ARMA

The Australian Remote Medicine Academy

Concept Paper

The solution to the shortage of doctors and lack of access to medical training in remote communities is right here

In the spirit of respect and reconciliation, the Royal Flying Doctor Service, University of Adelaide, Australian Indigenous Doctors Association and Australian College of Rural and Remote Medicine acknowledge Aboriginal and Torres Strait Islanders as the first peoples of Australia.

We acknowledge them as the traditional custodians of the land and seas and we pay our respects to their ancestors, elders past, present and emerging, and leaders, for they hold the memories, traditions, ancient knowledge, culture, and hope.

Now is the time for our country to demonstrate our commitment to reconciliation by investing in remote Australia to secure sustainable health for all Australians into the future.

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**In this document the term Aboriginal and Indigenous is used interchangeably to be meaningfully inclusive of Torres Strait Islander peoples.*

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Alf Traeger – Inventor of the Pedal Radio

Born in 1895, Alf invented the pedal radio after his work in Adelaide on a transceiver. He was instrumental to the success of the Royal Flying Doctor Service, which needed sets that were cheap, durable, small and easy to operate. Alf's famous pedal wireless was a pedal-operated generator that provided power for a transceiver. He used bicycle pedals to drive the generator and a cast base screwed on to the floor beneath a table.

Foreword

Australians who live in remote areas make considerable contributions to the economic and social status of our country. Sadly, however, the more remote in Australia you go, the more worrying the health statistics and the less likely you are to attend university, particularly to study medicine.

On average, Australians living in rural and remote areas live seven years less, have higher levels of disease and injury as a consequence of poorer access to and use of health services, compared with people living in metropolitan areas.

Moreover, remote Australia has suffered disproportionately from access to Australian–trained, culturally similar medical workforce. Less than 2% of medical students have an Aboriginal and Torres Strait Islander background and less than one in four medical students have a remote or rural background.

This health and education access disparity for Indigenous people and those living in remote areas is unacceptable in modern-day Australia. The economic and social disruption caused by Covid–19 has added a double disadvantage to those living in remote and rural Australia.

Now more than ever, it is crucial that we think and act differently to create a sustainable remote medical workforce for Australia.

The Royal Flying Doctor Service (RFDS), Australian Indigenous Doctors Association (AIDA), University of Adelaide (UoA), and Australian College of Rural and Remote Medicine (ACRRM) all share a vision to change the future of medical services in remote Australia. These four respected partners have demonstrated, through a memorandum of understanding, their commitment to addressing the gap in remote health and medical education in a way that has never been done before.

This group has been working together to develop a future sustainable medical training and workforce model and is keen to engage with Governments, philanthropists, health service providers, professional colleges and educational institutions which, over time, might assist us in achieving our goal of improving access to quality medical education and doctors in the bush.

Eight remote communities, each linked with an RFDS base and Aboriginal community–controlled health organisations, will have five medical students and doctors in training in each of the 12 years of this training pathway. This means 60 bright young people contributing to the health services and economy of these remote communities.

Some 20 years ago, the Australian Government took the bold step of developing rural medical programs through the Rural Health Multidisciplinary Training program. This program has dramatically changed the training infrastructure, medical school programs and career trajectories across regional Australia.

Now it is time to be bold once more and take a similar national approach for remote Australia.

The remote Australian communities serviced by the RFDS have more in common with each other than they have with regional centres in their districts.

ARMA will enable students to choose remote communities at the start of medical school training, see a training pathway to a highly valued medical career close to home, and become embedded in a community of practice so they don't simply learn to 'do' remote medicine, but learn to 'be' remote doctors. Australia urgently needs this visionary approach to solving existing disparities.

Monica Barolitz-McCabe
Chief Executive Officer,
Australian Indigenous Doctors Association

Frank Quinlan
Chief Executive Officer,
Royal Flying Doctor Service

Prof Benjamin Kile
Executive Dean, Health and Medical Sciences
The University of Adelaide

Marita Cowie AM
Chief Executive Officer,
Australian College of Remote
and Rural Medicine

Adelaide Rural Clinical School staff Dr Andrea McKivett and Ms Emma Richards with two standardised patients, Kaiden and Kiandra, who have contributed to the medical student clinical training

Contact the Australian Remote Medicine Academy (ARMA)

Professor Lucie Walters
Director, Adelaide Rural Clinical School
lucie.walters@adelaide.edu.au
M 0409 692 359

Ms Susanne Tegen (Susi)
Development Consultant, ARMA
susanne.tegen@adelaide.edu.au
M 0429 100 464

Vision and goals

- To provide access to quality medical education for Aboriginal and non-Aboriginal people living and working in remote (and rural) locations
- To secure equitable medical and health care everywhere across Australia, including rural and remote areas, through cultural understanding, connectivity, sustainability and reliability of medical services into the future
- The ongoing collaboration of government, private philanthropists, industry, health and community partners in planning and design of the training pathway to build a capable, flexible and sustainable remote (and rural) Aboriginal and non-Aboriginal medical generalist workforce.

Major aspects

- A historic commitment to delivering medical education in remote Australia
- An innovative, unique six-year medical school program integrated with a six-year post-graduate remote generalist training program through the Royal Flying Doctor Service
- Secure medical workforce supply and symbiotic prolonged clinical placements in partnering national Aboriginal community controlled health organisations
- Intensive mentoring and support from high school to enter the ARMA program through an extension of The University of Adelaide Karnkanthi Indigenous Education Program
- An ambitious goal of 50% intake of Aboriginal students, aiming for a minimum of 80% completion rate by supporting students academically and culturally
- Students and doctors-in-training to be based in eight communities across remote (and rural) Australia, linked to RFDS bases (initially Port Augusta, and potentially Broken Hill, Port Hedland and Alice Springs)
- Embedded culturally safe and reflective two-way governance of tertiary health education and vocational training curricula and health service delivery
- State-of-the-art distance education leadership and technologies through The University of Adelaide, a Go8 university
- Vocationally registered rural/remote generalist training through the Australian College of Rural and Remote Medicine
- A linked, remote community network to share learning and build a national remote (and rural) medicine community of practice.

Dr Danielle Dries
Aboriginal ACRRM rural generalist registrar

Dani is a Kaurna Aboriginal woman from South Australia. After finishing year 12, she moved to Albury, NSW to study physiotherapy.

Following numerous rural placements and working as a physiotherapist for a year, she decided to go down a different path.

Dani began studying medicine at the Australian National University in Canberra. She is now an ACRRM rural generalist registrar working in Moruya, NSW.

It starts with education and choice

All Australians deserve access to first–world, quality healthcare and tertiary education, particularly in the field of medicine, no matter where they live.[1]

Students who receive their education in remote and rural secondary schools generally have lower access to tertiary education. Opportunities are even fewer for Indigenous students. Lack of role models, financial support and understanding of the system warrant a social equity approach to recruiting and supporting students from Indigenous, remote and rural backgrounds.[1]

Students who undertake their medical studies in remote and rural areas contribute to the local economy and social fabric of the region – making remote and rural Australia a better place to live, work and do business. The longer these students stay immersed in remote and rural generalist practice, the more likely they are to stay and contribute to the health services when they graduate.[2]

The KBC Australia evaluation of the Rural Health Multidisciplinary Training Program calls for more long–term training opportunities in small rural and remote locations with a strong focus on primary care.[3]

"Let our high school students see what they can be, and clearly see that there is a training pathway to follow while remaining connected to country."

Prof Alex Brown, SAHMRI

In 2019, the Australian Government announced $62 million over four years to fast-track implementation of the National Rural Generalist Pathway.[4] The Australian College of Rural and Remote Medicine has been allocated an additional 100 training places by the Australian Government.[5] This demonstrates government confidence in ACRRM's ability to effectively train the next generation of remote doctors to achieve the systemic change our nation needs to genuinely Close the Gap.

Jill Benson
Rural/remote GP

Jill (FACRRM) is Associate Professor at The University of Adelaide and has been a general practitioner in rural and remote areas for more than 40 years.

"I can't imagine myself doing anything else. I now have 45 letters after my name, as part of being a GP means that I've been able to change my focus many times."

Jill has worked mainly in Aboriginal health, doctors' health and refugee health for the past 20 years, as well as spending time in mainstream general practice,

A pathway connected to country

From secondary school

In each of the eight communities with an RFDS base, an Aboriginal student can be supported through The University of Adelaide's Karnkanthi Indigenous Education Program[6] and local clinical work experience program to consider medicine and prepare for selection.

