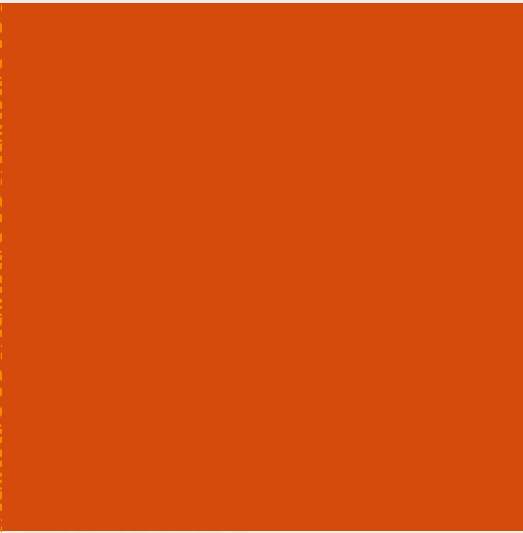
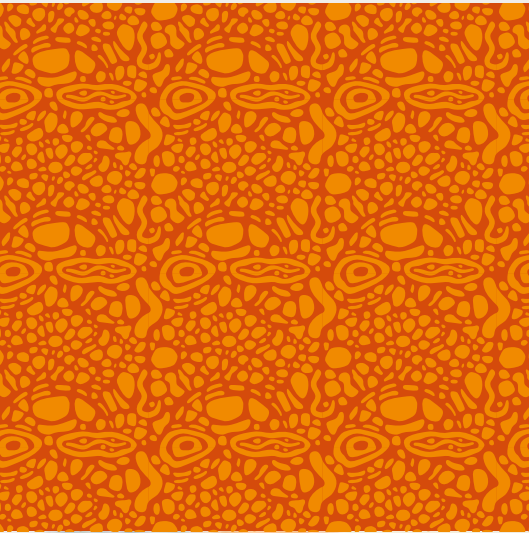
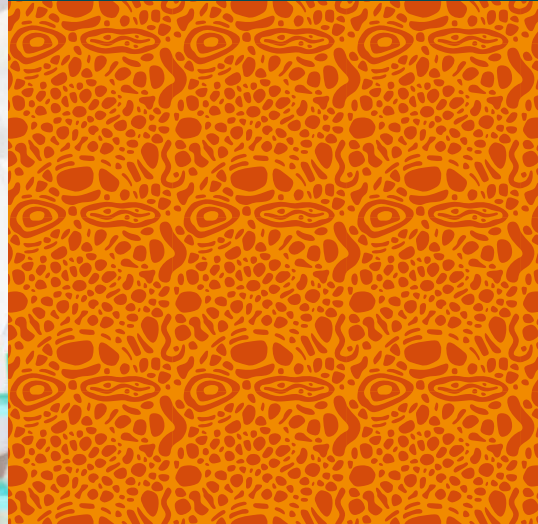


menzies
school of health research



2020
Annual
Report



The graphic pattern featured in the Menzies 2020 Annual Report is from an artwork by artist Cian Mungatj McCue who was born and raised in Darwin. Cian is a descendant of the Larrakia, Yanyuwa and Mulluk-Mulluk people.

The complete artwork is replicated inside the back cover.



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.



Our values

Quality We strive for excellence and rigour in everything we do.

Integrity We are open, honest and transparent, and maintain the highest standards of governance, accountability and ethics.

Relevance We concentrate on solving problems that matter. Our work is informed by the health needs and shared priorities of the people and communities with whom we work.

Partnerships We seek to partner with communities, health and other service providers, policy-makers and other researchers.

Innovation We embrace new approaches and technologies.

Communication We maintain an ongoing dialogue with partners, stakeholders and the local and national community during the research process, from conception through to completion and translation of results.

Accountability We take responsibility for our actions and results.

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

◀ Cover images

Top right Zoe Martin with Madison Martin and Kathleen Martin with Wynter Mahoney in Alice Springs.

Lower left Mark Mayo and Dr Robyn Marsh in the Menzies laboratory.

Find out more at www.menzies.edu.au

Contents

Who we are	2
Where we work	3
2020 highlights	4
Menzies 2021 Strategic Plan	6
Director and Chair's message	7
Our Board	8
Reconciliation Action Plan 2020-2022	11
Our research impact	12
Education and training	32
Our people	36
Organisational structure	37
Research excellence	38
Capacity building	42
Our donors and supporters	45
Our financials	49

Who we are

We are one of Australia's leading medical research institutes dedicated to improving the health and wellbeing of Aboriginal and Torres Strait Islander peoples. We are also a leader in global and tropical health research into life-threatening diseases. Through effective partnerships with communities across northern Australia and the Asia-Pacific region, we translate our research into real change.

Our diverse workforce fulfil key roles in health service delivery, research and training throughout Australia and across the region.

Number of staff

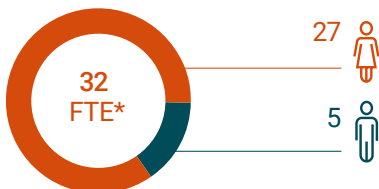


Number of students



* Full-time equivalent

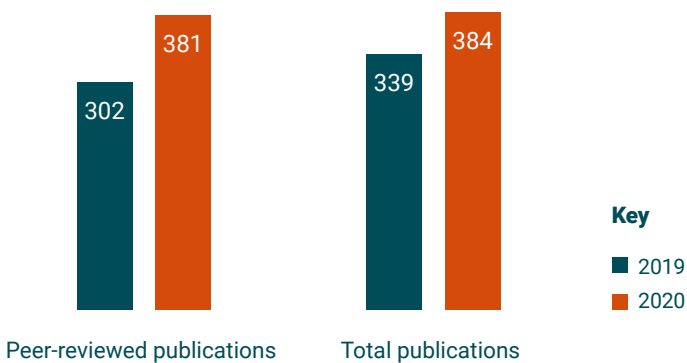
Number of Aboriginal and/or Torres Strait Islander staff



2020 Biyamarr ma trainees



Number of publications





Where we work

Our headquarters are in Darwin, with offices in Alice Springs, Brisbane and Dili, Timor-Leste. Our work spans central and northern Australia and countries within our global neighbourhood.

Key

- Countries where we work
- Countries with research collaborations
- Headquarters
- 2020 Field sites

2020 highlights

March

The COVID-19 pandemic affected all our lives and the way we do research. Here at Menzies, our team immediately supported state, national and international public health responses, as well as adapting their work in line with best practice.

Read more on pages 13-14.

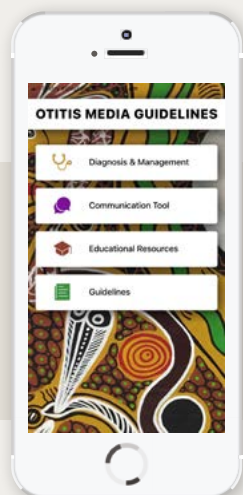


^ Infectious diseases specialists, Professor Bart Currie, Associate Professor Jane Davies and Professor Josh Davis.

We launched the new *Otitis Media Guidelines* app, an interactive tool to assist primary health care providers in the delivery of comprehensive, effective and appropriate care for Aboriginal and Torres Strait Islander people with otitis media (ear infections).

Read more on page 23.

✓ The OMapp.



Associate Professor Jaquelyne Hughes, for the eGFR3 Study, received a National Health and Medical Research Council (NHMRC) research excellence award for the highest ranked Clinical Trials and Cohort Studies application.



^ Associate Professor Jaquelyne Hughes receiving the NHMRC award.

We welcomed the appointment of Dr Sean Taylor as our Deputy Director – Indigenous Leadership and Engagement and Professor Gail Garvey and Mark Mayo as Associate Deputy Directors – Indigenous Leadership and Engagement.

April

Our team in Timor-Leste has continued to grow. Alongside colleagues in the Timor-Leste Ministry of Health, they have been an integral part of the COVID-19 response and in-country polymerase chain reaction (PCR) testing, as well as the strengthening of health systems.

Read more on pages 14-15.



^ Nevio Sarmiento, a microbiology scientist at Menzies, discusses samples with a colleague at the National Health Laboratory in Timor-Leste.

May

We launched our Innovate Reconciliation Action Plan (RAP) 2020-2022. Our RAP demonstrates our continued commitment to long-term Aboriginal and Torres Strait Islander employment and engagement goals. It provides an opportunity for us to reflect on our role in working towards reconciliation in Australia.

Read more on page 11.



^ The Menzies Innovate RAP 2020-2022.

June



^ Stuart Yiwarr McGrath, Vicki Kerrigan, Aunty Bilawara Lee and Rarrtjiwuy Melanie Herdman at the Ask the Specialist podcast launch at Government House, Darwin.

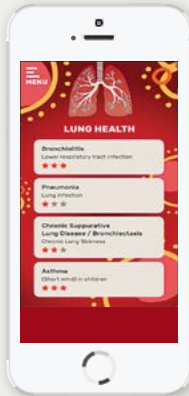
We launched the *Ask the Specialist* podcast. This award-winning cultural education podcast features Larrakia, Tiwi and Yolŋu leaders answering questions from doctors about working with Aboriginal patients at Top End hospitals.

Read more on page 19.

June

We launched the *Lung Health for Kids* app, an interactive lung health education tool created with and for Aboriginal and Torres Strait Islander children and their families. The app is available in nine languages spoken in Central Australia and the Top End.

Read more on page 20.



^ The *Lung Health for Kids* app.

August

Our first Hearing for Learning Initiative ear health facilitators were trained across four remote communities in the NT. The ear health facilitators will provide local knowledge and expertise when checking the ears and hearing of children in their community.

Read more on pages 22-23 and 44.



^ The first Hearing for Learning Initiative graduates on the Tiwi Islands.

The Communicate Study helped increase interpreter uptake at Royal Darwin Hospital (RDH). Further, we continued to work closely with communities and the Aboriginal Interpreter Service to incorporate Indigenous languages into our resources. Read more on page 18.

September

In collaboration with the End Rheumatic Heart Disease Centre of Research Excellence, we launched *The RHD Endgame Strategy: the blueprint to eliminate rheumatic heart disease in Australia by 2031*.

October

Our HealthLAB team showed people the consequences of their lifestyle choices through a new tablet-based app, *Time Machine*. The *Time Machine* app shows users the effects of smoking, excessive alcohol and an unhealthy diet as they age. The team won the 2020 SA/NT Not For Profit and Community sector category in the Australian Information Industry Association iAwards for this innovation.

Read more on page 20.



The Healthy Stores 2020 trial, implemented in 20 remote community stores in the Top End, found that reducing in-store merchandising of unhealthy foods and drinks can reduce purchases of those items.

Read more on page 24.

^ Fruit and vegetables at a remote community store.

November

The NT division of the Freemasons Centre for Male Health and Wellbeing, a new centre dedicated to advancing the health and wellbeing of all Australian males and by extension their families and the communities in which they live and work, was established at Menzies.

Read more on page 17.



^ Professor James Smith, director of the NT division of the Freemasons Centre for Male Health and Wellbeing, at the launch of the centre.

November

Territory Kidney Care (TKC) received the Community Benefit Award at the NT Digital Excellence Awards. This innovative clinical information system uses powerful analytics to assist with the early identification and best-practice management of kidney disease across northern Australia – the first of its kind worldwide.

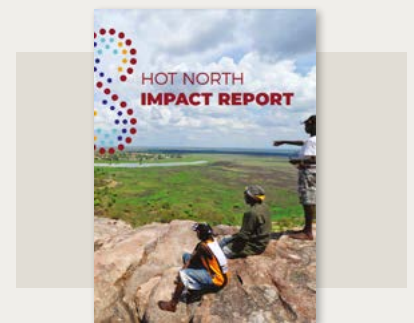
Read more on page 25.



^ TKC staff Gillian Gorham and Paul Kamler at the NT Digital Excellence Awards.

December

The HOT NORTH Impact Report was released. During HOT NORTH's first three years, 97 research activities were established, including pilot projects, fellowships and scholarships. The report highlights the impact this work has had in communities across northern Australia.



^ The HOT NORTH Impact Report was launched.

The Ramaciotti Regional and Remote Health Sciences Training Centre (Menzies-Ramaciotti Centre) provides a new pathway into the laboratory and health sector for regional and remote youth, with a focus on career development for Aboriginal and Torres Strait Islander youth. During the year, more than 30 Aboriginal and Torres Strait Islander and non-Indigenous NT youth were engaged in the centre. Read more on page 42.

Menzies 2021 Strategic Plan

Launched in 2017, our five-year strategic plan **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.



