone, the team saw more than 2000 people.



↑ A year 12 student from Xavier Catholic College in Wurrumiyanga explains how to use a carbon monoxide analyser to a staff member.

Indigenous capacity building

An important part of the Indigenous Capacity Building Unit (ICBU) is working collaboratively with, supporting, and building the capacity of an Indigenous health research workforce at Menzies.

Our ICBU works closely with Indigenous staff to foster a safe and welcoming work environment that supports their skills, knowledge, culture and language.

We were proud and delighted when a team of community-based researchers from Galiwin'ku on Elcho Island had their abstracts accepted to present their work at the World Indigenous Peoples' Conference on Viral Hepatitis in Anchorage, Alaska.

Sarah Bukulatjpi, Roslyn Dhurrkay and George Gurruwiwi are long-time Menzies researchers and have worked across a range of areas. Their achievement renewed our commitment to the ongoing training and development of community-based researchers.

Two nationwide events of significance to Indigenous peoples – Reconciliation and NAIDOC weeks – were also celebrated at an organisational level.

WORK EXPERIENCES OF PAST AND CURRENT INDIGENOUS STAFF INFORM STRATEGY

During the year, the results of a survey on the experiences of past and present Indigenous staff were published in an international policy journal. The findings will inform the development of Menzies' new Indigenous Employment Strategy.

The study, which recorded the views of 93 past and present Indigenous staff, aimed to identify positive and negative factors impacting them at work.

Among some of the key findings of the study were that a majority of staff agreed with the importance of Menzies' vision and work, and satisfaction of being engaged in work they enjoyed.

It will also inform ongoing training programs such as cultural awareness training.

INCREASING OPPORTUNITIES TO ACCESS CULTURAL AWARENESS TRAINING

During the year, we continued to run a program delivering cultural awareness training to Menzies staff both online and face-to-face by a local Indigenous consultant.

The aim of this training is to promote better understanding of communication and cultural differences between Indigenous and non-Indigenous staff and between our staff and research participants and community stakeholders.

In 2017, 16 staff completed online cultural awareness training and 36 attended the face-to-face sessions.



➤ Nadine Lee at the Menzies Red 9 building smoking ceremony.

➔ Menzies staff participated in the 2017 NAIDOC Week march in the Darwin CBD.



Case studies

HELPING COMMUNITIES STAY STRONG THROUGH BRIEF INTERVENTIONS

Indigenous Australians experience poorer health than non-Indigenous Australians. Achieving change through stopping smoking, improving nutrition and increasing physical activity would significantly improve health outcomes.

In 2017, the QLD Government engaged Menzies to develop and deliver a brief health intervention training program to Indigenous community health and hospital workers across the state.

From 2017–2019, our team will deliver training to more than a thousand people in the culturally-appropriate B.strong program. The program includes a one-day face-to-face workshop, six online modules and practitioner and client resource kits.

The materials have been designed to increase knowledge and skills and provide tools to assist with delivery of brief interventions to promote healthy changes with Indigenous clients.

The B.strong training program was launched in Brisbane in August 2017 by the QLD Minister for Health and Ambulance Services Cameron Dick.



Dr Jaquelyne Hughes with the Indigenous Patient Voices Symposium Report.

INDIGENOUS RESEARCHER KEEPS KIDNEY RESEARCH ON THE NATIONAL AGENDA

Dr Jaquelyne Hughes, a Torres Strait Islander woman and the country's first Indigenous kidney specialist, continued to shine the spotlight on the experiences of Indigenous Australians with chronic kidney disease.

In September, Dr Hughes, who is also an NHMRC Early Career Research Fellow at Menzies, played a lead role in organising the Indigenous Patient Voices Symposium in Darwin.

This forum, hosted within a National Scientific Meeting for kidney specialists, was the first of its kind bringing together patients, clinicians, policy makers and researchers to hear about the impact kidney disease has on patients and their families.

Participants talked about their experiences, limited access to health services and the impact of relocation for treatment of the current models of care.

The forum also identified solutions to the issues raised, including on-country treatment options.

In the months after the symposium, Dr Hughes, with Menzies and RDH colleagues, produced and published the symposium findings and spoke out through the media about its importance and significance.

This was another clear example of Dr Hughes' commitment to improving the lives of Indigenous kidney patients and strengthening health systems through clinical practice, research and advocacy.

Award winners

CHILD HEALTH

- Child Health laboratory manager, Jemima Beissbarth was awarded a PhD Scholarship from the NHMRC.
- Dr Gabrielle McCallum was named joint winner of the Exceptional Performance in Research award as part of CDU's Vice-Chancellor's Awards in recognition of her efforts to improve respiratory health in children. Her novel and innovative work has been recognised nationally and internationally.
- In September, Associate Professor Gurmeet Singh's collaborative project with Monash University *Why is the kidney vulnerable to preterm birth?* was recognised in the NHMRC's '10 of the Best' for 2016.

WELLBEING AND PREVENTABLE CHRONIC DISEASES

- Cherie Whitbread was awarded the 2017 NT Nurse of the Year.
- Professor Alan Cass was presented the Kidney Health Australia Clinical Science Award.
- Dr Paul Lawton was presented the Australian and New Zealand Society of Nephrology Rural Science Award.
- Alanna Gall received the SAGE scholarship.
- Former PhD student, Dr Anna Nicholson was awarded the 2017 Council of Academic Public Health Institutions Australasia PhD Excellence in Public Health award.