Local selection into medical school

Dr Andrea McKivett is Chair of the ARMA Selection Working Group, which is reviewing the literature and conducting community consultations to develop advice for The University of Adelaide's Admissions Committee. ARMA will have its own evidence–based selection process to meet the 50% Indigenous student profile, ensuring student success and ongoing community support for students.

Preclinical program

During the first three years of the Bachelor of Medical Studies /Doctor of Medicine (BMD) degree, students will be based primarily in their home site. They will undertake lectures and tutorials through distance learning and local delivery by clinicians and medical science academics. They will be supported in their learning by a local learning coach, and be supported culturally by a cultural mentor. Their learning will be community engaged – with opportunities to learn through:

- medical sciences in laboratories of local schools or industries
- social determinant of health and professionalism in the local Aboriginal community-controlled health organisations
- clinical skills in the simulation unit, the RFDS and local health services.

Connected-up clinical training

Drawing on the rural clinical school experience and Australian College of Rural and Remote Medicine, each trainee will be provided with 'authentic service' learning so they learn the full breadth of their curricula and contribute to the health services in the region. Local trainees will have priority as they transition from medical school to internship and from internship to vocational rural generalist training.

"ARMA will locally connect the components of the training pathway available nationally."

Dr Clive Hume RFDS Central

medical education, as a practice owner, university health, corporate health, travel medicine, public health (using her PhD in public health), research, mental health, health management and other areas.

"I have done volunteer fly-in/fly-out work in many needy areas throughout the world, including Vanuatu (as a WHO mental health consultant), remote eastern Nepal during the Maoist insurgency, Fukushima in Japan and currently in Tonga. I think that rural and remote work requires a different skillset as well as a different mindset to city general practice. My main drivers for working in rural and remote health are the difference you can make to people's lives. You use so many more skills than straightforward city-based general practice. You have to be more clinically attuned as you can't rely on quick turn-around investigations or referrals. I work with some amazing teams."

Working together to solve complex problems

Tackling these issues in partnership makes good sense to us, and so our innovative approach includes these key players in health and medicine:

- Royal Flying Doctor Service (RFDS)
- Australian Indigenous Doctors Association (AIDA)
- The University of Adelaide (UoA)
- Australian College of Rural and Remote Medicine (ACRRM).

We all share a vision to work with remote communities – including Aboriginal community health centres – governments, business and philanthropists to address entrenched health disparities, barriers to healthcare and tertiary undergraduate medical education for Australians living outside of capital cities and urban centres.

Importantly, ARMA will complement existing rural medical education programs including Australian Government–funded rural health multidisciplinary training.[7]

A partnership of this nature demonstrates cross–state, cross–jurisdiction relationships and alignment beyond borders, politics and organisations. The ARMA proposal is designed to meet the needs of people living in Australia's arid centre and to benefit all Australians, directly and indirectly.

"Australian Remote Medicine Academy will enable Indigenous, remote and rural people to work through a 12–year connected-up training pathway attached to an RFDS base to become the next generation of highly skilled, culturally competent doctors for the bush."

Dr Justin Gladman

Dr Justin Gladman
Aboriginal ACRRM registrar

Justin, a descendent of the Wiradjuri people of NSW, trained with the assistance of RFDS and the Bennelong Foundation. He now works at the Broken Hill base after completing his internship and resident year at Tamworth.

"Tamworth was very rewarding. It gave me a better understanding of the complexities of healthcare in rural areas. I moved to Broken Hill to do my generalist training, which is predominantly GP focused. We also choose one discipline for additional training and I chose anaesthetics.

It's good to be giving something back to this indispensable organisation."

The partners

Royal Flying
Doctor Service

About The Royal Flying Doctor Service (RFDS)

Founded 1928, the RFDS is one of the largest and most comprehensive aeromedical organisations in the world, providing extensive primary health care and 24-hour emergency service to people over an area of 7.69 million square kilometres.

The RFDS helps more than 1000 people every day and provides medical services needed in rural and remote areas of Australia.

The RFDS mission is to provide excellence in aeromedical and primary health care across Australia. It is led by the values of dedication, integrity and innovation and is part of Australia's larger health system. The RFDS is a vital emergency medical and primary health care provider for rural and remote Australia, even in areas with federal and state protective restriction orders.

Delivered by a dedicated team of professionals, using the latest in aviation, medical and communications technology and supported by vast numbers of volunteers and supporters, the RFDS is vital for those people who live, work and travel in rural and remote Australia.

By being an ARMA partner, the RFDS aims to build its future workforce, build on the existing relationships it currently has with various universities to promote remote and rural medical careers and provide insight into remote emergency medicine and primary health care access and delivery.

About Australian Indigenous Doctors Association (AIDA)

AIDA is a not-for-profit, member-based, professional association supporting Aboriginal and Torres Strait Islander medical students and doctors. Its purpose is to contribute to equitable health and life outcomes and the cultural wellbeing of Indigenous people.

As a peak organisation, AIDA is represented on more than 45 committees nationally and collaborates with key stakeholders and affiliated organisations. Its work aims to create a health system that is culturally sensitive and respectful, high quality and reflective of needs and human rights, to improve the health and life outcomes of Indigenous Australians. AIDA's research agenda focuses on research principles and priorities relevant to medical education, medical workforce and Aboriginal and Torres Strait Islander health.

AIDA contributes to improvements in Indigenous health by delivering federal policy and program advice, including the Coalition of Peaks on Closing the Gap and the Australian Government's Aboriginal and Torres Strait Islander Advisory Group on COVID-19, along with some 40 other health and medical bodies.

AIDA's drive within the Australian Remote Medicine Academy reflects its focus on working towards reaching population parity of Indigenous medical students and doctors, and supporting a culturally safe healthcare system.

Currently in Australia, there are some 360 Aboriginal and Torres Strait Islander medical students in universities, and some 550 doctors (about 300 of whom are currently practising or training as specialists). AIDA's aim is to not only reach parity, but to achieve above population parity of Indigenous medical students and doctors.

Flu vaccine clinic at the football Crystal Brook.

THE UNIVERSITY of ADELAIDE

About The University of Adelaide

The University of Adelaide is a member of Australia's prestigious 'group of eight' research-intensive universities. It is consistently rated highly by the most respected international assessment bodies. As the oldest university in South Australia, it is also considered one of the top 1%[8] of universities worldwide, and the top university in the state. Most of the university's research is rated 'above or well above world standard' by the Australian Research Council's Excellence in Research Australia program.

There is a culture of progression and a history of firsts, challenging traditions that hinder progress or reinforce inequality. Founded 143 years ago The University of Adelaide stands by its original goal of preparing young leaders – shaping them by education rather than birth or wealth.

University–distinguished alumni include five Nobel Laureates, over 100 Rhodes Scholars including Australia's first Indigenous recipient, and Australia's first female prime minister and Supreme Court judge.

Improving the health and wellbeing of Aboriginal and Torres Strait Islander people is one of highest priorities for the University. Its Reconciliation Action Plan outlines targets for 3% of staff and 2% of students to be Indigenous, and a commitment to reaching these goals through more accessible and culturally safe courses for Aboriginal people.

Adelaide Medical School is part of the Faculty of Health and Medical Sciences, from which the first doctors graduated in 1889. The school boasts Nobel Laureate Lord Howard Florey as a graduate and prominent medical alumni such as Australia's first female surgeon, Laura Fowler, and Helen Mayo, an Australian pioneer in women's and children's health. More recently Dr Claudia Paul, a Wiradjuri woman, became in 2016 the third Australian Indigenous person to be awarded a Rhodes Scholarship.

The faculty is the largest in the University, providing a world-class, innovative, collaborative learning environment for students studying translational medicine and research. In 2022, it will introduce a new medical program, Bachelor of Medical Studies and Doctor of Medicine (BMD). The structure of the BMD is in development, which allows the University to shape this for accredited remotely supported curriculum delivery.

> The University is particularly committed to providing access to medical education for Indigenous students whose interest in medicine and primary health care will ensure more Indigenous doctors in the remote medical workforce.
>
> **Prof Benjamin Kile Executive Dean, Health and Medical Sciences**

Adelaide Rural Clinical School (ARCS)

Since 2003, Adelaide Rural Clinical School (ARCS) has provided up to 44 final–year students with full-year rural community-engaged clinical placements. These are based in rural general practice in northern South Australia where communities are smaller, more sparsely distributed, have high proportion of Aboriginal people and the social determinants of health are keenly felt. Academically, this program has been highly successful, with students consistently excelling. As a longitudinal integrated clerkship (LIC), students are embedded in the community and the local health services as they contribute to the care of patients with diverse conditions.

By being a driving partner of ARMA. The University of Adelaide is setting the standard and experience of remote medicine and remote primary health care training in medicine. The University is particularly committed to providing access to medical education for Indigenous students whose interest in medicine and primary health care will ensure more Indigenous doctors in the medical workforce.