\$40.8m

Our external research income continued to support our work in finding enduring solutions to health problems that matter

Strong and resilient

despite COVID-19 putting our internal enablers to the test, we remained flexible and adaptable and were able to embrace new opportunities in a dynamic global environment

We had a

60%

increase in postgraduate coursework student numbers

We continued to grow and support our Aboriginal and Torres Strait Islander workforce, employing

32FTE

which exceeds our target



We undertook an independent academic review of Menzies which provided an external perspective on how we are performing, which we will use to help shape future directions



We launched the Ramaciotti Regional and Remote Health Sciences Training Centre, engaging 31 trainees, 90 per cent of whom were Aboriginal or Torres Strait Islander



Director and Chair's message

2020 posed unique challenges for health and community resilience across the globe. Even with low numbers becoming infected with COVID-19 in Australia, the impact on health services and health research was profound. In the Northern Territory (NT) we were fortunate to avoid community transmission.

Nevertheless, the pandemic led to the cessation of travel to remote communities and direct engagement with community members in research. It also fundamentally changed, perhaps permanently, how we work with national and international research partners.

In this rapidly changing environment, Menzies staff worked together to continue to deliver high-impact research and education to improve the health and wellbeing of people across northern and central Australia and the region.

We would like to acknowledge and thank all Menzies staff for their dedication, resilience, patience, and commitment.

Despite, and in response to, these challenges, Menzies achieved great success. This report explores and celebrates these successes. We hope you enjoy discovering the ways in which Menzies has had a real impact in our communities and across the region.

Presenting Associate Professor Kelvin Kong with the 2020 Menzies Medallion, for his leadership in Aboriginal health service delivery, advocacy and research, was a real highlight. As one example of his work to improve ear health in Aboriginal and Torres Strait Islander children, Professor Kong is directly engaged in our Hearing for Learning Initiative.

We were delighted to appoint Dr Sean Taylor as Deputy Director Indigenous Leadership and Engagement, and Professor Gail Garvey and Mark Mayo as Associate Deputy Directors Indigenous Leadership and Engagement for Queensland and the NT respectively. Sean, Gail and Mark bring decades of experience and knowledge to these important roles and provide strong Indigenous leadership within Menzies.

We thank everyone who supported us throughout 2020 and look forward to 2021 as we continue to work together towards a healthier future.

Director

Professor Alan Cass AO

Chair of the Menzies Board

Peter Plummer AM

Our Board



**Peter
Plummer
AM
Board Chair**

Prior to retirement, Peter spent 40 years working in the public service in Papua New Guinea and the Northern Territory.

He was the founding principal of Batchelor College and subsequently deputy secretary of the departments of Primary Industries and Fisheries then Industries and Development. He also held appointments as chief executive officer of Mines and Energy, Health and Community Services, as well as Education.

Peter has also served on many boards and committees including as the Chair of the National Curriculum Corporation, Charles Darwin University (CDU) Council, and 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 and France.



**Professor
Alan Cass AO**

Professor Cass has been the Director of Menzies since 2012.

Alan currently chairs the National Advisory Committee for the Australia and New Zealand Dialysis and Transplant Registry, is Deputy Chair of the NT Clinical Senate and a council member for the Central Australia Academic Health Science 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.

Alan has been instrumental in leading national and international clinical trials, conducting research to improve access to services and to improve the provision of care to patients with low health literacy, who speak a different language and have different understandings of health and illness from their healthcare providers.



**Leanne
Liddle**

Leanne is the director of the Aboriginal Justice Unit, Department of the Attorney-General and Justice.

She is an Arrernte woman born and raised in Alice Springs.

She was the first Aboriginal policewoman in South Australia (SA) where she worked for 11 years as a senior constable in remote and Adelaide police stations.

Leanne has held several senior public service roles, including as the manager of Food Security for Aboriginal communities in SA, and the manager of the APY and West Coast regions of SA within the Department of the Premier and Cabinet.

She has also worked on the international circuit; for the United Nations with stints in Geneva, New York and Paris with UNESCO; and as a director for Bush Heritage Australia.



**Ros
Moriarty**

Ros is a business owner, social investor and author. She is managing director and co-founder of both Balarinji and the Moriarty Foundation.

She was named Winner Business Enterprise in the 2015 Financial Review / Westpac Australian 100 Women of Influence Awards and is an inductee of the Australian Design Institute Hall of Fame and the Australian Businesswomen's Hall of Fame. Her board appointments have included the National Gallery of Australia, Australian Major Events SA and the Australian Academy of Design.

Ros is the author of the memoir *Listening to Country* shortlisted for both The Age 2010 Book of the Year and the Australian Human Rights Commission Literary Award. She has also written eight picture books for children.



Richard Ryan AO
Board
Co-Treasurer

Richard is director of a number of public and private companies which have included the NT Treasury, the Australian Government Solicitor's Advisory Board and the Adelaide Festival.

He is Chancellor Emeritus of Charles Darwin University, a Fellow of the National Heart Foundation, a Fellow of The Institute of Chartered Accountants and a Companion of The Institution of Engineers.

He is currently Chair of Bridging the Gap Foundation.

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.



Rowan Johnston
Board
Co-Treasurer

Rowan is a Sydney-based corporate advisor and is 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.

Rowan 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.



Ken Davies
PSM

Ken is the CEO of the Department of Territory Families, Housing and Communities and Deputy Chancellor of 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.

Ken is a former chair of the NT Board of Studies and former NT Principals' 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 Catherine Stoddart
PSM

Professor Stoddart is the Deputy Director General, Governance, Integrity and Reform, Department of Communities, Western Australia. From 2017 - 2020 she served as the CEO of the NT Department of Health. Prior to this she was the deputy chief executive and chief nurse at Oxford University Hospitals Foundation Trust in the National Health Service in the United Kingdom.

Catherine has held positions across health including chief nurse and midwifery officer of Western Australia (WA), regional director for the Kimberley region, WA Country Health Service, 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.

Our Board



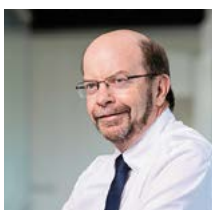
**The Hon
Trevor Riley
AO QC**

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.

Trevor was appointed as Queen's Counsel in 1989, sworn in as a judge in 1999 and was 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) and Chair of the AFLNT Appeals Board.



**Professor
Simon
Maddocks**

Until December
2020

Professor Maddocks was the Vice-Chancellor and President of CDU for seven years before his departure in December 2020. He has extensive leadership experience at senior levels of academia and government.

He was formerly with the Department of Primary Industries and Regions, South Australian Research and Development Institute (2003-2014), most recently as Director Science Partnerships.

Simon has held senior management and board positions on several 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.

Thanks to Professor Maddocks

Professor Simon Maddocks contributed as a board member at Menzies for 25 years.

Prof Simon Maddocks originally joined the Menzies Board as a nominee of the Menzies Foundation in 1995. At that time, he was a Senior Lecturer and Head of the Department of Animal Science at the University of Adelaide, Waite and Roseworthy campuses.

Prof Maddocks was Deputy Chair 2001 – 2003 and Chair 2004 – 2014 until his appointment as the Vice-Chancellor of Charles Darwin University (CDU). He remained on the board at Menzies, as the gazetted university representative, until his resignation at the end of 2020.

“It has been an absolute privilege to be part of the Menzies School of Health Research story, and to support in a small way, the passionate, talented staff and students, and Menzies continued growth and development. I wish everyone continued success. The impact of your work is so significant,”

Prof Maddocks said.



Reconciliation Action Plan 2020-2022

We are proud to have launched our second Reconciliation Action Plan (RAP), which embraces the focus areas of respect, relationships and opportunities.

Our Innovate RAP, which has been formally endorsed by Reconciliation Australia, confirms our commitment and guides our approach to longer-term employment and engagement strategies for Aboriginal and Torres Strait Islander staff.

We strive to find enduring, culturally responsive solutions to health

challenges, and commit to do more and do better in addressing health inequities for Aboriginal and Torres Strait Islander peoples.

Our Reconciliation Implementation Group (RIG) brings a diverse group of staff together, including Aboriginal and Torres Strait Islander and non-Indigenous staff, to provide leadership to implement the plan.

This Innovate RAP builds on the solid foundations of its predecessor to further embed and strengthen Menzies' collaborative research approaches with

Aboriginal and Torres Strait Islander peoples. We do this by continuing to create and invest in innovative employment and career pathways that provide opportunities for Aboriginal and Torres Strait Islander peoples and perspectives to meaningfully inform health research.

Our Innovate RAP 2020-2022 is available at www.menzies.edu.au/InnovateRAP



Local Darwin Aboriginal woman, Ms Norma Chidanpee Benger, born to stolen generation parents Marathiel/Keytej, specialises in creating images in her unique personal style, which enable the translation of information and transfer of biomedical knowledge into stories and cultural messages.

Sitting around the reconciliation circle
(Top left) We sit together around the Reconciliation Circle. The agenda focuses on respect, relationships, opportunities, partnerships and career pathways. We set off on a journey, marked by the blue circles, towards the good work ahead.

Sitting around the relationship coolamon
(Top right) Sitting around the relationship coolamon, the good work begins, and relationships are formed. The blue subjects indicate our work through research, education, translation and advocacy.

Dilly bag
(Centre) The dilly bag in the centre holds the subjects, the agreements and the partnerships that have been formed, and keeps them safe. There is strong connection with the reconciliation circle, the relationship coolamon, the place of respect and the red spiral of opportunities.

The red spiral of opportunities
(Bottom left) Together we arrive at the red spirals where the opportunities are endless. There is leadership, commitment to consider, respect, partner and create opportunities with Aboriginal and Torres Strait Islander people, businesses and services.

The sun comes up with respect
(Bottom right) We meet at a place between the hills, where the sun rises over respect for culture, histories, knowledge and the way business is conducted.

The AIMhi *Stay Strong* app is an innovative tool that addresses the mental health and wellbeing concerns of First Nations Australians using a cross-cultural approach.

Read more on page 16.



Our research impact

Our COVID-19 response

Without a doubt, 2020 was an unprecedented and difficult time for us all. Never in our lifetime has an infectious disease spread so rapidly to affect people across the world, from the largest cities to the most remote communities.

Our teams contributed to efforts to develop evidence about the epidemiology and ways to treat COVID-19, clinical and public health guidelines and pandemic planning at the state and national levels. We actively supported the Northern Territory (NT), Queensland, Australian and Timor-Leste governments in their responses to the pandemic. This included providing high-level strategic advice, training, enhancing testing, and guidance on infection control and patient care.

Our staff adapted as new challenges continued to arise, and as the threat of the pandemic increased, our clinical rooms were set up to become the first pandemic clinic in the NT.

Many of our researchers hold joint positions at the Royal Darwin Hospital. These staff members increased their clinical workloads at the hospital in response to the increased demand on health services.

Our research teams led several public health initiatives, particularly with Aboriginal and Torres Strait Islander communities in the north. They collaborated with local elders to produce a series of Stay Strong on Country videos, which promoted how people living with chronic conditions could act to protect themselves from COVID-19, and created

COVID-19 specific information, such as fact sheets for Aboriginal and Torres Strait Islander people living with cancer.

Although extremely challenging, the year highlighted the importance of having a strong, local, highly-skilled medical research institute in northern Australia. Our ability to pivot and contribute significantly to the local, national and international response has been remarkable and a credit to our extraordinary team.

✓ Our infectious diseases specialists, including Professor Josh Davis, Associate Professor Jane Davies and Professor Bart Currie, pictured, have been instrumental in the NT COVID-19 response.



Menzies in Timor-Leste

Establishing an office in Timor-Leste in 2019 has enabled us to build and grow a strong local team, strengthen local relationships and, in collaboration with the Timor-Leste Government, identify and respond to issues of national importance. In partnership with the Ministry of Health (MOH) and the Ministry of Agriculture and Fisheries (MAF), we have been testing and providing surveillance for COVID-19 and antimicrobial resistance (AMR) and strengthening health systems in the country.



▲ Dr Ismael Barreto, Menzies COVID-19 technical advisor in Timor-Leste, labels samples in the National Health Laboratory (NHL) in Timor-Leste.

COVID-19 response in Timor-Leste

Working alongside colleagues in Timor-Leste's MOH, we are proud to have contributed to the COVID-19 response in Timor-Leste.

When the first COVID-19 case was suspected, through our relationships with the MOH and Royal Darwin Hospital we were able to facilitate COVID-19 testing at the RDH laboratory. We then shifted quickly to support the establishment of COVID-19 testing in the National Health Laboratory (NHL), including roll-out of this testing to the regional districts.