GLOBAL AND TROPICAL HEALTH

- Professor Ross Andrews was part of the Scabies Research team awarded the 2017 Eureka Prize for Infectious Diseases Research.
- Dr Matthew Grigg was named the 2017 NT Young Tall Poppy Scientist of the Year in recognition for his research into *Plasmodium knowlesi*, a specific type of monkey malaria that is transmitted to humans via mosquitoes in Southeast Asia.
- PhD candidate Dr Bo Remenyi was awarded the 2017 NT Australian of the Year award for her work in fighting RHD.
- Our malaria team received the CDU Vice-Chancellor Award for exceptional research team.
- Professor Ric Price was awarded the CDU Library Open Access Award for the most open access articles published in 2017.
- Steven Kho was awarded the Best Oral Presentation at the 25th Year Celebration of the Eijkman Institute in Jakarta.
- Judith Wilson won the early and mid-career researcher poster prize for her finger contamination story at the Australian Chlamydia Conference.

CORPORATE

- Acting deputy director, Brendon Douglas received the Institute for Managers and Leaders' NT Leader/Manager of the Year Award.

STUDENTS

- The Australasian Epidemiological Association awards for the highest score in an Introductory Epidemiology or Biostatistics course / subject received by Master of Public Health student, Jessica Anne Harkness for Epidemiology and Graduate Diploma in Public Health student, Chevy Brown for Biostatistics.

INTERNAL AWARDS

- The 2017 Menzies Medallion was presented to Professor Peter Morris for his significant contribution to improving child health in the NT through paediatric health service delivery and research.
- The 2017 Ryan Prize was awarded to Jennifer Wong for her outstanding, ongoing commitment to her role as business manager in the Child Health Division.
- The 2017 Harry Christian Giese Research Into Action award was won by Dr Renae Kirkham. Dr Kirkham will use the award to support the translation of her research findings into a short film involving Indigenous women in the Top End of the NT sharing their experiences of diabetes in pregnancy, including advice and information for other women.
- The 2017 Val Asche Prize for academic excellence was awarded to Gerrard Murray (Master of Public Health), Chevy Brown (Graduate Diploma in Public Health) and Catherine Connolly (Graduate Diploma in Health Research).



Jennifer Wong received the 2017 Ryan Prize from NT Administrator The Hon John Hardy AO.

Award winners

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
2017 FOR THEIR
LONG-STANDING
CONTRIBUTIONS
WERE:**

25 YEARS

- Mark Mayo

15 YEARS

- Jenny Brands

10 YEARS

- Professor Anne Chang
- Belinda Davison
- Hui Lin Leow
- Jane Nelson
- Marie Kirkwood
- Mirjam Kaestli
- Professor Ric Price
- Robi Cohalan

5 YEARS

- Professor Alan Cass
- Anthony Gunther
- Barbara Machunter
- Catherine Martel
- Cherie Whitbread
- Colin Baillie
- Dr Elizabeth Barr
- Dr Frances Cunningham
- Dr Jaquelyne Hughes
- Joanna Bailey
- Nicole Wilson
- Dr Robyn Marsh
- Steve Buchanan



Menzies staff Mirjam Kaestli, Prof Ric Price, Jane Nelson, Robi Cohalan, Hui Lin Leow and Marie Kirkwood were recognised for 10 years of service.

Feature award winner

MARK MAYO

As part of our 2017 Long Service Awards, we were proud to recognise Mark Mayo for his 25 years of service at Menzies.

Mark is currently the melioidosis research program manager and a senior researcher. He is also an internationally recognised expert on environmental sampling for the melioidosis bacterium.

Additionally, the NHMRC regard Mark as an expert on support for Indigenous scientists in career pathways and project support.

He also advises other Menzies researchers on Indigenous support for their projects.

Mark began his career at Menzies as a lab trainee in 1992, progressing to roles as a junior lab assistant and research scientist before becoming program manager.

He is still actively involved in the research aspect of the melioidosis programs.

"Mark is the fourth recipient of the 25-year long service award and a real inspiration to not only his peers, but young people looking to commence a career at Menzies," Menzies Director, Professor Alan Cass said.

"With his unwavering commitment to excellence in his research, capacity building and community engagement, Mark really encapsulates the essence of the Menzies culture."



Program manager Mark Mayo has made significant contributions to melioidosis research during his time at Menzies.





Education and training

Within our teams of researchers are internationally-recognised authorities on their topics of expertise. In addition to producing bodies of knowledge and developing solutions to health problems, they also provide guidance to a new cohort of health researchers through our course offerings at CDU.

During the year, we continued to make significant improvements to our public health and health research higher education as well as vocational education and training courses.

Notably, the mode of teaching changed significantly during the year, allowing domestic students to choose between studying online and attending the semester-long units at the Casuarina campus of CDU.

The expansion of on-campus teaching paved the way for international students, with our first cohort arriving from Nepal, Nigeria and Pakistan. This change has also led to more Menzies researchers engaging in teaching, and increased opportunities for research translation with future public health practitioners.