About Australian College of Rural and Remote Medicine (ACRRM)

ACRRM is committed to having the right doctors, in the right place with the right skills to provide remote communities with excellent health care.

It supports members throughout their careers and is accredited by the Australian Medical Council for setting professional medical standards for training, assessment, certification and continuing professional development.

ACRRM was established in 1997 by doctors located across rural and remote Australia who recognised the need for a dedicated medical college that supported their unique model of practice. Fellows of ACRRM (FACRRM) receive full vocational recognition for Medicare A1 item numbers as a specialist general practitioner and enjoy the freedom to practise unsupervised anywhere in Australia.

Today, the College has more than 5000 members and is an international leader in advancing rural and remote medicine and the rural generalist model of practice. It is the only college in Australia dedicated to rural and remote medicine, training and supporting aspiring and experienced rural generalists.

ACRRM fellowships, developed by rural doctors for rural doctors, are four-year programs with the rural context embedded in the curriculum from day one. It supports Aboriginal and Torres Strait Islander doctors to provide high-quality health care and improve health outcomes for Indigenous people living in rural and remote communities.

ACRRM's overarching goal in being an ARMA partner is to build a sustainable, well–equipped Australian remote and rural primary healthcare medical workforce of rural generalists. The Australian Government funding commitment to accelerate the long–sought–after pathway for trainee doctors will be crucial to ensure rural and remote communities have access to highly trained rural generalists who understand their individual needs and circumstances.

Dr Jane Greacen OAM
(MBBS, MPH, FAFOEM, FACRRM)

"As a passionate rural doctor, I advocate for Aboriginal health and medical workforce, rural training and the health and wellbeing of the Bairnsdale and East Gippsland communities. I have set up my clinic to provide access to the local Aboriginal community and am therefore very involved in the Centre of Excellence for Aboriginal Health in East Gippsland (CEAHEG)to develop the future Koori medical and health workforce."

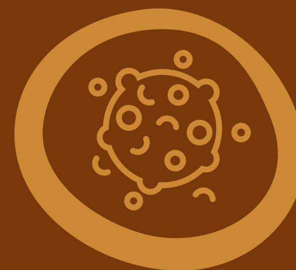
A challenge worthy of investment

Preventable hospitalisation rates in very remote areas are 2.5 times as high as major cities

(Australian Institute of Health and Welfare 2017-18)

Life expectancy for both males and females decreased as remoteness increased

(Australian Institute of Health and Welfare 2017-18)



The total disease burden rate in remote and very remote areas was 1.4 times as high as major cities.

(Australian Institute of Health and Welfare 2015)

Health of people who live in remote areas

Only 28% of Australia's 25 million people live outside our metropolitan coastal fringe. The problems faced by the people in remote or rural Australia can appear invisible or insignificant.

Consider then, the very real issues that affect us all, particularly their economic and social flow–on effects. People who live in remote areas have poorer health outcomes than their urban counterparts and routinely face:

- lower education levels and socio-economic disadvantage[9]
- higher cost of living[10]
- more risk factors for chronic diseases including –
  - » higher rates of tobacco smoking
  - » lower average levels of physical activity
  - » fresh food shortages and subsequent obesity[11]
  - » fewer and/or inadequate health and social services[12]
- scattered investment in community infrastructure, social capital, education and employment that fails to recognise local priorities.[13]

"The social and economic cost of current and future inaction for remote communities is considerable."

Frank Quinlan, CEO RFDS

The disparity in mortality between Australians living in remote and urban settings and those living in urban areas is alarming. Consider the facts – compared with urban Australians:

- coronary heart disease is 1.3 times higher in remote areas[14]
- death from diabetes is 2.3 times higher[15]
- hospitalisation for injury is 1.5 times higher[16]
- suicide rates 1.5 to 2.6 times higher[17]

"ARMA training will enable students to understand first–hand the social determinants of health by living, working and learning alongside people in remote communities."

Professor Lucie Walters

People living in rural and remote areas have poorer access to, and use of, primary health care services, compared with those living in metropolitan areas.[18]

Data from the RFDS paints a fascinating picture of the needs of people in remote regions:

- 370,706 annual patient contacts made through RFDS clinics, aeromedical transports and telehealth consultations
- 97,602 patients contacts through RFDS telehealth services
- 77 aircraft service the Australian landmass
- 27,286,414 kilometres were flown by the RFDS in 2019
- 58 RFDS clinics are held every day
- In the 2019–20 financial year there were 43,787 retrievals, with total Indigenous retrievals of 10,685 (24.4%).[19]

Hawker, South Australia

Health of remote Aboriginal Australians

Aboriginal people make up 64% of the remote and very remote population – some 147,579 people.

"Remote Aboriginal and Torres Strait Islander people have the poorest health outcomes in Australia, even when compared with non-Indigenous remote Australians."

Dr David Atkinson

Leading causes of premature death for remote Aboriginal people compared with non-Aboriginal people are:

- diabetes (16% compared with 2.9%)
- ischaemic heart disease (14% compared with 13.6%)
- renal failure (12% compared with 1.8%.[20]

Health conditions affect opportunities for education and employment. Forty–six per cent of remote Aboriginal people had at least one chronic condition that posed a significant health problem.[21]

Hearing impairment is far more frequent for Aboriginal people living in remote areas compared with those living in other areas (59% compared with 39%). More than two in 10 (23%) of remote Aboriginal people had a measured hearing impairment in both ears.[22]

Australian Indigenous people, particularly remote Aboriginal people, are still culturally vulnerable in our hospitals today.[23] They are also at risk of reduced access to health interventions compared with non-Indigenous patients in the same place.[24]

Importantly, the higher prevalence of impaired hearing, nutritional deficiencies, and the in–utero effects of alcohol and other toxic substances directly impacts the educational outcomes of remote Aboriginal people. As education is one of the most critical social determinants of health, childhood deafness detrimentally affects the health of the next generation.[25]

Access to tertiary education

Remote and rural students have greater hurdles

Remote and rural students are less likely to progress to tertiary education due to lack of understanding of its potential value, as well as perceived barriers of cost and dislocation from family and friends.[26]

For rural students who progress to tertiary education, the current completion rate for domestic bachelor-level university students, six years after commencing, is 53% for remote students compared with 66% for metropolitan students, and 61% for regional students.

Less than a third of all Australians in remote areas have a university qualification, compared with more than half in metropolitan areas.[27]

Despite the additional challenges, when remote students do complete tertiary education, they often go on to achieve great professional success. People from remote, rural and regional backgrounds are strongly represented in leadership positions in Australian businesses.[28]

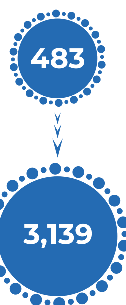
Aboriginal and Torres Strait Islander students

In 2013, Aboriginal students made up only 1% of university enrolments, well below their 3% broader population rate.[29] Although we have reached population parity for intake into medicine, we are not yet there for graduation from medical school or vocational training. In 2018, AHPRA registration figures showed that only 0.1% of all registered health practitioners are Indigenous.[30]

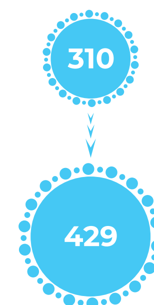
> "Aboriginal students who make it through university pathways have been successful and hold their own with non-Indigenous Australians."
>
> **Ken Wyatt, Indigenous Affairs Minister**

Reaching population parity requires some 2,300 more Aboriginal or Torres Strait Islander doctors. These clinicians can only serve a small number of Indigenous patients on one day, but they can potentially influence a whole generation of young people and change the culture of medicine in Australia, indeed on country.

