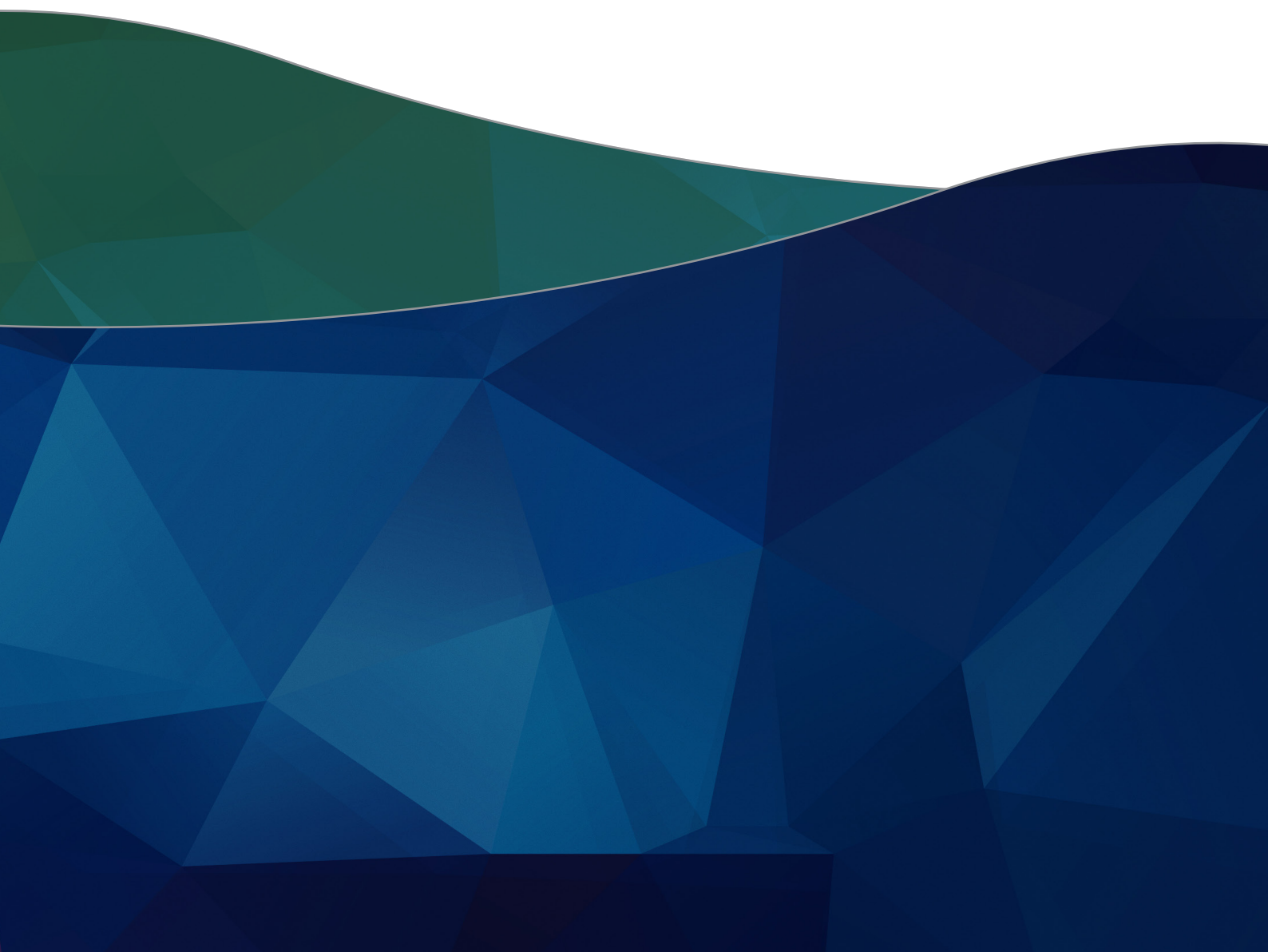**Australian Government**

National Rural Health Commissioner

Report for the Minister for Regional Health, Regional Communications and Local Government
on the
Improvement of Access, Quality and Distribution of Allied Health Services in Regional, Rural and Remote Australia

June 2020

Attribution

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Disclaimer

The National Rural Health Commissioner is an independent statutory officer. The views expressed in this document do not represent an official position of the Commonwealth Department of Health or the Australian Government. Publication of this document by the Commissioner does not necessarily reflect the views of the Department of Health or indicate a commitment to a particular course of action.

Acknowledgement of Country

The National Rural Health Commissioner (the Commissioner) acknowledges the Traditional Owners and Custodians of Country throughout Australia. The Commissioner recognises the strength and resilience of Aboriginal and Torres Strait Islander people and acknowledges and respects their continuing connections and relationships to country, rivers, land and sea. The Commissioner acknowledges and respects the Traditional Custodians upon whose ancestral lands our health services are located and the ongoing contribution Aboriginal and Torres Strait Islander people make across the health system and wider community. The Commissioner also pays his respects to Elders past, present and emerging and extends that respect to all Traditional Custodians of this land.

In developing this Report the Commissioner has been guided by learnings from Aboriginal and Torres Strait Islander people's concepts of health and wellbeing, in the importance of community control and connection to country, and with respect and consideration for the wisdom of Elders and local decision-making.

A message from the National Rural Health Commissioner

In my many visits across Australia, I have witnessed the incredibly valuable service that our current rural allied health professionals provide to regional, rural and remote communities. I have heard a range of issues along with options to improve access, distribution and the quality of rural allied health services for the communities they serve.

This Report is the culmination of a detailed review of 20 years of published rural allied health literature along with findings from a broad-scale consultation with the rural allied health sector at a national, jurisdictional and local level. It represents the contributions of a diverse range of consumers, students, allied health, medical and nursing professionals, researchers, teachers and health service leaders in rural and remote communities around Australia.

This Report is intended to provide practical strategies for the Commonwealth to make both immediate and long term impacts in rural communities. I recognise the generous contribution to this document from a breadth of communities, government leaders, and the broader rural sector. In particular, I wish to recognise the privilege of working with Commonwealth Ministers who are committed to making a difference in rural health and have supported me in taking a 'rural health team' approach to my work.

Ultimately, the passion to see healthy rural communities, supported by sustainable health services, is driving this work. Now more than ever, as we face the COVID-19 pandemic together, regional, rural and remote Australia needs the flexible responsiveness of sustainable, locally trained workforce. I believe a rural allied health workforce that is designed for the future health, economic development and success of rural Australia as outlined in this Report, is achievable.

Terminology

In this Report, the Modified Monash Model (MMM) is used to differentiate areas of Australia in terms of their remoteness and population. The Commissioner acknowledges that there are important considerations beyond distance and size that distinguish one area of Australia from another and that these can be accommodated in planning and implementation. However, for simplicity, this document occasionally uses collective terms to describe certain areas of Australia and those terms should be taken broadly to have the following meanings:

- 'Regional' means MMM 2 and 3 areas
- 'Rural' means MMM 4 and 5 areas
- 'Remote' means MMM 6 and 7 areas

The terms 'Aboriginal and Torres Strait Islander' and 'Indigenous' are used interchangeably throughout this document with respect.

The term 'health service provider' is used in this report to include collective individual service providers as well as health service organisations from the public, private and not for profit sectors.

The terms 'Commonwealth' and 'Australian Government' are used interchangeably throughout this document.

The Office of National Rural Health Commissioner

This Report is prepared for the Minister for Regional Health, Regional Communications and Local Government, Hon Mark Coulton, MP, (the Minister), and fulfils the requirements of the 2019 and 2020 Statements of Expectations.

The *Health Insurance Act 1973* (the Act) provides the legislative basis for the appointment and the functions of the National Rural Health Commissioner (the Commissioner).

In accordance with the Act, the functions of the Commissioner are to provide independent and objective advice in relation to rural heath to the Minister responsible for rural health.

In December 2018, Senator the Hon Bridget McKenzie, Minister for Regional Services, Minister for Sport, Minister for Local Government and Decentralisation issued a Statement of Expectations[1] to the National Rural Health Commissioner for advice on rural allied health workforce reform.

Statement of Expectations 2019:

1. *Conduct a literature review to: explore the means by which allied health services are delivered in rural, regional and remote areas; identify existing or developing issues; identify potential duplication of services provided by the Commonwealth and jurisdictions; and provide an evidence base for advice to Government.*

2. *Work with the Australian Allied Health Leadership Forum (which includes Allied Health Professions Australia, Indigenous Allied Health Australia, and Services for Australian Rural and Remote Allied Health Australia), Australian Healthcare and Hospitals Association and the National Rural Health Alliance to:*

   a. *Prepare a discussion paper on policy options, within the Commonwealth's remit, to improve the quality, accessibility and distribution of allied health services in regional, rural and remote Australia;*

   b. *Deliver a final report with evidence-based recommendations for consideration by the Minister;*

   c. *Consult on policy concepts in the discussion paper. The above organisations can consult independently, on your behalf via their membership, and report back to you.*

3. *Provide advice on rural allied health matters at the request of the minister responsible for rural health.*

In December 2019, Minister Coulton issued a Statement of Expectations[2] to the National Rural Health Commissioner for further advice on the implementation of rural allied health workforce reform.

Statement of Expectations 2020:

1. *Priority for the National Rural Health Commissioner*

Your first priority is to refine your advice to Government on effective and efficient strategies to improve the access, quality and distribution of allied health services in regional, rural and remote Australia. Due to the significant reforms that you are suggesting, it is important that the report outlines priorities for implementation; potential barriers; and other practical implementation considerations.

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[1]   Australian Government (2018) [Accessed 31 Mar 2020] Retrieved from: https://www1.health.gov.au/internet/main/publishing.nsf/Content/National-Rural-Health-Commissioner-publications

[2]   Australian Government (2019) [Accessed 31 Mar 2020] Retrieved from: https://www1.health.gov.au/internet/main/publishing.nsf/Content/815AFEED0337CF95CA2581D30076D095/$File/Statement%20of%20Expectations%20-%202020.pdf

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Executive Summary

Allied health professionals are essential to the physical, social and psychological wellbeing of people living in rural and remote Australia. They are integral to the care of rural and remote communities, whose capacity to achieve optimal health outcomes is limited by inequitable access to appropriate health services. They are also integral to the economic development of rural and remote populations particularly in relation to workforce participation and educational outcomes.

There is both an undersupply and a maldistribution of allied health services in rural and remote towns of less than 30,000 people that can be addressed by an integrated service and learning pathway linked to more and better structured jobs, greater participation of Indigenous Australians, improved access to workforce data and through national allied health leadership.

In Australia, the allied health professions are characterised by a diverse mix of regulated and self-regulated disciplines. Allied health professionals work across a variety of sectors including primary, secondary, tertiary and quaternary health care, aged care, mental health, disability, justice, alcohol and other drugs, early childhood and education. In rural and remote settings, they often work in areas of market failure where service delivery is fragmented and vulnerable to short-term contracts and disparate funding arrangements.

Beginning in December 2018, the National Rural Health Commissioner (the Commissioner) has consulted with the allied health sector to develop a set of recommendations aimed at improving the quality of services, and equitable access to and distribution of the regional, rural and remote allied health workforce. While recognising there is unmet need for allied health services across all of regional, rural and remote Australia, the particular focus of the Commissioner's work has been on improving access to services for populations living in Modified Monash Model 4-7, where the maldistribution is most pernicious.

The Commissioner's work has been framed by the concept of the 'demographic dividend' – that an investment in the health of populations leads to improved economic outcomes that produce benefits not only at a local or regional level but at a national level as well. While the definition below refers to low and middle income countries, it is comparable to the geographical areas described in this Report where income, resources and health outcomes are markedly poorer than those experienced by populations living in higher income metropolitan centres:

> *Economic growth and development depends on a healthy population. Around one quarter of economic growth between 2000 and 2011 in low- and middle income countries is estimated to result from the value of improvements to health. The returns on investment in health are estimated to be 9 to 1. One extra year of life expectancy has been shown to raise GDP per capita by about 4%... This contributes to a faster demographic transition and its associated economic benefits, often called the demographic dividend.*[3]

In developing this Report and the recommendations, the broad quality principles of the Commissioner's 2018 National Rural Generalist Pathway for medicine have been continued. These principles are guided by learnings from Aboriginal and Torres Strait Islander people's understandings of health and wellbeing. These principles recognise the importance of community control and connection to country, as well as respect and consideration for the wisdom of Elders and local decision-making.

Extensive research over two decades has demonstrated the connection between rural origin and the retention of rural practitioners. Research has also shown us that extended rural exposure during training has a positive influence on early-career decision making and higher rates of retention. However rural students face numerous barriers to accessing tertiary allied health courses and limited options to undertake their training in rural settings. The majority of rural allied health training consists of short-term placements in MMM2-3 locations, while the greatest need for workforce occurs in MMM4-7 regions. An added complexity is the lack of capacity for practitioners (who are often solo or part-time) in these areas to supervise students. The recommendations in this Report are designed to address these issues by

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3   High-Level Commission on Health, Employment and Economic Development. *Working for health and growth: investing in the health workforce*. Geneva; World Health Organization: 2016.

combining service provision and learning into a single networked system that supports students, trainees and practitioners while providing continuity of care to communities across multiple towns.

This Report also acknowledges the strengths of rural and remote communities and the need to leverage local education and employment opportunities to create an environment where all rural and remote people have better health, more jobs, and the opportunity to flourish and create their own futures. These principles aim to add further value to rural allied health services by:

- **Improving access**
  Integrating regional, rural and remote 'own grown' health training systems with networked, integrated health service systems to overcome the disadvantage rural and remote communities face in accessing training and appropriate healthcare.

- **Enhancing quality**
  Increasing the participation of Aboriginal and Torres Strait Islander peoples in the allied health professions and enhancing cultural safety in rural allied health education, training and service delivery.

- **Expanding distribution**
  Providing complete and accurate allied health workforce data including distribution patterns to improve the understanding of complex issues related to rural allied health policy and service delivery and to enhance future rural workforce planning and policy design.

The recommendations are designed to promote better use of existing resources and infrastructure to address current gaps in allied health workforce distribution and service provision in rural and remote populations by investing in nationally cohesive strategies which maintain flexibility for local application. By combining training and service provision into a single system, matched to community need and supported through sub-regional integrated networks, rural and remote communities will have access to a sustainable workforce providing appropriate allied health services. These collaborative and integrated allied health services will lead to improved health, economies of scale, and greater wellbeing. These conditions, in turn, will yield enhanced social and economic development and participation for all rural and remote communities.

When implemented, the recommendations within this Report will contribute to meeting the objectives of the first three pillars of Australia's *Long Term National Health Plan* (2019) - guaranteeing Medicare and stronger primary care including stronger rural health; supporting public and private hospitals; and prioritising mental health and preventative health. They will also assist in meeting the targets in the Closing the Gap strategy and the objectives of the *Aboriginal and Torres Strait Islander Health Workforce Strategic Framework* and strategies defined in the *National Aboriginal and Torres Strait Islander Health Workforce Plan* expected to be finalised in late 2020. The recommendations will support the broader vision underpinning the *Stronger Rural Health Strategy* and *10-year Primary Health Care Plan*; and, through enhanced allied health leadership, enable cross-sector solutions essential to the success of the National Disability Insurance Scheme (NDIS) and My Aged Care programs. Each recommendation recognises and builds upon significant work that has already been undertaken at local, jurisdictional and national levels.

During the development of this Report, rural and remote communities across the country have faced a series of unprecedented natural disasters that have destroyed infrastructure, homes and livelihoods and resulted, in some communities, in a tragic loss of life. As rural communities turn to the urgent task of rebuilding their towns, yet another challenge has emerged – the COVID-19 pandemic. There is no stronger evidence than the potential ramifications of this health emergency to demonstrate how fragile the health workforce is in rural and remote communities and how acute the need is for a more sustainable approach to health service provision. Australia is, however, fortunate that more than two decades of consistent Commonwealth investment has built an infrastructure that, through the recommendations outlined in this Report, can be transformed into an integrated system that increases allied health workforce and service provision while strengthening rural and remote communities. We do not need to reinvent the wheel, but we do need to utilise, combine and redesign our resources and systems in a way that matches the needs of rural and remote communities. The timing for reform has never been more urgent.

Summary of Recommendations

The Commissioner has prioritised strategies achievable for the Commonwealth Government, acknowledging that the perspectives and experiences of other sectors and jurisdictions are also important requirements for forming and implementing strong and effective policies. The Commissioner's recommendations build on policies and investments in infrastructure in regional, rural and remote Australia, including over 20 years of investment in University Departments of Rural Health (UDRH), Aboriginal Community Controlled Health Services, Rural Workforce Agencies, Divisions of General Practice/Medicare Locals and Primary Health Networks.

The recommendations have been developed to work interdependently, while supporting existing programs and plans. They are designed to be the catalyst for the larger system-wide change necessary within current allied health and rural health environments. The recommendations are intentionally focused on promoting positive and widespread action towards an improved and self-sustaining system of healthcare in MMM4-7 regions where the need for access to appropriate allied health services is most acute.

While Recommendations 1, 2 and 3 are each aligned to the themes access, quality or distribution, it is important to note that the recommendations have been developed to work together to improve workforce distribution and quality and access to allied health services in regional, rural and remote Australia. It is also important to note that the recommendations are not ordered hierarchically but as a package, a structured whole, and are intentionally focused on stimulating system elements that would enhance and integrate existing efforts and initiate further progress.

Recommendation 1 – Improving Access

To improve access to allied health services, it is recommended that the Commonwealth progressively establish, initially through a series of demonstration trial sites, *Service and Learning Consortia* across rural and remote Australia. With the support of new and existing program funding, *Service and Learning Consortia* will integrate rural and remote 'grow your own' health training systems with networked rural and remote health service systems. *Service and Learning Consortia* will consist of local private, public and not for profit service providers, training providers, and community representatives collaborating across multi-town and multi-sector networks, according to community need. Once established, *Service and Learning Consortia* will improve recruitment and retention of allied health professionals by making rural and remote allied health practice and training more attractive and better supported.