Our team also assisted in the development of guidelines and training activities covering triage, infection prevention and control, clinical management and surveillance and outbreak response.

Paediatric infectious disease specialist and co-lead of Menzies Timor-Leste program, Dr Josh Francis, said this quick response was possible because of the strong relationships built from the growing program of work in Timor-Leste, helping the MOH and MAF to



▲ Virginia da Conceicao and Dr Josh Francis discuss samples in the NHL in Timor-Leste.

improve surveillance of, and response to, infectious diseases, such as the STRONG TL program.

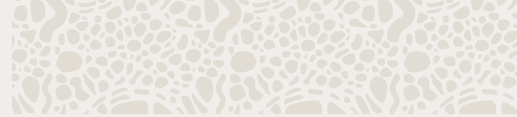
"We are continuing with the health system strengthening and implementation research work, which is focused on infectious diseases diagnosis, surveillance and public health responses," Dr Francis said.

"The systems we have established to improve capacity in diagnostic microbiology and clinical recognition and diagnosis of infectious diseases, are readily applicable to scaling up capacity to respond to and manage a large outbreak of a respiratory virus like COVID-19.

"Mentors within the team continue to work in Timor-Leste and remotely from Australia, to support more than 30 local staff, working hard alongside their MOH colleagues to respond to infectious diseases challenges including COVID-19 and antimicrobial resistance."

STRONG TL

STRONG TL, which began in 2018, works to strengthen communicable disease surveillance and control in Timor-Leste and evaluate the impact of improved surveillance on health system and health security policy responsiveness.



Understanding antimicrobial resistance in animals in Timor-Leste

Infectious diseases can be transmitted from animals to humans, which is why it is important to understand animal health to improve human health. Research also shows that AMR in bacteria in humans, animals or the environment may spread from one to another.

Our work with the Timor-Leste MAF is strengthening their animal AMR and antimicrobial use (AMU) surveillance system, as well as building capacity in the National Veterinary Diagnostic Laboratory.

One of the projects our team has been working on is collecting samples from chicken farms and live bird markets around the country.

Dr Abrao Pereira, Menzies animal health epidemiology officer, coordinates field sample collection and training of government staff for this activity.

“We are concentrating on chickens because it is one of the fastest-growing animal sectors in Timor-Leste, where there is potential for improper use of antimicrobials,” said Dr Pereira.

“Proper antibiotic use will not only preserve its efficacy in animals but also humans because antimicrobial resistance can be passed between animals and humans.”

The samples collected from the chickens are sent to the National Veterinary Diagnostic Laboratory for testing. The testing aims to use selected bacteria from the gastrointestinal tract of birds and determine their AMR profile.

Dr Shawn Ting, a Menzies senior research fellow and public health veterinarian, animal health lead for the project, explained that antimicrobials are a critical tool for disease management,

and it is essential to preserve their efficacy for use in human and animal health.

“Testing animal bacteria for resistance has never been done before in Timor-Leste. This will not only expand the capacity of the lab to investigate bacteria resistance but improve the overall diagnostic capacity of the laboratory,” said Dr Ting.

During the year, our animal health team has provided ongoing side-by-side mentorship and numerous training sessions to government staff to strengthen data collection and analysis for AMR and AMU in Timor-Leste.

✓ Dr Abrao Pereira and his colleagues from the Timor-Leste MAF conducting AMR surveillance at poultry farms in Timor-Leste.



Fleming Fund Grant in Timor-Leste

The Fleming Fund (a UK aid program managed by the UK’s Department of Health and Social Care) supports testing and surveillance for AMR in Timor-Leste.

Through the Fleming Fund Grant, we work with the Government of Timor-Leste to develop systems for monitoring rates of infections and the use of antibiotics, which help to identify areas where antimicrobial use could be optimised across both the human health and animal health sectors. This One Health approach, which recognises that the health of people, animals and the environment are interconnected, is critical to contribute to global efforts to fight AMR.

Funding under this program has enabled critical refurbishments of the NHL, which have been vital in the COVID-19 response in Timor-Leste.

Improving the wellbeing of chronic kidney disease patients

The use of e-mental health interventions has shown an increase in wellbeing for Aboriginal and Torres Strait Islander people with chronic kidney disease (CKD).

For Aboriginal and Torres Strait Islander people, a CKD diagnosis usually means relocating to an urban centre to access haemodialysis. This results in dislocation from community, country and family. The physical impacts and time spent on dialysis, hooked up to a machine, further contribute to the high emotional burden and, consequently, high rates of depression.

Menzies researchers established the Wellbeing Intervention for Chronic Kidney Disease (WICKD) study to examine the effectiveness of e-mental health interventions in improving the mental health and wellbeing, quality of life and attendance at treatment of CKD patients.

In particular, the study looked at the effectiveness of the Menzies AIMhi *Stay Strong* app in improving psychological distress, depressive symptoms, quality of life and dialysis attendance, compared to another app that focused on physical health, the Menzies *Hep B Story* app, and the wellbeing of patients who used no app at all.

Both the *Stay Strong* app and the *Hep B Story* were developed with, and for, Aboriginal and Torres Strait Islander people.

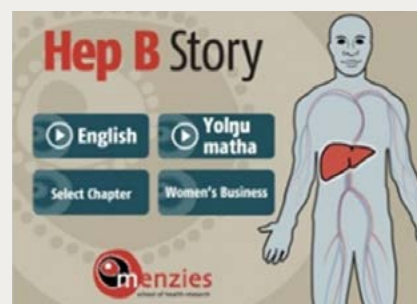
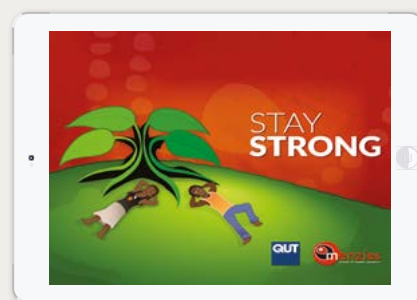
Available for tablet, the *Stay Strong* app talks with people about their story: the people who keep them strong, the things that keep them strong, their worries and what they can change to feel strong again.

The *Hep B Story* is about Hepatitis B and was introduced as an important story for people on dialysis, as Hep B is a physical illness that can also affect kidney health.

Importantly, the study found that both apps improved the wellbeing of participants, particularly for those with signs of distress or depression at the start.

Findings suggest that talking to people about their wellbeing and providing information relevant to kidney health using culturally adapted, locally relevant apps improve the wellbeing of people on dialysis.

Based on feedback from the trial, the *Stay Strong* app is currently being adapted and improved, including making it smartphone accessible.



^ The *Stay Strong* and *Hep B Story* apps

Strong Country Strong People: A positive social media campaign

Strong Country Strong People explored the use of social media to promote strength, resilience and connection for Aboriginal and Torres Strait Islander people.

Funded under the National Suicide Prevention Trial, the six-month campaign reached over 27 000 people sharing monthly positive wellbeing messages from Aboriginal and Torres Strait Islander leaders in Darwin.

The large online community who connected to the campaign reported increases in connection within the community, understanding of social and emotional wellbeing, awareness of

available resources and services, and found themselves checking in on their family and friends more often.

✓ The Strong Country Strong People Facebook page shared fun and positive messages for Aboriginal and Torres Strait Islander people to promote strength, resilience and connection.



A new centre for male health and wellbeing launched

A new centre based at Menzies is focused on improving the health and wellbeing of boys and men in the NT, including that of their family and communities, by supporting world-leading multidisciplinary research excellence in male health and wellbeing.

The Freemasons Centre for Male Health and Wellbeing Northern Territory is a research alliance with the University of Adelaide, the South Australian Health and Medical Research Institute and the Masonic Charities Trust.

Over the next three years, the Centre, in conjunction with the South Australian division, will embark on research covering the key themes of Indigenous male health, boys' and young men's health,

equity and social determinants of health (including employment, education and justice), fathers and families, and social and emotional wellbeing (including healing, alcohol and other drugs, gambling and mental health).

Through this focus, the Centre will deliver research projects that help position both divisions as national and global leaders in men's health research.

Director of the NT division of the Centre is Professor James Smith, who is also Head of Menzies Alcohol, Other Drugs and Gambling Team and Father Frank Flynn Fellow (Harm Minimisation). Prof Smith said the Centre is keen to focus on Indigenous male health as well as equity and the social determinants of health.

"The development of community partnerships, involving both women and men, will be fundamental for achieving health gains for the families and communities of the NT," Prof Smith said.

"The Centre will considerably build research capacity across the NT, allowing our researchers to make significant contributions in these areas of need that will steer us towards becoming a healthier society, as well as play a major part in helping to shape health policy and practice locally."

✓ Professor James Smith, Director of the NT division of the Freemasons Centre for Male Health and Wellbeing, at the launch of the Centre.



The Communicate Study

Although 60 per cent of Aboriginal people in the NT primarily speak an Aboriginal language, interpreters are used infrequently during medical consultations.

The Communicate Study is aimed at improving communication to provide positive health outcomes for Aboriginal patients who do not have English as their first language.

The study has found that an increase in using Aboriginal interpreters in hospital is associated with a decrease in patients leaving treatment early.

Professor Anna Ralph, the study's chief investigator, says that using interpreters more in a clinical setting could improve health outcomes.

"The link between the increase in interpreter use and the decrease in self-discharges has long been speculated about. When people understand more about the need to stay in hospital and feel better supported in the hospital, they are less likely to self-discharge."

The study began in 2015 and has resulted in the employment of an interpreter coordinator, employment of interpreters for the first time by Top End Health Service, working with interpreter training for doctors, encouraging clinicians to use interpreters and the development of an award-winning cultural education podcast, *Ask the Specialist*.

"The Communicate Study has shown that health systems changes implemented in partnership between Menzies, Top End Health Service and the Aboriginal Interpreter Service result in increased uptake of Aboriginal interpreters. During the study, self-discharge rates fell."

Professor Anna Ralph

✓ Talitha Morgan, interpreter and Professor Anna Ralph with Royal Darwin Hospital patient, Gloria Friday.



Ask the Specialist: a cultural education podcast

Ask the Specialist is an award-winning podcast that reveals the reality of the hospital experience for Aboriginal patients in the Top End of the NT and offers ideas to improve the delivery of culturally safe care.

The NT Anti-Discrimination Commissioner Sally Sievers said the podcast has “the potential to save lives and address systemic racism”.

Created on Larrakia country by Menzies doctoral communications researcher Vicki Kerrigan with Aboriginal community leaders and RDH staff, the seven-episode series answers doctors’ questions about working with Aboriginal patients.

The Specialists are Larrakia, Tiwi and Yolŋu leaders Aunty Bilawara Lee, Pirrawayingi Puruntatameri, Rarrtjiwuy

Melanie Herdman and Stuart Yiwarr McGrath. Kriol and Burrara interpreter Bernadette Nethercott from the NT Aboriginal Interpreter Service also shares her expertise.

Questions range from the practical, “Is it ok to make eye contact?” to issues at the heart of social justice: “I want to know what Aboriginal people feel like when we talk to them, what makes them think that we’re racist?”

Feedback from health workers has been overwhelmingly positive. One doctor from Gove District Hospital said: “It is fearless, and a remarkable resource. It has changed the way I practise.”

The Specialists hope their stories, which elevate the Aboriginal patient perspective and challenge negative stereotypes that fuel racism, inspire health workers to

reflect on their beliefs so they can deliver culturally safe care.

The podcast, which is available for free download on Google Play, Apple Store and Spotify, won the silver medal in the Smartest Podcast category at the Australian Podcast Awards and the NT Community Achievement Award for Health and Wellbeing.

“It is fearless, and a remarkable resource. It has changed the way I practise.”

Gove District Hospital doctor

✓ Members of the *Ask the Specialist* team, Stuart Yiwarr McGrath, Vicki Kerrigan, Aunty Bilawara Lee and Rarrtjiwuy Melanie Herdman at the launch.



What's app-ening with my lungs?

Learning about asthma has just become a lot easier for Aboriginal and Torres Strait Islander families and health practitioners thanks to a new interactive app.

In Australia, Aboriginal and Torres Strait Islander people are three times more likely to die from asthma and have poor clinical outcomes. Health education that is culturally appropriate is important to reduce language and cultural barriers to health equity.

Menzies Child Health Respiratory team worked with health practitioners and families to create a lung app that could be used at home, not just in the clinic. The first module to be released in the *Lung Health for Kids* app is about asthma.