To reach parity we need to go from:



Indigenous medical doctors



Indigenous medical students

Information by Medical Deans Australia and New Zealand and the National Workforce Data Set July 2019

Funding models favour medical training in urban settings

Commonwealth funding models for Australian medical schools provide adequately for urban and regional medical school curricula, but disadvantage remote areas where:

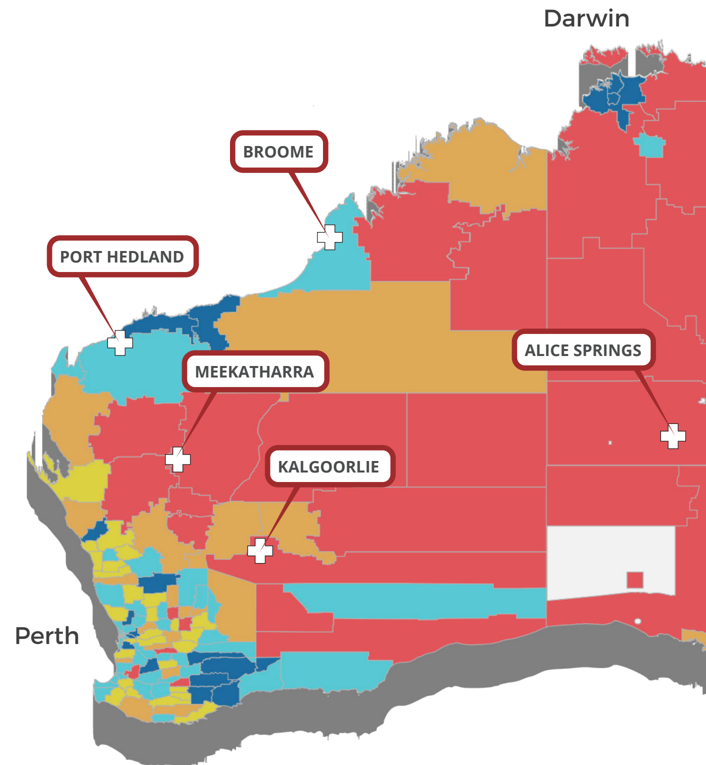
- residents have reduced access to and uptake of tertiary education, particularly the field of medicine
- residents experience higher costs for state-of-the-art training
- programs require additional investment in clinicians and research academics who secure health services and enrich the learning environment for students.

In cities and large regional centres, tertiary hospitals' activity-based funding of health services allows staffing infrastructure that ensures medical students have adequate clinical supervision and rich exposure to research–active clinical role models. Here, the medical workforce is stable and student training is not risked by medical workforce vacancies and staff turnover.

On the other hand, in remote Australia activity-based funding does not provide the human investment to add quality training to the responsibilities of employed clinicians. Without training pathways, remote and rural Australia is dependent on international medical graduate recruits.[31] With Covid–19 now limiting migration, reliance on a distantly trained workforce is not sustainable.

Investment in clinical training capacity of the magnitude proposed for ARMA will stabilise the medical services in identified sites, and secure the learning environment for trainees.

Map of Australia showing the proposed initial and potential sites.



IRSAD Quintile

most advantaged

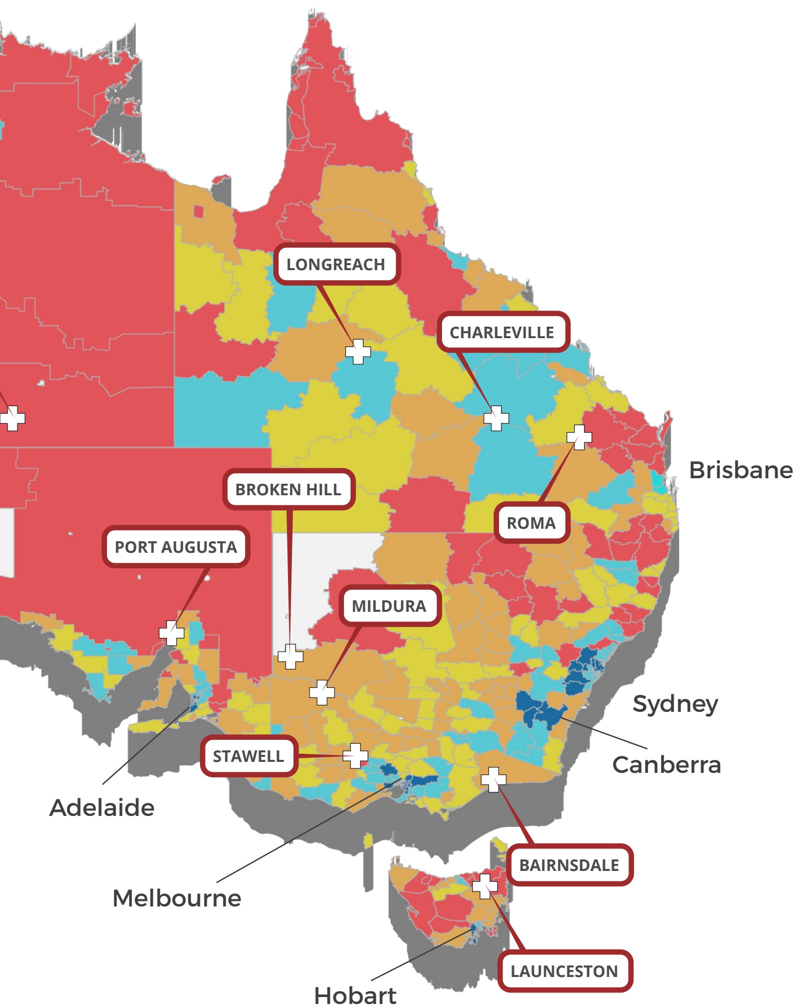
most disadvantaged

not published

RFDS sites and considered ARMA sites

Index of relative advantage and disadvantage quintiles (20 per cent lots) for local government areas.

Source: Australian Bureau of Statistics SEIFA 2016



There will be time to prioritise learning and a conscious effort to build the future medical workforce to serve all Australians.

There is good evidence that rural clinical schools have enabled career diversity for clinicians in rural areas, and have supported people to stay in the regions, with opportunities to progress their academic career.

Investment in ARMA will facilitate clinicians to stay in remote areas to secure the health services on which remote economic activities, such as farming, mining and tourism, depend. ARMA will also strengthen remote IT infrastructure to benefit remote communities. The ARMA proposal comes at a crucial time when Australia must invest to safeguard economic security in remote Australia.

ARMA partners step up to contribute

The University of Adelaide will reallocate Commonwealth–supported medical places from its urban-based medical program and redistribute these medical school places to remote settings.

This, however, is not enough based on current funding models. ACRRM is also contributing training resources for rural generalist trainees. RFDS is providing valuable clinical placement opportunities in partnership with other local health services. AIDA will specifically inform the support and mentorship of Aboriginal students and doctors-in-training.

ARMA needs additional investment to ensure the quality and sustainability of medical education and health care delivery in remote Australia.

Australia's missing medical program – ARMA

Local people for local needs

Led by The University of Adelaide, ARMA's six-year medical school will be associated with ACRRM's post-graduate remote generalist training program, under the wing of the RFDS, working collaboratively with remote GP clinics and Aboriginal health services.

We envisage ARMA students and doctors-in-training will be based in eight communities across remote Australia aligned with RFDS services that have:

- an Aboriginal health service that seeks to engage in this project
- additional capacity for training for rural generalist trainees and medical students.

Communities with RFDS bases in each state will be invited join ARMA. The final locations may include: Port Augusta, Alice Springs, Charleville, Broken Hill, Mildura, Port Hedland and additional sites potentially in Western Australia and Tasmania. ARMA plans to service communities around these regions.

"ARMA has set an ambitious target of 50% indigenous intake and a student profile that is supported through to graduation. We make a commitment to grow the number of Aboriginal and Torres Strait Islander and remote and rural doctors to meet the health and wellbeing needs of Aboriginal and Torres Strait Islander communities."

Prof Benjamin Kile, Executive Dean Faculty of Health and Medical Sciences, University of Adelaide

Underpinned by critical mentoring and student support, the ARMA medical school curriculum will have the same learning outcomes as the mainstream BMD, but the course will be different for students in each setting. This 'different pathways – same outcome' approach is well understood by the Australian Medical Council.

Dr Andrea McKivett
Medical educator, researcher

Adelaide Rural Clinical School is fortunate to have Andrea, a Gija woman, medical doctor, passionate medical education and public health researcher.

Andrea is currently concentrating on her PhD, 'Healing Conversations', a research project to develop and test a targeted communication framework to help students in health professional education fields to enhance their clinical capabilities in Aboriginal health.

Two-way engagement at all levels

Central to achieving health equity and improved population outcomes for people in remote communities is enabling Aboriginal and Torres Strait Islander people to play a central role as co–creators of their own destinies.

"With empowerment of Indigenous people at all levels of the program, from governance, leadership, recruitment, selection, teaching, learning and community engagement, ARMA can be a critical part of Australia's strategy for creating the future remote medical workforce."

Kym Thomas, University of Adelaide Academic team (A-team), Nukunu Elder, Port Augusta

With key Aboriginal organisational partnerships, highly engaged Aboriginal community–controlled health organisations and an active A-team, ARMA will be well situated to facilitate self-determination of Indigenous people within its institution and the wider community. Everyone involved in ARMA can share the responsibility for meaningfully addressing Indigenous health inequities.