Recommendation 2 – Enhancing Quality

To enhance the quality of allied health services in rural and remote Australia, it is recommended that the Commonwealth invest in strategies to increase the participation of Aboriginal and Torres Strait Islander people in the allied health workforce. Two strategies recommended are: further expansion of the National Aboriginal and Torres Strait Islander Health Academy model to all Australian jurisdictions; and the creation of a Leaders in Indigenous Allied Health Training and Education Network. Once established, these strategies will increase pathways for Aboriginal and Torres Strait Islander people to enter the allied health workforce and will improve the cultural safety of rural and remote allied health services and training for all Australians.

Recommendation 3 – Expanding Distribution

To expand the distribution of the allied health workforce across rural and remote Australia, it is recommended that, building on current national and jurisdictional initiatives, the Commonwealth develops a National Allied Health Data Strategy. This Strategy will include building a geospatial Allied Health Minimum Dataset that incorporates comprehensive rural and remote allied health workforce data. Once established, this data strategy and minimum dataset will inform and improve the design and development of rural and remote allied health workforce planning and policy.

Recommendation 4 - National Leadership

It is recommended that the Commonwealth appoint a dedicated full-time Chief Allied Health Officer (CAHO) to work across sectors and departments including health, mental health, disability, aged care, early childhood, education and training, justice, and social services. The CAHO will work with relevant peak bodies and consumer advisory groups to ensure equity of access to high quality allied health services for all rural and remote communities. Once established, the CAHO will provide valuable allied health input and leadership into Commonwealth government policy.

Report Structure

The Report is divided into four chapters.

Chapter one provides an overview of the allied health workforce in rural and remote Australia and the particular challenges communities face in achieving continuous and appropriate access to healthcare.

Chapter two describes the development of the evidence base, which began with a review of available literature related to the improvement of quality, access and distribution of allied health services across Australia and continued with a consultation process undertaken to strengthen the evidence base and to develop the recommendations.

Chapter three provides the Commissioner's recommendations for improving the quality, access and distribution of allied health services across Australia. For each recommendation, the key elements are described and an overview of the supporting evidence is provided which draws on the literature and the combined expertise and advice of the sector and key stakeholders.

Chapter four provides the Commissioner's closing remarks related to the provision of high quality and sustainable allied health services in regional, rural and remote Australia.

Attachments 1 and 2 include the record of consultations including the details of the groups and individuals who provided formal feedback on the draft policy options and Interim Report developed by the Commissioner and released for public comment.

The Literature Review is included in this Report as Attachment 3.

Chapter One: Introduction

Allied health professionals underpin the health and wellbeing of our nation. They are the quiet achievers of our health, disability, education, aged-care, and social service sectors. Without them our schools, workplaces, homes and aged-care facilities all struggle to realise their potential. Communities suffer and economic development stalls.

Allied health professionals preserve the quality of life in communities. Consider the challenges that confront any rural Australian community. Now consider what allied health professionals do to minimise the impact of such challenges and optimise the health and wellbeing of these communities. Occupational Therapists help younger school starters with learning difficulties by giving them new skills for school. Psychologists provide strategies to manage wellbeing for high school students and help them choose a job that fits their strengths. Pharmacists ensure medications are safely managed. Speech Therapists treat those surviving stroke to recover speech and quality of life. Audiologists make sure those with hearing loss can socialise and participate in conversations. Podiatrists prevent pain, discomfort and foot amputations for residents in nursing homes. Physiotherapists rehabilitate sports and farm injuries to stop them becoming chronic. Radiographers make sure the diagnosis is accurate. Dieticians and Exercise Physiologists promote healthy lifestyles for communities to avoid diabetes and avoid reduced productivity. Hospital Scientists provide the biochemical markers needed to track progress toward better health. Social Workers facilitate community access to the services and resources needed at times of hardship. Counsellors work with others to keep families together and help people cope with the traumas of life and make wise and effective choices.

Healthy communities become wealthy communities. Healthy communities recover faster and better from natural disasters. Thus allied health professionals are critical to our society's wellbeing and prosperity and rural Australia deserves its fair share of both. Australia delivers one of the world's best health systems and continues to improve through strategies set out in *Australia's Long Term National Health Plan*, by achieving the targets in *Closing the Gap*, the *National Preventative Health Strategy*, and by implementing the broader vision that underpins the *Stronger Rural Health Strategy* and the *10-year Primary Health Care Plan*. It is a system prepared to respond accordingly to the significant issues raised by the National Disability Insurance Scheme (NDIS) Thin Markets Project, the Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability and the Royal Commission into Aged Care Quality and Safety. As Australia embarks on recovering from the bushfires, floods, drought and the COVID-19 pandemic, there has never been a more important time to ensure equitable access, quality and distribution of allied health services for all Australians.

Many Professions Addressing Broad Needs

In 2012, the Australian Institute of Health and Welfare (AIHW) reported there were 126,788 registered allied health clinicians in Australia (this count included 11 allied health professions)[4]. Allied Health Professions Australia (APHA) estimates the 2019 figure to be 195,000 (including 22 professions) with approximately 15,000 allied health professionals working in rural and remote areas of Australia. The sector provides diagnosis, treatment and rehabilitation, often autonomously, delivering an estimated 200 million health services annually.

The allied health sector is represented by a number of associations and organisations including: Allied Health Professions Australia (AHPA), Australian Council of Deans of Health Sciences (ACDHS), Indigenous Allied Health Australia (IAHA), National Allied Health Advisors and Chief Officers (NAHAC), and Services for Australian Rural and Remote Allied Health (SARRAH). These organisations make up the membership of the Australian Allied Health Leadership Forum (AAHLF) representing the sector at the national policy level and as an emerging voice with the Commonwealth regarding health workforce planning. Additionally, there are other associations and organisations that invest in the sector such as the Australian Hospitals and Healthcare Association (AHHA), the National Aboriginal Community Controlled Health Organisation (NACCHO), the National Rural Health Alliance (NRHA), Australian Rural Health Education

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[4]   Including: Physiotherapists, Occupational Therapists, Chiropractors, Podiatrists, Psychologists, Optometrists, Medical Radiation Specialists and Pharmacists. Please note this count includes Aboriginal and Torres Strait Islander Health Practitioners, Chinese Medicine Practitioners and Dental Practitioners which are outside of the scope of this report.

Network (AHREN), jurisdictional health departments and individual professional associations, societies and guilds representing different allied health professions.

Not unlike the broader health sector, allied health faces challenges of workforce shortages and maldistribution, competition for public investment and finding sustainable models to attract, supervise, train and retain the workforce. Nowhere are these challenges greater than when delivering services to regional, rural and remote communities.

In addition, there are conceptual challenges for the sector; for example, there is no universally agreed definition of 'allied health' nor a definitive list of the professions included and excluded. Rather, there are a number of definitions often determined by the context in which they are applied and by whom, be it governments, insurers, regulators, health service providers or professional associations.

Some allied health professions are regulated through the National Registration and Accreditation Scheme (NRAS) while others are self-regulated. Some professions can access Medicare payments while others cannot. Some can self-refer to Medicare (optometry and audiology) while the majority cannot. Additionally, there is diversity in salary levels, training and accreditation, as well as the ability to influence policy.

Acknowledging that the Australian Allied Health Leadership Forum (AAHLF) is comprised of a number of sector peak bodies and therefore a key lead body for the sector, the AAHLF definition of *Allied Health Professional* has been adopted in the compilation of this Report.

> *Allied Health Professionals are qualified to apply their skills to retain, restore or gain optimal physical, sensory, psychological, cognitive, social and cultural function of clients, groups and populations.*
>
> *Allied Health Professionals hold nationally accredited tertiary qualifications (of at least Australian Qualifications Framework Level 7 or equivalent), enabling eligibility for membership of their national self-regulating professional association or registration with their national board.*
>
> *The identity of allied health has emerged from these allied health professions'* client focused, inter-professional and collaborative approach that aligns them to their clients, the community, each other and their health professional colleagues.[5]

Note that it is generally accepted that nursing, dentistry, midwifery, emergency and medical specialties are excluded from the definition and have been for the purposes of this Report.

Following advice from the National Aboriginal and Torres Strait Islander Health Worker Association (NATSIHWA), Aboriginal and/or Torres Strait Islander Health Workers and Health Practitioners have not been included in the definition of allied health professionals for this Report. Aboriginal and Torres Strait Islander Health Workers and Health Practitioners have a unique training pathway and role definition. They often work with allied health professionals as a part of a multidisciplinary team but their roles are not considered to be interchangeable.

Allied health assistants (AHAs) have a recognised and important role in supporting allied health professionals in the delivery of allied health services. While the role of the allied health assistant is not within the category of allied health professions, it is broadly acknowledged that appropriate delegation of tasks by allied health professionals to allied health assistants can improve access to allied health services. The recommendations in this Report would benefit the allied health assistant workforce including formalising pathways between Vocational Education and Training (VET) Allied Health Assistant training and tertiary allied health training, training allied health professionals in innovative models of care that include allied health assistants, and overall investment in the allied health sector leading to increased employment opportunities for allied health assistants.

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5   Australian Allied Health Leadership Forum (2019) What is Allied Health? [Accessed 12 Sep 2019]
     Retrieved from: https://aahlf.com/what-is-allied-health.

Factors Impacting the Rural Allied Health Workforce

The undersupply and maldistribution of the allied health workforce has a significant negative impact on the accessibility of allied health services for rural communities and the severity of impact increases with remoteness. It is most obvious for people living in towns with populations of 15,000 or less (areas designated as Modified Monash Model (MMM) 4-7), and some more isolated centres with populations up to 30,000. Due to the smaller populations of these rural and remote towns, permanent teams of specialist providers offering a full range of the required allied health services are neither viable or sustainable.

Residents of these smaller towns are frequently required to travel long distances to larger regional centres to access the healthcare they require, often facing long patient waiting lists, lost productivity and incurring travel and accommodation costs with limited or no local follow-up. This causes upheaval and disruption not only to individuals and their families, but also to employers and communities. In turn, larger regional centres often lack sufficient numbers of appropriate resident health workers to adequately service the demand across these larger catchments.

The Australian allied health workforce is highly complex with diverse professions delivering a vast range of services with often fragmented funding models and myriad service modalities. For patients, individual clinicians, service provider groups and even jurisdictional government providers, there are funding gaps and disparities between national and state programs and across sectors. In the cities, market demand is sufficient to address these challenges. For example, an allied health professional in a city can generate a full-time income from a single funding stream without excessive travel and with good local support and supervision. In regional, rural and remote regions this is not always feasible.

Funding models such as those for private health insurance, the Medicare Benefits Schedule (MBS), My Aged Care, and the National Disability Insurance Scheme (NDIS), are designed to be market-driven solutions. However, in smaller rural and remote towns prone to thin markets and market failure, these funding models are not effective and often exacerbate the ongoing challenges to attract, retain and support an allied health workforce. Essentially, these factors result in the allied health workforce largely remaining concentrated in and around metropolitan and regional cities where these market-driven solutions are more effective and sustainable. Meanwhile, rural and remote populations have insufficient access to allied health care. The result is poorer health outcomes in those communities.

The purpose of this Report is to provide a set of recommendations to increase investment in a sustainable allied health workforce that would deepen market access for rural communities and provide equitable access to services for diverse population groups living in rural and remote Australia. The recommendations are based on extensive consultations with the allied health sector, health service and workforce organisations, government departments, students and consumers and are supported by a comprehensive literature review further described in Chapter Two.

Chapter Two: The Evidence

The challenges of attracting and retaining allied health workers to rural clinics are not dissimilar to those faced by the broader health sector. These include the practitioner's need for adequate supervision and support, structured career pathways and progression, appropriate workloads, safety and quality, accommodation and infrastructure, salary levels, training and development, social connection as well as employment and educational opportunities for partners and family. These elements all play into the decision to work and live rurally in the first instance, as well as making the decision to stay. These challenges as well as the strategies to address them have been further explored by the Commissioner in response to the Minister's 2019 and 2020 Statement of Expectations, which specified that the Recommendations be underpinned by evidence from a review of the literature and strengthened through further consultation with the sector.

Findings from the Literature Review

The Commissioner's literature review included the analysis of 119 peer-reviewed articles published between 1999 and 2019. The articles examined factors that affect the quality, access and distribution of regional, rural and remote allied health services, particularly in relation to workforce, scope of practice, recruitment and retention incentives, rural training pathways and models of service.

The findings suggest that there is a significant maldistribution in the current allied health workforce despite increasing graduate numbers, and there is strong unmet need for more allied health services in rural and remote Australia. Of those allied health professionals working rurally, most work in the public sector but several disciplines are more privately based including optometrists, podiatrists, pharmacists, physiotherapists and psychologists. Policies need to accommodate growth of rural public, not for profit and private service capacity.

Rural allied health professionals work across a broad scope of practice, large geographic catchments, visiting multiple communities. They require a broad range of skills and knowledge in health service management, culturally safe and responsive service provision, chronic disease management, health promotion and prevention and primary and secondary health care, however, they have fewer resources, higher patient to therapist ratios and less infrastructure than their counterparts in urban areas. In rural and remote Australia, there are insufficient numbers of clinicians to service whole-of-population need and therefore service provision often occurs based on the clinicians available, where they are located, and where there is the necessary infrastructure, rather than where the population and health need is.

The published evidence supports the premise that critical mass can be achieved by selecting rural background students, providing high quality rural-based training, rural curriculum, strengthening job satisfaction, career paths and ongoing professional training. The literature also shows that supporting the utilisation of allied health assistants through clear governance frameworks could assist to buffer rural allied health workload. For smaller communities, the evidence shows that outreach and virtual consultations are critical for enabling early intervention and continuity of care, but viable business models, an adequate staff base, and ongoing face to face consultations, along with local community engagement and staff training, are essential to drive such service distribution. Monitoring and evaluation of any action is critical for continuous improvements for tailored, cost-effective policy and programs.

The full literature review is available at Attachment 3.

Findings from Consultations

Since December 2018, the Commissioner has engaged in comprehensive consultations underpinned by the principles of inclusion and collaboration and focused on improving the quality, access and distribution of allied health services in regional, rural and remote Australia. The Commissioner has travelled across Australia to work with students, allied health peak bodies, associations and professional bodies, rural allied health service providers, clinicians, universities and schools, Aboriginal and Torres Strait Islander representative bodies and health services, consumers and consumer groups, along with local, state, territory and Australian Government representatives to develop a comprehensive understanding of the current contributors and challenges affecting equity of allied health services for rural and remote Australians.

These consultations identified barriers resulting from systems that were designed for city-based service models and which do not work optimally in rural and remote settings. The Commissioner was made aware of historical examples of service duplication between the Commonwealth, states and philanthropic endeavors which led to unintended poor outcomes. However, greater than the costs of duplication of programs has been the challenge borne from underinvestment in critical allied health services in rural and remote Australia.

Participants also shared stories of success that result from innovations and hard work to overcome the limitations of systems. Some rural communities were collaborating across multiple towns to integrate resources and develop the allied health services that their populations needed most. Instead of duplication of some services and gaps in others, these collaborations and partnerships were integrating, providing new business opportunities, expanding local services and adding value to Commonwealth programs. They were facilitating the delivery of a wider range of services matched to the needs of their communities.

During the consultations it became clear that the Commissioner's focus could now progress from identifying further areas of potential duplication at a national level, to understanding and creating the conditions in which training and service delivery is optimised at a local level. These early examples of collaboration across towns inspired the concept of *Service and Learning Consortia* (Recommendation 1) which is designed to create business capability at the sub regional level, augment existing training and service systems, stimulate local economies and elevate the health of rural populations towards parity with urban counterparts.

The initial consultations informed wider engagement which, together with the literature review, developed a strong evidence base. The Commissioner developed a discussion paper outlining policy options for improving the quality, access and distribution of allied health services in regional, rural and remote Australia. The discussion paper was released in July 2019 for public consultation on the Commissioner's web page. Feedback on the feasibility and suitability of the options in the discussion paper was sought directly from a variety of organisations and individual leaders in the sector. During this consultation phase, the paper was also promoted widely using social media networks, during consultations and presented at many professional engagements across the country.

The Commissioner received 116 submissions on the options presented in the discussion paper. The feedback was received from a broad range of respondents including individual health professionals and consumers, the university sector, public, private and not for profit organisations, student bodies, peak bodies, professional associations and representation from every state and territory in Australia. There was overwhelming support for the approach undertaken in developing the discussion paper and broad support for the options presented.

The Commissioner also consulted the areas of the Commonwealth Government responsible for delivering programs identified by the sector to have had positive impacts on the quality, access and distribution of allied health services in rural and remote Australia, and which were therefore the focus of some of the policy options presented. During these consultations potential recommendations were tested for operational feasibility, and to identify existing plans and strategies with which the Commissioner's recommendations were ultimately structured to complement or enhance. These strategies and plans include:

- Australia's Long Term National Health Plan
- The Stronger Rural Health Strategy
- The Medicare Benefits Schedule Review
- The National Aboriginal and Torres Strait Islander Health Workforce Plan
- Closing the Gap
- The National Preventative Health Strategy
- The 10-year Primary Health Care Plan
- Evaluation of the Rural Health Multidisciplinary Training (RHMT) Program
- The Allied Health Rural Generalist Workforce and Education Scheme
- The National Health Reform Agreement

Interim Report

In March 2020, contributing to priority one of the 2020 Statement of Expectations, the Commissioner released the Interim Report[6] on improving distribution, quality and access of rural allied health services. The Interim Report described key strategic themes identified through the extensive consultations and literature review and considered within the context of broader health and rural health policy platforms. The strategic themes were tested and refined through further consultation with the peak bodies named in the 2019 Statement of Expectations, other key stakeholders such as the National Aboriginal Community Controlled Health Organisation (NACCHO), Australian Rural Health Education Network (AHREN), the Commissioner's Consumer Expert Reference Group and the National Rural Health Student Network, and again with relevant areas within the Australian Government.

Since March, the Commissioner has continued to work closely with key stakeholders and the Department of Health to consolidate the themes into recommendations to improve access, quality and distribution of allied health services in regional, rural and remote Australia and to provide detailed advice on the implementation of these recommendations.