Our education team continued to contribute to CDU's learning and teaching committees and participated in projects such as the Academic Calibration Project for Innovative Universities Australia. The project is an external peer review process to obtain comparable and constructive feedback on learning outcomes as well as maintain and improve academic standards of partner universities.

We also saw a growth in student numbers in the public health and health research courses, which was the result of a refreshed marketing strategy.

Throughout 2017, the team provided strategic, targeted information of our course offerings to primary health care providers across the NT, WA

and SA. We also launched our international student marketing strategy by attending the PostgradAsia Education Fair in Malaysia.

One of our strongest selling points is the outstanding potential and track record of our research academics. Our student supervision continued to grow stronger, which resulted in high completion rates and scholarship successes.

New scholarships were also provided to 12 higher degree by research students to recognise their potential and support their research training.

During the year, we celebrated the graduation of eight PhD candidates and one Doctor of Public Health. Four of the graduates contributed to new knowledge for the treatment of malaria, while other graduates contributed new understandings of RHD, otitis media, psychological assessment of Indigenous school students, the impact of parenting programs, and road traffic injuries in the NT.

We continued to build capacity of Indigenous community-based researchers through teaching the Certificate II in Community Health Research.

Of the 25 Indigenous students enrolled, 17 graduated and eight received statements of attainment. Students undertook workplace training through work in the Social Media and Tobacco Control Project, a Mixed Methods Anaemia Evaluation, and the Stores Healthy Options Project in Remote Indigenous Communities (SHOP@RIC).

Students enrolled for 2017/2018 are working on research projects for the prevention of ARF and RHD called On Track Watch and the Living in Darwin for Dialysis project.

The education and training unit were pleased to welcome Clarissa Carter to the team following the completion of her Indigenous Youth Traineeship. Clarissa, who is also enrolled in the Certificate IV for Training and Assessment (TAE40110), supports students directly and contributes to the administration of the Certificate II in Community Health Research.



➤ *Jacob Jungarai Spencer graduated with a Certificate II in Community Health Research.*



➤ *Dr Kathryn Roberts, Dr Anna Stephen, Prof Ross Bailie and Dr Karen Dempsey at the June CDU graduation.*

DOCTOR OF PHILOSOPHY

➤ **Carmen Cubillo (PhD)**
Understanding Indigenous and non-Indigenous parenting in the Let's Start preschool program.

➤ **Santie DuPlessis (PhD)**
Adaptive Behaviour Assessment System: Indigenous Australian Adaptation Model (ABAS:IAAM).

➤ **Matthew Grigg (PhD)**
Risk factors, clinical features and treatment of human infection with *Plasmodium knowlesi* and other *Plasmodium* species in Sabah, Malaysia.

➤ **Hugh Kingston (PhD)**
Hemoglobin, nitric oxide and the circulation in severe malaria.

➤ **Jessica Loughland (PhD)**
Functional characterisation of human blood dendritic cell subsets during *Plasmodium* infection.

➤ **Kathryn Roberts (PhD)**
Echocardiographic screening for RHD in northern Australian children.

➤ **Anna Stephen (PhD)**
The contribution of social and environmental factors to otitis media in Aboriginal children in the NT.

➤ **Grennady Wirjanata (PhD)**
Phenotypic characterisation of chloroquine resistance in *Plasmodium spp.* isolates.

DOCTOR OF PUBLIC HEALTH

➤ **Karen Dempsey**
In harm's way: A study of NT linked crash records.



➤ Jessica Loughland graduated with a PhD for her research into malaria.

Education and training

Higher Education Course	Equivalent full-time student load (EFTSL)	Graduates
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Master of Public Health	21.5	13
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Graduate Diploma in Public Health	8.75	6
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Graduate Diploma in Health Research	3.875	7
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Cross course participation in Menzies-taught units	14.75	N/A
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Vocational education and training	Enrolments	Graduates
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10513 NAT Certificate II in Community Health Research	19	16
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Case studies



Val Asche Prize for Academic Excellence recipient Chevy Brown.

MENZIES QUALIFICATION A STEPPING STONE TO ACHIEVING HIS GOALS

It has taken four years to get where he originally hoped to be, but recent Graduate Diploma in Public Health graduate Chevy Brown is glad for the detour.

A recipient of the Val Asche Prize for Academic Excellence, Chevy credited his Menzies and CDU qualification for giving him a competitive advantage to secure a place to study a Master of Physiotherapy at Flinders University.

With a Bachelor of Exercise and Sport Science under his belt, the long-time Katherine resident had plans to undertake a master's degree.

However, he was not accepted into the program that year and found himself considering the option of studying at Menzies instead.

"It was rewarding and a relaxed environment with intimate class sizes, and I enjoyed meeting other students from different backgrounds," he said.

"Since graduation, I have commenced my master's at my top choice of university and hope to eventually work as a physiotherapist.

"In the future, there might be an opportunity for me to bridge my clinical roles with research as I am also interested in chronic disease management and public health at a social and population level."

LEARNING FROM WORLD-CLASS RESEARCHERS AT MENZIES

Menzies PhD candidate and international student Celestine Aho knew of Menzies' work long before she moved to Darwin to begin her research.

Through her work in the laboratory of a research institute in her native Papua New Guinea, Celestine had been involved in collaborations between the institutes. She knew she would be learning from pioneers in the field at Menzies.