Menzies senior research fellow and project lead Dr Gabrielle McCallum said the asthma app is an innovative way to help people access important information about asthma in their home and at their own pace.

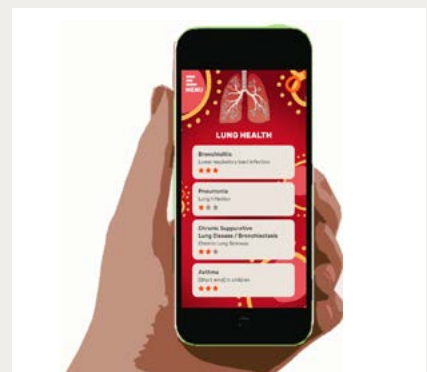
"The team evaluated the app with 80 Aboriginal and Torres Strait Islander carers from the NT and Queensland and found that knowledge of asthma significantly improved after using the asthma app, particularly how asthma is treated and the steps in first aid," Dr McCallum said.

The *Lung Health for Kids* app is due to be expanded in early 2021 to include modules for bronchiolitis, pneumonia and chronic suppurative lung disease/

bronchiectasis and is free to download on Google Play and the Apple Store.

The app uses various languages: English, Tiwi, Murrinh Patha, Yolŋu Matha, Kriol, Pitjantjatjara, Western Arrernte and Warlpiri.

✓ The *Lung Health for Kids* app.



HealthLAB continues to innovate to bring health awareness to youth

The Menzies HealthLAB is a pop-up lab providing an interactive tour of a person's health. They can take their own health measures and learn what they mean for now and for their future health.

When COVID-19 travel restrictions were announced, the HealthLAB team had to cease community visits and the hands-on model that defines the initiative. In the face of these challenges, HealthLAB employed an innovative approach to maintain the flow of positive health messaging.

The team produced targeted health promotion packages and provided online training for local delivery, arranged kits and mentoring for schools whose National Science Week activities were impacted, and implemented new technologies.

One of the new technologies was the *Time Machine* app, aimed at capturing the attention of youth and inspiring them to reflect on their own health behaviours.

The app needed to be primarily visual to acknowledge that many users would speak English as another language, and it had to be digitally transportable to access the farthest reaches of the Territory during COVID-19 travel restrictions. The *Time Machine* was developed in collaboration with IBM Australia, KWP Technology and the Bridging the Gap Foundation.

The *Time Machine* uses facial modelling technologies to show youth how they may age with a healthy lifestyle compared to ageing with smoking, excessive alcohol or unhealthy eating behaviours. A strengths-based positive



^ Bradlee Ward, Joshaviah Johnson, Stanley Waistcoat, Lesley Versteegh and Tony Bradshaw explore the *Time Machine* app in Tennant Creek. Photo credit: Tennant and District Times.

message follows that tells youth the health benefits that can be achieved by making lifestyle changes today.

The *Time Machine* won the iAwards 2020 SA/NT Not For Profit and Community sector category.

Understanding the burden of diabetes in pregnancy

The burden of diabetes in pregnancy has grown substantially in the NT over the past three decades. The impact on Aboriginal women in the NT is particularly concerning, with about one in five pregnancies to Aboriginal women in recent years complicated by diabetes.

Diabetes increases the risk of complications arising during pregnancy and childbirth, impacting both mother and baby. If a mother has diabetes during pregnancy, the baby has a higher risk of developing diabetes and obesity.

During Menzies' recent study of the 30 years from 1987 to 2016 the number of Aboriginal women who already had type 2 diabetes before pregnancy increased substantially. The prevalence of type 2 diabetes in pregnancy among Aboriginal women in the Central Australia region of the NT is now believed to be the highest reported in the world.

Among non-Aboriginal women in the NT, very few people have pre-existing type 1 or type 2 diabetes, but the rate of gestational diabetes (GDM) increased six-fold during the study and now affects more than one in ten pregnancies.

“The rising burden of diabetes at relatively young ages in the NT is a significant public health issue as we are witnessing an escalating intergenerational cycle of adverse metabolic health, with type 2 diabetes being seen at increasingly young ages.”

Menzies Senior Principal Research Fellow Professor Louise Maple-Brown



The diabetes research team has taken an intersectoral approach. In 2011, for example, the Menzies-led Diabetes Across the Lifecourse: Northern Australian Partnership was established, expanding to far north Queensland in 2015, to improve the care and outcomes of women with diabetes in pregnancy and their babies.

The team also works to support clinicians caring for women with diabetes in pregnancy to improve their knowledge and confidence in managing diabetes in pregnancy.

Almost 4000 women are now on the partnership's register, with 50 per cent of those in the NT identifying as Aboriginal and Torres Strait Islander. This has led to increased screening and reporting of GDM and earlier screening in high-risk women and resulted in 30 per cent of women with GDM being diagnosed



∧ Intergenerational type 2 diabetes as illustrated by digital artist Charlotte Allingham, a young Wiradjuri woman living in inner Naarm (Melbourne).

◀ Rachel and Zarik Spiller Karpany from Alice Springs.

before 20 weeks gestation, up from 10 per cent, enabling earlier management and improved birth outcomes.

In addition, the partnership has commenced a youth-friendly model of care initiative to address the high prevalence rates of type 2 diabetes in Aboriginal and Torres Strait Islander young people living in northern Australia and the impact on the intergenerational cycle of the condition.

The team will work with Aboriginal and Torres Strait Islander people with type 2 diabetes aged 10 to 25 years, the community and health professionals involved in their clinical management to design and evaluate culturally appropriate services and supports to improve the quality of life for youth living with diabetes.

Understanding ear health at a local level

Up to nine in every 10 Aboriginal and Torres Strait Islander children under the age of three in the NT suffer from some type of otitis media (ear infections) in one or both ears. Seven of every 10 have severe chronic otitis media that may need hearing aids or surgery.

Left untreated, this can have a devastating impact on speech, language, communication, behaviour, school readiness and performance.

The Hearing for Learning Initiative aims to change these statistics through locally trained ear health facilitators. The on-country training and employment initiative, carried out in four communities this year, will continue in 20 NT communities over the next three years.

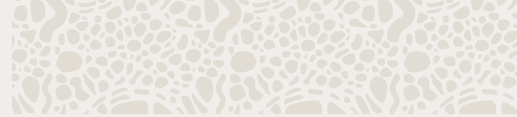
The graduates can now apply for roles in clinics, working with health professionals, families and schools to screen all kids and assist those who need treatment for their ears and hearing problems.

Menzies Professor Amanda Leach AM, joint chair of the initiative, said the program aimed to increase early detection of otitis media, which is often not detected until school age when learning problems become clear to teachers.



▮ Sissy Tyson explaining tympanometry to Agnella Tipungwuti and Elizabeth Puruntatameri during the Wurrumiyanga, Tiwi Islands course.

> Professor Amanda Leach AM with Kalkarindji Hearing for Learning Initiative graduate Noelene Edwards.



New app for early diagnosis and treatment

“It is important, now more than ever given the COVID-19 pandemic, to have sustainable health systems through job creation and skills development for resident community members who have language, cultural knowledge and are highly respected,” Prof Leach said.

“Checking every ear of every child at every opportunity, together with evidence-based management plans appropriate to the severity of this problem, will prevent development of chronic ear and hearing problems, and reduce workload and improve efficiency of fly-in fly-out specialists.”

The initiative is funded by lead philanthropic supporter The Balnaves Foundation and the Australian and NT governments.

“Our goal is to drastically reduce long wait times for those who need hearing aids and surgery. Of course, another benefit is the job creation for up to 40 community-based health workers across the NT.”

Menzies Professor Amanda Leach AM

New interactive guidelines are now available to assist healthcare workers to deliver up-to-date evidence-based care to children with otitis media (ear infections).

The Otitis Media app, or *OMapp*, assists primary health care providers across Australia to deliver comprehensive, effective and appropriate care for Aboriginal and Torres Strait Islander children with otitis media and hearing problems.

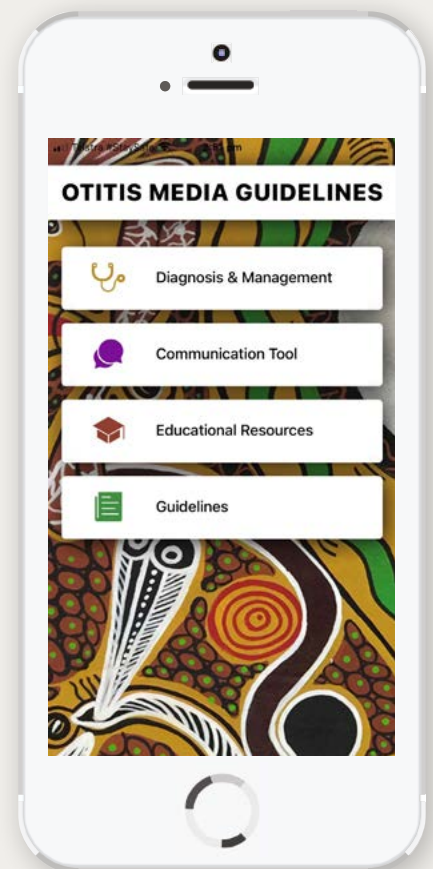
The content is based on the new Otitis Media Guidelines developed by the Centre of Research Excellence in Ear and Hearing Health of Aboriginal and Torres Strait Islander Children (aka Indigenous Children’s Healthy EARs, I-CHEAR). The hard copy and downloadable PDFs of the full Otitis Media Guidelines will be released in 2021.

I-CHEAR director and Menzies Senior Principal Research Fellow, Professor Amanda Leach AM, said the updated guidelines are needed to ensure delivery and access to quality ear health care across Australia.

“The new guidelines provide clear information about prevention, audio-visual enhanced algorithms to guide decision making in the diagnosis (with a diagnostic quiz), prognosis and referral pathways for health practitioners working in both urban and remote settings, for children at low or high risk of treatment failure or disease progression.”

Menzies Professor Amanda Leach AM

“To assist with communication, families can benefit from the culturally appropriate resources within the app, such as animations about prevention or the journey to hospital for surgery. The Communicate and Education sections, which have been translated and audio-recorded into five Aboriginal languages, assist the health professional to communicate with parents about the diagnosis, treatment, and communication strategies that will help their child. All of the *OMapp* content can be downloaded for offline use.”



^ The Otitis Media app (*OMapp*).

Reducing sugar through store merchandising

A 12-week trial reducing in-store merchandising of unhealthy food and drinks in remote stores in the NT and Queensland has resulted in 1.8 tonnes less sugar sold without impacting business outcomes.

The excessive intake of unhealthy food and drinks is a leading contributor to the burden of disease in Australia. And for the Aboriginal and Torres Strait Islander population living in remote communities, unhealthy products provide 42 per cent of total energy intake and account for 53 per cent of food and beverage expenditure.

Healthy Stores 2020, established by Monash University in collaboration with Menzies and the Arnhem Land Progress Aboriginal Corporation (ALPA), responded to community concerns about sugar consumption and the number of sugary products for sale in community stores.

The program worked with 20 remote stores, with a strategy in 10 stores to reduce merchandising of unhealthy products – specifically sugar, sugar-sweetened beverages, sweet biscuits and confectionery – while increasing merchandising of healthier options.



▲ Loretta Cook and baby Coleen pictured at the Milikapiti store.

The reduction of sugar sold was equal to the weight of a large car, showing that retail food environments can be reshaped in partnership with retailers to assist families to make better choices for their health without adversely affecting profits.

Healthy Stores 2020 Chief Investigator, Menzies Honorary Fellow, Associate Professor Julie Brimblecombe, said the project grew from discussions with community leaders worried about the health of their children.

“The project was a collaboration between community leaders, researchers and retailers,” Assoc Prof Brimblecombe said.

“Healthy Stores 2020 has demonstrated, through a randomised controlled trial, that the amount of free sugars purchased in remote communities can be reduced significantly through a low-cost intervention while still offering choice.”

Associate Professor
Julie Brimblecombe



◀ Treprena Taylor with baby Tikia Roy and Corelus Roy at the Maningrida store.

The clinical information system removing barriers to care

2020 was a year of consolidation for Territory Kidney Care (TKC), an integrated clinical information system designed to support the early identification and best-practice management of people with kidney disease.

Launched in 2019, TKC was developed to address the escalating rates of severe or end-stage kidney disease devastating Aboriginal communities in the NT.

TKC is an innovative clinical decision tool providing support to clinicians in the evidence-based management of kidney disease, to slow the progression to dialysis.