For a detailed list of consultations and stakeholders who provided feedback to the discussion paper please see Attachments 1 and 2.

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6   Australian Government (2020) [Accessed 31 Mar 2020] Retrieved from: https://www1.health.gov.au/internet/main/publishing.nsf/Content/815AFEED0337CF95CA2581D30076D095/$File/NRHC%20Interim%20Report%20to%20the%20Minister%20V1.3.pdf

Chapter Three: Recommendations

This chapter describes the Commissioner's recommendations to improve the quality, access and distribution of allied health services in regional, rural and remote Australia, including detailing the policy intent, the desired outcomes, and the evidence base supporting these recommendations.

While Recommendations 1, 2 and 3 are each aligned to either access, quality or distribution, it is important to note that the recommendations have been developed to work interdependently and, together, will contribute collectively to improving workforce distribution and quality and access to allied health services in regional, rural and remote Australia.

The Commissioner's recommendations are designed to be the catalyst for the larger system-wide change required within current allied health and rural health environments. The recommendations are not ordered hierarchically but as a package, a structured whole, and are intentionally focused on stimulating system elements that would enhance and integrate existing efforts and initiate further progress. They promote positive and widespread action towards an improved and self-sustaining system of healthcare distributed in MMM4-7 areas where the need for access to high quality allied health services is most acute.

Recommendation 1: The *Service and Learning Consortia* Program

A co-investment model to improve access to allied health services in rural Australia

To improve access to allied health services, it is recommended that the Commonwealth progressively establish, initially through a series of demonstration trial sites, *Service and Learning Consortia* across rural and remote Australia. With the support of new and existing program funding, *Service and Learning Consortia* will integrate rural and remote 'grow your own' health training systems with networked rural and remote health service systems. *Service and Learning Consortia* will consist of local private, public and not for profit service providers, training providers, and community representatives collaborating across multi-town and multi-sector networks, according to community need. Once established, *Service and Learning Consortia* will improve recruitment and retention of allied health professionals by making rural and remote allied health practice and training more attractive and better supported.

Policy Intent – Improving Access

This recommendation addresses two interrelated factors that influence the capacity of the rural allied health workforce to deliver accessible allied health services. The first factor concerns improving the allied health training system. How and where allied health students and workforce are trained directly influences the availability and sustainability of rural and remote health service provision. Improvements in the training system will ensure there is a 'rural ready' workforce available to provide services to rural and remote communities. The second factor concerns improving the rural and remote allied health service system. Improvements in the service system will ensure attractive and supported positions are available to allied health professionals who want to work rurally. While these two factors are inextricably linked, past interventions have generally focused on improving one factor or the other. This has led to less effective outcomes.

This recommendation proposes a *national system* that recognises and supports the *interdependence of rural training and rural service* and links them to existing programs. This will create *greater efficiencies and effectiveness* within existing programs. The policy intent of this recommendation is therefore twofold:

> *To support the broad vision underpinning the Stronger Rural Health Strategy through a structured and supported education and training pathway for rural and remote allied health professionals to improve workforce distribution and retention.*

> *To support the broad vision underpinning Australia's Long Term National Health Plan (2019) to make our health system better at preventing disease and promoting health, more focused on patients' multidisciplinary needs, more affordable, and more accessible to all Australians, wherever they live and whoever they are.*

Policy Outcomes

- Improved access to allied health services for rural and remote communities
- Deepened rural markets and attractive jobs for the future workforce
- Stable integrated and coordinated rural and remote allied health services
- Increased rural and remote economic participation
- Improved alignment of existing Commonwealth rural education/workforce funding with workforce needs
- Increased alignment of training courses, high quality student clinical placements, population health needs and career opportunities
- Increased opportunities to train in rural and remote areas
- Increased pathways into tertiary education for rural and remote students
- Increased opportunities for post graduate rural generalist training in all settings, including non-government settings

The *Service and Learning Consortia* program

It is evident and supported by the sector that a different approach to funding rural and remote allied health services is required in order for communities to receive equitable allied health services. A different approach that also enables allied health professionals to have viable and well-supported jobs and successful careers in rural and remote regions. It is evident that in order to provide these services and rural careers, appropriate and high quality rural training opportunities and placements are required for the emerging allied health workforce. Finally, it is evident that any recommendation must be flexible enough to enhance capacity of existing allied health and more broadly health services in the regions and to enhance any service networks already established.

There was overwhelming support for a sustained catalytic investment to implement integrated allied health services across networked clusters of smaller rural communities to build scale, scope and status for rural allied health services, increase utilisation of existing funding sources, and promote sustainable, fulfilling and rewarding rural careers.

This recommendation has been developed to support the increasing move towards innovative integrated models of care to deliver self-sustaining training, education, workforce and service delivery in rural and remote Australia. Based on the evidence in the literature review and the extensive consultations, the Commissioner has concluded that integrated networked models of care can deliver positive outcomes in primary care in regional, rural and remote Australia in ways that have not been seen before.

At the time of writing, the Australian Department of Health is working with a number of organisations across the sector to support the development of proposals for integrated primary health care models. The proposals recognise that optimal outcomes are achieved when there is a focus on networked sub regions rather than individual towns and when all levels of Government work together to develop solutions for addressing rural community health needs. This will improve quality service provision in areas at risk or currently experiencing market failure.

This *Service and Learning Consortia* program will ensure that the allied health sector has the opportunity to be a prominent influence on these other health service models (that are often focused around general practice services) and thus co-create comprehensive, multidisciplinary, integrated models of care which will benefit the broader primary care sector and communities in rural and regional Australia. *Service and Learning Consortia* are not designed to be hub and spoke models but rather, multi-town, multi-sector allied health networks of care.

It is proposed that the *Service and Learning Consortia* (SLC) program be implemented progressively across the country with robust evaluation and quality improvement built into initial demonstration sites focused on the policy outcomes above. Only once these outcomes have been shown to be deliverable would the program be expanded beyond these sites. Consideration must be given to defining suitable geographic footprints, legislative matters and workforce gaps to be addressed by the new models, along with cross-sector factors, scalability and funding requirements. Initial demonstration sites will provide an

immediate response in areas that have a demonstrated readiness to establish multi-sector and multi-town training and service networks to meet clearly articulated community needs.

It is proposed that the *Service and Learning Consortia* (SLC) program is first established in communities where UDRHs, Aboriginal Community Controlled Health Services (ACCHSs), Primary Health Networks (PHNs), and Rural Workforce Agencies (RWAs) are prepared to collaborate with community representatives and local private, public, and not for profit service providers to co-design, co-invest in, and co-deliver high quality allied health services and training.

By combining sub-regional service models with sub-regional allied health vocational, graduate and post graduate training programs, workforce sustainability will be built into the program design. The sustainability of rural and remote allied health services will be strengthened in two ways: through incentivising service integration, and by combining this service integration with local, high value, service based training opportunities for allied health students – the emerging allied health workforce.

The *Service and Learning Consortia* program will align with initiatives and policies already in place through the National Health Reform Agreement, the Partnership Agreement on Closing the Gap, the National Allied Health Advisors and Chief Officers Committee (NAHAC), and through National Cabinet and the Council on Federal Financial Relations and other relevant partnership agreements to ensure local consortia are enabled to work across sectors without barriers.

The *Service and Learning Consortia* Delivery Model

The *Service and Learning Consortia* delivery model has four primary components, each designed to enhance the allied health capability of local service and education providers (consortium members):

1. *Local Community Driven Governance*

2. *Service Integration and Attractive Allied Health Positions*

3. *Learning Integration and Enhancement*

4. *Business Integration and Administrative (Back of House) Support*

1. Local Community Driven Governance: Implementing holistic and patient-centred services, co-designed by local communities, consumers and providers

Service and Learning Consortia will be accountable to their respective communities. A fundamental principle of the *Service and Learning Consortia* program is that service design and provision will be flexible and locally determined, developed and led. The Consortia membership will be made up of local service providers (not for profit, private and public), training organisations, Aboriginal Community Controlled Health Services, Rural Workforce Agencies, Primary Health Networks, consumers, community representatives and other interested parties such as local governments and schools.

Community members and consumers will be co-designers of services and community champions, ensuring services are appropriate and meet the needs of the communities they serve. These consumer-centred models will build community capacity and skills and increase employment opportunities from within the regions.

Service and Learning Consortia will enable services to expand capacity and to augment and articulate their collective strengths in order to attract available Commonwealth and jurisdictional funding. Through a locally driven governance structure, partnerships and economies of scale, they will create greater value for each dollar spent and mitigate potential duplication of services. A local bank of knowledge will form through shared governance and engagement processes to understand local issues and business, training and service needs. This will in turn lead to continuous improvement in local capability, stimulate local economies and improve access to local high quality services and training. It will result in improved physical, social and emotional wellbeing and health outcomes for rural communities.

Service and Learning Consortia will support patient-centred care provision, ensuring culturally safe and responsive services to communities. Importantly, *Service and Learning Consortia* will engage local service

providers and community groups in order to co-design programs, to ensure appropriate, safe, meaningful and locally determined allied health services are delivered that meet community needs.

Recognising that different rural and remote communities have different allied health needs, services, gaps and strengths, *Service and Learning Consortia* will be locally responsive and will enable maximal leverage of local strengths with the flexibility to resolve common challenges (such as the availability of supervision). *Service and Learning Consortia* will be nimble and responsive to needs as they are recognised through governance structures informed by community engagement activities, consortium members and population health and workforce needs assessments (carried out by Primary Health Networks and Rural Workforce Agencies).

It is not recommended that *Service and Learning Consortia* are established as new businesses in their own right. Rather, it is recommended that the Consortia utilise existing business structures and, through the collaborative governance structure and the new funding that adds to the local co-investments, ensure that the resultant whole is much greater than the sum of the parts.

2. Service Integration and Attractive Allied Health Positions

Addressing inequities in access to high quality medical care has been a longstanding challenge and has been the focus of a broad range of government initiatives. In previous work, the National Rural Health Commissioner has identified employment conditions as a key issue that needs to be addressed to make rural practice more attractive for new graduates. In response, the Australian Government has recently announced a trial of innovative employment arrangements for junior doctors undertaking rural generalist training in the Murrumbidgee region of NSW. This trial includes a Medicare exemption to enable new partnerships between state government facilities and private practices to share resources, reflecting a more flexible way of working to deliver training and services. The trial will enable medical rural generalist trainees to maintain their employment conditions as they move between hospitals and primary care settings. Approval of this trial reflects a significant amount of collaborative work that's been driven by local health services in the Murrumbidgee and other key training stakeholders.

Comparable levels of local innovation, system flexibility and integration are also required to create the range of allied health positions that smaller rural and remote communities need. It is proposed that local *Service and Learning Consortia* members be incentivised to develop innovative and integrated service and learning models of care. For example, they may be able to bring together part time salaries that may be available in different workplaces in the region but not easily filled and instead offer attractive full time allied health positions. As a result, clinical staff may spend some days in hospital settings and some days in community-based settings such as in an Aboriginal Community Controlled Health Service (ACCHS) or a private NDIS provider. These integrated models will also enhance continuity of care and inter-professional collaboration, focusing on communities currently undersupplied.

Thus service providers that individually do not have the capacity to employ an additional allied health practitioner full-time, will be able to link to create economies of scale within the Consortium to generate teams of allied health professionals. It is not anticipated that consortium members would be required to move funds out of their organisations to integrate funding for SLC positions. Rather there could be agreement, for example, that consortia member A and consortia member B, each have a 0.4 full time equivalent (FTE) physiotherapist position that they have been unable to fill. Catalytic Commonwealth SLC funding would provide the additional 0.2FTE to make one full time physiotherapy position in the sub-region. Interested applicants apply for one full time position. The successful applicant works at the two organisations for two days each and for the fifth day in a week, they could work as a supervisor or in telehealth or providing other services for the *Service and Learning Consortia*. The Back of House staff manage the salary/invoicing arrangements between the organisations for the physiotherapist position. Previously the applicant would have been required to apply for multiple part-time positions with multiple employers.

Developing mechanisms to create sustainable full-time positions is urgently required to address current workforce shortfalls and to build a sustainable rural allied health workforce. Commonwealth investment is pivotal, enabling Consortia to create multiple, supported allied health positions and bring the scale required to provide peer support and opportunities for appropriate annual, maternity/paternity, sickness and educational leave. This would also allow new positions to include explicit time for telehealth services, community engagement, early intervention programs, and for the provision of additional services to vulnerable and at risk clients who have used their full MBS allied health quotas yet require further treatment to avoid preventable hospitalisations and to improve their health and wellbeing.

Service and Learning Consortia will be multi-town, multi-sector networks enabling the teams to be accessible through the region. The Consortia will work closely with communities and existing services, developing service and training models that reach remote communities, and decrease reliance on Fly in Fly Out (FiFO) and Drive in Drive Out (DiDO) models. An example of such a service model that is currently operating successfully is the locally led Lower Gulf Strategy, a shared service model formed through partnership with Western Queensland Primary Health Network, the North-West Hospital and Health Service and Gidgee Healing (a regional Aboriginal Community Controlled Health Organisation). The tri-partite framework was adopted to Close the Gap in Doomadgee, Mornington Island and Normanton. A Memorandum of Understanding was executed in 2017, providing a blueprint for design and implementation of the most appropriate model of care for each community. A feature of this shared service model, and central to the initiative, is strong community engagement and building cultural capability in the Hospital and Health Service teams. The Lower Gulf Strategy has had a significantly positive impact on primary healthcare in the targeted communities.

Since the introduction of these integrated and community-controlled services, there has been a reduction in Emergency Department (ED) presentations in the respective EDs of the three hospitals with 20% of Category 4 and 5 presentations diverted from Normanton ED to Gidgee Healing, a 31% decrease at Doomadgee and an 18% decrease at Mornington Island. Additionally, there has been a 1300% increase in Aboriginal Health Checks. In addition to improved health outcomes, the project has seen an increase in the Indigenous health workforce recruited directly from the communities.[7]

There are similar programs in development, such as the Integrated Health Networks (IHN) in Victoria, a collaborative program between Murray Primary Health Network, Australian Department of Health and the Victorian Department of Health and Human Services. This program aims to build a network of partnerships between primary care and acute care services and multidisciplinary, team-based working environments with peer support, and mentorship and supervision that link training pathways and programs to destinations of employment and career progression.

With investment to develop *Service and Learning Consortia*, programs such as the *Lower Gulf Strategy* could expand to multidisciplinary models of care, 'bolting on' vital allied health services designed by and for communities. For communities, this means availability and access to appropriate coordinated care, early intervention, reduced acute exacerbations, reduced preventable hospitalisations and readmissions and improved patient wellbeing and health outcomes.

Service and Learning Consortia service providers and members will be supported and trained in the delivery of culturally safe and responsive services so that Aboriginal and Torres Strait Islander allied health students, professionals and consumers are in safe environments to work and receive care. A Cultural Educator can be employed and supported through the *Service and Learning Consortia* program to provide support for Aboriginal and Torres Strait Islander allied health professionals and training for mainstream services in the provision of culturally responsive and safe services, thus providing a reinforcing link to Recommendation 2 below.

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7   Johnson, S. (2019). The Lower Gulf Strategy. The Health Advocate(February), 46-47 (2018) [Accessed 12 Sep 2019] Retrieved from: https://ahha.asn.au/system/files/docs/publications/feb2019_tha_web.pdf

3. Learning Integration and Enhancement

Investment is required for *Service and Learning Consortia* to form networks of clinical teaching services of excellence in order to provide high quality training opportunities and supervision for allied health students, graduates, assistants, and early and senior career professionals. They will provide structured support for rural allied health education and training through enhanced placement, supervision and mentoring capability at both student and postgraduate levels. Importantly, they will respond to local community need whilst training a workforce prepared for rural service, who are supported in early career positions to deliver high quality care to rural communities.

Increasing Home Grown Training Opportunities

There is a clear link between training rural origin students and increased recruitment and retention rates for rural practitioners. Despite this, many rural students face significant barriers accessing tertiary allied health courses and training rurally and are, by design, redirected by city based education into urban-based training and careers.

It is sometimes argued that not all allied health courses are suitable for longer term remote learning. Stakeholders described certain barriers in enabling students to undertake a year of their course or complete their full course in non-metropolitan settings. These include the lack of available supervisors, the current funding model for UDRHs, a shortage of student accommodation and a lack of allied health academic posts. Despite these obstacles, the majority of stakeholders in principle supported 12 month and end-to-end rural allied health training as a strategy to increase the rural allied health workforce and noted that successful models needed to utilise flexible modes of delivery including telehealth, service learning, and the option of remote supervision depending on the circumstances. The experience of delivering allied health courses through the current COVID-19 pandemic has fast-tracked the capability for Universities to deliver high quality curriculum to students in geographically distributed locations.

The *Service and Learning Consortia* model is designed to address well known rural challenges by increasing capacity for supervision, connecting students and potential employers, and increasing high quality placement opportunities. It is not expected that every Consortia would provide these training opportunities for every allied health professional course. *Service and Learning Consortia* would be expected to prioritise the allied health professions home grown training opportunities according to their specific local community needs and capabilities.

Service and Learning Consortia will increase access to tertiary training through Vocational Education and Training (VET) local pathways into the tertiary sector, increased opportunities for longer-term placements and end-to-end rural allied health undergraduate training, increased opportunities for quality placements in MMM4-7 locations, and increased support for structured postgraduate training in rural and remote locations.

Service and Learning Integration

The *Service and Learning Consortia* will link potential employers to students and graduates through high quality, supported clinical placements. They will enrich the student learning experience and align service and learning placement provision with areas of workforce shortage and population health need. In some cases, UDRHs have already responded to urgent local allied health service need, for example in Three Rivers[8], Lismore, Broken Hill, Katherine, Whyalla and Mt Isa, where each provide high value service-based training opportunities for students in allied health disciplines including occupational therapy, podiatry and speech therapy while at the same time meeting immediate community health needs by providing services which would otherwise not be accessible in the communities they serve.

Work ready placement programs such as those currently delivered by the abovementioned UDRHs, that increase opportunities for longer-term rural placements and end-to-end rural training have a positive impact on developing a sustainable rural workforce and viable and healthy communities.