Her thesis, which looks at understanding the bacterial pathogens associated with otitis media in children from at-risk populations in the NT and PNG, will make her one of the few people working on otitis media in her home country.

"Otitis media is not very well-researched in PNG; research tends to focus on higher profile diseases like malaria, pneumonia and TB," she said.

"But otitis media can lead to hearing loss, which affects all facets of a child's life, from their learning to job prospects later on in life."

Now in her final year of her candidacy, Celestine said she enjoyed working with leading researchers who were supportive and passionate about their work.

"I'm so fortunate to be here, doing research that directly impacts people's lives," she said.



Menzies PhD candidate and international student Celestine Aho.



In the community

Research does not exist in a vacuum. It is important to us to interact with the communities in which we work, live and study. Every year, we hold various events and invite our communities to attend, including the Menzies Oration, lunchtime seminars and HealthLAB hands-on health promotion activities.

Community engagement

Dr Dino Hodge and Belinda Inglis from the hearing team checking NT Thunder captain Shannon Rioli's ears as part of HealthLAB during National Science Week at Parliament House, Darwin.



Professor Ian Anderson AO delivered the 2017 Menzies Oration.



Felicity Gerry QC spoke about the rights of children with mental disabilities in the NT.

HEALTHLAB TOURS THE TOP END DURING NATIONAL SCIENCE WEEK

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

The HealthLAB team engaged community members in Bathurst Island, Kakadu National Park and Gunbalanya to conduct their own health tests and find out what the results mean for their general wellbeing.

During the week, the team also dropped into Parliament House, Darwin to test the health of our politicians.

CHILD RIGHTS FORUM

In collaboration with CDU's School of Law, Menzies hosted a Child Rights Forum in February with the issues of youth justice, family violence, trauma and healthcare access being discussed.

CDU senior law lecturer Felicity Gerry QC and acclaimed paediatrician Professor Kim Mulholland presented keynote addresses at the forum, followed by a Q&A session with a panel of experts.

2017 MENZIES ORATION DELIVERED BY PROFESSOR IAN ANDERSON AO

In November, Deputy Secretary for Indigenous Affairs in the Department of Prime Minister and Cabinet, Professor Ian Anderson AO, delivered an insightful Menzies Oration in the Menzies Auditorium.

Prof Anderson's presentation 'Democratising Data / Building Platform for Indigenous Development' discussed data collection and how it can be better used to inform policy decisions at a local and community level.

Our donors and supporters

This year was one of intensive corporate and philanthropic engagement for our Development team.

We continued raising awareness of our work and cultivating relationships with established supporters while introducing new community and corporate groups to Menzies' work.

The end of the year saw a number of negotiations still underway in the corporate and philanthropic spaces, with significant income expected to be realised at the beginning of 2018 in several research areas.

Many of our efforts during the year were aided and championed by the Menzies Development Committee, who were instrumental in supporting our efforts through their expertise, advice, networking and hosting.

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 teams.

We are grateful to our patrons and ambassadors for their ongoing commitment to the work of Menzies: John Hardy AO, Vicki O'Halloran AM, 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.



➤
Menzies researcher Thérèse Kearns presenting at The Incubator mock pitch in Darwin.

ENGAGEMENT EVENTS

During the year, two corporate engagement events were sponsored and hosted for Menzies in Melbourne and Sydney. These events provided the opportunity for our researchers to present to key business and philanthropic leaders, raising awareness of and garnering support for their projects.

We extend our deep gratitude to our event hosts Ben McLaughlin, partner at Baker McKenzie and Rebecca McGrath, advisory council member at J.P. Morgan for their support.

CONTINUED ENGAGEMENT WITH CORPORATE PARTNERS

We continued our partnership with Medibank and the McArthur River Mine Community Benefits Trust on the Whole-of-Community Health scoping assessments to identify community driven health priorities.

We thank Medibank and the McArthur River Mine Community Benefits Trust for their commitment to significantly improving the health and wellbeing of Indigenous communities.

THE INCUBATOR PROGRAM INTRODUCED

A highlight of 2017 was the introduction and trial of a broad staff engagement program called The Incubator.

The program provides researchers with tools and methods to help them better market their research projects to philanthropic and corporate audiences.

We utilised one-on-one support and feedback in crafting proposals for funding, plenary sessions for group training and practical tasks, and workshops for specific skills to develop researchers' projects into pitch-ready stories.

The program culminated in a mock pitch session to representatives from the NT government, business and philanthropic community. The feedback from participants and the panel was positive and constructive.

The Incubator is shaping up to be a useful method for researchers to experiment with seeking different income streams, and is likely to become an annual event.