TKC consolidates patient information from government and non-government primary and tertiary health services, to close the information gap and enhance clinical care. Critically, TKC provides a

means to facilitate earlier and targeted patient care without increasing the burden on staff.

During the year, remote GPs were given access to the system, providing encouraging feedback about the efficiencies it provided, and the project team was recognised at the NT Digital Excellence Awards.

Project lead, Gill Gorham, said she did not envisage the system would be so effective.

“The system is unique, for the first time combining both government and non-government data and instantaneously and intelligently summarising longitudinal information,” Gill said.

The diagnostic capabilities, that is the ability of the TKC information system to derive a diagnosis of kidney disease or diabetes, as a clinician would from

“The system is unique, for the first time combining both government and non-government data and instantaneously and intelligently summarising longitudinal information.”

Gill Gorham, project lead

reviewing medical records, test results and use of medications, are highly developed and very accurate. TKC also provides opportunities for pre-emptive virtual care, for example specialists offering earlier and targeted advice to GPs for patients identified as ‘at risk’.

Linkages of patient records from different systems have achieved over 98 per cent accuracy. With our comprehensive matching protocol, which is weighted to err on the side of caution, we have worked to ensure there are no false linkages. Doctors in primary care and kidney specialists can use the system with confidence.

“The positive feedback from our remote GPs has highlighted the gap in information that was previously present.”

Looking forward, the TKC team will continue to develop the system, expanding the diagnostic and geographical scope to enhance kidney health and care for related chronic diseases.



◀ TKC Health Informatics Nurse, Paul Kamler, and Joe Parry from Radical Systems discuss the TKC system.

Continuing to fight malaria within a global pandemic



Photo credit: Pearl Gan in association with OUCRU, Vietnam, and EOGRU, Indonesia.

Despite major interruptions due to COVID-19, our malaria team continued to make important advances towards malaria elimination.

Over the past decade, significant gains have been made in malaria control, but this has been far greater for *Plasmodium falciparum* than *Plasmodium vivax*, the species found in Asia. Outside Sub-Saharan Africa, *P.vivax* is now the predominant cause of malaria.

Unlike *P. falciparum*, *P. vivax* forms dormant liver stages (hypnozoites) that can reactivate weeks to months after initial infection causing recurrent relapses. The relapses sustain ongoing transmission and thus must be prevented if elimination targets are to be met by 2030.

Currently, the only widely available drug to kill hypnozoites and therefore prevent relapsing infection is primaquine, which is administered in a combination known as radical cure. The effectiveness of primaquine is limited by the long treatment course (14 days) recommended in most countries, and concerns over its safety, particularly the risk of acute haemolysis

in individuals with glucose-6-phosphate-dehydrogenase (G6PD) deficiency.

G6PD is an inherited disorder found in up to 30 per cent of populations in malaria endemic areas. For patients with G6PD deficiency, the risk of drug-induced haemolysis and severe anaemia is a major hurdle to doctors prescribing effective treatment.

Novel treatment regimens and diagnostic tools are now available and poised to transform the field. However, widespread uptake will require evidence of their feasibility, impact, safety and cost-effectiveness in routine practice, particularly in remote and poorly resourced communities where the main burden of malaria lies.

Our malaria team includes researchers with skills in clinical trials, epidemiology, diagnostics, molecular biology and health economics. Between 2013 and 2018 the team conducted the IMPROV study, a large multicentred trial that showed a high daily dose of primaquine administered over seven days was well tolerated and had the same efficacy as the standard 14-day regimen for the radical cure of *P.vivax*.

The clinical trials group has now embarked on a new study, the EFFORT trial, to assess the seven-day primaquine regimen in a real life setting, and compare its effectiveness with tafenoquine, a new single-dose, and the standard seven-day primaquine regimen. The trial will recruit patients in Indonesia, Ethiopia, Cambodia and Pakistan. Studies in Bangladesh, India, Indonesia and Bhutan are also underway to determine the accuracy and feasibility of novel ways to rapidly test for patients with G6PD deficiency to ensure the new short course regimen can be given safely.

Closer to home, in Indonesia and Papua New Guinea (PNG), *P. vivax* remains a major health threat and has been difficult to control. Following requests from the ministries of health in both countries, Menzies is working with local partners to conduct feasibility studies for new approaches for radical cure in routine care to better policy and practice. With support from the Australian Department of Foreign Affairs and Trade (DFAT), healthcare systems have been strengthened.

In 2021 a new program funded by UNITAID will explore the large-scale feasibility of G6PD testing and treatment with the seven-day primaquine regimen in 10 sites across Sumatra, Papua and PNG. Over three years, we will monitor the incidence of malaria and serious adverse events before and after a policy change in more than 100 000 patients presenting with malaria.

Working with key local stakeholders, these studies will provide crucial evidence to translate our research findings into policy and practice. The findings will also have relevance for other malaria-endemic countries to reduce disease and facilitate malaria elimination in Asia, the Pacific, the Horn of Africa and the Americas.

Maintaining a global presence without air travel

Once the impact of COVID-19 was realised, our research teams had to be innovative, adapting rapidly as clinical trials experienced significant disruption before being suspended.

"We quickly developed tools to bring training and a risk-based monitoring service online to ensure local research staff were still able to gain the skills required and continue work once things were able to open up," Chief Investigator of the EFFORT study, Associate Professor Kamala Thriemer, said.

Additional logistical issues ranged from restrictions in international air travel impairing the ability to move supplies to trial sites to stock expiring as a consequence of the suspension.

Professor of Global Health Ric Price said he was incredibly proud of the Menzies team along with their collaborators for adapting to the "new normal" for global health research with speed and innovation.

"The key ingredients for global health research are perseverance, flexibility and collaboration. These will play a central role in our efforts to achieve the regional elimination of malaria by 2030."

Professor Ric Price,
Global Health

Could scabies be treated with a single pill?

A Phase 2 dose-finding trial to determine if the drug moxidectin can kill the scabies mite, could result in a more efficient, convenient and long-lasting treatment.

The trial, sponsored by Medicines Development for Global Health, is being conducted in France and Australia in collaboration with Menzies.

Scabies is an ancient, parasitic disease. It is an infestation of the skin of the parasitic "itch mite". The mite is so small it can only be seen under a microscope. The tiny mite burrows into the upper layers of the skin causing intensely itchy lesions that commonly become infected with bacteria.

Principal investigator of the trial, dermatologist and Menzies Honorary Fellow Dr Dev Tilakaratne, explained scabies can be disruptive not only to the individual, but also to their whole family.

"Scabies is an infectious disease that spreads through close contact, often within households disrupting sleep due to the excessive itching once exposed," Dr Tilakaratne said.

The current treatment for scabies is a topical cream and/or a two-dose schedule of a tablet taken seven to 14 days apart. The efficacy rate can be less than 80 per cent and the treatments can be inconvenient to use.

Moxidectin has the potential to be a gamechanger for those experiencing the debilitating effects of scabies.

"Moxidectin is used already for treating river blindness (onchocerciasis) – another parasitic disease," Dr Tilakaratne said.

"This trial is looking at its potential as an alternative oral treatment for scabies because it has a relatively long half-life of 30 days compared to 12 hours for the current treatment of ivermectin, so potentially only one dose would treat the disease."

Dr Dev Tilakaratne, Menzies Honorary Fellow

✓ Dr Dev Tilakaratne checking for scabies.



New instrumentation supporting ear and lung health

Chronic middle ear and respiratory infections affect many children in the NT. These infections often persist, even when children are given best practice medicines.

The reasons why some medicines don't work are not clear. So, our lab team is investigating how interactions between bacteria in the airways may affect the effectiveness of the antibiotics used to treat chest and ear infections.

Before causing ear and chest infections, bacteria first need to colonise the nose. Earlier studies at Menzies have revealed the presence of several bacteria in the nose that have not been studied before and whose role in this environment is poorly understood.

Some of the new bacteria being studied only grow when oxygen levels are very low or there is no oxygen at all. Studying these types of germs in the lab requires specialist incubators called anaerobic chambers.

To assist the team to delve deeper, the Darwin International Airport's Corporate Giving Program provided kick-starter funding, which helped to leverage the full amount of funding needed to purchase an anaerobic chamber.

Our lab subsequently received funding from the Ian Potter Foundation to support the purchase of a Matrix-assisted laser desorption/ionization-time of flight (MALDI-TOF) mass spectrometry machine that enables rapid identification

of different bacteria by generating a molecular fingerprint of each species.

Access to the combined power of the anaerobic chamber and the MALDI-TOF technology is enabling the team to detect and understand previously difficult to identify anaerobic bacteria that may indirectly affect whether antibiotics can clear ear and chest infections.



▲ Katrina Lawrence demonstrates the anaerobic chamber to the Darwin International Airport's Corporate Giving Program group.

Impact of maternal anaemia in pregnancy on childhood anaemia discovered

Findings from the first study to identify the association of maternal anaemia with childhood anaemia in Aboriginal women and their children found anaemia in pregnancy to be a more significant risk factor than being born premature or of low birth weight (LBW).

Maternal anaemia in pregnancy, which has considerable adverse outcomes for both mother and infant, is most commonly linked to iron deficiency. However, although iron supplementation is effective in preventing iron deficiency anaemia, it is not currently recommended as a routine supplement for Aboriginal women during pregnancy or their infants in the NT.

Current policy and best practice guidelines for identifying infants at risk of anaemia focus exclusively on LBW and infants born prematurely. However, this study indicated that the practice of administering prophylactic iron supplementation at one-month of age only to children born with LBW or premature should be expanded to include children born to anaemic mothers.

Despite some limitations, the small study was able to link maternal and child data in three remote Aboriginal communities in the NT to provide a longitudinal view of each child for the first 1000 days from conception to two years of age.

A prevalence of 62 per cent of maternal anaemia in pregnancy was found, with a strong correlation between maternal haemoglobin in the third trimester and an infant's haemoglobin at six months.

Also, the odds of a child developing anaemia at six months were four times greater if their mother had anaemia in the third trimester compared to those born to non-anaemic mothers. The odds substantially increased if not treated.

Further, increased odds of childhood anaemia at 12 and 24 months of age were found, highlighting the need for a renewed focus on implementing and reporting anaemia screening, prevention and treatment in pregnancy.

Using play to build stronger family connections

In response to COVID-19 travel restrictions, the Play to Connect parenting program in Wurrumiyanga, on the Tiwi Islands, delivered an innovative variation, adapting a group program to individual home visit support by local team members, supported remotely by the study coordinator.

The Play to Connect program involves parents and children in transition year, aged four to seven, creating knowledge of early childhood development and building positive relationships between parent and child through play.

In the interactive sessions, parents practise special skills for play: how to let the child lead, how to listen, respond and give positive encouragement.

The home visits, designed to meet national public health pandemic guidelines, ensured families continued to be supported, with local staff supported remotely from the Darwin office.

Play to Connect program coordinator, Carolin Stock, said the challenge of adapting to the uncertainties and operational hurdles facing the program had been an insightful learning experience, highlighting the importance of innovative teamwork.

“The responsive approach taken by the team demonstrates that supporting and developing the capabilities of an Aboriginal workforce is central to the engagement of families, delivery of the program and responding to external pressures,” Carolin said.

“Despite the cancellation of the group programs, families expressed pleasure at the home visits and recognition of feelings of loneliness and confusion during a difficult time. For them, the support of the local Play to Connect team was a helpful and needed initiative.”



▲ Menzies Tiwi Implementation Officer Aileen Tiparui supporting family in Wurrumiyanga.

Keeping health professionals in remote communities

In the NT, the turnover rate for primary health care workers in remote areas is extremely high, impacting the effectiveness of care and driving up costs.

Working with the NT Department of Health, our study delivered its findings and strategies to successfully retain remote area health staff.

When rolled out, the strategies could take the pressure off hospital admissions, decrease costs and improve health outcomes.

Led by Menzies Professor of Remote and Rural Health Services Research, John Wakerman, the study drew on an analysis of NT data alongside international evidence to determine three broad approaches to improving remote health workforce retention.

“Firstly, universities need to target enrolment into health training and deliver appropriate, contextualised education. Secondly, health services need to address underlying system issues, such as adequate funding, to ensure a safe and supportive work environment. Finally, services need to offer customised individual and family support packages,” Prof Wakerman said.

“There is no silver bullet. Optimal remote health workforce stability is a complex issue, but the impact can be huge. For example, if we manage to halve the staff turnover rates in remote clinics, the potential savings would be approximately A\$32 million per annum, not to mention the improvements this will make to health outcomes for remote populations.”