The collective responsibility to enact change in Indigenous health will be achieved through two-way governance that nurtures relationships between Indigenous and non-Indigenous partners at all levels of the organisation.[32]

The two-way approach draws on the strengths of Indigenous and mainstream knowledge and worldviews to create culturally responsive and respectful medical education.[33] This will prepare all ARMA graduates to be skilled and knowledgeable in Aboriginal health to make a meaningful contribution to advancing health outcomes for Aboriginal communities.

"Two-way governance facilitates an approach of Indigenous and non-Indigenous people working collaboratively in decision-making structures in medical education."

Dr Andrea McKivett, Gija woman, medical doctor, passionate medical education and public health researcher

Selection as the most important assessment

Statistically, the biggest hurdle to becoming a doctor is getting into medicine.

ARMA will nurture interested remote students

Currently remote Aboriginal students can gain intensive mentoring and support during high school through The University of Adelaide Karnkanthi Indigenous Education Program.[34] Several states also have programs to help remote and rural students understand the medical courses in their state.

ARMA will build on these approaches by developing site–specific recruitment programs for high school students, and importantly, for Aboriginal people with tertiary or vocational education and training qualifications who want to study medicine on country.

In each of the eight program sites, a recruitment officer will work closely with schools and Aboriginal community–controlled health organisations in their regions. Opportunities for local clinical work experience and 'try medical school' programs will encourage local people to consider medicine and prepare for selection.

Select students who choose remote

The University of Adelaide and ARMA will have an evidence–based selection process to meet the 50% Indigenous intake goal and ensure student success.

Currently only 7% of students attending Australian rural clinical schools are interested in remote and small–town rural practice. The main predictors of small–town rural generalist practice are present at selection into medical school.[35]

Community-engaged selection for remote practice, nurtured through longitudinal remote and rural training, will enhance Australia's capacity to create the medical workforce we need.

Train closer to country – where the workforce is needed

Where students can remain in one site and progress seamlessly through the medical pipeline, we know they frequently settle and create the next generation medical workforce. There are few places in remote Australia which have previously been able to connect the training pathway from high school to rural generalist.

The Australian Remote Medicine Academy seeks to change this, aligning with the Australian Government's current focus on tertiary reforms in remote Australia.[36]

It is planned that each of the eight ARMA sites will have:

- 5 rural generalist registrars who will begin specialist training each year (Year 8 of the pathway), working across the local RFDS, Aboriginal medical services, and other local and outreach health services

  They will spread their time between:

  - providing clinical services under appropriate supervision
  - training toward their fellowship qualifications
  - teaching the medical students based in the region.

- 5 students each year (during Year 1 of the pathway) who will begin The University of Adelaide 6-year Bachelor of Medical Studies and Doctor of Medicine.

These students will progress through their program learning through online lectures, simulation activities, local face–to–face tutorials facilitated by a resident learning coach, and clinical training within the local RFDS base, Aboriginal medical service and local health services.

Although based in one remote community for most of their medical school or fellowship training, students may have special placements elsewhere in Australia or overseas, to meet curriculum requirements and to develop skills needed to care for patients and the community.

"Once ARMA is fully established across eight sites, it will be training 240 medical students and 240 rural generalist doctors-in-training (through ACRRM) in remote and rural areas."

Marita Cowie AM, CEO ACRRM

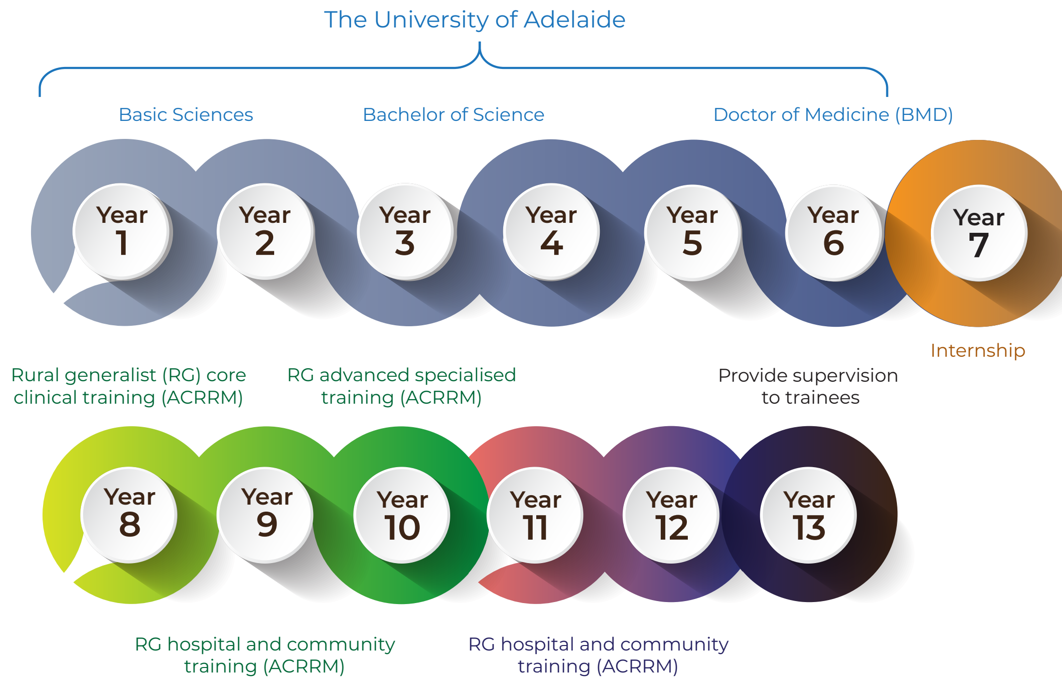
Professor Alex Brown

Alex attended medical school at the University of Newcastle, before working in hospitals on the central coast of NSW. He completed his Master of Public Health in Israel before returning to Alice Springs where he spent 14 years.

Following a remarkable contribution to the Alice Springs Centre of Disease Control, the Menzies School of Health Research and the Baker IDI Health and Diabetes Institute, Professor Alex Brown joined South Australian Health and Medical Research Institute (SAHMRI) to lead Aboriginal health research in 2012.

He now oversees a research team focused on Indigenous chronic disease and leads projects in cardiovascular disease, diabetes, cancer and healthcare models.

The ARMA Journey



Note: While rural generalist training will be encouraged, it is up to the individual student which specialty training they choose. Students can choose a direction for further medical training after Year 7 of the pathway.

Course structure

Although based in one remote community for most of their medical school or fellowship training, students may have special placements elsewhere in Australia or overseas, to meet curriculum requirements and to develop skills needed to care for patients and the community.

Many other universities expose students to the frontline of rural medicine and health, but this is usually only for one to two years in regions closer to metropolitan centres.

ARMA's teaching program delivered through the prestigious University of Adelaide, will serve the population of the largest landmass of any medical school in the world.

The University's Adelaide Rural Clinical School already has more than 10 well-established medical student placement sites across South Australian regional and rural areas and one in New South Wales.

In this model, students spend up to a full academic year serving remote or rural communities in Year 5 of the course, as well as short–term placements in Years 4 and 6.

ARMA's foundation coincides with major curriculum restructure at the Adelaide Medical School. In 2022, it will move from a bachelor–level degree to a combined Bachelor and Medical Doctorate (BMD). This new course structure will assist ARMA to integrate.

A well-supported remote 'community of practice'

Remote regions have more in common with each other than they do with the capital cities in their state. Leveraging this connection, ARMA creates an opportunity for a beneficial distance network with enough critical mass to add value to individual communities and to remote Australia as a whole.

> "Social learning is about learning to 'be' a rural doctor not just learning to 'do' rural medicine."
>
> **Dr Louis Peachy FACRRM, rural generalist and AIDA inaugural chair**

Creating a network of remote sites also ensures that students can connect with each other, learning from and with their peers and those just ahead of them on the remote pathway to rural generalism.

ARMA students will shape the future of medicine.

Different learning journeys, same Go8 medical degree

ARMA's foundation coincides with major curriculum restructure at the Adelaide Medical School. In 2022, this new course structure will assist ARMA to integrate and yet remain distinct from the course based in Adelaide. Distinct features will include:

- two-way governance and student support to ensure cultural safety at each site
- promoting and prioritising Indigenous worldviews and values throughout the organisation including curriculum and student support structures
- evidence–based, frontline education support including learning coaches, programmatic assessment for learning (routine information and feedback about competence and progress)
- state–of–the art virtual and online education led by the Adelaide Medical School Simulation unit
- symbiotic partnerships with local RFDS, Aboriginal community–controlled health services, local generalist clinics and local healthcare providers
- high–tech clinical equipment for apprenticeship learning in clinical settings, such as portable ultrasound and point–of–care testing
- distance assessments and constant feedback for students about their performance.