Major donors and partners

We are grateful to the following donors and partners for their generous support in 2017:

MAJOR DONORS

Amcal Max Night and Day Casuarina
 Belinda Gibson
 Belinda Paspaley
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 Charles Moses
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 Chris Tuck
 Don Grant
 Dr Anna Ralph
 Dr Henry Duncan
 Dr Matthew Sharland
 Dr Richard Russell
 Dr Stephen Baddeley
 Dr Val Asche
 Graham Blashki
 Heather D'Antoine
 Ian Albrey and Edwina Menzies
 Inclusion Melbourne
 James Hogben
 John Flynn

Kate Duncan
 Kate Russell
 Leslie English
 Lita Connolly
 McArthur River Mining
 Megan Duffy
 Michael Pemberton
 Professor Peter Morris
 Peter Waggitt
 Rex and Lyn Wild
 Rob and Dulcie Andrew
 QEC Pty Ltd
 Rotary Club of Darwin
 Simon Elix
 Susan Hiley
 Tanya and David Edwards
 The Corella Fund
 The Maple-Brown Charitable Foundation
 The McArthur River Mine Annual Charity Golf Tournament
 The Ray and Margaret Wilson Family Foundation
 Warren Snowdon MP

PARTNERS AND FUNDERS

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 Addis Continental Institute of Public Health (ACIPH), Ethiopia
 Agency for Clinical Innovation (ACI) NSW
 Airmorth
 Alaska Native Tribal Health Consortium
 Allen and Clarke Policy and Regulatory, New Zealand
 Allens Linklaters
 Amity Community Services Inc
 Anyinginyi Health Aboriginal Corp
 Apunipima Cape York Health Council
 Armauer Hansen Research Institute
 Asthma Australia Inc
 Asthma Foundation NT
 Attorney - General's Department - Criminal Justice Division
 Auckland University
 Arizon Community Fund
 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
 Australian Government Attorney-General's Department
 Australian Government Department of Education and Training
 Australian Government Department of Families, Housing, Community Services and Indigenous Affairs
 DFAT
 Australian Government Department of Health
 Australian Government Department of Industry and Science
 Australian Government Department of Social Services
 Australian Government Department of the Prime Minister and Cabinet

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
 Banyala Garrangali School
 Bawinanga Aboriginal Corporation
 Berrimah Veterinary Labs
 beyondblue
 Bila Muuji Upper Sector Consortium NSW
 Bill and Melinda Gates Foundation
 Bupa Health Foundation
 Burnet Institute
 Brisbane Indigenous Media Association (989fm)
 CAAHSC
 CAAMA Productions
 Cairns Diabetes Centre
 Canadian Partnership Against Cancer
 Cancer Australia
 Cancer Council Australia
 Cancer Council NSW
 Cancer Council QLD
 Cancer Council WA
 Cancer Institute NSW
 Catholic Archdiocese of Mount Hagen, PNG
 Catholic Archdiocese of Madang, PNG
 Catholic Archdiocese of Kundiawa, PNG
 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, University of Oxford

Centro Internacional de Entrenamiento e Investigaciones (CIDEIM), Colombia	Fitzroy Crossing Foundation for Alcohol Research and Education	Institute of Tropical Medicine (ITM) Antwerp, Belgium	McMaster University
Channel 7 Children's Research Foundation	Flinders University	Integria Healthcare	Medibank Private
CDU	Giese Family	International Agency for Research on Cancer	Medical Oncology Group of Australia
Collier Charitable Fund	Geraldton Regional Aboriginal Medical Service	International Centre for Diarrhoeal Disease Research, Bangladesh	Medical Research Council, UK
Columbia University	Gilead Sciences	J.P. Morgan	Medicines for Malaria Venture
CSIRO	Glaxo Smith Kline Australia	James Cook University	Melbourne Health
Danila Dilba Health Service	Global Health Group, University of California, USA	Jiangsu Institute of Parasitic Diseases, Jiangsu, China	Memorial University, Newfoundland
Deakin University	Goodman Fielder	Jilamara Arts and Crafts, Milikapiti, Tiwi Islands	Menzies Foundation
Defence Threat Reduction Agency, USA	Griffith University	Katherine West Health Board Aboriginal Corporation	Michael Long Learning and Leadership Centre
Deloitte Access Economics	Group Training NT	Keningau Hospital, Sabah, Malaysia	Ministry of Health, Bhutan
Deloitte Australia	Guardian Trust – The James Russell Lewis Trust	Korea Center for Disease Control and Prevention, Republic of Korea	Mitra Masyarakat Hospital, Papua, Indonesia
Department of Chemistry and Chemical Biology and Department of Pharmaceutical Sciences, Northeastern University, Boston, MA, USA	Gurriny Yealamucka Health Service Aboriginal Corporation	Korea National Institute of Health, Republic of Korea	Miwatj Health Aboriginal Corporation
Department of Homeland Security, USA	Hanako Foundation	Kormilda College	Monash University
Department of Malaria, National Institute of Parasitic Disease, Chinese Center for Disease Control and Prevention	Health and Social Development Organization, Afghanistan	Kota Marudu Hospital, Sabah, Malaysia	Mulligas and Cudjeries Group, Darwin
Department of Medical Research, Myanmar	Health Protection and Research Organisation, Afghanistan	KPMG Australia	Mulungu Aboriginal Corporation Primary Health Care Service
Department of Parasitology and Medical Entomology, University of Kassala, Sudan	Health Protection NSW	Kuching Specialist Hospital, Sarawak, Malaysia	Murdoch Childrens Research Institute
Department of Zoology, University of Colombo, Sri Lanka	Healthy Living NT	Kudat Hospital, Sabah, Malaysia	Nanyang Technological University, Singapore
Developing East Arnhem Limited (DEAL)	Heart Foundation Australia	Lady Cilento Children's Hospital	NACCHO
Diabetes Australia Research Program	Heart Foundation NSW	Laynhapuy Homelands Aboriginal Corporation	National Breast Cancer Foundation
Dreamedia Creative	Heart Foundation QLD	Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore	National Centre for Parasitology Entomology and Malaria Control, Cambodia
Drug and Alcohol Services Association (DASA)	Hepatitis Australia	Likas Hospital, Sabah, Malaysia	National Critical Care and Trauma Response Centre
Duke University Medical Center, USA	Hormozgan University of Medical Sciences, Iran	London School of Hygiene and Tropical Medicine	NHMRC
Eijkman Institute for Molecular Biology, Jakarta, Indonesia	Hubert Kairuki Memorial University, Dar-es-Salaam, Tanzania	Lung Foundation Australia	National Heart Foundation NT
Eijkman Oxford Clinical Research Unit (EOCRU), Indonesia	Hunter Medical Research Institute	Maari Ma Health Aboriginal Corporation	National Heart Foundation of Australia
Ethiopian Public Health Institute (EPHI), Ethiopia	Ian Garton	Mackay Hospital and Health Service	National Institutes of Health, USA
EY Ernst & Young	Icon Cancer Care	Mahidol-Oxford Tropical Medicine Research Unit, Thailand	National Rural Health Alliance
Faculty of Medicine, University of Antioquia, Colombia	Inala Indigenous Health Service	Mailman School of Public Health, University of Columbia, USA	National University of Singapore
Family Health International, USA	InBios International, Inc. USA	Malaria Atlas Project (MAP), Oxford Big Data Institute, University of Oxford	Naval Medical Research Center, USA
Financial Markets Foundation for Children	Infectious Diseases Society Kota Kinabalu Sabah, Malaysia	Malaysia Ministry of Health	NAVSUP Fleet Logistics Center Singapore Office
Fiona Stanley Hospital WA Department of Nephrology	Infectious Diseases Unit, Queen Elizabeth Hospital, Malaysia	Mallee District Aboriginal Services	Ngaanyatjarr Health
	Impex Operations Australia Pty Ltd	Mamu Health Service Limited	Nganampa Health
	Insein General Hospital, Yangon, Myanmar	Maningrida College	Ninti One Limited
	Institut Pasteur du Cambodge, Cambodia	McArthur River Mine Community Benefits Trust	North and West Remote Health Ltd
	Institute for Healthcare Improvement		Northern Adelaide Local Health Network
	Institute of Infectious Disease and Epidemiology, Tan Tock Seng Hospital, Singapore		Northern Arizona University