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[8]   Longman JM, Barraclough F, Swain LS (2020) *The benefits and challenges of a rural community-based work-ready placement program for allied health students* [Accessed 21 May 2020] Retrieved from: https://www.rrh.org.au/journal/early_abstract/5706

Improving Rural Placements and Supervision

Service and Learning Consortia will offer supervision and support in the workplace for early career professionals. They will provide opportunities for career progression, training, role expansion and supervisory roles, thus increasing postgraduate rural workforce satisfaction and retention.

The majority of Rural Health Multidisciplinary Training (RHMT) Program allied health placements currently occur in MMM 2 and 3 regions. However, the data show that MMM 2 and MMM 3 regions do not have substantial deficits per capita in allied health professionals compared to our major cities. The maldistribution of the allied health workforce predominately affects MMM 4-7 regions. It is therefore recommended that a progressive realignment of the RHMT funding for allied health training occurs in order to focus on training within MMM 4-7 regions. For this to happen it is recognised that the availability of clinical placements in MMM 4-7 locations must increase – particularly in private and not for profit settings. This would build on the valuable work and training already undertaken in MMM 2-3 settings.

The *Service and Learning Consortia* model will be a mechanism to improve rural placement opportunities in the allied health disciplines. Placements provided through *Service and Learning Consortia* will be for a minimum of eight weeks and aligned with core competencies in rural and remote health. It is noted that some courses, for example audiology, have a limit on the number of weeks per placement due to course structures. Where this occurs, there should be flexibility. However, the overall aim should be for longer high quality placements structured within curricula, to ensure the maximum benefit for the student, the practice and the community.

Integration, funding and networking arrangements managed through the *Service and Learning Consortia* will increase the number of attractive and supported full-time senior positions available, providing additional supervision capacity in the regions. The Consortia will incentivise supervision further through the provision of the *Primary Care Allied Health Supervision Package* and access to *Service and Learning Consortia* clinical educators.

Primary Care Allied Health Supervision Package

Funding for clinician supervision already exists in the public sector, but not in private or not for profit settings. The Primary Care Allied Health Supervision Package (Supervision Package) will be used to expand supervision to these vital settings in MMM 4-7 regions. Regions where finding allied health practitioners (private and not for profit) who have both the capacity to deliver services their communities need, *and the capacity to* provide high value placement opportunities to students, is currently extremely limited.

The Supervision Package will assist in delivering high value learning, high value service provision, and enhanced recruitment and retention to these undersupplied regions. The Supervision Package would recognise the reduction of income and productivity associated with the provision of supervision, including supervising early career clinicians who are completing post graduate studies (for example studies in Allied Health Rural Generalism). The Supervision Package will address the difficulty UDRHs currently face when seeking placements for students in rural and remote areas of Australia where sole practitioners working at capacity are inhibited by the potential loss of productivity. The Supervision Package will be made available to those clinics and supervisors who can provide longer term placements (i.e. eight weeks or more).

Additionally, *Service and Learning Consortia* Clinical Educators, will be appointed through prioritised Rural Health Multidisciplinary Training (RHMT) Program funding. The *Service and Learning Consortia* Clinical Educators will work with participating private and not for profit providers, supervisors and students to provide appropriate training, placement selection, structured professional support and guidance.

Career Opportunities, Support and Post-Graduate Learning

Increasing the number and capacity of allied health professionals providing supervision will not only support students but also new graduates and early career allied health professionals who currently make up a large proportion of the rural allied health workforce and where it is not uncommon for them to be the sole provider for their profession in the town. These new or recent graduates can experience isolation, burnout and often only have access to minimal and remote supervision. Understandably, the attraction

to, and retention of, allied health professionals in these positions is an ongoing challenge. What has come through strongly in the literature and consultations is that these unsupported positions are a risk to individual professionals and communities alike. Safety and quality can be compromised for the worker who is practising in an unsupported environment and for the client who is receiving treatment from an inexperienced or burnt out allied health professional without ready access to appropriate clinical expertise and support.

Service and Learning Consortia will provide opportunities to immerse students and clinicians in supported rural learning and training environments and structured career training pathways. An excellent example of a local structured career pathway has been developed by the private practice Good Country Physiotherapy in South Australia servicing Naracoorte, Keith, Bordertown and Kingston. This pathway is based on a career development framework for staff from student clinical placement through to 4th year early career allied health professional level. This model and pathway has been successful in attracting and retaining allied health professionals to the Limestone Coast area.[9]

A structured, cohesive and nationally consistent education and training pathway for rural and remote allied health students and trainees is required to address the challenges and barriers raised by stakeholders and identified in the literature review. Structured career progression, access to appropriate continuing professional development opportunities, the ability to work at full scope of practice, and to expand scopes of practice where required is strongly supported by the sector. Many stakeholders agreed that the Allied Health Rural Generalist (AHRG) Pathway (the Pathway) is a means to meet these requirements.

The Pathway is a workforce initiative that supports the development of a sustainable rural generalist allied health workforce and service delivery models to improve access to allied health services for rural and remote communities. It comprises three key components: a formal education program, workforce policy and employment structures, and rural generalist service models.

SARRAH defines rural generalist allied health service provision as:

> *A service or a position or practitioner delivering services that respond to the broad range of healthcare needs of a rural or remote community. This includes delivering services to people with a wide range of clinical presentations from across the age spectrum and in a variety of clinical settings (inpatient, ambulatory care, community). The primary aim of rural generalist service models is to deliver high quality, safe, effective and efficient services as close the client's community as possible.[10]*

Allied Health Rural Generalist training positions have been created in multiple jurisdictions including Queensland, Northern Territory, Western Australia, New South Wales, Tasmania and South Australia. The Pathway is designed to be flexible and accommodates variations between jurisdictional training models. There are 55 allied health rural generalists who have completed their training in public services across Queensland, Northern Territory, New South Wales, Tasmania and South Australia, and a further 56 public service training positions currently being implemented.

On November 21, 2019 the Hon Mark Coulton, Minister for Regional Health, Regional Communications and Local Government, announced forty new scholarships for Allied Health Rural Generalists working in private practice and non-government organisations. Importantly the *Allied Health Rural Generalist Workforce and Education Scheme* (the Scheme) provides funds for backfilling as well as travel and accommodation. The majority of these rural generalist training positions are now underway in non-government settings in New South Wales, Queensland, Tasmania and the Northern Territory. All regions could benefit from this Scheme. The Commissioner strongly supports this new initiative be continued and integrated into the *Service and Learning Consortia*. The Commissioner recommends that there is a formal articulation and linkage between UDRHs, Regional Universities, and the Scheme, and that this is formalised through key performance indicators in both the RHMT Program and the new Scheme.

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9   Good Country Physiotherapy [Accessed November 2019]
    Retrieved from: https://www.goodcountryphysio.com.au/careers
10 Services for Rural and Remote Allied (SARRAH) (2017) Allied Health Rural Generalist Training Positions: an Overview.
    [Accessed August 2019] Retrieved from: https://sarrah.org.au/sites/default/files/images/info_1._overview_20170614_in.pdf

4. Business Integration and Administrative (Back of House) Support

Service and Learning Consortium members will have access to Business Integration and Administrative Support (Back of House) services to further enhance their individual operational capability. This support will source and assist with new funding, registration, reporting, and accreditation. The administration team will provide clinical administration support such as scheduling, accommodation, fleet management, human resources, patient billing and payroll functions where required, at scale.

Reducing the administrative burden for smaller operators will increase their capability and willingness to access new funding opportunities, increase clinic time, become supervisors, continue their own training, provide high quality service delivery, and to integrate with other services in their network. It will also mean they do not have to take their administrative work home in the evening, thus improving their quality of life.

Service and Learning Consortium members will be supported to access state and Commonwealth funding streams available through Health, NDIS, Aged Care, Mental Health, Justice, Education and Social Services. This will shift administrative and cost burdens currently experienced by individual clinicians and small providers to properly resourced and trained coordinators, administration staff and allied health assistants. Back of House Support will improve corporate governance and provide more time for allied health professionals to invest in clinical governance. This Support will enhance the competitive position of local providers to win contracts that are currently being outsourced to larger, city-based organisations.

Through the provision of Back of House Support, the local capability to collect, analyse and report allied health training, workforce and population health data will be enhanced. This data will build a local evidence base to inform future planning and service design activities. This local capability links with Recommendation 3 in this Report i.e. the *Service and Learning Consortia* can become demonstration sites for the collection, analysis and use of comprehensive allied health workforce and service provision data. Additionally, the aggregated and de-identified data can be provided to the Commonwealth to evaluate the effectiveness of the *Service and Learning Consortia* program.

This Back of House Support will deepen rural and remote markets, expand areas of clinical focus, and help create attractive, well supported rural and remote jobs by supporting allied health professionals to be able to work across sectors and funding streams with relative ease.

The benefits gained through establishing such support at scale can be seen at the Institute for Urban Indigenous Health (IUIH) in South East Queensland. The Institute was established in 2009 by four Aboriginal Community Controlled Health Services to provide primary care services to local Aboriginal and Torres Strait Islander populations and has since expanded to 20 multidisciplinary primary health clinics, with funding partnerships including the Australian Government, Queensland Government, Hospital and Health Services and Primary Health Networks. An independent review of the Institute conducted in January 2019 highlighted the benefits achieved through economies of scale:

> *In this model, IUIH is systems integrator of regionally led reforms across the IUIH Network of ACCHSs, and has a lead role in strategic planning, service development, business modelling, income generation, data analysis, clinical/corporate governance, quality improvement, performance monitoring, workforce development, cross-sector connectivity and research. This has delivered significant returns on investment, including through leveraging region-wide funds pooling, regionally scaled solutions and generation of economies of scale to harness substantial efficiencies and support reinvestment to significantly expand services (eg allied health & aged care).[11]*

The long-term health outcomes and economic benefits of the IUIH model are becoming evident. An independent analysis of IUIH's impact in shifting the Health Adjusted Life Expectancy (HALE) of its patients indicated an improvement of 0.4 years HALE relative to baseline improvement in South East Queensland.

An independent health economic impact study identified a net benefit to society from IUIH System of Care of $1.43 for every $1 invested. This included estimated savings in avoidable hospital admissions. Conservative modelling calculated $100 million in net benefit to the community since IUIH was established.[12]

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[11]   Institute for Urban Indigenous Health (2019) *History and performance: Charting the way forward: Independent Review of: The Institute for Urban Indigenous Health* [Accessed Sept 2019] Retrieved from: http://www.iuih.org.au/Portals/0/xBlog/uploads/2019/4/17/NOUS%20Review%20of%20IUIH%20-%20Summary%20Report%202019.pdf

[12]   Institute for Urban Indigenous Health (2018) *Annual Report 2017-18* [Accessed Sept 2019]
Retrieved from: http://www.iuih.org.au/Portals/0/PDF/IUIH_2017-18_AnnualReport_V8.pdf?ver=2019-01-17-143421-707

Technological Integration

During consultations, a common issue raised was the requirement for rural and remote patients to travel long distances for short appointments and instead at times choosing not to attend for vital care. Telehealth can decrease the distance between allied health providers and their patients. It can increase responsiveness and reach, enhance shared care opportunities between clinicians, and provide timely, convenient, connected and quality care experiences for rural consumers. The Commonwealth has demonstrated flexibility to include telehealth in the model of service delivery in disability support and veteran's services.

The value of telehealth as a crucial option for service delivery has also become more evident as a result of the national COVID-19 response. The Commonwealth has rapidly responded to the need to reduce face to face contact of clinicians and patients by enabling telehealth allied health consultations to be supported through the MBS. While this has been welcomed by the sector and communities, the measures apply only to those allied health professions and certain types of patients already able to claim through MBS. The number of consultations is also limited. At the time of writing, the telehealth measure is temporary and set to be rolled back in September 2020. An evaluation of expansion of telehealth MBS billing and improvements of access to allied health for rural and remote populations prior to September 2020 is recommended as a matter of urgency.

Evidence Base Summary for Recommendation 1

Rural and Remote Allied Health Service Provision

In thin markets, and as remoteness increases, shortfalls in the allied health workforce worsens, resulting in solo practitioner, locum and small service arrangements becoming more common. During consultations, it was raised that these small service provider models often result in allied health professionals working in isolation with limited peer support, high workloads and limited administrative support and leave relief.

Fragmented funding models result in unappealing often unfillable short term, part time allied health positions. Attracting allied health professionals to fill such positions is an ongoing challenge for public, not for profit and private employers alike. Retaining allied health professionals in these positions is equally difficult, resulting in high 'churn' and vacant positions. The difficulty in filling these undesirable positions means that rural and remote communities are often left with no choice but to rely on costly locum arrangements where funds dedicated to their communities are not spent locally but in large regional centres and cities where locums are based, further undermining the economic sustainability of rural communities. These challenges are being felt across rural and remote Australia.

In rural and remote communities, fragmented sector-by-sector funding approaches contribute to the vulnerability of local economies and viability of allied health service models. While rural and remote communities in theory have access to multiple funding sources from sectors and programs such as the National Disability Insurance Scheme (NDIS), Primary Health Networks, aged care services, state health departments, local government, and education and social services, these sources, in reality, are often underutilised or untapped by small rural and remote providers. These fragmented funding systems are administratively burdensome, costly and complex to navigate, each with different payment, registration, reporting and accreditation processes. Faced with such complexity, allied health providers are deterred from expanding to deliver the full range of services to communities who need them.

These fragmented funding approaches have resulted in a significant shortfall in the per capita provision of allied health services in MMM4-7 regions, when compared to their metropolitan counterparts. For example, in 2017, only 4.7% of all psychologists worked in outer regional locations.[13] This means less choice for rural consumers, and in many cases, going without essential care. It also means rural communities continue to experience poorer health outcomes, poorer quality of life, higher mortality rates and increased potentially preventable hospitalisations than their metropolitan counterparts. These barriers are felt nationwide and result in significant challenges to the successful roll out of national programs such as the National Mental Health Strategy, National Disability Insurance Scheme (NDIS) and My Aged Care.

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[13]   Australian Department of Health [Accessed Jan 2020] Retrieved from: https://hwd.health.gov.au/publications.html

'Home and Own Grown' Learning

Stakeholders supported investing in opportunities for people with a rural background (home grown) to train and work as health professionals as a strategy to improve the distribution of rural allied health professionals and thus increase access to allied health services for rural communities. Responses to the discussion paper underlined the need for a range of strategies to increase the number of rural-origin and Aboriginal and Torres Strait Islander allied health graduates and called for a vertically integrated approach.

In order to attract a sustainable rural and remote allied health workforce, there is a need for high quality and appropriate rural training opportunities and placements. Currently, most University Departments of Rural Health (UDRH) provide predominately short-term clinical placements for allied health students. The number of these short term placements have been increasing every year, with the majority being delivered in MMM2-3 regions. Some UDRHs such as University of Newcastle[14] have been successful in developing longer term (six to 12 month) placements for disciplines such as physiotherapy. In addition, some regional universities offer end-to-end training (own grown) in a number of allied health courses.

Stakeholders were consistent in identifying the need to expand opportunities for student placements in private and not for profit settings. However, they noted that there was currently limited scope due to a lack of support for supervision costs. Private and not for profit clinicians require financial support to compensate for any loss of income they experience while supervising students on placements. Providing support to supervisors to host longer service-based learning placements would ultimately be of greater economic benefit to the host clinics.

The longer the placement, the more the student contributes to service delivery (as their proficiency and productivity rises) and the greater the symbiosis between supervisor and student. Hence, longer placements mean a lower burden for supervisors and a more comprehensive learning experience for students. Compare, for example, the learning journey associated with one student on a 20-week placement as opposed to four students on five week placements. Each placement requires the same orientation, initiation and intensity of initial supervision. However, only the longer placement allows the practice to gain a return on this investment by the student having time to become a productive team member and contribute more to patient care. In addition, stakeholders highlighted that funding must be made available to offset the financial implications of rural placements for students.

Stakeholders were in strong agreement that high value placements that resulted in positive clinical and social experiences were more likely to influence early career decisions of students and new graduates compared to the current practice of offering a larger number of short term placements. Many stakeholders recommended placements of up to eight weeks per year during undergraduate training and some cautioned that this may need an increased investment or a reprioritisation of existing funds to do so.

Longer- term immersion models can vary from 12 months, including course work and clinical placements, through to end-to-end rural training and flexible distance modes of delivery for relevant disciplines. Given the maturity of the rural health education system, it is now important for Universities that receive RHMT funding to commit to these rurally delivered programs as ongoing and mainstream. This includes underwriting continuing contracts for rural staff — a critical factor in recruitment and retention of high quality staff and thus the quality of rural programs.

The Allied Health Rural Generalist (AHRG) Pathway

The Allied Health Rural Generalist Pathway is an early career support program that provides high quality early career positions that encourage practice at full professional scope with guaranteed high quality supervision, guaranteed time for professional development, and funded rural-specific education. In 2013, a multi-jurisdictional AHRG Pathway Project Governance Group led by Queensland Department of Health and the Greater Northern Australia Regional Training Network was established comprising services implementing Allied Health Rural Generalist training positions. Since 2013, the Pathway has undergone key development initiatives including mapping clinical tasks and functions, a trial of supernumerary

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[14] https://www.newcastle.edu.au/about-uon/governance-and-leadership/faculties-and-schools/faculty-of-health-and-medicine/department-of-rural-health/placement-information/disciplines/physiotherapy

positions, the development and review of the Allied Health Rural Generalist Education Framework, the development of the AHRG Post-Graduate Education Accreditation System (developed by AHHA) and the commencement of the Allied Health Rural Generalist Program including a Graduate Diploma of Rural Generalist Practice..

The Pathway is currently governed by a multijurisdictional AHRG Pathway National Strategy Group (NSG) which includes representation from members of the Australian Allied Health Leadership Forum, Rural Workforce Agencies, the Australian Department of Health (National Rural Health Commissioner's office), Primary Health Networks, University Departments of Rural Health and chaired by SARRAH. This multijurisdictional approach to the development of the Pathway reflects the need for Rural Generalist training to remain flexible so that it can be adapted to suit varying workforce needs and structures across diverse settings.