The integrated curriculum will enable students to build their capabilities over time. ARMA students will study an equivalent, context–specific medical curriculum on par with medical students in the Adelaide city campus. They will undertake a different learning journey and be assessed to equivalent standards to reach the same BMD outcome.

Proposed infrastructure investment

ARMA will require direct investment in infrastructure for remote communities. Medical students and doctors–in–training will need access to the following infrastructure in their remote community:

- technology–enhanced tutorial rooms with state–of–the–art video connectivity and high–speed internet
- a pre–clinical science laboratory
- a clinical simulation unit with access to clinical equipment, manikins used to help simulate medical, surgical, or clinical scenarios and standardised patients
- library, common room and study space
- additional space in clinical settings to enable students to see patients under supervision (parallel consultation).

Shared resources – genuine connectivity

To support learners to connect to each other and with the community, ARMA aims to be 'embedded in the community' rather than building separated, 'sandstone campuses' in each region. This way, ARMA can use, expand and add value to existing community infrastructure.

In Port Augusta for example, the science laboratory is likely to be shared with a local high school or TAFE. Tutorial rooms, the library and common room may well be shared with the local professional development space at the Aboriginal community–controlled health service. The simulation unit and parallel consulting space may be shared across organisations, including the Adelaide Rural Clinical School, hospital and RFDS.

ARMA will develop local resources in consultation with local stakeholders and formalised partnerships created to ensure access to learners from collaborating organisations.

Pre–vocational and rural generalist trainees will work in the RFDS, national Aboriginal community–controlled health organisations, hospital and local general practices. Consulting rooms and other healthcare infrastructure will be the responsibility of the employing agency, but learning resources will be supported through ARMA.

This project will also require investment in local housing and accommodation for students and doctors–in–training, as well as staff who support the program. The net increase in people in the communities will encourage considerable increased investment in town infrastructure.

The ARMA program provides further impetus to increase internet connectivity in identified remote communities. This can potentially attract other internet–speed–dependent businesses.

Proposed human capital

An exciting aspect of the ARMA concept is the opportunities it creates to:

- increase local employment
- enrich established clinical roles
- attract new, highly qualified people to the ARMA communities.

ARMA will have a distributed leadership model, with people based across the remote sites providing operations management for the medical student, pre–vocational and vocational training as well as research, finance and travel coordination.

This proposed staff profile requires over $3.2 million per annum to be invested in local wages in each ARMA site, with an additional $2.7 million distributed across sites.

When all eight sites across Australia are up and running, ARMA will bring an estimated $27 million worth of new jobs and wages and an additional $10 million in other benefits to remote Australia annually.

Initially there may be existing employees seeking to expand their roles, local people seeking new careers, or people working in the field in other parts of Australia, who see ARMA as an exciting opportunity to build their skills, live, work and fulfill their passion for teaching and researching in remote regions. Later, ARMA will support alumni who have achieved their dream through the ARMA pathway taking on clinical academic positions within the program.

The ripple effect will have an impact on Australia's remote economy and society.

ARMA will bring people and finances into remote communities as each site will require the following roles and/or staff for the medical school component of the pathway:

- clinical dean to lead the local project
- several fractional clinical appointments to work as
  - » course coordinators (1.0FTE) to deliver topics across all sites
  - » clinical teachers (1.0FTE) to support medical students in each year level
  - » specialists and hospital clinical supervisors
  - » rural generalist educators to support doctors in training (1.2FTE)
- Aboriginal cultural advisor (1.0FTE)
- Aboriginal cultural mentor (1.0FTE)
- simulation lab manager and clinical skills tutor (1.0FTE)
- public health academic (1.0FTE)
- basic science academic (1.0FTE)
- learning coaches (1.0FTE).

In addition, ARMA professional staff will support the program in each site including:

- a recruitment officer
- general administration
- IT technician
- site manager
- student support and coordination officers
- clinical skills technician
- Aboriginal liaison officer
- research assistant.

The next generation of remote doctors

To build an effective, qualified and experienced remote workforce that redresses the considerable health inequalities in regions far from urban settings, we need to engage local Indigenous people and their communities.

ARMA will prioritise access to tertiary health education opportunities for Aboriginal community members in recognition of the vital role Aboriginal people play in shaping equitable healthcare for all Australians.

This commitment is behind our goal to meaningfully support recruitment, retention and graduation of Aboriginal students into medicine and healthcare, beginning in early high school and continuing through to post-graduate medical training.

Imagine this...

The next generation of remote doctors live and train in their local communities, in culturally safe programs tailored to and considerate of their local cultural context.

Daniel Zweck
2019 ARCS alumnus

Daniel, a 2019 Aboriginal Adelaide Rural Clinical School (ARCS) alumnus, completed his final year as a medical student at The University of Adelaide. He was appointed winner of the Rotary Indigenous Health Scholarship in 2019 and was based at Mount Barker, South Australia.

"How will I contribute to improving Indigenous health as a qualified medical practitioner or health worker? Once I have completed my Bachelor of Medicine

They go on to serve their own communities or further their expertise to benefit other similar remote locales. No matter where they choose to work, whether rural, remote or urban, they will bring their skills and experience with them as doctors, teachers, researchers, policy makers or advocates for rural and remote patients.

Our partners each play critical roles in enacting this goal:

- AIDA supports Aboriginal doctors' pathways throughout training and their career
- RFDS and Aboriginal health services develop the future remote medical workforce and offer a vital lived experience not usually attainable during an undergraduate medical degree
- The University of Adelaide provides consistent remote medical training across all eight remote and rural sites, linking each remote training hub and its participants
- ACRRM boosts the educational experience and value of postgraduate training positions by connecting students to become vocationally registered rural generalists.

It is important to note that, through the RFDS' emergency primary aeromedical evacuations and other essential primary health care services will still be necessary throughout Australia.

ARMA will complement existing services by strategically planning for and training medical students in targeted areas. This will be where population needs are at their most critical and there are few, if any, other health services. The RFDS plays a pivotal role in catering for future workforce and community needs.

and Surgery, I want to work in a rural hospital. Health outcomes and quality of life for those affected with disease are poorer in rural and remote areas. There is a need for more doctors working rurally and remotely, where there is typically a higher proportion of Indigenous patients.

"I see this as an exciting career pathway, which I feel will be very rewarding being able to treat a high proportion of Indigenous patients and work towards improving health in rural and remote areas of South Australia."

A typical ARMA medical student week in Port Augusta

MY WEEK
Year 1 Semester – Week 3

Mon
- Morning: 9.00am-1.00pm online lectures
- Afternoon: 2.00-4.00pm team-based mini scenarios

Tue
- 9.00am key concept talk – cell biology
  11.00am case-based discussion
  – cardiac physiology
- 2.00-5.00pm histology virtual practical
  Cardiac muscle structure and function

Wed
- 9.00am-12.00pm history scenarios
  – chest pain
  11.00am case-based discussion
  – cardiac physiology
- 2.00pm intro to ECGs
  3.00-5.00pm basic resuscitation at RFDS simulation lab

Thu
- 9.00-11.00am private study
  11.00am-1.00pm small group learning
- 4.00-6.00pm biochemistry practical at local high school

Fri
- 9.00am discuss case summaries
  11.00am RAT online assessment
  12.30pm learning coach meeting
- Practical digital worksheets

MY WEEK
Year 3 Semester – Week 3

Mon
- Morning: 9.00am-1.00pm team-based mini scenarios
- Afternoon: 2.00-4.00pm online lectures – endocrinology

Tue
- 9.00am key concept talk – diabetes
  11.00am history scenarios – diabetes
- Private study

Wed
- 9.00am-12.00pm history scenarios – thirst
- 12.00pm tutorial with local rural generalist registrar – diabetic ketoacidosis

Thu
- 9.00-12.00am physical examination – endocrine
- 2.00-5.00pm clinical skills practical at RFDS base – hypoglycaemia

Fri
- 9.00am-2.00pm health promotion practical at ACCHO
- 3.00pm RAT online assessment
  4.30pm learning coach meeting

MY WEEK
Year 5 Semester – Week 3

Mon
- Morning: 8.00am ward round
  Then in GP clinic sister's station
- Afternoon: Assisted with anaesthetic list
  Skills test – respiratory physiology

Tue
- 8.00am ward round
  9.00am-12.30pm parallel consulting at local GP clinic
- 3.00-4.00pm geriatrics tutorial
  4.00-5.00pm rural medicine tutorial

Wed
- 8.00am ward round
  Then on call with GP – admitting a patient with leg ulcer and reviewed vascular anatomy
  On–call tonight
- 2.00pm-5.00pm parallel consulting at local GP clinic
  Evening on call – deliver a baby!