NSW Government Far West Local District	Poche Centre for Indigenous Health and Wellbeing, Alice Springs	The Catholic Bishops' Conference of Papua New Guinea and the Solomon Islands (CBC)	University of Sydney
NT Airports	Poche Centre, University of Sydney	The Clive and Vera Ramaciotti Foundation	University of Sydney, University Centre for Rural Health
NT Clinical School, Flinders University	PNG Government Department of Community Development and Religion	The Corella Fund	University of Tasmania
NT Community Benefit Fund	Primary English Teaching Association Australia	The Fred Hollows Foundation	University of Technology Sydney
NT Department of Business	Prince Charles Hospital	The Honda Foundation	University of Utah, USA
NT Department of Children and Families	Princess Alexandra Hospital	The Kirby Institute, University of NSW, Sydney	University of WA
NT Department of Education	QIMR Berghofer	The Lowitja Institute	University of Wollongong
NT Department of Health	QLD Aboriginal and Islander Health Council	The Peter Doherty Institute for Infections and Immunity (Doherty Institute)	Victorian Aboriginal Community Controlled Health Organisation Inc. (VACCHO)
NT Department of Housing	QLD Government Department of Health	The Pratt Foundation	VicHealth
NT Department of Land Resource Management – Water Resources Division	QLD University of Technology	The Prince Charles Hospital Chermside QLD	Victoria University
NT Department of Local Government and Community Services	Quitline – QLD	Timika Regional Hospital, Papua, Indonesia	Victorian Cytology Service
NT Department of Primary Industry and Fisheries	Ranau Hospital, Sabah, Malaysia	Top End Health Services	Victorian Infectious Diseases Reference Laboratory
NT Department of the Attorney-General and Justice, Child Deaths Review and Prevention Committee	Rebecca L Cooper Medical Research Foundation Limited	Townsville Aboriginal and Islander Health Service	Vysnova Partners Inc
NT Department of Trade, Business and Innovation	Research Institute for Tropical Medicine, Department of Health, Philippines	Tropical Public Health Services – Cairns	WA Government Department of Health
NT Government Department of Treasury and Finance	RHD – QLD	Uncle Jimmy Thumbs Up!	Walter and Eliza Hall Institute of Medical Research
NT Primary Health Network	RhEACH	UNICEF	Walytja Palyantjaku Tjutaku Aboriginal Corporation
NT Public Health Network	Robinson Institute, University of Adelaide	United States Department of Defense	Wellcome Trust Sanger Institute
Nunakwarrin Yunti Inc	Rotary Club of Darwin	Universiti Malaysia Sarawak (UNIMAS)	Wellington Aboriginal Corporation Health Service
Office For Aboriginal and Torres Strait Islander Health	Roy Morgan Research Ltd	University Centre of Rural Health	Wells Bio, Republic of Korea
OLSH Thamarrur Catholic School, Wadeye	Royal Adelaide Hospital Department of Nephrology	University Malaya Medical Centre (UMMC), Kuala Lumpur, Malaysia	Western Desert Nganampa
Ord Valley Aboriginal Health Service	Royal Australasian College of General Practitioners	University of Adelaide	Western University, Schulich Interfaculty Program in Public Health, Canada
Organization for Social Science Research in Eastern and Southern Africa (OSSREA), Ethiopia	Royal Australasian College of Physicians	University of California, USA	Westpac
Outback Stores	RDH	University of Gadjah Mada, Yogyakarta, Indonesia	Women's & Children's Health Network
Oxfam Australia	Seattle Children's Hospital, USA	University of Khartoum, Sudan	WHO
Oxford University Clinical Research Unit Vietnam	Shoklo Malaria Research Unit, Tak Province, Thailand	University of Malaya, Kuala Lumpur, Malaysia	WorldWide Antimalarial Resistance Network (WWARN)
Oxford Wellcome Trust	South Australian Health & Medical Research Institute (SAHMRI)	Universiti Malaysia Sabah (UMS), Sabah, Malaysia	Wuchopperen Health Service Ltd
Papuan Health and Community Development Foundation, Timika, Indonesia	St Vincent's Hospital Melbourne	University of Medicine 2, Yangon, Myanmar	Wurli Wurlijang Health Service
Pasteur Institute of Ho Chi Minh City	Starship Children's Hospital, NZ	University of Melbourne	Xavier Catholic College, Wurrumiyanga
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Perpetual Limited (The Ramaciotti Foundation)	Swiss National Science Foundation	University of NSW	Yothu Yindi Foundation
Pfizer Australia	Teleton Kids Institute	University of Newcastle	Zip Print
Pierre and Marie Curie University, Paris, France	Tengku Ampuan Rahimah Hospital, Klang, Malaysia	University of Otago, NZ	
Pika Wiya Health Service	Territory Families	University of Oxford, UK	
	TGen North, USA	University of QLD	
	The Black Dog Institute	University of SA	
	The Cass Foundation		