Queensland Health has established the Allied Health Rural Generalist Pathway within the organisation including trials of twenty-two supernumerary AHRG Training Positions between 2014 and 2018, and since 2019 the embedding of the pathway in rural workforce establishments. A formal rural generalist education program has been developed and delivered through an agreement between the Allied Health Professions Office of Queensland (AHPOQ), within the Queensland Department of Health, and James Cook University and in collaboration with Queensland University of Technology.

The Allied Health Rural Generalist Program has a two-level program of study designed to complement AHRG training positions. The education program is currently available for nine allied health professions: Medical Imaging, Nutrition and Dietetics, Occupational Therapy, Pharmacy, Physiotherapy, Podiatry, Speech Pathology, Social Work and Psychology. Level One is aimed at early career professionals or professionals new to rural and remote practice. Course duration is 24 months and has a focus on workplace integrated learning. It requires significant involvement of locally based discipline specific supervisors and managers. Level Two has been developed for more experienced clinicians who undertake a Graduate Diploma in Rural Generalist Practice over a two-year period. Other allied health disciplines have expressed interest in joining the Program.

Integrated Service and Learning

There is global recognition that the safest and most effective clinics occur where the benefits of high quality clinical service, teaching and training, quality improvement and research are combined. Significant structural reform is required to realise the optimal benefit of integrated service and learning.

It was well recognised during the consultations that in rural and remote communities, where thin markets are more common, the viability of small business and service models in single towns can be tenuous. Many public allied health jobs are part time positions that remain unfilled year after year and the fragmentation and complexity of funding sources, as well as the socioeconomic and demographic characteristics of these communities, further affect viability despite high service demand. These factors make it difficult for small businesses and not for profit organisations to offer attractive, secure and supported allied health positions and as a result potential business growth is stunted. In addition, there is a lack of capacity and support for health professionals working in these environments to provide supervision for student placements therefore reducing opportunities for allied health students to train in rural service provision. Thus improving jobs and improving education are inter-related and both were frequently raised as significant causes for the undersupply of allied health professionals in rural and remote Australia.

In examining the available evidence and strong stakeholder support for both locally designed integrated rural models of care and increased high value rural allied health training opportunities, it was apparent that an intervention designed to address both of these factors would create a more effective approach to rural and remote workforce sustainability. Additionally, it was recognised that the long-term investment by the Commonwealth in rural health education capacity and infrastructure – in particular the Rural Health and Multidisciplinary Training (RHMT) Program - would be an important platform to build on. Integrating training and service provision in areas with high need and potential for future employment will increase workforce supply, quality and sustainability.

Recommendation 2: Investing in a Culturally Safe and Culturally Responsive Workforce

Enhanced quality of allied health services through increased participation of Aboriginal and Torres Strait Islander people in the allied health workforce and comprehensive delivery of culturally safe and responsive services.

To enhance the quality of allied health services in rural and remote Australia, it is recommended that the Commonwealth invest in strategies to increase the participation of Aboriginal and Torres Strait Islander people in the allied health workforce. Two strategies recommended are: further expansion of the National Aboriginal and Torres Strait Islander Health Academy model to all Australian jurisdictions; and the creation of a Leaders in Indigenous Allied Health Training and Education Network. Once established, these strategies will increase pathways for Aboriginal and Torres Strait Islander people to enter the allied health workforce and will improve the cultural safety of rural and remote allied health services and training for all Australians.

Policy Intent – Enhancing Quality

Despite the high quality service provided by any individual allied health professional, if the overall system in which they are trained and operate has deficits, then the experience of the patient receiving care will not be of the highest standard possible.

This recommendation supports the broad vision underpinning the *National Aboriginal and Torres Strait Islander Health Plan 2013-2023*, that is: *an Australian health system that is free of racism and inequality, and where all Aboriginal and Torres Strait Islander people have access to health services that are effective, high quality, appropriate and affordable; and that the health system is comprised of an increasing Aboriginal and Torres Strait Islander health workforce delivering culturally-safe and responsive health care.*

This recommendation seeks to enhance the quality of allied health services through increased access to culturally safe and culturally responsive service provision for Aboriginal and Torres Strait Islander regional, rural and remote populations and support the Commonwealth Government's *Closing the Gap* national targets on health, education and employment.

Policy Outcomes

- Increased pathways into allied health undergraduate programs for rural Aboriginal and Torres Strait Islander students
- Increased number of Aboriginal and Torres Strait Islander allied health graduates
- Cultural safety and cultural responsiveness training embedded consistently across allied health curricula
- An Aboriginal and Torres Strait Islander allied health workforce that reflects rural and remote populations
- Workforce retention for Aboriginal and Torres Strait Islander allied health professionals
- Culturally safe and culturally responsive allied health practices and services

Funding the further expansion of the National Aboriginal and Torres Strait Islander Health Academy model

Barriers for rural origin students to enter undergraduate allied health courses are high and considerably higher for Aboriginal and Torres Strait Islander students. Existing responses, such as the Indigenous Allied Health Australia (IAHA) National Aboriginal and Torres Strait Islander Health Academy model, that create supportive, community-led local pathways into tertiary training, directly work towards increasing the number of Aboriginal and Torres Strait Islander allied health graduates.

The IAHA National Aboriginal and Torres Strait Islander Health Academy is a community-led learning model focused on academic achievement and re-shaping the way training pathways are co-designed and delivered with Aboriginal and Torres Strait Islander high school students. The Academy aims to embed culturally safe curricula and to be inclusive of local cultural aspirations for successful outcomes where social, cultural and environmental determinants are addressed with wraparound supports. Students undertake a School Based Traineeship in Certificate III in Allied Health Assistance alongside their year 11 and 12 qualifications. They also undertake a work placement in a health or related sector provider to gain on the job training and experience in their preferred career pathway.

The Academy has Aboriginal and/or Torres Strait Islander higher education health students and graduates supporting them as role models and as mentors, sharing their journeys into health, experiences in further education and the opportunities which exist. The Academy is promoting all health careers inclusive of allied health, nursing, medicine and Aboriginal and/or Torres Strait Islander Health Workers/Practitioners. The Academy promotes the diverse health and related settings where the health workforce is required including disability, aged care, community services, community- controlled health services, hospitals and pharmacy.[15]

The expansion of IAHA's National Aboriginal and Torres Strait Islander Health Academy model across and into all states and territories of Australia would reshape the way education and training pathways are designed and delivered for Aboriginal and Torres Strait Islander high school students. By embedding culturally safe learning environments, culturally relevant curricula, wrap-around mentoring and links with local health services and training providers, appropriate, safe and supported pathways will be available to Indigenous Australians to participate in the allied and broader health workforce.

The Commissioner is aware of recent Commonwealth recognition of the importance of this model through the support of its expansion into three additional sites and recommends that the expansion should continue, with a focus on rural and remote sites, across all jurisdictions.

Funding the establishment of a Leaders in Indigenous Allied Health Training and Education Network through a collaboration initiative of IAHA, ARHEN, ACDHS, and NACCHO.

Increasing the number of Aboriginal and Torres Strait Islander allied health graduates requires a whole- of-training collaborative approach. A dedicated inter-professional training and education network of Leaders in Indigenous Allied Health Training and Education Network (LIAHTEN) can facilitate this collaboration. The LIAHTEN would be similar to the LIME Network for medical schools and the LINMEN for Nursing and Midwifery. LIAHTEN would be established by IAHA through a partnership with the Australian Rural Health Education Network (AHREN), the Australian Council of Deans of Health Sciences (ACDHS), and the National Aboriginal Community Controlled Health Organisation (NACCHO).

The LIAHTEN's responsibilities would include:

- **Comprehensive implementation of the National Aboriginal and Torres Strait Islander Health Curriculum Framework in all allied health courses and training programs**

A collaborative approach to the implementation and monitoring of the Aboriginal and Torres Strait Islander Health Curriculum would increase the quality of allied health workforce education and training. Culturally safe and responsive services with comprehensive monitoring and governance processes would improve the quality of service delivery to Aboriginal and Torres Strait Islander populations and the Australian population as a whole.

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[15]   Indigenous Allied Health Association. Annual Report. IAHA; Deakin: 2019.

The Commissioner acknowledges that some universities have implemented the Aboriginal and Torres Strait Islander Health Curriculum Framework[16] (the Framework) into their health courses. However, stakeholders identified the need for its universal and comprehensive application. One of the first tasks of the LIAHTEN would be to begin implementation of the Framework across all allied health training courses in Australia.

In order for the Framework to be effectively embedded and implemented, support needs to be demonstrated by allied health program coordinators that cultural competency training is core to the course curriculum. This can be ensured by implementing mechanisms for impact such as the inclusion of relevant cultural capability exam questions. For this to happen good governance for implementation of the Framework needs to be in place to ensure academic leaders in Indigenous education are involved in design of curriculum including development of assessment and exam criteria.

The Framework provides clear expectations around Aboriginal and Torres Strait Islander cultural capabilities for clinical placement providers. LIAHTEN would work with universities to ensure structures are in place to support services and students in ensuring education and training placements are culturally safe and responsive.

- **Extending student placements in Aboriginal Community Controlled Health Services (ACCHS) in MMM 4-7 to a minimum of eight weeks' duration, and introducing mandatory course competencies in Indigenous health**

Stakeholder feedback called for a more systematic approach to providing high quality student placements in order to increase cultural safety and cultural responsiveness. Investing in quality placements in Aboriginal Community Controlled Health Services (ACCHSs), coordinated through the LIAHTEN, would improve cultural safety and responsiveness for patients and Aboriginal and Torres Strait allied health professionals. Longer placements result in higher value learning and experience for students. Accordingly, longer placements in ACCHSs will result in higher value learning regarding the provision of culturally responsive and safe services. Not only are longer placements most likely going to be of greater value to students but also for the ACCHS. As outlined in an earlier section of this Report, the longer the placement, the more the student contributes to service delivery–as their proficiency and productivity rises–and the greater the symbiosis between supervisor and student. Hence, longer placements mean a lower burden for supervisors and a more comprehensive learning experience for students. Regardless of placement length, each placement requires the same orientation, initiation and intensity of initial supervision. However, only the longer placement allows the practice to gain a return on this investment by the student having time to become a productive team member and contribute more to patient care.

Systemic implementation of the Framework will benefit ACCHSs by ensuring that allied health students are better prepared through the completion of foundational cultural context and capability subjects prior to placement. This will equip students with a greater understanding of Aboriginal and Torres Strait Islander history, health systems and experiences, which they will continue to develop during their placements.

It is recommended that formal partnerships between the UDRHs and Regional Universities, the Aboriginal Community Controlled sector and IAHA be established to increase opportunities for allied health students to undertake placements in ACCHSs and that ACCHSs have a role in the selection of students for placements. LIAHTEN would facilitate these opportunities and partnerships and work towards a new standard where placements are at least eight weeks in duration and aligned with specific course competencies for Aboriginal and Torres Strait Islander health. The LIAHTEN would facilitate these negotiated outcomes at a national level. LIAHTEN would provide guidance to universities to ensure ACCHSs are provided appropriate support through dedicated and appropriately skilled resources, for example the appointment of Indigenous Placement Officers and by ensuring students are well matched and have undertaken core cultural capability subjects.

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16   Commonwealth of Australia (Department of Health).
       The Aboriginal and Torres Strait Islander Health Curriculum Framework. Canberra: 2014.

- **Undertaking a systematic national review of the current quotas for Aboriginal and Torres Strait Islander student enrolments in allied health courses**

Stakeholder feedback was consistent in its support for an improved system of quotas for Aboriginal and Torres Strait Islander intake into allied health training courses. Currently quotas vary across courses and universities. IAHA was identified by many stakeholders as being a key organisation to work with the University sector to establish a more consistent approach towards improving the way quotas are currently applied. Through the LIAHTEN, IAHA would influence a consistent national response.

- **Increasing pathways into allied health courses for Indigenous Australians through the Vocational Education Training sector, Aboriginal Registered Training Organisations and through the National Aboriginal and Torres Strait Islander Health Academy**

Investing in the expansion of community-led pathways into tertiary training, facilitated through the LIAHTEN, would lead to growth in the Aboriginal and Torres Strait Islander allied health workforce and better health outcomes for Aboriginal and Torres Strait Islander populations.

Stakeholders identified the important role of Aboriginal and Torres Strait Islander Training Organisations in providing pathways into tertiary training. Many training organisations provide culturally-safe learning environments that involve local community members in teaching and mentoring roles. Stakeholders called for an expansion of the roles of these organisations and sectors in creating articulated pathways into allied health training through more formal partnerships with tertiary institutions. This expansion would be facilitated through the LIAHTEN.

- **Increasing the leadership pathways and recruitment of Aboriginal and Torres Strait Islander allied health professionals to academic roles**

Increased recruitment of Aboriginal and Torres Strait Islander allied health professionals to academic roles would enhance the integrity of teaching in relation to culturally safe and responsive service delivery, provide role models and opportunities for mentorship and the proportion of Indigenous students who successfully complete allied health courses leading to a greater number of Aboriginal and Torres Strait Islander allied health professionals working across Australia.

Stakeholder consultation revealed the importance of Aboriginal and Torres Strait Islander-led programs to ensure the cultural lens is foundational. The development of structured leadership pathways for Aboriginal and Torres Strait Islander allied health professionals to academic leadership roles promises to achieve multiple important outcomes.

The Commissioner also recognises the isolation that individual Aboriginal and Torres Strait Islander academics can feel in large institutions. LIAHTEN can provide a safe and supportive space for these leaders that will build a network of peers for this workforce and enhance the attractiveness of academic work as a career opportunity for Aboriginal and Torres Strait Islander people.

Aboriginal and Torres Strait Islander-led course development is essential for optimising graduate capability in the delivery of effective health services that are responsive to the needs of Aboriginal and Torres Strait Islander people. Similarly, when people with Indigenous backgrounds deliver the courses, the integrity of teaching is reinforced as students learn directly from those with lived experience. The availability of Indigenous educators provides Indigenous students with mentorship through access to role models with correlating cultural identities.

Evidence Base for Recommendation 2

Barriers to accessing appropriate health services can take many forms – workforce shortage, geographical isolation, financial and service type. Barriers can also be cultural: built over time by decades of racism and neglect. It is incumbent on the health system to ensure that all services are culturally safe and culturally responsive to Aboriginal and Torres Strait Islander people who deliver and receive allied health services.

> *Cultural safety and responsiveness extend beyond the provision of care which is culturally 'blind' and in which processes or clinical practices do not differentiate because of race, but equally do not take account of cultural norms or the needs of particular people. Cultural safety requires recognition and understanding of how one's own culture – and the culture of the health system – influences the provision of treatment to Aboriginal and Torres Strait Islander people and, therefore, whether treatment supports the needs and aspiration from the perspective of the recipient. Cultural responsiveness is the action required to deliver culturally safe care.*[17]

Peer reviewed and grey literature found that while people living in rural and remote communities experience poorer health outcomes than those in metropolitan centres, the burden of disease in rural and remote Aboriginal and Torres Strait Islander populations is significantly higher and is exacerbated by limited access to appropriate and culturally safe and responsive health services. This is reflected in Australia's life expectancy rates where the life expectancy at birth of Aboriginal and Torres Strait Islander men in remote areas is 13.8 years less than non-Indigenous males in remote areas, and where Aboriginal and Torres Strait Islander women have a life expectancy 14 years less than non-Indigenous women. Aboriginal and Torres Strait Islander people living in urban areas have an increased life expectancy of 6.2 years for males and 6.9 years for females, compared to those in remote areas, the tyranny of distance and rurality, a significant factor in these variations.[18]

Currently, Aboriginal and Torres Strait Islander allied health professionals represent just 0.5% of the sector, which is in stark disproportion to the populations they serve, particularly in rural and remote areas. The Aboriginal Community Controlled Health Sector experiences similar challenges to the broader health sector in recruiting and retaining a sustainable level of allied health professionals in rural and remote areas, despite having a long history of providing multidisciplinary approaches to health services.

The benefits of increasing Aboriginal and Torres Strait Islander participation in the allied health workforce include providing a unique cultural lens, improving systems of care and increasing access to health services through the provision of culturally safe and responsive care. Increasing participation is consistent with current Commonwealth policy objectives, in particular the *National Aboriginal and Torres Strait Islander Health Workforce Strategic Framework (2016-2023)* which notes that:

> *Building Aboriginal and Torres Strait Islander health workforce capability is a key component of building health systems effectiveness.*[19]

To summarise, feedback from stakeholders and the findings of the literature review acknowledged that while the overall quality of the Australian allied health workforce is high, there are still specific quality initiatives required to address the gap in health outcomes experienced by Aboriginal and Torres Strait Islander Australians living in rural communities and that increased Aboriginal and Torres Strait Islander participation in the allied health workforce is essential to this quality indicator.

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[17] Indigenous Allied Health Association. (2019) Racism in Health [Accessed 13 March 2020]
Retrieved from: https://iaha.com.au/wp-content/uploads/2020/02/Racism-in-Health-Position-Statement.pdf

[18] Australian Bureau of Statistics, Life Expectancy Tables for Aboriginal and Torres Strait Islander Australians.
ABS Catalogue No. 3302.055.003; Canberra: 2018.

[19] Australian Health Ministers' Advisory Council. *National Aboriginal and Torres Strait Islander Health Workforce Strategic Framework 2016-2023*; COAG: 2017.

Recommendation 3: Investing in Allied Health Data and Infrastructure

Enhanced evidence-based policy development and health workforce planning through access to comprehensive allied health data

To expand the distribution of the allied health workforce across rural and remote Australia, it is recommended that, building on current national and jurisdictional initiatives, the Commonwealth develops a National Allied Health Data Strategy. This Strategy will include building a geospatial Allied Health Minimum Dataset that incorporates comprehensive rural and remote allied health workforce data. Once established, this data strategy and minimum dataset will inform and improve the design and development of rural and remote allied health workforce planning and policy.

Policy Intent – Expanding Distribution

To support the underpinning aims of *Australia's National Digital Health Strategy 2019-2022* by providing better health for all Australians enabled by seamless, safe, secure digital health services and technologies that provide a range of innovative, easy to use tools for patients, providers and planners.