Thu
- Sleep in after being on call all night
  10.00am ward round
  12.00pm student lunch
- 2.00–4.00pm human reproductive health tutorial

Fri
- 8.00am ward round
  9.00am consulting with visiting renal physician
- Renal dialysis round with renal physician
  3.00pm early finish

ARMA's five-year staged roll-out

ARMA's proposed budget is provided to ministers and departments of Health, Education, Indigenous Australians, Infrastructure, Transport and Regional Development, Regional Health and Regional Communications as a separate in-confidence document.

Each site will have:

ACADEMIC STAFF

- professor/lead of ARMA
- education lead yr 1-3
- education lead yr 4-6
- elder in residence
- assessment academic

PROFESSIONAL STAFF

- executive of ARMA
- student operations coordinator
- postgrad and vocational trainee operations coordinator
- research management officer
- finance officer
- travel administrative officer
- medical student recruitment coordinator
- IT technician
- e-learning manager
- administration assistant

NONSALARIED EXPENDITURE

- employee–related expenditure
- travel/entertainment and motor vehicles
- student support/services
- property and maintenance
- rent and building leases
- utilities
- equipment (capital item and miscellaneous)
- education costs (teaching and research program costs)
- administration and communication costs
- tutorial and study space and common room and cultural safety area
- technology enhancement of tutorial rooms x 3 per site
- preclinical science learning laboratory
- clinical simulation laboratory upgrade
- parallel consulting kit–out.

John Flynn, OBE
(pioneering 'Flynn of the inland')

"If you start something worthwhile – nothing can stop it!"

Born in 1880, Flynn was an Australian Presbyterian minister who founded the Australian Inland Mission, which later separated into Frontier Services and the Presbyterian Inland Mission. He is also credited as the founder of the Royal Flying Doctor Service, the world's first air ambulance.

Flynn was appointed an Officer of the Order of the British Empire in 1933 and died in 1951 leaving an enduring legacy in the form of the Uniting Church of Australia's Frontier Services and the Presbyterian Church of Australia's Presbyterian Inland Mission, as well as the Royal Flying Doctor services that still deliver his vision of a 'mantle of safety' to the people of outback Australia.[37]

Economic and social benefits for remote Australia

Australia has a critical population health and primary healthcare problem. Working towards reducing inequalities, particularly for Aboriginal and Torres Strait Islander populations, requires collective action and commitment. Closing the Gap is still a vital Australian policy at the root of the ARMA proposal.

Economic

Apart from a moral imperative, there are considerable economic arguments behind this proposal.

For example:

- the cost of maintaining 'the status quo' to government by using 'fly in–fly out' medical practitioners and international medical graduates who prefer to be in a city setting
- the social and financial cost of health inequity
- the social and financial cost of unemployment and related socioeconomic problems in regional, rural and remote communities

offset by

- reducing the need for emergency/ health treatment RFDS retrievals, which increase patient stress and uncertainty, and cost at least $20,000 on average, per retrieval*
- building a knowledgeable, empathetic future medical workforce for remote areas
- local jobs and a positive future for people in remote and regional areas
- career opportunities in each region, also for existing staff
- the opportunity to retain trainees for the benefit of the region
- building a larger, integrated local industry for each regional 'hub'
- funding that stays in remote settings
- the flow–on effect of increased spending in each region.

*based on South Australian estimates.

Social and health equality

There is no doubt that remote communities, particularly Indigenous people, will benefit from the ARMA proposal in multiple other tangible and intangible ways. Here are just a few:

- reducing the health care access gap in regional and remote Australia
- improving health outcomes for people from acute or chronic conditions
- reducing preventable mortalities
- increasing tertiary medical education uptake by remote, very remote and rural Australians
- improving access to medical registrars in regional areas, in the longer term
- ARMA students as visible role models in local communities
- strengthening relationships with local schools
- building healthier communities across rural, regional and remote Australia.

EXIT
EXIT
FLIGHT NURSE

Managing risks

ARMA partners have conducted due diligence and considered risk factors and potential controls or mitigations. The table below is a summary of material risks only. Please request a comprehensive risk and mitigation strategy in the ARMA business case.

The impact of COVID–19

Rural and remote communities have experienced great hardship, with accumulated economic and societal impacts of fires, floods, droughts and lower healthcare access. Now

Consequence rating	Reputation	People – health*
Severe	• Loss of confidence in ARMA from government or philanthropists • Breakdown in relationship with one or several entities in ARMA MOU group, governance group and stakeholders • Risk event impacts on ability to meet ARMA objectives eg Covid–19, major disaster • Significant ongoing adverse publicity • Suicide of student • ARMA training fails to meet AMC/UoA and other relevant national accreditation standards	Fatalities or life-threatening injuries or illness or death and/or requiring ongoing rehabilitation and/or requiring no in–person contact
Major	• Government and philanthropic funding is not available or not enough to ensure success • Site loses confidence of the executive and or clinical lead • ARMA loses confidence of other key stakeholders eg RFDS, Aboriginal health clinic • Risk event impacts on ability to meet ARMA objective or several MOU objectives • Negative media coverage • Negative community /Indigenous community relationships resulting in loss of trust • Indigenous students do not feel culturally safe • Major milestones are not met • Government policies change and funded is severely cut	Serious injury or illness requiring hospitalisation and/or some rehabilitation
Medium	• Site board loses confidence in executive and senior management • Risk event impacts on ability to meet a overall and/or site objective or a number of site objectives • Major milestones are running behind • Delay of funding payments • ARMA does not meet the 50% recruitment and 95% graduation of Indigenous student target	Injury/illness requiring one off minor medical treatment
Minor	Risk event impacts on site and/or project objectives in terms of quality, timing	Minor injury requiring first aid only
Minimal	Low Impact	Minor injury not requiring treatment

the unprecedented Covid–19 health crisis will profoundly challenge these same vulnerable regions across Australia. These communities already experience inequality in per capita expenditure and services. More than ever, Australia needs the injection of economic stimulus, long–term financial commitment and community involvement in solutions to these disparities.

People – skills & resources	Financial	IT systems & assets	Integrity / compliance	Privacy / security
Protracted loss of critical skills or involvement	Greater than $500k impact on funds	Key system outage impacting on whole ARMA Loss of significant asset (eg building)	Exposure to significant damages and prosecution threatening operations Systematic and/or large-scale fraud	Compromise of personal data held by ARMA information
Major loss of capability or capacity leading to unavailability of critical skills	Between$400k – $100k impact on funds	Key system outage or loss affecting multiple areas Loss of essential assets – difficult or expensive to replace	Exposure to damages and prosecution of one or more persons Multiple cases of internal and/ or external fraud	Compromise of confidential information
Moderate loss of capability or capacity in ARMA staff leading to the unavailability of core skills	Between $100k –$50k impact on funds	System outage causing delay in key services Damage to essential assets	Technical legal challenge or legal breach Multiple minor reportable breaches Internal fraud	Compromise of protected information
Minor loss of capability or capacity in ARMA staff	Between $50k – $10k impact on funds	System disruption causing delay Damage to required assets	Non-compliance with internal policy or accidental breach of external requirement	Compromise of information
Low-level loss of capabilities or capacity in ARMA not requiring action	Less than $5k impact on funds	Low-level system disruption causing in–convenience Minor damage to non-essential assets	Non-compliance with internal procedures No external penalty imposed	Information provided to internal stakeholder incorrectly

Be part of the solution

ARMA will offer end–to-end tertiary medical education across eight sites in remote Australia as a solution to the increasing remote healthcare crises. This means students can study 12 years of training from secondary school through medical school, internship and vocational training to become a rural generalist.

Graduates can choose to work in primary care, including in their own remote area, or join another of the many specialist disciplines such as emergency medicine or anaesthetics.

Making a genuine, lasting difference needs a whole–community approach that incorporates:

- training our doctors in dedicated primary health settings
- offering a remote medical degree in the very communities that most need them
- building the capability, capacity and the social capital of remote communities
- building sustainable health and medical care in remote communities
- nurturing a group of high–profile, well-known partners skilled and knowledgeable in the challenges faced by our remote population
- a foundation of evidence–based population research
- increasing investment in health services, education and tertiary education
- raising information technology infrastructure in remote areas
- investment in remote regions, which will pay dividends for Australia as a nation.

ARMA is building on proven experience, investing in solid evidence and solving a seemingly intractable crisis.

Now is the time to do things differently!

All it takes is the funding, expertise and the will to make it happen.