Our financials

The following pages provide a summary of Menzies' financial statements for the year ended 31 December 2017. For the full report, please visit www.menzies.edu.au/2017financialreport

Financial summary

Statement of Profit or Loss and Other Comprehensive Income

For the Year Ended 31 December 2017

	NOTE	2017 \$	2016 \$
Income from continuing operations			
Australian Government financial assistance			
NHMRC	2	10,959,791	11,687,385
Other Government Agencies	2	2,448,708	3,986,501
NT Government financial assistance	3	5,161,924	9,787,331
Fees and charges	4	3,090,634	3,501,465
Investment income	5	816,782	769,509
Consultancy and contract research	6	10,353,570	9,408,806
Other revenue	7	4,265,807	3,944,465
Total revenue from continuing operations		37,097,216	43,085,462
(Loss)/Gain on disposal of assets	8	(1,003)	8,000
Total income from continuing operations		37,096,213	43,093,462
Expenses from continuing operations			
Employee related expense	9	24,904,426	23,335,161
Depreciation and amortisation	10	2,577,823	2,556,646
Repairs and maintenance	11	1,261,071	1,178,544
Direct research costs	12	5,843,061	5,695,057
Other expenses	13	5,883,996	6,466,987
Total expenses from continuing operations		40,470,377	39,232,395
Operating result from continuing operations		(3,374,164)	3,861,067
Operating result attributable to members		(3,374,164)	3,861,067
Revaluation of investment	23	3,732	5,967
Total comprehensive (loss)/income attributable to members		(3,370,432)	3,867,034

The above Statement of Profit or Loss and Other Comprehensive Income should be read in conjunction with the notes included in the audited 2017 financial statements.

Statement of Financial Position

For the Year Ended 31 December 2017

	NOTE	2017 \$	2016 \$
Assets			
Current Assets			
Cash and cash equivalents	14	2,473,893	10,645,929
Trade and other receivables	15	625,870	596,372
Other financial assets	16	31,727,000	24,727,000
Other non-financial assets	18	692,571	658,795
Total Current Assets		35,519,334	36,628,096
Non-Current Assets			
Other financial assets	16	39,907	34,744
Property, plant and equipment	19	1,683,874	2,364,712
Intangible assets	17	28,337,831	30,027,832
Total Non-Current Assets		30,061,612	32,427,288
Total Assets		65,580,946	69,055,384
Liabilities			
Current Liabilities			
Trade and other payables	20	841,545	594,160
Provisions	22	4,072,346	4,424,968
Other liabilities	21	212,730	120,852
Total Current Liabilities		5,126,621	5,139,980
Non-Current Liabilities			
Provisions	22	403,773	494,420
Total Non-Current Liabilities		403,773	494,420
Total Liabilities		5,530,394	5,634,400
Net Assets		60,050,552	63,420,984
Equity			
Reserves	23	7,657,326	6,831,863
Retained earnings	24	52,393,226	56,589,121
Total Equity		60,050,552	63,420,984

The above Statement of Financial Position should be read in conjunction with the notes included in the audited 2017 financial statements.