Policy Outcomes

- A reliable, comprehensive and current national allied health workforce dataset used for workforce analysis and planning.
- High-quality allied health data with a commonly understood meaning that can be accessed with ease and confidence
- Improved understanding of the distribution patterns of allied health workforce
- Ability to respond to emerging trends identified through analysis of improved national allied health data

Development of the National Allied Health Data Strategy

Understanding Australia's allied health workforce distribution and demand is currently limited by sub-optimal data availability, coordination, integration and management. While a range of allied health data is known to be collected, it is disparate and not widely accessible. Currently, allied health data is collected using different standards, definitions, at different levels of detail and for different purposes.

> *'A substantial proportion of healthcare demand is met by the allied health sector and yet their role is often poorly understood, underutilised and largely overlooked in digital health reform.'[20]*

There is significant opportunity to improve the quality of and access to allied health data in order to form a more accurate and complete picture of the Australian health workforce. A national view of allied health workforce distribution will inform national, state and regional workforce planners in a way that currently cannot be done easily or with a high degree of confidence.

The development of a National Allied Health Data Strategy will map out the plan to improve the quality and accessibility of allied health workforce supply and demand data for effective policy development and planning in health, aged care, disability, education, social services and rural health.

It is proposed that the National Allied Health Data Strategy (the Strategy) will be developed under the guidance of a newly established National Allied Health Data Governance Committee (the Committee). Membership on the Committee will include cross sector and cross departmental allied health leaders, peak organisations, university and training sector representatives and consumer groups. The Committee will link in with other relevant stakeholders, allied health data custodians and data governance groups such as the Department of Health, Health Workforce Division Data Governance and Strategy Team. The Committee will oversee the development of the Strategy.

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[20]   Health Informatics Society of Australia (HISA) Allied Health Professionals: the untapped potential in digital health [Accessed 30 March 2020] Retrieved from: https://www.hisa.org.au/wp-content/uploads/2019/02/Allied-Health-Informatics-Position-Statement_draft.pdf

The Strategy will describe a five to ten-year plan to improve the management, collection, organisation, accuracy, usability and accessibility of allied health workforce data to support evidence-based health workforce policy development at national, state and regional levels. The sector is calling for a single authority with clear responsibility for partnering with the many stakeholders to achieve this. The proposed Chief Allied Health Officer (see Recommendation 4) would have the authority and responsibility to do so.

The Strategy will map out integration and alignment of national allied health workforce data with other relevant agreements, strategies, plans and programs such as the National Medical Workforce Strategy, NDIS demand mapping project, HeadsUPP Tool, Data Integration Partnership for Australia (DIPA), National Primary Health Care Data Asset and the Digital Health Agency. Findings and recommendations resulting from the *Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability and the Royal Commission into Aged Care Quality and Safety* related to data and allied health workforce can also be considered in the development of the Strategy.

Development of the National Allied Health Workforce Minimum Dataset

A single National Allied Health Workforce Minimum Dataset (NAHWMDS) is urgently required for high quality allied health workforce planning and policy development. The National Allied Health Workforce Data Strategy will include scope for the development of a NAHWMDS.

The NAHWMDS will be designed to integrate and build on existing digital strategies and programs. If deemed appropriate the MDS could be 'bolted on' to existing data projects and infrastructure, such as the National Medical Workforce Strategy. There are many organisations, including the Australian Institute of Health and Welfare, which would have capability in managing the NAHWMDS and making the data available in useful forms. Options for the development of the NAHWMDS would be explored in an initial scoping project overseen by the Governance Committee. The scoping project would explore options regarding (but not exclusive to):

- Program governance and management arrangements for a NAHWMDS
- Establishment of data governance, standardisation and data management frameworks
- Linkages with existing health workforce data programs
- Development of data exchange agreements and processes with data custodians
- Data discovery - identifying data availability, metadata and gap analysis
- Opportunities to maximise data quality
- Digital infrastructure design options
- Opportunities to maximise usability and searchability of data including location-based searching.

When completed, decision makers will be able to access the NAHWMDS to see a more complete picture of the allied health workforce (including students, clinicians working in dual roles and/or across sectors, locums etc.) along with the modes of delivery (e.g. face-to-face, telehealth, outreach). They will be able to drill down to a particular geographical area from a national view. They will be able to contrast this information against health metrics (e.g. Quality Adjusted Life Years), indicators of wellbeing (e.g. patient satisfaction), and patient demographics. The data would identify exemplars and, by contrast, areas with sub-optimal balance of supply (quality, access and distribution) and demand (from reliable indicators of health and wellbeing). Users of the MDS will be able to measure the effectiveness of strategies in terms of the extent and durability of outcomes and derive a value for the return on their investment. The data would then inform further strategies for continual improvement.

Evidence Base for Recommendation 3

There was universal support from stakeholders that improvements to the coordination and management of allied health workforce data and research were needed and that a national collection of the data is required to address the gap that currently exists in Australia's health workforce data.

Data and evidence limitations in the allied health sector have been reported for many years, in 2010 the Workload Measures for Allied Health Professionals Final Report stated, 'Comprehensive and accurate information on the numbers and workload of the allied health workforce is urgently required for national workforce planning. If such data are not improved, then it will continue to be impossible to conduct national workforce planning for these groups in Australia.[21] Without complete and accurate allied health workforce data and expanding research capacity, the evidence base required by funding bodies and workforce planners to invest, is absent.

A Review of Allied Health Workforce Models and Structures observed 'there is relatively little detailed and compelling evidence related to the contribution of the allied health workforce. It does not reflect an absence of contribution by the workforce, but rather a relative lack of examination of the workforce with the objective of achieving broader policy engagement and influence.'[22] Allied health workforce data limitations, accuracy and gaps exist at state, territory and national levels. Part of the challenge in collecting allied health workforce data can be explained by cross sector complexities, a workforce operating across multiple systems with not for profit, private and public sector employers and where the composition and registration of professions included as 'allied health' varies.

These data limitations have significant knock on effects such as when measuring Aboriginal and Torres Strait Islander allied health professionals' contribution to the health sector, described in the Indigenous Allied Health Workforce Strategy ....*it is not currently possible to obtain a precise count of the allied health workforce in Australia, or a profile of the Aboriginal and Torres Strait Islander allied health workforce. Nonetheless, it is clear from available data that allied health continues to be among the health professions with the largest gap between Indigenous and non-Indigenous professionals. Consequently, the inadequacy of available data systems regarding allied health practice and need 'understates' their actual and potential impact and deprives policy, program and funding decision-makers of the evidence they need to guide system and service reform. This partly explains the slow progress in shifting the health system from an illness and event driven framework to a more health enabling and preventive model.*[23]

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21 National Health Workforce Planning and Research Collaboration 2010: Workload Measures for Allied Health Professionals Final Report. [Accessed April 2019]. Retrieved from: https://docplayer.net/2453115-Workload-measures-for-allied-health-professionals.html

22 Victorian Government (2017) Victorian Allied Health Workforce Research Program Information sheet [Accessed April 2019]. Retrieved from: https://www2.health.vic.gov.au/about/publications/factsheets/vahwrp-information-sheet-year3-sept2017

23 Indigenous Allied Health Australia Workforce Development Strategy 2018-2020

The amount and quality of allied health data available show signs of gradual improvement. In recent years there have been improvements made in the capture of quality allied health workforce data for example through APHRA and more specifically National Registration and Accreditation Scheme (NRAS) providing national data collection for eleven component allied health professions. Emerging plans, for example, the anticipated expansion of the HeaDS UPP[24] tool to include the ARHPA registered allied health workforce data and the Data Integration Partnership of Australia (DIPA) a whole of government investment to maximise the use and value of the Government's data assets, add to the overall improvement in allied health data availability and quality.

While there has been some recent progress made in the collection of allied health data, the limitation of these collections and the narrow scope of functions around which they have been developed make them insufficient for the purpose of effective national workforce planning. For example, some datasets only focus on a particular region or on a particular funding source. Some, like the HeaDS UPP tool, have strong reliance on Medicare data which includes only a fraction of the allied health services that are essential in remote areas.

Allied health data improvements are also being seen at the jurisdictional level, for example in Victoria where the Department of Health and Human Services recently completed the Victorian Allied Health Workforce Research Program. The Program objectives being to strengthen the evidence base of Victorian allied health professions in order to generate new data and to identify key workforce development issues that influence the capacity of allied health professions to meet service demand and inform government policy making.[25]

Many data sets exclude sufficient geographical parameters to show the locations of services, clinicians and patients. Further complication arises from a lack of national standardisation that would allow straightforward amalgamation of datasets.

What is clear is that Australia requires a strategy and investment to enhance the quality and availability of allied health workforce data to better inform workforce policy and planning development in the future. Improving the visibility of the allied health workforce in the workforce evidence base will address the blind spot that currently exists for 20% of the health workforce.

24 Australian Department of Health. Health Demand and Supply Utilisation Patterns Planning [Accessed 20 January 2020] Retrieved from: https://hwd.health.gov.au/heaDSUPP.html
25 Victorian Government (2017) Victorian Allied Health Workforce Research Program Information sheet [Accessed April 2019]. Retrieved from: https://www2.health.vic.gov.au/about/publications/factsheets/vahwrp-information-sheet-year3-sept2017

Recommendation 4: Investing in National Leadership

The appointment of a national Chief Allied Health Officer to provide leadership and representation within the Australian Government

It is recommended that the Commonwealth appoint a dedicated full-time Chief Allied Health Officer (CAHO) to work across sectors and departments including health, mental health, disability, aged care, early childhood, education and training, justice and social services. The CAHO will work with relevant peak bodies and consumer advisory groups to ensure equity of access to high quality allied health services for all rural and remote communities. Once established, the CAHO will provide valuable allied health input and leadership into Commonwealth government policy.

Policy Intent

To enhance the Australian Government Department of Health's capacity to contribute to the success of the 10-year Primary Health Care Plan, the NDIS, My Aged Care and other related strategies.

Policy Outcomes

- A focal point for engagement with allied health in the development of Australian Government policy
- Dedicated, cross-sector national allied health policy leadership within the Australian Government

Appointment of a Chief Allied Health Officer

There is a unanimous call across the allied health service sector for stronger allied health leadership and representation from within the Australian Government, namely the appointment of a Commonwealth Chief Allied Health Officer. While there is acknowledgement of the commitment and developmental work of the Deputy Secretary of Health Systems Policy and Primary Care Group, who currently holds the title of Chief Allied Health Officer in addition to other responsibilities, there is now a great need for the expansion of those responsibilities through the appointment of a dedicated Chief Allied Health Officer with staff and funds quarantined to focus more wholly on advancing cross sector allied health linkages, rural allied health access and distribution and strengthening allied health workforce development.

This appointment comes at a crucial time as the reliance on the allied health workforce to effectively deliver Australian Government policy and programs in health, NDIS, aged care, education and social services continues to increase. It is a crucial time to appoint a national allied health leader as states, territories and the Commonwealth also develop stronger partnerships and commitments to integrated funding and service provision in order to deliver seamless services to communities, through National Cabinet and the Council on Federal Financial Relations and relevant partnership agreements. Additionally, it is a crucial time to represent the allied health workforce and rural allied health professionals in the development of relevant policy and workforce planning as Australia rebuilds communities and systems, in the wake of recent drought, bushfires and COVID-19.

To enable success in the role, the Chief Allied Health Officer will require a position in government at a level equivalent to the other Chief Officers in the Department of Health. Given the work required to address maldistribution of the allied health workforce in rural and remote Australia, the Chief Allied Health Officer will need to establish and maintain close linkages and ties with office of the National Rural Health Commissioner. The Chief Allied Health Officer will require the authority and influence to work across sectors and government to fully harness the diversity and unrealised potential inherent in the allied health sector. The Chief Allied Health Officer would work alongside and with the Chief Medical Officer and Chief Nursing and Midwifery Officer and have the necessary authority and resources to develop critical relationships across sectors, across government, and across the nation in the delivery of a measurable improvement to health and wellbeing outcomes for all Australians through the provision of high quality and accessible allied health services.

Developing partnerships

The Chief Allied Health Officer role will develop partnerships across health, mental health, disability, aged care, education and training, early childhood, justice, and social services to develop and implement an integrated suite of strategies that achieve shared outcomes.

The development of collaborative internal and external relationships is critical and includes:

- with the National Rural Health Commissioner, to progress current undersupply of allied health professionals in rural and remote Australia
- within the Department of Health (e.g. Indigenous Health Division, Health Workforce Division, Primary Health Care Division)
- across Government (e.g. National Disability Insurance Agency, National Indigenous Australians Agency, Australian Institute of Health and Welfare, Social Services, Veterans Affairs, Education and Justice)
- with relevant peak bodies and key allied health leadership groups (e.g. Australian Allied Health Leadership Forum (AAHLF))
- with universities, training organisations and schools
- to link the jurisdictions and the Commonwealth and facilitate joint planning through the National Allied Health Advisors Committee and through National Cabinet and the Council on Federal Financial Relations and relevant partnership agreements
- with relevant health consumer forums.

Developing a National Allied Health Workforce Strategy

The Chief Allied Health Officer will work across sectors, departments and jurisdictions to identify and promote best practice in allied health. In doing so, the Chief Allied Health Officer would identify common needs and challenges experienced by the allied health sector, opportunities for workforce development and training, address current maldistribution patterns and develop flexible, person-centred, outcome-focused strategies and practice models that fit the varying needs of rural communities and achieve ongoing improvement of rural health. This work will culminate in the development of a National Allied Health Workforce Strategy.

The Chief Allied Health Officer can identify best practice and work with the sector to build on existing structures and knowledge to develop integrated strategies for achieving health equity, allied health jobs and opportunities, higher productivity and therefore greater economic participation and development, particularly in rural areas. Included in this work could be providing guidance on currently unresolved issues such as overseeing evaluation of the expansion of allied health telehealth MBS in response to COVID-19, measuring the effectiveness of different models for delivering NDIS and Aged Care allied health services to rural and remote communities, and providing clarity to the sector regarding claiming MBS while supervising allied health students.

Appointment Considerations

The person appointed to the position of Chief Allied Health Officer requires the background, knowledge and authority to facilitate the establishment and improvement of relationships and agreements that achieve the broader policy intent of these recommendations within and outside government. They will bring experience and strong capability in developing patient- and community-focused governance structures across multiple health disciplines and extensive knowledge of rural and remote health, services and systems.

The Chief Allied Health Officer will have a consultative approach to capture and reflect a comprehensive understanding across allied health and related professions, departments, sectors, private and not for profit organisations, representatives of the Aboriginal and Torres Strait Islander health and education sectors, universities, training organisations and professional associations.

In order to ensure resources are directed optimally towards achieving health equity, the Chief Allied Health Officer must be given direct accountability for delivering improvements to rural populations in a measurable way. Those improvements must be made in line with Australia's Long Term National Health Plan which prioritises patient-centric health optimisation, illness prevention and chronic disease management, through research and integrated equitable healthcare systems. Clear and strong consultative mechanisms with the National Rural Health Commissioner, possibly including jointly appointed staff, will assist in ensuring a focus on outcomes for rural and remote communities.

To be effective in developing the above relationships and directing efficient implementation of strategies, the appointee requires an allied health professional background and a demonstrated appreciation of, and responsiveness to, Aboriginal and Torres Strait Islander health and cultural needs.

Evidence Base for Recommendation 4

The allied health sector's engagement with the Commonwealth continues to mature and the importance of the role that allied health plays and could further play in the health of rural communities is well recognised. In 2013, the Commonwealth Department of Health appointed a Chief Allied Health Officer to work directly with the allied health sector. This was well received by sector representatives at the time who saw the appointment as the allied health sector having a 'voice at the highest level of government for the first time'[26]. The sector acknowledges the support the position has provided and recommends an expansion of the position to a dedicated Chief Allied Health Officer role (currently a duel role held by the Department's Deputy Secretary).

Feedback from the sector strongly supports the appointment of a dedicated Chief Allied Health Officer to ensure that the views and expertise of the allied health sector are reflected in broader health and cross sector policy development and decision-making.

The complexity of working across sectors and of aligning the wide range of market forces across so many professions continues to hinder progress towards equitable access to allied health services. This includes the maldistribution of the allied health workforce and the high cost of delivering rural and remote services. These factors further highlight the need for national leadership and representation of the allied health sector.

The evidence shows that with multiple professions and multiple sectors incorporated in allied health policy, the area is difficult to navigate and allied health sector representation and expertise is urgently required in national decision-making. This expertise and representation is also vital for understanding the complex issues related to rural allied health policy and planning and the role of allied health professionals in the delivery of sustainable rural models of care.

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[26]   Media release SARRAH (2013) https://sarrah.org.au/media/sarrah-welcomes-australias-first-chief-allied-health-officer [Accessed April 2019]. Retrieved from: https://sarrah.org.au/media/sarrah-welcomes-australias-first-chief-allied-health-officer

Chapter Four: The Commissioner's Concluding Remarks

Equitable health and wellbeing is a rightful expectation of rural and remote Australians. This should not be just an aspiration. By building intelligently on current evidence, infrastructure, experience and expertise, there is an alternative future in which remoteness and size no longer determine the health of a community nor the access and quality of allied health services available to it. We have a tremendous opportunity, through the achievable recommendations in this Report, to bring that future forward to the present.

As a package, these recommendations become a catalyst which can further unite rural and remote allied health services to form a productive and efficient whole. Scale, through integrated services across rural and remote areas, can create jobs and deepen economies. Funding sources can augment rather than compete. Better data means better planning. The provision of culturally safe and culturally responsive services improves quality of care for all. Growing our own workforce locally reduces costs, improves quality of care, and builds sustainability. National leadership ensures a cohesive approach to rural and remote allied health workforce support across government.

This is especially so for rural health professions education. The radical redesign of course delivery to online modes during the COVID-19 pandemic means that the justification for students being resident in major metropolitan centres for the majority of their course has evaporated. The ability for many smaller rural centres to be flexible and pivot to provide different, but safe and effective clinical learning environments has reinforced their importance in the education system. The contributions that students and junior clinicians can make to health care, including in public health areas such as contact tracing, reminds us of the symbiotic importance of learners in our health system. And the rural and remote workforce shortages that pre-existed COVID-19, that were in meaningful part a product of our city-centric education system, cannot be tolerated in tomorrow's world.