Stress not a barrier to quitting the smokes

New research has debunked the theory that stress is an obstacle to quitting smoking for Aboriginal and Torres Strait Islander people.

The study found that more smokers who reported being stressed at baseline made quit attempts and stayed quit in the next year, compared to smokers who were not stressed.

As part of the national *Talking about the Smokes* study, which is led by Menzies in partnership with Aboriginal Community Controlled Health Services, the study participants had completed baseline surveys and then follow-up surveys a year later.

Study leader, Menzies' Professor David Thomas, said health staff could emphasise the benefits to stress management, mental health and wellbeing that come with successfully quitting smoking.

"This is very important in these stressful times, and for Aboriginal and Torres Strait Islander people who experience more stressful events," Prof Thomas said.

"Being stressed could be seen as a reason to initiate rather than postpone a quit attempt."



^ The *Talking About the Smokes* project is a collaboration between Menzies and Aboriginal Community Controlled Health Services.

Innovative data use an important step in eliminating hepatitis B

Chronic hepatitis B (CHB), a virus that causes inflammation of the liver, is endemic in Aboriginal and Torres Strait Islander communities in the NT with approximately 25 per cent of cases leading to liver cancer and liver failure.

To help eliminate the disease, a team of researchers led by Menzies, designed and tested a new algorithm to determine hepatitis B (HBV) status of Aboriginal people in the NT to enable appropriate clinical care to be provided.

The team used data linkage of existing HBV tests, vaccination data and a computerised algorithm to determine a person's HBV status – immune, non-immune or infected. To check the accuracy of the code, a thorough quality assurance exercise was undertaken before allocating people to a care pathway.

From the available data, 91 per cent of the study population were allocated an HBV status, exceeding national targets. This research has informed the methodology for the foundation step of the partnership project Hep B PAST which is working towards the elimination of CHB in the NT.

Improvements in the cascade of care, in the NT, since and Hep B PAST commenced

	Diagnosed	Engaged in Care	On Treatment
2016	No data	19%	5%
2017	No data	21%	5%
2018	73%	28%	7%
2021*	91%	77%	18%
2022 National Targets	80%	50%	20%

* Data from serocoding of TEHS, CAHS, Miwatj, KWHB)

< Improvements in the cascade of care, in the NT, since Hep B PAST commenced.

Starting conversations about wellbeing

Ngawurramangajirri (we care for each other), a Tiwi to English phrase book about mental health and wellbeing, is helping to start conversations about mental health and wellbeing.

Cathy Pumuralimawu Stassi, a Tiwi elder and one of the book's authors, says the book is the first in a series.

"We are helping our people to keep our culture strong, respect each other and look after ourselves and others, our land and our creators, Purrukupali and his mother, Murntankala," Cathy said.

Project Manager, Josie Povey, said the project grew out of the need for young people to develop stronger Tiwi language skills and be able to express their feelings and needs in Tiwi.

The content was developed through seven workshops held between May and September 2019. The resources were launched in March 2020 at a community event in Wurrumiyanga.

"There is rarely a direct translation for mental health terms in Tiwi. Each feeling, description or phrase included in this

dictionary was explained in Tiwi and English, then crafted through discussion amongst the Tiwi language speakers," Josie said.

"Words and phrases were put together, taken apart, put back together, revised, edited, revised again then checked and double checked."

The book, which features Tiwi to English translations and illustrations by Tiwi College students, was developed through a collaboration with Tiwi Elders, Tiwi College, Menzies, R U OK Australia and the NT Government.


Ngawurramangajirri (we care for each other) is available for free download on the Menzies website www.menzies.edu.au/tiwiphasebook

✓ The *Ngawurramangajirri* launch in Wurrumiyanga, Tiwi Islands.

"We would like people to know, we feel this is just the beginning. Others might like to make their own story. We included many people's views and interpretations. We hope this book encourages Tiwi people to talk about how they feel and what could help them."

Cathy Pumuralimawu Stassi, Tiwi elder





Menzies international Master
of Public Health student Julie
Mae Malcampo.

Education and training



^ Master of Public Health student Bisal Kadariya on campus.

Our public health and health research courses provide students with effective frameworks and reliable tools which enable them to comprehend and tackle complex population health and social issues in cross-cultural, local and global environments.

Our courses address the major public health challenges in northern and central Australia, neighbouring and international regions. These challenges include health inequities; economic and social determinants; changing environmental conditions; infectious and chronic diseases; development and urbanisation; and accessibility of services.

Our graduates have become public health leaders, professional practitioners and successful health researchers.

The COVID-19 pandemic created both challenges and opportunities in the delivery of our courses.

In response to the pandemic, our postgraduate courses adapted seamlessly to complete online delivery and we introduced the Graduate Certificate of Infectious Disease Prevention and Control as part of the Australian Government COVID-19 training initiatives.



^ Menzies Public Health Lecturer Dr Benedikt Ley with Master of Public Health student Merita Monteiro.

With the launch of the new course and the growing interest in public health generated by the pandemic, we saw an incredible 60 per cent increase in postgraduate coursework students.

In addition, we continued to attract students into our Masters by Research and PhD programs with 70 students in the 2020 Higher Degrees by Research (HDR) cohort.

And amid it all, we celebrated the graduation of 11 HDR and 29 higher education coursework students with online graduation ceremonies held by CDU.

During the year, we also enjoyed teaching the Graduate Certificate of Epidemiology and Master of Health Research for the first time and introduced some exciting new initiatives for our HDR students, including monthly "Lunch With The Prof" sessions to provide an opportunity to

hear about the journeys of our senior researchers and Art and Mindfulness sessions to provide a creative outlet for our students.

Due to the lockdown of remote Aboriginal communities, our Vocational Education and Training (VET) Certificate II in Community Health Research faced a major challenge. However, with the help of a grant from Medibank our trainers were able to adapt individual units to be delivered using a combination of technologies such as Zoom, Microsoft Teams and the e-learning platform Learnline. This enabled staff from MJD Foundation and Purple House, who would normally work with remote clients, to receive tailored training.

Master of Public Health Graduates completing with a research thesis

Andeela Hafeez The Currently Recommended Treatments for Lumbopelvic Pain in Pregnancy in Western and non-Western Countries.

Elizabeth Fisher Evaluation of the Acute Rheumatic Fever Diagnosis Calculator.

Louise Mayclair A Realist Evaluation of the Impact of the Certificate II in Family Wellbeing on Alcohol-Related Harm in Kakadu, Northern Territory.

Renu Unnikrishnan Association of Vitamin A Deficiency with Anaemia, Undernutrition and Infection in Aboriginal and Torres Strait Islander Children.

HDR graduates

Celestine Aho (PhD) Understanding pathogens with relevance to otitis media management in Papua New Guinea.

Belinda Davison (PhD) Chronic stress exposure and emotional wellbeing in Australian Indigenous and non-Indigenous young adults.

Audra de Witt (PhD) Factors and Practices that Enhance Delivery of Quality Cancer Care for Indigenous Australians across Primary Health Care and Hospital Settings in Queensland.

Karen Hobday (PhD) Swallowing the pills: Scaling-up the use of misoprostol for the prevention of postpartum haemorrhage at home births in two provinces in Mozambique.

Jana Lai (PhD) Pneumococcal epidemiology in East Asia.

Alison Laycock (PhD) The developmental evaluation of a knowledge translation project in Indigenous primary health care quality improvement.

Lisa McHugh (PhD) The uptake and safety of vaccines in pregnancy.

Damian Oyong (PhD) Protective and pathogenic roles of complement in human malaria.

Audrey Rachlin (PhD) Next-generation sequencing for greater understanding of *Burkholderia pseudomallei* epidemiology and phylogeography in northern Australia and Vientiane, Laos.

Moana Tane (PhD) Talking about Smoking in East Arnhem Land: Denormalisation, Stigmatisation and Leadership in remote Yolŋu communities, a qualitative study.

Beverley Marcusson (Master by Research) Challenges to equitable access to cancer services for Indigenous Australians.

HDR scholarships announced in 2020

Mary Wicks, PhD The Many Faces of Diabetes in Remote Aboriginal People of the Northern Territory. NHMRC Scholarship.

Emily Papadimos, PhD The epidemiology of youth type 2 diabetes in Indigenous populations and the contribution of in-utero diabetes exposure on growth outcomes and diabetes risk profile in early childhood. NHMRC Scholarship.

Paula Binks, PhD Improving early diagnosis of liver cancer among Aboriginal Australians. NHMRC Scholarship.

Winnie Chen, PhD A clinical decision support tool for chronic kidney disease and related chronic diseases – development, validation, and cost-effectiveness analysis. Research Training Program (RTP) Scholarship.

Sarah Clifford, PhD The effect of alcohol restrictions on violence against adult women in the Northern Territory. RTP Scholarship.

Vicki Wade, PhD Cultural impact on social and emotional wellbeing of young Aboriginal and Torres Strait Islander peoples with RHD. RTP Scholarship.

Richard Lew, PhD Evaluating the Role of Neutrophils in the Pathogenesis of Pulmonary and Central Nervous System Tuberculosis. Malaysia Australia Colombo Plan Commemoration (MACC) Scholarship.

Student case study

Dr Audrey Rachlin



^ Dr Audrey Rachlin in the Menzies laboratory.

For Dr Audrey Rachlin, a research trip to Laos led to ground-breaking discoveries of a disease impacting both human and animal health.

Dr Rachlin recently completed her PhD with Menzies where she looked at the spread and understanding of melioidosis in northern Australia and Laos.

Her passion for finding out more about this little-known tropical disease started when she was on a research trip to Laos for her master's with the London School of Hygiene and Tropical Medicine.

"It was during this time that I really became aware of the heavy burden of melioidosis infection and high rate of morbidity and mortality, both in Laos as well as globally," Dr Rachlin said.

"I remember being shocked that, even though the predicted mortality estimate of melioidosis exceeds that of more recognised infections, like dengue and leptospirosis, it is still so overlooked that it's missing from the WHO list of Neglected Tropical Diseases!"

Doing her PhD at Menzies was a natural next step due to Menzies world-renowned research in melioidosis, focusing on the One Health approach in which human and animal health are interconnected.

Dr Rachlin's thesis, *Next-generation sequencing for greater understanding of Burkholderia pseudomallei epidemiology and phylogeography in northern Australia and Vientiane, Laos*, examined the distribution and local spread of *B. pseudomallei* in soil and surface runoff in Darwin and Vientiane, Laos, which are two highly endemic urban settings for melioidosis infection.

"We used whole-genome sequencing technology to demonstrate that some strain types are more widespread and established in the environment, while others are highly spatially clustered over a small geographic area.

"The high rate of detection and diversity at drain sites in Darwin and Laos also suggest that drains likely play a role in dispersal of *B. pseudomallei* in the environment, particularly during periods of heavy rainfall.

"Better awareness of the local population structure in Darwin also enabled us to successfully investigate two fatal clusters of melioidosis infections in captive zoo animals at a local wildlife park. We hope to use this data to improve our understanding of *B. pseudomallei* dispersal and source attribution, which may help to develop future public health measures throughout endemic areas."

Since completing her PhD, Dr Rachlin has been developing a training and capacity building manual for melioidosis in emerging endemic countries through the American Society for Microbiology India Zoonotic Diseases Project and USA Centers for Disease Control and Prevention (CDC).

In 2021, Audrey will join the CDC Epidemiology Intelligence Service Traineeship in the USA.

"I hope to use this exciting opportunity to gain additional skills in applied public health and implement what I have learned during my time as an infectious disease researcher at Menzies to frontline field epidemiology."

Dr Audrey Rachlin

Head of Laboratory
Science, Professor
Phil Giffard.