Monica Barolits-McCabe CEO, AIDA

Contacts

Ms Susanne Tegen
Development Consultant,
Australian Remote Medicine Academy (ARMA)
susanne.tegen@adelaide.edu.au
Mobile 0429 100 464

Professor Lucie Walters
Director
Adelaide Rural Clinical School (ARCS)
lucie.walters@adelaide.edu.au
Mobile 0409 692 359

Project contributors

MOU group

Monica Barolitz-McCabe
BCom/Acc
Chief Executive Officer,
Australian Indigenous Doctors Association

Frank Quinlan
BA, FAICD
Chief Executive Officer,
Royal Flying Doctor Service

Marita Cowie AM
BA, BBus, Med
Chief Executive Officer,
Australian College of Remote and Rural Medicine

Prof Benjamin Kile
PhD, BSc (Hons), LLB
Executive Dean,
Health and Medical Sciences
The University of Adelaide

Prof Lucie Walters
PhD, MBBS, DCH, DRANZCOG, FRACGP, FACRRM
Director of Adelaide Rural Clinical School (ARCS)

Ms Susanne Tegen
MBA, BA, DipEd,
GCCM, FAICD, FARL
Australian Remote Medical Academy Development Consultant

Emeritus Prof Paul Worley
PhD, MBBS, DRANZCOG,
FRACGP, FACRRM, MBA, GAICD
Inaugural Rural Health Commissioner
Clinical Consultant

Project development group

Prof Lucie Walters, Director, Adelaide Rural Clinical School

Ms Susanne Tegen, Development Consultant, Australian Remote Medicine Academy

Dr Andrea McKivett, MBBS, MAH, Gija woman, lecturer and Indigenous medical education researcher, Adelaide Rural Clinical School

Mr Kym Thomas, Lecturer, Nukunu/Ngadjuri Elder and Aboriginal and Torres Strait Islander cultural awareness educator, Adelaide Rural Clinical School

Ms Jenna Patterson, Project Officer, Australian Remote Medicine Academy

Ms Dee Risley, Operation Manager, Adelaide Rural Clinical School

Contributors

Dr Pascale Dettwiller
DPharm, MHumBio, MAICD, MRPSGB, HMI
Associate Prof Research, Adelaide Rural Clinical School

References

1. Commonwealth of Australia, National Regional, Rural and Remote Tertiary Education Strategy Final Report, available at ISBN 978-1-76051-733-5, accessed September 2020

2. National Rural Generalist Taskforce, Advice to the National Rural Health Commissioner on the Development of a National Rural Generalist Pathway, 2018

3. Australia K, Independent Evaluation of the Rural Health Multidisciplinary Training Program, Final Report to the Commonwealth Department of Health, 2020

4. Liberal and Nationals Government leads way for rural healthcare with $62m rural generalist pathway program [press release], 2019

5. 100 extra places to train more rural doctors [press release], 2020

6. Karnkanthi Indigenous Education Program, available at https://www.adelaide.edu.au/wirltu-yarlu/study-with-us/karnkanthi-indigenous-education-program, accessed September 2020

7. Australia K, Independent Evaluation of the Rural Health Multidisciplinary Training Program, Final Report to the Commonwealth Department of Health, 2020

8. https://www.adelaide.edu.au/about/world-rankings

9. James R, Wyn J, Baldwin G, Hepworth G, McInnis C, Stephanou A, Rural and Isolated School Students and Their Higher Education Choices: A Re-Examination of Student Location, Socioeconomic Background, and Educational Advantage and Disadvantage, Commissioned Report, ERIC, 1999

10. Australian Institute of Health and Welfare, Rural and Remote Health, Cat. no. PHE 255, Canberra, 2019

11. Australian Institute of Health and Welfare, Rural and Remote Health, Cat. no. PHE 255, Canberra, 2019

12. Australian Institute of Health and Welfare, Rural and Remote Health, Cat. no. PHE 255, Canberra, 2019

13. Australia's Regions: Investing In Their Future The Recommendations of the Strategic Regional Growth Expert Panel for Investing in the Future of Regional Australia, 2020

14. Gardiner FW, Bishop L, Foreman R, Potter J, Gale, L., Laverty M. Cardiovascular Disease Prevention and Rehabilitation in Rural and Remote Populations, Canberra, The Royal Flying Doctor Service of Australia, available at https://www.flyingdoctor.org.au/what-we-do/research, accessed September 2020

15. Commonwealth of Australia, National Regional, Rural and Remote Tertiary Education Strategy Final Report, available at ISBN 978-1-76051-733-5, accessed September 2020

16. Mitchell R, Chong S, Comparison of Injury-Related Hospitalised Morbidity and Mortality in Urban and Rural Areas in Australia, 2010

17. Caldwell TM, Jorm AF, Dear KB, Suicide and Mental Health in Rural, Remote and Metropolitan Areas in Australia, Medical Journal of Australia, 2004;181:S10-S14

18. Australian Institute of Health and Welfare, Rural and Remote Health, Cat. no. PHE 255, Canberra, 2019

19. Royal Flying Doctor Service, About the RFDS, available at https://www.flyingdoctor.org.au/about-the-rfds/, accessed September 2020, published 2020

[20] Hyde Z, Smith K, Flicker L, et al, Mortality in a Cohort of Remote-Living Aboriginal Australians and Associated Factors, PloS one, 2018;13(4):e0195030

[21] Australian Bureau of Statistics, National Aboriginal and Torres Strait Islander Health Survey, 2018-19

[22] Australian Bureau of Statistics, 4715.0 National Aboriginal and Torres Strait Islander Health Survey, 2018-19 Ear disease and hearing problems

[23] South Australian Health Performance Council, Institutional Racism – Audit of South Australia's Local Health Networks, available at https://www.hpcsa.com.au/reports/institutional-racism#downloads, accessed September 2020

[24] Malatzky C, Haines H, Glenister K. Racism in a Place of Healthcare: The qualitative case of a rural Australian hospital. Journal of Community Medicine & Health Education, 2020;10(3):Article number: 1000681

[25] Hart MB, Moore MJ, Laverty M, Improving Indigenous Health Through Education, The Medical Journal of Australia, 2017;207(1):11-12

[26] James R, Wyn J, Baldwin G, Hepworth G, McInnis C, Stephanou A, Rural and Isolated School Students and Their Higher Education Choices: A Re-Examination of Student Location, Socioeconomic Background, and Educational Advantage and Disadvantage, Commissioned Report, ERIC, 1999

[27] Commonwealth of Australia, National Regional, Rural and Remote Tertiary Education Strategy Final Report, available at ISBN 978-1-76051-733-5, accessed September 2020

[28] Australian Government Department of Education Skills and Employment, Retention and Attainment of Regional, Rural and Remote Learners In Tertiary Education, available at https://docs.education.gov.au/system/files/doc/other/issues_paper_3_-_retention_and_attainment.pdf, accessed September 2020

[29] Hart MB, Moore MJ, Laverty M. Improving Indigenous Health Through Education, The Medical Journal of Australia, 2017;207(1):11-12

[30] Australian Health Practitioner Regulation Agency, 2017–2018 Annual Report: Our National Scheme: For safer healthcare. 2018

[31] O'Sullivan B, Russell DJ, McGrail MR, Scott A. Reviewing Reliance on Overseas-Trained Doctors In Rural Australia and Planning For Self-Sufficiency: Applying 10 years' MABEL evidence, Human Resources for Health, 2019;17(1):8

[32] McKivett A, Hudson JN, McDermott D, Paul D, Two-Eyed Seeing: A useful gaze in Indigenous medical education research, Medical Education, 2020;54(3):217-224

[33] McKivett A, Thomas K, Two-ways Governance Model, 2020

[34] Karnkanthi Indigenous Education Program, available at https://www.adelaide.edu.au/wirltu-yarlu/study-with-us/karnkanthi-indigenous-education-program, accessed September 2020

[35] Raftery D, Isaac V, Walters L, What are the Factors that Increase Medical Students' Interest in Small Rural and Remote Practice in Australia? AJRH, in press September 2020

[36] Tertiary reforms to unleash potential of regional Australia [press release], 2020

[37] https://www.aihw.gov.au/reports/rural-remote-australians/rural-remote-health/contents/access-to-health-care

"It is rare that an idea, a way of doing things differently is agreed upon by key stakeholders and community. A moment such as this; after fire, drought and Covid19, an innovative approach is needed to solve the disparity in health and education of our remote and rural communities. The time remote and rural Australia builds on its past, and develops the medical workforce needed in future, is now, and we cannot waste this opportunity".

Susi Tegen
ARMA Consultant and Rural Advocate

Australian Remote Medicine Academy

c/- The University of Adelaide
AUSTRALIA 5005
Ph: +61 429 100 464
email: susanne.tegen@adelaide.edu.au