Statement of Changes in Equity

For the Year Ended 31 December 2017

	NOTE	Retained Earnings \$	Reserves \$	Total \$
Balance at 1 January 2017		56,589,121	6,831,863	63,420,984
Operating result for the year	25	(3,374,164)	-	(3,374,164)
Net Revaluation gain on investments	23	-	3,732	3,732
Total Comprehensive Income		53,214,957	6,835,595	60,050,552
Transfers	24	(821,731)	821,731	-
Balance at 31 December 2017		52,393,226	7,657,326	60,050,552
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
Total Comprehensive Income		57,337,793	6,083,191	63,420,984
Transfers	24	(748,672)	748,672	-
Balance at 31 December 2016		56,589,121	6,831,863	63,420,984

The above Statement of Changes in Equity should be read in conjunction with the notes included in the audited 2017 financial statements.

Statement of Cash Flows

For the Year Ended 31 December 2017

	NOTE	2017 \$	2016 \$
Cash flows from operating activities			
Australian Government grants		13,345,614	16,093,962
NT Government funding		5,161,924	9,787,331
Receipts from student fees		3,090,634	3,501,465
Interest received		815,351	768,478
Consultancies and contract research		10,248,315	9,408,806
Other receipts		4,265,807	3,662,621
Payments to suppliers		(13,308,550)	(12,619,736)
Payments to employees		(24,583,143)	(23,165,688)
Net cash (used in)/provided by operating activities	27	(964,048)	7,437,239
Cash flows from investing activities			
CDU – Menzies investments funds	29	(7,000,000)	(2,000,000)
Proceeds from sale of plant and equipment			8,000
Payments for property, plant and equipment	19	(207,988)	(325,398)
Net cash outflow from investing activities		(7,207,988)	(2,317,398)
Net (decrease)/increase in cash and cash equivalents		(8,172,036)	5,119,841
Cash and cash equivalents at the beginning of the year		10,645,929	5,526,088
Cash and cash equivalents at end of the year	14	2,473,893	10,645,929

The above Statement of Cash Flows should be read in conjunction with the notes included in the audited 2017 financial statements.

	2017 \$	2016 \$
Reconciliation of net surplus/(deficit)	(3,374,164)	3,861,067
Represented by:		
Capital funding – interest earned	302	1,294
Research and Education surplus/(deficit)	(981,955)	1,203,690
Non-research surplus/(deficit)	186,315	204,729
NT Government research investment funding	-	5,000,000
Depreciation and amortisation	(2,577,823)	(2,556,646)
Gain of disposal of assets	(1,003)	8,000
	(3,374,164)	3,861,067

ANALYSIS OF RESULTS

There are two important factors to recognise when analysing Menzies' financial results:

1. Menzies' income is predominantly for the conduct of multi-year research, and is recorded as income in the year it is received, though expenditure related to that income may occur in future years. As such, the mismatch between income and expenditure can result in research surpluses in one year as income is received, and research deficits in subsequent years as expenditure is incurred.

This dynamic is demonstrated in Menzies Research and Education results for 2017 and 2016. The amount expended on Menzies' research activities exceeded the amount received in 2017 resulting in a deficit of \$981,955. This deficit is representative of a spend down on funds received but not spent in prior years, such as the \$1,203,690 surplus funds in 2016, rather than a permanent or unfunded deficit.

2. Depreciation and amortisation is recognised annually for assets that were granted in previous years. This again highlights the mismatch between the receipt of income and the recognition of expenditure. It also represents non-cash costs recognised in accordance with Accounting Standards for:

- i. assets, of which many have been granted and that Menzies is unlikely to need to replace from its own working capital as the assets reach the end of their useful life, and;
- ii. use of buildings for which Menzies has long term peppercorn lease arrangements in place.

After taking into account that the research and education deficit represents a spend down of funds received in prior years, **Menzies' adjusted operating result before depreciation and amortisation for 2017 is \$185,614 surplus.**

It is also important when comparing results for 2017 with those of 2016 to note that in 2016 Menzies was granted \$5m as a one off investment of funds by the NT Government into strategic research capacity. Adjusting for this, and for research and education surplus funds that are to be spent in future periods, **Menzies' adjusted operating results before depreciation and amortisation for 2016 is \$214,023 surplus.**

	2017 \$	2016 \$
Reconciliation of adjusted net surplus/(deficit)		
Net Surplus/(Deficit)	(3,374,164)	3,861,067
Adjusted for:		
Research and Education surplus funds to be spent in future years	-	(1,203,690)
Research and Education deficit funds spent down on prior year surpluses	981,955	-
One-off NT Government research investment funding	-	(5,000,000)
Depreciation and amortisation	2,577,823	2,556,646
Adjusted net surplus/(deficit)	185,614	214,023

WE WISH TO THANK THE MANY INDIVIDUALS AND COMMUNITIES WHO GRANTED PERMISSION TO USE PHOTOGRAPHIC IMAGES OF THEMSELVES AND THEIR CHILDREN THROUGHOUT THIS PUBLICATION.

Children from Bagot Community, Darwin enjoy the RHDustralia Sharing a Heartbeat film launch.





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