Our people

Organisational structure

Senior Executive Team

Professor Alan Cass AO
Director

Brendon Douglas
Deputy Director of Strategy

Tegan Ryan
Chief Operating Officer

Dr Sean Taylor
Deputy Director Indigenous
Leadership and Engagement

Professor Gail Garvey
Associate Deputy Director Indigenous
Leadership and Engagement

Mark Mayo
Associate Deputy Director Indigenous
Leadership and Engagement

Research

Global and Tropical Health

Professor Anna Ralph

Malaria, TB and Other Regional
Endemic Diseases

Regional Health System
Strengthening

Global Women's and
Children's Health

Tropical and Emerging
Infectious Diseases

Viral Hepatitis

RHDAustralia

HOT NORTH

Child Health

Professor Anne Chang AM

Respiratory Health

Maternal Health

Immunisation

Ear Health

Childhood Anaemia

Life Course

Polymicrobial Research

International Child Health

Child Health Laboratory

Housing and Hygiene

Indigenous Medicinal Plants

HealthLAB

Centre for Child Development and Education

Professor Gary Robinson

Preventing Suicide
and Self-Harm

Evaluation of Child and Family
Health and Social Services

The Child and Youth
Development Research
Partnership

Strong Parents and Children

Resilient Youth

Population Health and Wellbeing

Wellbeing and Preventable Chronic Diseases

Professor David Thomas /
Professor Tricia Nagel

Mental Health and Wellbeing

Tobacco Control

Nutrition

Alcohol and Other Drugs and
Gambling (AODG)

Diabetes

Cancer Epidemiology

Renal

Primary Health

Rural and Remote
Health Services

Education and Training

Higher Degrees by Research

Associate Professor Heidi Smith-Vaughan

Master by Research

Doctor of Philosophy

Honours Program

Postgraduate and VET studies

Dr Sharon Chirgwin

Postgraduate Coursework Programs

Vocational Education and Training

Professional Services

Executive Support

Finance

Human Resources

Legal Services

Development

Biyamarr ma

Work Health and Safety

Facilities and Operations

Research Administration

Communications,
Media and Marketing

Information Technology

Governance and Risk

Data Management

Research Quality

Ethics Office

Laboratory Science

Biostatistics

Research excellence

American Society of Tropical Medicine and Hygiene

Professor Ric Price was recognised as an American Society of Tropical Medicine and Hygiene (ASTMH) Distinguished International Fellow for his contributions to tropical medicine.

Young NT Australian of the Year

Aboriginal health practitioner and *Ask the Specialist* podcast panellist, Stuart McGrath, was awarded the Young NT Australian of the Year.

University of Newcastle - Alumni Medal for Professional Excellence

Professor Gail Garvey was presented with the University of Newcastle - Alumni Medal for Professional Excellence.

University of Tasmania Alumni Award

Sophie Weston received the University of Tasmania Alumni Award for commitment to Global and Tropical Health.

Australian Society for Microbiology Award

Microbiologist Professor Phil Giffard was recognised for his exceptional service and contributions to science by the Australian Society for Microbiology (ASM) with the society's Distinguished Service Award.



^ Professor Phil Giffard. Photo credit: Charles Darwin University.



^ Associate Professor Jaquelyne Hughes at the NHMRC awards.

NHMRC Clinical Trials and Cohort Studies Award

Associate Professor Jaquelyne Hughes, for the eGFR3 Study, received an NHMRC award for the highest ranked Clinical Trials and Cohort Studies application.

ADS Ranji & Amara Wikramanayake Clinical Diabetes Research Award

Professor Louise Maple-Brown was awarded the 2020 ADS Ranji & Amara Wikramanayake Clinical Diabetes Research Award for her significant contributions to diabetes research.

Australian Podcast Awards

Ask the Specialist won the silver medal in the Smartest podcast category at the Australian Podcast Awards and was a finalist in the Best Indigenous podcast category.

The Society for Mental Health Research - Best Research Paper Award

PhD candidate, Bernard Leckning, was the winner of the Society for Mental Health Research 2020 Best Research Paper Award.

Australia and New Zealand Society Nephrology Rural Science Award

The WICKD study was recognised for excellence and awarded the Australia and New Zealand Society Nephrology Annual Scientific Meeting 2020 Rural Science Award.

iAwards

Menzies HealthLAB was the iAwards winner in the 2020 SA/NT NFP and Community sector category for the *Time Machine* app and merit recipients in the national NFP and Community sector category for the *Time Machine* app.

NT Community Achievement Awards

Ask the Specialist was awarded the NT Community Achievement Awards Health and Wellbeing Award.

NT Digital Excellence Community Benefit Award

Territory Kidney Care (TKC) received the 2020 NT Digital Excellence Community Benefit Award in Partnership with DXC Technology.



^ TKC's Gillian Gorham and Paul Kamler at the Digital Excellence Awards.

CDU Special Commendation Indigenous Alumnus Award

Mark Mayo was presented with the CDU Special Commendation Indigenous Alumnus Award.

CDU Visualise your Thesis competition

PhD candidate, Dr Winnie Chen, won the CDU leg of the 2020 Visualise your Thesis competition.

^ Dr Winnie Chen with her prize.



Internal awards

The **2020 Menzies Medallion** was presented to Associate Professor Kelvin Kong for his leadership in Aboriginal health service delivery, advocacy and research, in particular his work to improve ear health in Aboriginal and Torres Strait Islander children.

The **2020 Val Asche Memorial Prize** for Academic Excellence was awarded to Matthew Nesbitt (Graduate Diploma in Health Research), Tarah Fantis (Graduate Diploma in Public Health) and Jessica Harkness (Master of Public Health).



^ Menzies Director, Professor Alan Cass, presents Associate Professor Kelvin Kong with the 2020 Menzies Medallion.



Dr Marita Hefler was recognised for her commitment to mentoring and developing an equitable, nurturing research environment, along with her research successes with the **2020 Ryan Family Prize**.

^ Menzies Director, Professor Alan Cass, presents Dr Marita Hefler with the 2020 Ryan Family Prize.

Long service awards

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

Recognised in 2020 for their long-standing contributions were:

30 years

Associate Professor Heidi Smith-Vaughan

25 years

Professor Joan Cunningham



20 years

Joanne Bex, Cate Wilson and Jemima Beissbarth

15 years

Dr Gabrielle McCallum

^ Associate Professor Heidi Smith-Vaughan, Cate Wilson and Jemima Beissbarth at the long service awards.

Celebrating 30 years of service

Associate Professor Heidi Smith-Vaughan started her career with Menzies in 1990 as a molecular microbiologist and quickly developed a passion for respiratory health, health promotion and youth mentorship.

Reflecting on the early days of her 30-year career at Menzies, Assoc Prof Smith-Vaughan said she grew up as a scientist and researcher here with founding Director, Professor John Mathews, leaving the greatest impression.

"I was incredibly fortunate to have had this opportunity," she said.

"These were exciting times of rapid technological change allowing us to do amazing new things.

"I still remember fondly the staff meetings where John would read to us works from greats such as Popper and Medawar. He was also always promoting collaboration over competition."

Fast forward 30 years, Assoc Prof Smith-Vaughan continues to be inspired.

"Menzies has always attracted remarkable and inspiring people and it's these people who established a culture that has stuck," she said.

"For an institution of Menzies size and isolation to work right along the research timeline from exploratory research through to translation, and to do it extremely well, is quite extraordinary.

"Being a health researcher means striving to help others and to create a better world. Menzies provides opportunities to help others in our local community and our northern neighbours as we adapt to where community need drives



▲ Assoc Prof Heidi Smith-Vaughan with her daughter, Charlotte Valle, at the long service award presentation.

us. As Professor Peter Morris says, 'research is a team sport', and I still feel very privileged to be able to work with these teams, and remarkable people like Peter, Professor Amanda Leach AM, Professor Anne Chang AM, Professor Kim Mulholland and many others."

Assoc Prof Smith-Vaughan oversees a wide-ranging portfolio. She works with the Child Health Laboratory Group on molecular and genomic public health projects in Darwin and with satellite teams in Vietnam and Papua New Guinea.

She also runs the Menzies HealthLAB, a mobile, interactive laboratory she conceived in 2014 with the late Associate Professor Sue Sayers to educate young people about how they can take control of their own health.

Assoc Prof Smith-Vaughan has always championed traineeships and pathways for NT youth.

"I love working with our trainees. They bring with them dreams and so much potential, and are a connection to the community, the people we serve," she said.

"Opening Menzies' doors to youth, and seeing them grasp these opportunities and fly, is so rewarding!"

Most recently, Assoc Prof Smith-Vaughan worked with long-term colleagues, Mark Mayo, Dr Robyn Marsh and Dr Kalinda Griffiths, to further build on her passion for youth with the establishment of the Ramaciotti Regional and Remote Health Sciences Training Centre, developing a sustainable local Aboriginal and Torres Strait Islander biomedical and health sciences workforce in the NT. On top of this, she is the Interim Associate Director for Research – Higher Degree by Research (HDR) and Ethics, with a focus on Menzies' HDR students.

"Since first beginning with Menzies in 1990, Heidi has displayed an unwavering commitment to excellence in all of her research, capacity building and community engagement endeavours. As a Principal Research Fellow, Heidi continues to represent the best of Menzies on the national and international stage," Menzies Director, Prof Alan Cass, said.

Capacity building

The Ramaciotti Regional and Remote Health Sciences Training Centre

A new centre has been set up at Menzies to develop a sustainable, local and Aboriginal and Torres Strait Islander biomedical and health sciences workforce in the NT.

The Ramaciotti Regional and Remote Health Sciences Training Centre (Menzies-Ramaciotti Centre) facilitates biomedical and health sciences career progression for regional and remote youth, with a focus on career development for Aboriginal and Torres Strait Islander youth.

In regional and remote areas of Australia, hurdles to education can be exacerbated by distance and extreme social disadvantage. Approximately 50 per cent of NT youth do not complete high school. Low high school completion rates and a lack of supported pathways into employment for youth result in reduced biomedical training and employment opportunities.

The Menzies-Ramaciotti Centre enables regional and remote youth to overcome barriers to the biomedical and health workforce by providing multiple entry points for training in health sciences. Youth can enter the program via high school engagement pathways, certificate level training, undergraduate training and postgraduate training, and research.

Students can undertake a range of educational and workplace training experiences, including laboratory techniques, data analysis, computer literacy, literature reviews, coding and bioinformatics, health promotion and allied health. Students also benefit from training in the latest technology, industry partnerships, dedicated trainers, mentoring programs, internships across institutions and access to Menzies researchers and networks.



Mark Mayo, Associate Deputy Director Indigenous Leadership and Engagement at Menzies and co-lead of the Menzies-Ramaciotti Centre says the opportunities provided by the centre are already in high demand, despite having only recently been established at Menzies.

"There is no shortage of youth approaching the Centre for training opportunities and we are looking at ways we can both internally and externally increase our supervisory capacity, develop our training programs and create more opportunities for NT youth."

The Centre has accomplished much in 2020 and is looking forward to the career development opportunities that will be shared with NT youth in 2021.

▲ Raelene Collins, Erin Gargan, Her Honour the Honourable Vicki O'Halloran AO, Administrator of the Northern Territory and Kellie McCrory.

"The Centre has partnered with internal and external stakeholders to engage more than 30 Aboriginal and Torres Strait Islander and non-Indigenous Northern Territory youth in biomedical and health sciences training."

Mark Mayo, Associate Deputy Director Indigenous Leadership and Engagement, Menzies

Menzies Biyamarr ma traineeship program

The Menzies Biyamarr ma traineeship program provides a training pathway for Aboriginal and Torres Strait Islander people interested in joining the health workforce in the Northern Territory (NT) and Queensland.

Recently, the traineeship program has grown to offer more professional development opportunities for the trainees, including cultural activities, personal development workshops with Balanced Choice, community and school engagement opportunities and internal networking collaborations.

In 2020 we had seven trainees, Ashanti Berry, Jaylene Friel, Jahdai Vigona, Paris Caton-Graham, Niamah Walters, Tiana Alley and Whitney AhMat, with three trainees graduating.

The trainees have the opportunity to work across our broad spectrum of research areas including Hepatitis B, alcohol

and other drugs, mental health and the Menzies HealthLAB.

The traineeships are tailored to support the wellbeing of our Aboriginal and/or Torres Strait Islander participants – in particular our program takes a holistic approach to mentoring.

We work closely with Group Training NT (GTNT) through the Biyamarr ma traineeship program. The trainee, their supervisor and a GTNT employment specialist meet monthly to discuss their progress in the traineeship and to provide additional support and guidance.

We also work with Adam Drake, a local mentor, to provide Balanced Choice workshops. These workshops encourage the trainees to think about how they can make positive choices and structure their days with a healthy balance in mind and provide them with the tools to do this.

Another important part of our program is to show school students how they could be involved in the Biyamarr ma traineeship program after school and the many career opportunities in health through school visits. The visits are organised, hosted and facilitated (including laboratory tours) by our trainees. During 2020, we held school visits with Stars Haileybury, Jabiru and Casuarina Secondary College students and Clontarf Katherine students.

We also work with IAHA (Indigenous Allied Health Australia) Darwin Academy by providing work placements to students completing their allied health school-based traineeships.

Since 2019, Bridging the Gap Foundation has also provided funding for the Biyamarr ma traineeships allowing us to expand our program and take on more trainees.