Allied health professionals are critical to our society's wellbeing and prosperity and regional, rural and remote Australia deserves its fair share of both. Australia delivers one of the world's best health systems and continues to improve through strategies set out in *Australia's Long Term National Health Plan*, by achieving the targets in *Closing the Gap*, the *National Preventative Health Strategy*, and by implementing the broader vision that underpins the *Stronger Rural Health Strategy* and the *10-year Primary Health Care Plan*. It is a system prepared to respond accordingly to the significant issues raised by the National Disability Insurance Scheme (NDIS) Thin Markets Project, the Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability and the Royal Commission into Aged Care Quality and Safety. As Australia embarks on recovering from the bushfires, floods, drought and COVID-19, there has never been a more important time to ensure equitable access, quality and distribution of allied health services for all Australians

The recent devastation caused by widespread drought, fire and flooding in rural communities, and the current challenge of containing the spread of the COVID-19 pandemic, have revealed the fragile nature of health service delivery outside metropolitan centres. The recommendations in this Report are designed to strengthen rural and remote health service access by creating an integrated system that attracts and retains the current generation of allied health providers and those that will follow. This is good news for the bush, and that means good news for our nation.

Contacts

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Further information about the National Rural Health Commissioner can be found on the Commissioner's website at www.health.gov.au/national-rural-health-commissioner

Attachment 1: Consultations

Commonwealth Ministers' Offices

Minister for Regional Health, Regional Communications and Local Government, the Hon Mark Coulton

Senator the Hon Bridget McKenzie

Minister for Health, the Hon Greg Hunt

Minister for Indigenous Affairs, the Hon. Ken Wyatt

Australian Government

Caroline Edwards – Deputy Secretary of Health Systems Policy and Primary Care Group, Department of Health

Diagnostic Imaging and Pathology Branch, Medical Benefits Division, Department of Health

Health Training Branch, Health Workforce Division (inc. Consultant Kristine Battye)

Health Workforce Reform Branch, Health Workforce Division, Department of Health

Indigenous Health Division, Strategy and Evidence Branch, Department of Health

National Disability Insurance Scheme Market Reform Branch, Department of Social Services

Pharmacy Branch, Technology Assessment and Access Division, Department of Health

Primary Care, Dental and Palliative Care Branch, Primary Care and Mental Health Division, Department of Health

Primary Health Networks Branch, Primary Care and Mental Health Division, Department of Health

Rural Access Branch, Health Workforce Division, Department of Health

Rural and Remote Market Strategy, National Disability Insurance Agency (NDIA))

Australian Allied Health Leadership Forum

Allied Health Professions Australia

Australian Council of Deans of Health Sciences

Indigenous Allied Health Australia

National Allied Health Advisors and Chief Officers Committee

Services for Australian Rural and Remote Allied Health

State and Territory Chief Allied Health Officers and Advisors

Jenny Campbell	Chief Health Professions Officer, WA Department of Health
Andrew Davidson	Chief Allied Health Officer, NSW Department of Health
Hassan Kadous	Principal Allied Health Advisor, NSW Department of Health
Heather Malcolm	Principal Allied Health Officer, NT Department of Health
Donna Markham	Chief Allied Health Officer, Safer Care Victoria
Helen Matthews	Chief Allied Health Officer, ACT Department of Health
Liza-Jane McBride	Chief Allied Health Officer, Allied Health Professions' Office of Queensland, Clinical Excellence Division
Kendra Strong	Chief Allied Health Advisor, TAS Department of Health
Catherine Turnbull	Chief Allied and Scientific Health Officer, SA Health

Rural Health Stakeholder Roundtable

Terry Battalis	NT Branch President, Pharmacy Guild of Australia
Lisa Bourke	Chair, Australian Rural Health Education Network
Karl Briscoe	CEO, National Aboriginal and Torres Strait Islander Health Worker Association
Ashley Brown	Chair, National Rural Health Student Network
Christopher Cliffe	CEO, CRANAplus
David Garne	Federation of Rural Australian Medical Educators
Keith Gleeson	Board Director, Australian Indigenous Doctors' Association
Allan Groth	Indigenous Allied Health Australia
Ross Hetherington	Chair, Rural Health Workforce Australia
Claire Hewat	CEO, Allied Health Professions Australia
Eithne Irving	Deputy CEO, Australian Dental Association
Shane Jackson	CEO, Pharmaceutical Society of Australia
Cath Maloney	CEO, Services for Australian Rural and Remote Allied Health
Ewen McPhee	President, Australian College of Rural and Remote Medicine
Gabrielle O'Kane	CEO, National Rural Health Alliance
Melanie Robinson	CEO, Congress of Aboriginal and Torres Strait Islander Nurses and Midwives (CATSINaM)
Peta Rutherford	CEO, Rural Doctors Association of Australia
Shehnarz Salindera	Council of Rural Doctors, Australian Medical Association
Ayman Shenouda	Chair, Royal Australian College of General Practitioners - Rural Faculty

Other National Organisations

Philip Anderton	Convenor, Rural Optometry Group of Optometry Australia
Monica Barolits-McCabe	CEO, Australian Indigenous Doctors' Association
Libby Boschen	Special Advisor, Optometry Australia
Ashley Brown	Chair, National Rural Health Student Network
Megan Cahill	Chair, Rural Workforce Agency Network
Phil Calvert	National President of Australian Physiotherapy Association
Dawn Casey	COO, National Aboriginal Community Controlled Health Organisation
Deborah Cole	Chair, Australian Healthcare and Hospitals Association
Rob Curry	President, Services for Australian Rural and Remote Allied Health
Sarah Davies	Policy and Advocacy Manager, Optometry Australia
Mark Diamond	former CEO, National Rural Health Alliance
Suzanne Greenwood	Executive Director, Pharmacy Guild of Australia
Simon Hanna	Professional Development and Clinical Policy Manager, Optometry Australia
Claire Hewat	CEO, Allied Health Professions Australia
Shane Houston	Managing Director, Cultural Fusion Consultancy
Shane Jackson	Acting CEO, Pharmaceutical Society Australia
Martin Laverty	former CEO, Royal Flying Doctors Service of Australia
Martin Laverty	Secretary General, Australian Medical Association
Tanya Lehmann	Chair, National Rural Health Alliance
Cath Maloney	CEO, Services for Australian Rural and Remote Allied Health
Ewen McPhee	President, ACRRM
Member Meeting	Coalition Of National Nursing and Midwifery Organisations (CoNNMO)
Donna Murray	CEO, Indigenous Allied Health Australia
Anja Nikolic	CEO, Australian Physiotherapy Association
Gabrielle O'Kane	CEO, National Rural Health Alliance
Krishn Parmer	Allied Health Officer, National Rural Health Student Network
Janine Ramsay	National Director, Australian Rural Health Education Network
Peta Rutherford	CEO, Rural Doctors Association of Australia
Ayman Shenouda	Vice President, Royal Australian College General Practice
Edward Swan	Executive Officer, Rural Health Workforce Australia
Alison Verhoeven	CEO, Australian Healthcare and Hospitals Association

Jurisdictional Leaders

Ross Bailie	Director, University Centre for Rural Health, University of Sydney
Leanne Beagley	CEO Western Victoria Primary Health Network
Sharon Downie	Manager, Allied Health Workforce, Department of Health and Human Services, Victoria
Chris Brenber	Dean of Education, College of Nursing and Health Sciences, Flinders University
Nick Bush	CEO, Echuca Regional Health
Maureen Carter	Nindilingarri Cultural Health Services (aka Fitzroy Crossing ACCHS)
Richard Cheney	Director Allied Health, Western New South Wales Local Health District
Richard Colbran	CEO, NSW Rural Doctors Network
Wendy Cox	Executive Director Medical Services, Murrumbidgee Local Health District
Lisa Davies Jones	CEO, North West HHS
Bob Davis	CEO, Maari Ma
Michael Dirienzo	CEO, Workforce and Allied Health, Hunter New England Local Health District
Vivienne Duggin	Regional Training Hub Project Officer, University of Western Australia
Michael Fisher	Principal, Broken Hill Public School
June Foulds	Regional Training Hub Project Officer, University of Western Australia
Stuart Gordon	CEO, Western Queensland Primary Health Network
Richard Griffiths	Executive Director, Workforce Planning and Talent Development Branch, New South Wales Ministry of Health
Andrew Harvey	CEO, Western New South Wales Primary Health Network
Denis Henry	Chair, Royal Flying Doctors Service, Victoria
Nicki Herriot	CEO Northern Territory Primary Health Network
Matt Jones	CEO, Murray Primary Health Network
Martin Jones	Director of the UDRH in Whyalla
Sabina Knight	Director, Centre for Rural & Remote Health, James Cook University
Jill Ludford	CEO, Murrumbidgee Local Health District
Esther May	Dean, Academic and Clinical Education, Health Sciences Divisional Office, University of South Australia
Jenny May	Director, University of Newcastle Department of Rural Health
Jodie May	Project Manager, Rural Support Service, SA Health, Government of South Australia
Scott McLachlan	CEO, Western New South Wales Local Health District
Chris Mitchell	CEO, Health Workforce Queensland
Richard Murray	Dean, College of Medicine and Dentistry, James Cook University
Murrumbidgee Board of Directors	Murrumbidgee Primary Health Network
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Amanda Proposch	CEO Gippsland Primary Health Network
Greg Sam	CEO, Royal Flying Doctor Service, Broken Hill
Rebecca Sealey	Associate Dean of Learning & Teaching, College of Healthcare Services, James Cook University
Tim Shackleton	CEO Rural Health West
John Smithson	Acting Academic Head Nursing and Midwifery, James Cook University
Tim Smyth	Chair, Western New South Wales Primary Health Network
Lee Stewart	Dean, College of Healthcare Sciences, Division of Tropical Health & Medicine, James Cook University
Catherine Stoddart	CEO, Northern Territory Health
Rachel Strauss	Executive Director, Latrobe Community Health Service, Victoria
Therese Tierney	Gippsland Primary Health Network
Lisa Vandommele	Acting Director of Academic Quality & Strategy, James Cook University
Robyn Vines	Senior Lecturer Mental Health, Western Sydney University, Bathurst
Katrina Wakely	Allied Health Academic, University of Newcastle Department of Rural Health
Luke Wakely	Allied Health Academic, University of Newcastle Department of Rural Health
Judi Walker	Board Director, Latrobe Community Health Service
Trish Wielandt	Academic Head Occupational Therapy and Speech Pathology, College of Health Science, James Cook University
Rebecca Wolfgang	Allied Health Academic, University of Newcastle Department of Rural Health
Ian Wronski	Deputy Vice Chancellor, Division of Tropical Health & Medicine, James Cook University
Jacqui Yoxall	Director, North Coast Allied Health Association
Mimi Zilliacus	Manager, Goulburn Valley Regional Training Hub

Attachment 2: Written Submissions Received

Peak bodies named in the Minister's Statement of Expectations

Allied Health Professions Australia (AHPA)

Australian Allied Health Leadership Forum (AAHLF)

Australian Healthcare and Hospitals Association (AHHA)

Indigenous Allied Health Australia (IAHA)

National Rural Health Alliance (NRHA)

Services for Australian Rural and Remote Allied Health (SARRAH)

Other valued contributors*

Aboriginal Health Council of Western Australia

Aboriginal Medical Service Alliance of the Northern Territory

Australasian Sonographers Association

Australian College of Nursing

Australian College of Rural and Remote Medicine

Australian Council of Deans of Health Sciences (ACDHS)

Australian Government, Department of Health

Australian Government, Department of Social Services, Boosting the Local Workforce Program

Australian Physiotherapy Association

Australian Rural Health Education Network (ARHEN)

Australian Rural Health Education Network, Mental Health Academic Network

Australian Health Care Reform Alliance

Australian Medical Association, General Practice and Workplace Policy Department

Australian Society of Medical Imaging and Radiation Therapy (ASMIRT)

Boab Health Service

Central Australian Rural Practitioners Association

Central Queensland University, School of Health, Medical, and Applied Sciences

Central West Hospital and Health Service

Charles Darwin University,

Charles Sturt University, Three Rivers University Department of Rural Health

CheckUP Australia, Queensland

Consumers Health Forum

Council of Deans of Nutrition and Dietetics

Country Health Connect, Limestone Coast

Country SA Primary Health Network

CRANAplus

Dental Health Services Victoria

Diabetes NSW & ACT

Exercise & Sports Science Australia

Flinders University, College of Nursing & Health Sciences

Flinders University, Discipline of Rural and Remote Health (DRRH) College of Medicine & Public Health

Gippsland Allied Health Leaders (GAHL) and the Gippsland Allied Health Educators Group (GAHEG)

Gold Coast Hospital and Health Service, Allied Health Services

Gold Coast University Hospital, Operations

Griffith University QLD, School of Allied Health Sciences

Health Workforce Queensland

James Cook University, Centre for Rural and Remote Health

James Cook University, Division of Health Services

James Cook University, Division of Tropical Health and Medicine

KBC Australia

La Trobe Community Health Service

La Trobe University, Office of the Vice-Chancellor

Latrobe Regional Hospital

Laurentian University, Northern Ontario School of Medicine

Marathon Health

MahonyGroup

Monash Rural Health

National Rural Health Student Network

Newcastle Department of Rural Health

National Aboriginal and Torres Strait Islander Health Worker Association (NATSIHWA)

North Coast Allied Health Association

National Aboriginal Community Controlled Health Organisation (NACCHO)

Northern Territory General Practice Education

Northern Australia Primary Health LTD

Northern Territory Government, Department of Health, People and Organisational Capability

Northern Territory Government, Department of Health, Top End Health Service

Northern Territory Primary Health Network

NSW Ministry of Health, Workforce Planning & Talent Development Branch

NSW Rural Doctors Network

Occupational Therapy Australia

Optometry Australia

Osteopathy Australia

Pharmacy Guild of Australia

Pharmaceutical Society of Australia

Queensland Government, Children's Health QLD Health and Hospital Services, Deadly Ears Program

Queensland Government, Department of Health & Human Services: Policy and Planning; Policy and Intergovernmental Relations; Health Workforce Division; Mental Health Division; Indigenous Health Division; Medicare Benefits Division; Primary Care Division

Queensland Government, North West Hospital and Health Service

Queensland Government, Wide Bay Hospital and Health Service (WBHHS)

Queensland Health, Allied Health Professions Office of Queensland

Queensland Health, Central Queensland Hospital and Health Service

Queensland Health, Central West Hospital and Health Service

Queensland Health, Darling Downs Health

Queensland Health, Torres and Cape Hospital and Health Service

Queensland Health, Townsville Hospital and Health Service, Rural Hospital Service Group

Queensland Health, Sunshine Coast Hospital and Health Service

Riverina Physiotherapy Centre, Wagga Wagga, NSW

Royal Australian College of General Practitioners, RACGP Rural

Royal Far West

Rural Pharmacy Network Australia

Rural Workforce Agencies

Safer Care Victoria

Society of Hospital Pharmacists of Australia

South Australian Government, Riverland Mallee Coorong Local Health Network

South Australian Government, SA Pharmacy, Department for Health and Wellbeing

South Australian Government, System Leadership and Design, Department for Health and Wellbeing

South Australian Government, SA Health, Rural Support Service

Southern Queensland Rural Health, Baillie Henderson Hospital campus

Tasmanian Government, Department of Health, Office of the Secretary

Tasmanian Government, Tasmanian Health Organisation - South

True, Relationships and Reproductive Health

Universities Australia, Health and Workforce

University Centre for Rural Health, New South Wales, Lismore

University of Melbourne, Chancellery

University of Newcastle, Department of Rural Health

University of Newcastle, Centre for Rural and Remote Mental Health

University of Notre Dame, Majarlin Kimberley Centre for Remote Health

University of South Australia, Division of Health Sciences

University of Sydney, Head of Department, Broken Hill

University of Sydney, Faculty of Health Sciences

University of Sydney, Office of the Vice-Chancellor and Principal

University of Tasmania, College of Health and Medicine

University of Tasmania, School of Health Sciences

University of Western Australia, Vice-Chancellor's Office

Victorian Government, Health Services Policy and Workforce, Department of Health & Human Services

WA Primary Health Alliance (Perth North PHN, Perth South PHN and Country WA PHN)

Western Australian Government, WA Country Health Service

Western NSW Primary Health Network

Western NSW Regional Training Hub, University of Sydney, School of Rural Health

Western Queensland Primary Health Network

Western Victoria Primary Health Network

*Please note: Individuals who provided feedback independent of an organisation have not been named to protect privacy. We thank those who contributed and value the time, insights and knowledge they shared.

www.health.gov.au/National-Rural-Health-Commissioner
Information in this publication is correct as at June 2020

Attachment 3: Literature Review

Review of rural allied health evidence to inform policy development for addressing access, distribution and quality

Prepared by the National Rural Health Commissioner

Executive summary

In December 2018, the Rural Health Minister Hon Bridget McKenzie requested the National Rural Health Commissioner to work with the allied health sector to develop Advice about improving the access, distribution and quality of rural and remote allied health services. The Commissioner's Office has prepared this literature review to inform policy advice.

This document summarises the results of a scoping review of the published peer review literature (1999-2019). Included were 119 studies, 19 of which were other reviews and 100 empirical studies. Broad themes identified were: rural allied health workforce and scope of practice; rural pathways to train and support; recruitment and retention and; models of service.

Snapshot of findings

Workforce and scope of practice

More than half of rural allied health professionals work publicly; although those more privately based include optometrists, podiatrists, pharmacists, physiotherapists and psychologists.

Rural allied health workers commonly service large catchments, visiting multiple communities. They work across an extended scope using generalist and specialist skills to meet diverse community needs with limited infrastructure.

Particular skills used are in paediatrics, Indigenous health, chronic diseases, health promotion and prevention, primary health and health service management. In rural and remote communities, training local workers including Indigenous Health Workers and allied health assistants is important for increasing early intervention, prevention, service coordination and enabling culturally-safe care.