Paris Caton-Graham – Certificate III in Community Services and Certificate II in Community Based Research (AODG team) with Lydia Graham, Dr Sean Taylor and Professor Alan Cass at her graduation.



This painting represents the beautiful pandanus plant also known as Biyamarr ma to the Larrakia people of Darwin, Northern Territory, Australia. The Biyamarr ma is an amazing plant that has helped our Aboriginal and Torres Strait Islander tribes thrive for thousands of years due to its almost limitless uses such as food, medicine, craft objects and much more.

Artist: Mim (Meikim) Cole
Tribes: Larrakia (NT), Wardaman (NT), Karajarri (WA)

Hearing for Learning Initiative's ear health facilitator graduations



△ Graduate Aileen Tiparui using an otoscope to check for ear problems.

Menzies celebrated the first graduates of its Hearing for Learning Initiative this year.

The initiative is a stepped-wedge trial in 20 communities around the NT over the next three years.

The graduates completed a six-week course delivered by qualified nurse trainers gaining Certificate II qualifications in three modules of Aboriginal Primary Health Care from the Central Australian Remote Health Development Services and four weeks of enhanced skills (otoscopy, tympanometry and hearScreen) in detecting and recording ear and hearing problems.

Graduations have been held in Wurrumiyanga, Kalkarindji, Katherine and Gunbalanya, with recruitment underway for four more NT communities (Wadeye, Palumpa, Ti-Tree, and Lajamanu) in 2021.

Graduate Aileen Tiparui said she was inspired to do the training to help the young people in her community to take care of their hearing.

“I wanted to learn more about hearing and to get more skills and to know more about hearing problems for our kids, especially the young ones.

“I learned new skills and how to look after ears, such as how to use an otoscope to look into ears.”

Aileen Tiparui, graduate

The Hearing for Learning Initiative is funded by The Balnaves Foundation and the Australian and NT governments.

Supporters of our new Centre for Male Health and Wellbeing at the launch.

Our donors and supporters

2020 highlighted the importance of our community of donors. When the COVID-19 pandemic impacted our research programs, our community responded. Our donors and partners quickly and generously gave more than \$1 million to our COVID-19 Emergency Response Fund to help address the rapidly changing and unprecedented situation.

The campaign enabled us to strengthen our capacity to respond dynamically to the evolving COVID-19 crisis, including supporting national COVID-19 efforts, supporting staff, funding new projects to address COVID-19 and continuing to make an impact in the communities in which we partner.

INPEX Australia supports Menzies AIMhi Stay Strong app

INPEX Australia generously responded to our COVID-19 Emergency Response Fund appeal by donating \$100 000 towards the adaption of our Aboriginal and Islander Mental Health Initiative (AIMhi) *Stay Strong* app to address the increased need for mental health and wellbeing support of Aboriginal and Torres Strait Islander people during and after the COVID-19 pandemic.

INPEX's financial support will enable the team to undertake community consultations, co-design, testing and dissemination of the updated *Stay Strong* app and the development of a new smartphone *Stay Strong* app.



^ The AIMhi *Stay Strong* app.

The updated app will be available free of charge on smartphones as well as tablet devices. It will incorporate Aboriginal and Torres Strait Islander languages and wellbeing outcome measures and will support service access and data collection.

BHP Vital Resources Fund supports Territory Kidney Care

In response to challenges faced by regional communities due to the COVID-19 pandemic, BHP established the Vital Resources Fund to help support regional Australian communities in its areas of operation to provide support in a range of areas such as health services and resilience building.

Through the Vital Resources Fund, BHP made a generous contribution of \$100 000 to our COVID-19 Emergency Response Fund appeal.

The funds were directed to support our Territory Kidney Care (TKC) project.

TKC is an innovative clinical information system that uses powerful analytics to assist with the early identification and best-practice management of kidney disease.

The funding provided by the BHP Vital Resources Fund is being used to ensure the TKC system incorporates the necessary technological capability for sustainability, transferability and scalability, particularly in response to the COVID-19 pandemic.



Medibank supports Community Health Research Certificate course digitisation

Medibank Better Health Foundation contributed \$30 000 to the COVID-19 Emergency Response Fund to assist with the digitisation of one of our key community health program training courses, the Certificate II in Community Health Research, making it available online for remote communities.

Digitisation of the course enabled us to overcome travel restrictions during the pandemic which prevented face-to-face course delivery.

The Certificate II in Community Health Research aims to empower Aboriginal and Torres Strait Islander people to help deliver health promotion and research in their communities.

It also provides graduate Aboriginal and Torres Strait Islander community-based researchers a nationally accredited award, a pathway to further education, greater health literacy and increased employment opportunities.

Bridging the Gap Foundation Facebook campaign success

The Bridging the Gap Foundation (BTGF) was established by Menzies and CDU to fund research in health and education initiatives to address the gap between Aboriginal and Torres Strait Islander people and non-Indigenous people's health and education opportunities and outcomes.

In June, BTGF began an extensive Facebook fundraising campaign to raise donations for Aboriginal and Torres Strait Islander traineeships. The campaign attracted thousands of national and international donors in support of this initiative, raising over \$300 000.

The campaign focused on the important role Aboriginal and Torres Strait Islander trainees have played in delivering key health education programs in remote communities during the pandemic, and how they continue to play a role as they develop their skills and forge new pathways to further education and career development. The money raised enabled us to recruit more Aboriginal and Torres Strait Islander trainees and support their training and mentorship.



^ 16-year old Olivia Dymond made masks during Melbourne's lockdown and contributed her sales to the BTGF Facebook fundraising campaign.

Major donors and partners

We are grateful to the following donors and partners for their generous support in 2020:

Australian Government	Graham Blashki	Megan Duffy
Australian Securities and Investment Commission (ASIC)	Ian Albrey and Edwina Menzies	Northern Territory Government
Baker McKenzie	INPEX Australia	Dr Paul Lawton
Belinda Gibson	James Hogben	Richard Ryan AO
BHP Vital Resources Fund	John Gamble	Rotary Club of Kiama
Bridging the Gap Foundation	Mala'la Health Service Aboriginal Corporation	Rotary Club of North Balwyn
Charles Darwin University	Maple-Brown Charitable Foundation	The Balnaves Foundation
Darwin International Airport Employees	Medibank Australia	The Ray and Margaret Wilson Foundation
Future Generation Global Investment Company	Medtronic Australasia	The Williams Family

Major contributions*

\$2 247 706

* Major contributions are recorded as consultancy and contract research in the presentation of Menzies financials

Donations

\$660 210



Our financials

Financial summary

Total revenue

\$45 720 764

National Health and Medical Research Council (NHMRC) Grants

\$10 628 104



Investment income

\$403 721



Other Australian Government grants

\$4 805 269



Consultancy and contract research

\$9 684 398



NT Government funding and grants

\$5 562 906



Other revenue

\$10 883 282



Course fees and other charges

\$3 753 084



24% Other revenue

23% NHMRC Grants

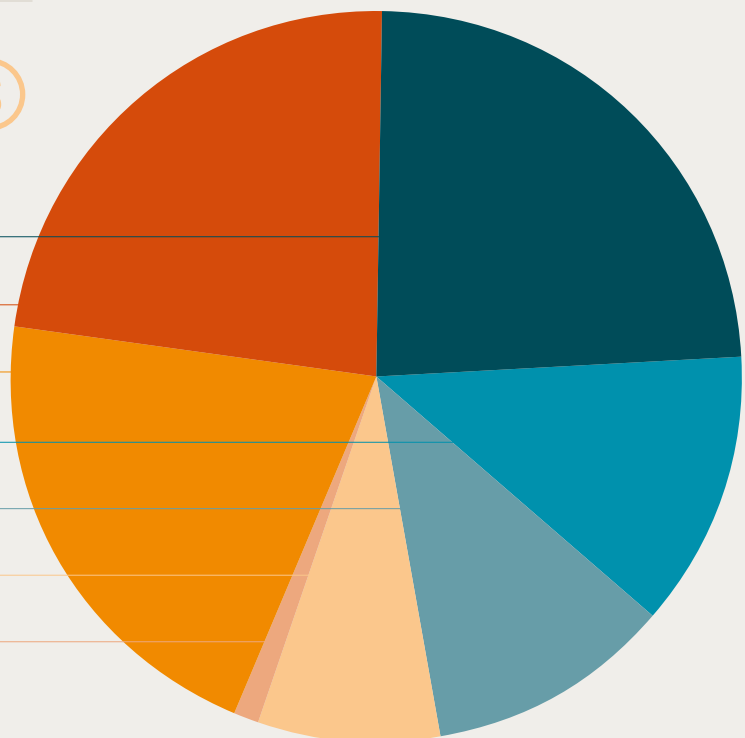
21% Consultancy and contract research

12% NT Government funding and grants

11% Other Australian Government grants

8% Course fees and other charges

1% Investment income



Total expenses

\$44 722 559*

Salary and other employment related costs

\$28 415 427



*88% of total Salaries and other employment related costs spent is directly attributable to the delivery of research, education and training.

Direct research and other costs

\$15 491 840



Depreciation

\$625 049



Repairs and maintenance

\$190 243

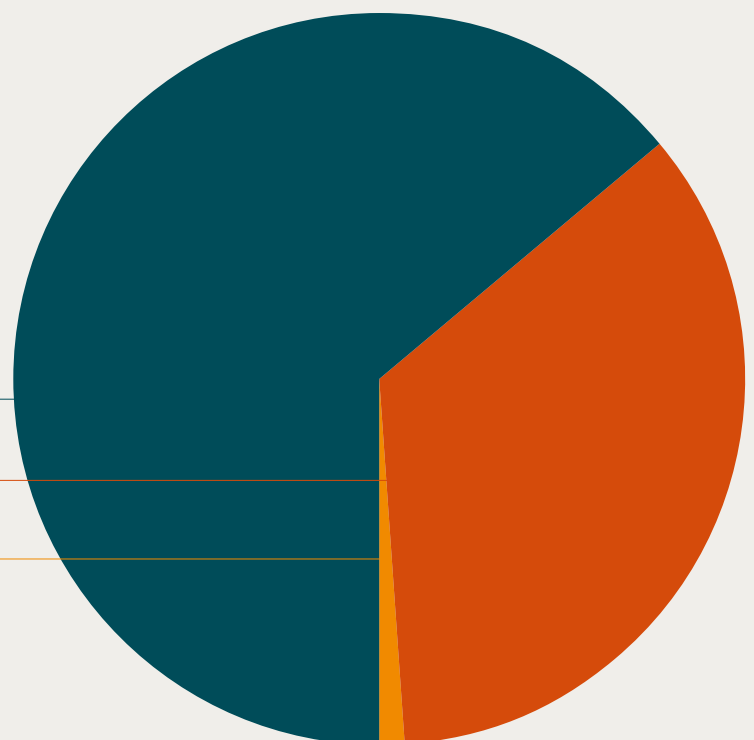


64% Salary and other employment related costs

35% Direct research and other costs

1% Depreciation

0% Repairs and maintenance



Jahdai Vigona and
Tasha Cole discussing
the Menzies Biyamarr ma
traineeship program.



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

The graphic pattern featured in the Menzies 2020 Annual Report is from an artwork by artist Cian Mungatj McCue. Born and raised in Darwin, Cian is a descendant of the Larrakia, Yanyuwa and Mulluk-Mulluk people.

This piece symbolises the NT, the different regions, landscapes and people. The top part of the piece represents the Top End and has used linework

reminiscent of artwork from across the Top End. It is blue to represent saltwater. The green part of the piece symbolises savanna, grasslands and freshwater waterways. The big circular element to the right of this section is reminiscent of a dried water lily pod, but has been created in a style to represent human cells. The orange part of the artwork is moving south towards stone and desert

country. The red parts represent the Red Centre and has been created in a style similar to dot art from the region. The orange and red parts of the piece have been created in a style symbolic of blood cells and it also represents the heart of the Territory.



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

ISBN: 978-1-922104-88-5 (paperback)

ISBN: 978-1-922104-89-2 (online)

©2020 Menzies School of Health Research

The material contained in this document is the subject of copyright and/or privileged information.

Any use, disclosure (written or verbal), copying or dissemination of this document is prohibited without written consent from the Menzies School of Health Research.

PO Box 41096
Casuarina NT 0811
Australia

John Mathews Building (58)
Royal Darwin Hospital Campus
Rocklands Drive, Tiwi NT 0810

T 08 8946 8600

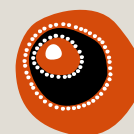
F 08 8946 8464

E communications@menzies.edu.au

ABN: 70 413 542 847



menzies.com.au



menzies
school of health research