Rural pathways to train and support

Based on a range of surveys, around half to two-thirds of rural allied health workers have a rural origin and half have some rural training experience.

Accessing tertiary allied health training is challenging for rural youth. Rural training opportunities have increased over time through University Departments of Rural Health (UDRH) (some disciplines of 12 months' duration), with signs that quality rural training impacts early career supply, after controlling for rural background.

Tertiary scholarships with rural return of service requirements and professional support could improve uptake of rural work. Intention to stay and turnover have the potential to vary between public and private sectors warranting tailored approaches.

Recruitment and retention

Reduced turnover is predicted by commencing employment at a higher grade (2/3 compared with 1) or being aged >35 years (compared with <35).

Factors considered important for retention are having strong rural career pathways, access to relevant professional development and local colleagues, working in a supportive practice environment and the nature of work (independence in role, variety of work, its community focus and a feasible workload).

Models of service

Available professionals (public and private), skills, infrastructure and the community need determine the allied health service platform for a regional catchment.

Patient-centred planning and partnerships between public hospitals and private providers (shared care) in regions can optimise use of the available workforce and promote access and quality.

Coordinated patient care depends on health service networks having strong leadership/ coordination, patient information, clear referral processes and staff training.

Outreach and telehealth, along with viable business models, are important for increasing service distribution. They require an adequate staff base, strong community engagement and training for local staff who manage ongoing care between allied health service points.

Summary

Australia is leading the evidence base with respect to rural allied health workforce and services. Findings suggest that allied health providers are working as generalists and need particular skills.

Access and quality depend on a critical mass of skilled providers, working in complementary teams to address needs of regional catchments. This can be aided by selecting rural background students, providing more rural-based training, rural curriculum, supported rural jobs and rural career pathways including addressing job satisfaction.

At the regional level, patient-centred service planning and coordination of public and private providers underpins access to more comprehensive and high quality services.

For smaller communities, outreach and virtual consultations are critical for early intervention and continuity of care, but viable business models and an adequate staff base are essential to improve service distribution.

Introduction

There are around 195,000 allied health professionals and allied health workers make up 25% of Australia's registered health workforce, however, they remain poorly distributed in rural and remote areas (1, 2). In December 2018, the Rural Health Minister Hon Bridget McKenzie requested that the National Rural Health Commissioner (the Commissioner) consult with the allied health sector to develop advice about the current priorities for rural and remote allied health services by October 2019. To support this, the Commissioner's Office has prepared a literature review and policy options paper. This document describes the literature review. Section 1 outlines the scope of the review. Section 2 describes the collection of evidence. Section 3 describes the results and Section 4 discusses the policy implications.

Section 1: Defining the scope of the review

1.1 Defining allied health

"Allied Health" describes a range of health professional groups involved in health service provision who are important for achieving comprehensive health and well-being outcomes outside of the boundaries of emergency, medical, dental and nursing care.(2, 3) In Australia, allied health professionals are trained in universities (faculties of health science, medicine, education, social sciences and University Departments of Rural Health (UDRH). Allied health assistants are trained by vocational training providers.

There are a range of allied health professions registered through the National Registration and Accreditation Scheme including psychologists, pharmacists, physiotherapists, occupational therapists, medical radiation practitioners, chiropractors, optometrists, podiatrists and osteopaths(Table 1).(1) In addition to the registered allied health professions, a large number of allied

health professions operate under self-regulation. These include speech pathologists, dietitians, social workers, audiologists, exercise scientists/ physiologists, orthoptists, orthotists, prosthetists and sonographers. Allied health assistants work under supervision of allied health professionals in single or multi-disciplinary roles.

A number of stakeholders are involved in allied health policy development. In February 2018, AHMAC formally recognised the Australian Allied Health Leadership Forum (AAHLF) as the appropriate allied health forum for AHMAC and Health Service Principle Committee (HSPC) to seek allied health workforce specific advice. The Forum includes members of Allied Health Professions Australia (AHPA), Deans of Universities that have allied health courses, Chief Allied Health Advisers, Indigenous Allied Health Australia and rural and remote representation via Services for Rural and Remote Allied Health (SARRAH).(4) The Forum describes allied health professionals as university qualified with "skills to retain, restore or gain optimal physical, sensory, psychological, cognitive, social and cultural function of clients, groups and populations", being "client focused, using inter-professional and collaborative approaches related to client needs, the community, and each other". The AAHLF does not delineate the specific disciplines included.

Allied Health Professions Australia (AHPA) is a peak body representing 20 national allied health association members and 6 organisational friends. AHPA also defines allied health professionals as university qualified practitioners with specialised expertise in preventing, diagnosing and treating a range of conditions and illnesses, qualified at the Australian Qualifications Framework (AQF) (Level 7 or higher), who work in multidisciplinary teams to address patient priorities (included disciplines listed in Table 1).(2) Various states and territories (jurisdictions) also manage a range of allied health disciplines and other health workers under the banner of "allied health" (Table 1). The Department of Health and Human Services (DHHS) in Victoria noted that a multiplicity of professions, technical expertise, training pathways, sectors of practice and professional governance frameworks needs to be embraced within allied health policies. (3)

Table 1 – Different groupings of disciplines registered, included or managed by jurisdictions for "allied health"

National Registration and Accreditation Scheme (AHPRA)	Allied Health Professions Australia (AHPA)	Victoria #	New South Wales #	Queensland #
Chiropractic*	Audiology	Art therapy	Art therapy	Audiology
Medical radiation practitioners	Chiropractic*	Audiology	Audiology	Clinical Measurements*
Occupational therapy	Creative arts therapy*	Biomedical science*	Child Life Therapy*	Exercise Physiology
Optometry	Dietetics	Chiropractic*	Counselling	Leisure Therapy*
Osteopathy	Exercise & sports science	Diagnostic imaging medical physics	Diversional Therapy*	Music Therapy
Pharmacy	Genetic Counselling*	Dietetics	Exercise Physiology	Neurophysiology
Physiotherapy	Medical imaging and radiation therapy	Exercise physiology	Genetic Counselling*	Nuclear Medicine Technology
Podiatry	Music therapy	Medical laboratory science*	Music Therapy	Nutrition & Dietetics
Psychology	Occupational therapy	Music therapy	Nuclear Medicine Technology	Occupational Therapy
Additional registered health workers that may be part of rural allied health teams	Optometry	Nuclear medicine	Nutrition & Dietetics	Optometry
Dental hygienist*	Orthoptics	Occupational therapy	Occupational Therapy	Orthoptics
Dental prosthetist*	Orthotics & Prosthetics	Optometry	Orthoptics	Orthotics & Prosthetics
Dental therapy	Osteopathy*	Oral health (not dentistry)*	Orthotics & Prosthetics	Pharmacy
Oral health therapy*	Perfusionists*	Orthoptics	Pharmacy	Physiotherapy
Aboriginal and Torres Strait Islander Health Practitioners*	Physiotherapy	Orthotics & Prosthetics	Physiotherapy	Podiatry
	Podiatry	Osteopathy*	Podiatry	Psychology
	Psychology	Pharmacy	Psychology	Radiation Therapy
	Rehabilitation counselling*	Physiotherapy	Radiography	Radiography
	Social work	Podiatry	Radiation Therapy	Rehabilitation Engineering*
	Speech pathology	Psychology	Sexual Assault*	Social Work
		Radiation oncology medical physics	Social Work	Sonography*
		Radiation therapy	Speech Pathology	Speech Pathology
		Radiography	Welfare*	
		Social work		
		Sonography*		
		Speech therapy		

*   May not be on lists of other jurisdictions, AHPRA or AHPA as of 2019 (1, 5, 6)

\#   Not all disciplines managed by jurisdictions are considered allied health but are listed if they are managed by allied health advisors

1.2 Rural allied health and rural community need

Services for Rural and Remote Allied Health (SARRAH) emerged in 1995 as a grassroots organisation advocating for rural allied health workers (7). SARRAH includes a range of allied health professions including but not limited to: audiology, dietetics, exercise physiology, occupational therapy, optometry, oral health, pharmacy, physiotherapy, podiatry, psychology, social work and speech pathology.

Various jurisdictions have initiated rural training and support programs to achieve a skilled and distributed rural allied health workforce and services. The most advanced of these is the Queensland (led by James Cook University - JCU) rural generalist allied health training program. Within this program, "generalist allied health" is described as either a service, or a practitioner, responding to the broad range of healthcare needs of rural or remote communities by delivering services for people with a wide range of clinical presentations, across the age spectrum, and in a variety of clinical settings (inpatient, ambulatory care, community). The aim of allied health generalist services/workers is to deliver accessible, high quality, safe, effective and efficient care using strategies such as telehealth, delegation, extended scope of practice and partnerships (particularly for low volume but important areas of care).

The University Departments of Rural Health (UDRH) and their parent body, the Australian Rural Health Education Network (ARHEN) which was formed in 2001, represent rural nursing and allied health disciplines (8). The UDRH Program was established as a result of the 1996-1997 Federal budget after being identified as a key component of the Government's Rural Workforce Strategy (9). In 2016, UDRH funding was incorporated into the Rural Health Multi-disciplinary Training Program (along with funding for rural medical and dental training). Around 16 UDRHs in Australia provide clinical placements in rural and remote locations for health science students and have a role in developing evidence to inform rural health system quality improvement (8).

Rural and remote communities have access to fewer allied health services. Despite more allied health workers being produced nationally in recent years, workforce statistics suggest poor distribution (10). In 2016, 83% of psychologists, 81% of physiotherapists, 79% of optometrists, 77% of pharmacists, and 75% of podiatrists worked in metropolitan locations (MMM1) where only 70% of the population resides (10). The ratio of allied health workers per 100,000 population diminishes with increasing remoteness. This absolute deficit is in addition to the large distances, population dispersion, lower socio-economic and health status and higher health risk behavior of rural and remote that also impact on shortfall of workers relative to the number required (10).

In 2012, core primary care services needed for rural and remote communities were defined using a Dephi method with 39 experts - 'care of the sick and injured', 'mental health', 'maternal/child health', 'allied health', 'sexual/reproductive health', 'rehabilitation', 'oral/dental health' and 'public health/illness prevention'. The challenges of providing these services equitably in rural and remote areas required diverse strategies and strong service coordination (11). A follow up study identified that most of these core services were required even in communities as small as <1000 people (12).

Hospitalisation data reflects substantial unaddressed need within rural and remote primary care. One 2011-2013 study found that hospitalisations for oral and dental conditions were significantly higher for Indigenous infants and primary school-aged children from remote areas than age-matched metropolitan controls (13). Also over a one year period, a remote Northern Territory clinic transferred 789 children (aged <16 years - average age of 4.4 years) for care in a metropolitan centre (14).

Other literature directly reflects unmet need and barriers to accessing rural allied health services. O'Callaghan et al, identified that 85% of parents in rural NSW considered access to paediatric speech pathology services a prime concern, mainly related to lack of providers (15). Rural families faced long travel distances and costs for accessing services, lack of public transport, poor awareness of available services, and delays in treatment due to waiting lists. A further integrative review of the experience of rural mothers caring for children with chronic conditions identified that common challenges were accessing the right staff and resources, long travel times and social

isolation (16). Mitsch et al found there was limited access to rehabilitation for brain injury in rural and remote areas in New South Wales (NSW) related to funding, recruiting and retaining appropriately skilled health, rehabilitation and support staff (17). An international literature review reinforced the deficits in access to rehabilitation services in rural and underserved areas, mainly related to the supply and distribution of an appropriately skilled workforce (18).

Indigenous people are over-represented in rural and remote areas. Leach et al described otitis media which commenced in Aboriginal infants within 3 months of birth, progressed to chronic suppurative otitis media in 60% of the children and did not resolve throughout early childhood (19). Rural pharmacists identified that access and maintenance of medications with appropriate support was essential to manage the high burden of early onset chronic diseases experienced by rural Indigenous clients (20). Based on increased hospitalisations and deaths from suicide in remote Indigenous communities, Hunter identified more comprehensive upstream approaches were required rather than narrowly focused clinical services models (21). Another study identified that strong and collaborative workforce models were also important for improving the management and prevention of chronic diseases in rural and remote Indigenous populations (22).

Communities with younger populations relative to Australian averages may need early intervention services including for oral health. Gussy et al (2008) reported among rural Victorian parents (in towns 10-15,000 population) that tooth cleaning was done for 12-24 month year old infants "at least sometimes", however a large proportion lacked confidence and this was significantly related to the frequency of the cleaning (23). In another study, with multivariate models controlling for Indigenous status, living in a fluoridated area, low socio-economic status (SES), and age and sex, the mean decayed/missing/filled teeth of 5–10 year old and 8–12-year-old children in 2009 were significantly higher for rural children compared with metropolitan (24). Children in remote areas fared worst, mainly related to having more filled teeth. In another study of adolescents aged 11-17 years in rural Victoria, early lesions were found in 60% of students and advanced decay in 28%, associated with diet, mothers' education level being primary school and irregular check-ups (25).

Rural and remote service access is also affected by the health-seeking behaviour of rural and remote people. For small and dispersed populations who have lower access to healthcare, many working in self-employed industries, important health needs are not necessarily well-identified, nor acted upon. Rural and remote people tend to under-access health services due to poor health literacy, stigma, stoicism, long waiting lists, lack of medical providers as gate keepers, cost (time), distance (time), cultural safety and convenience (26-30). Unmet healthcare needs can in turn affect the ability to fully participate in education, work and community life (31).

1.3 The Commissioner's focus

Under Part VA of the Health Insurance Act 1973 (the Act), the National Rural Health Commissioner is required to consider the needs of the entire rural health workforce. For this reason, the review was deliberately broad and inclusive of allied health disciplines as defined by AAHLF, thus excluding medicine, nursing, midwifery, dentistry, paramedicine and non-clinical roles. Given the rural context requires cost-effective and sustainable models that can operate well across geographically distributed populations, allied health assistants, oral therapists/hygienists and Aboriginal and Torres Strait Islander health Practitioners were included in the search terms. Given the Commissioner reports to the Minister responsible for Rural Health, the review predominantly focused on the health sector, rather than disability, aged care, justice and education areas. The Commissioner's focus is on discerning policy options within the remit of the Commonwealth Department of Health, but the literature review was broader in order to understand the evidence from a whole of community perspective.

Section 2: Collecting the published evidence

2.1 Review question and search strategy

Scoping reviews are an effective way to summarise existing evidence and inform real-life policy and program questions (32). The following questions were posed:

> What are the characteristics of the rural allied health workforce and their scope of practice?
>
> What is the range of evidence about the rural allied health workforce and rural allied health services for informing policy development, specifically about issues of access, distribution and quality?

In line with scoping review methods, questions guided all aspects of data collection and extraction. A range of search terms was mapped based on the review questions. These were then iteratively developed to ensure sensitivity to the range of disciplines and rural contexts of interest. The final search included three key concepts, allied health (not specific to discipline names) using terms like "allied health", "health work*" "therap*",

rural or remote practice, and training, recruitment, retention and service models. To ensure relevance of material to informing Australian policy, a fourth concept limited the material to high income countries where previous global scale literature reviews had identified the most evidence about primary care/allied health: Australia, New Zealand, Japan, Canada and the United States (33, 34).

Six databases were selected based on scope and relevance of literature content: *Medline, Social Science Citation Index, CINAHL, ERIC, Rural and Remote Health, Informit Health Collection, and the Cochrane Database of Systematic reviews*. The search included literature published between February 1999 and February 2019. A Boolean search was applied based on the terms in each concept. The final search was restricted to English, producing around 8,000 articles considered both feasible within a time-limited review, and found to be sensitive when checked against ten allied health articles of different disciplines, countries and topics, already known to the authors. Other key published texts were found by hand searching and identified by key informants. The literature was entered into Endnote and duplicates were removed.

Concept 1	Concept 2	Concept 3	Concept 4
Rural OR remote	"health work*" OR "rural generalist" OR "allied health" OR "community health worker" OR "health assistant" OR "therap*"	train* OR curricul* OR develop* OR course OR placement OR immersion OR skill OR education OR qualification OR competen* OR recruit* OR retention OR *care OR *access OR model OR telehealth OR outreach	Australia OR New Zealand OR Japan OR Canada OR United States OR North America

2.2 Study selection

Study selection occurred iteratively, led by two team members and guided by whole-of-team weekly discussions. Titles and abstracts were screened and included if:

- Based in a rural or remote location
- Empirical study or literature review about allied health disciplines or services "in scope"
- Reporting outcomes
- Over 40% of results about allied health workforce
- From Australia, Canada, United States of America, New Zealand, Japan

Studies were excluded if:

- Low or middle income country
- Discussion or perspective only
- Clearly aged care, disability or education sectors
- Virtual service models not specific to supporting rural workforce or rural access
- <15 people in sample
- Full text not available (via find full text using Endnote, Google or direct library searching)

After abstract and title screening, relevant material was read in full text. All forms of investigation were considered potentially useful for informing policy directions. Data extraction criteria were determined based on the review questions, trialled and refined during first reading to ensure that they were fit-for-purpose. The following information was extracted:

- Country, location and year
- Health worker type/s
- Area of care
- Research question
- Study sample
- Study design / methods
- Outcomes
- Enablers or barriers

The extracted material was thematically analysed, firstly by reading the articles and recording preliminary ideas and thoughts, discussed at weekly team meetings. Secondly by re-reading and organising the material into themes (35).

Section 3: Results

3.1 The range of evidence

Of 7,429 articles, 205 were relevant from initial abstract and title screening. Of these, 85 were excluded using the above criteria, leaving 118 meeting the inclusion criteria. Two additional studies, not already in the database, were included from stakeholders, resulting in a total of 120 articles. Of these, 101 were empirical studies, 19 were literature reviews; 83 (70%) were published recently (2009-2019).

Of the 101 empirical studies, 11 were from another country - 8 from Canada, 2 the USA, 1 from New Zealand. The other 90 were based in Australia – 6 of which were national scale studies and 84 from one or more state or territory jurisdictions. Of jurisdictional studies, most (n=24) were from Queensland (including one which also covered Northern Territory (NT)), (n=22) New South Wales (NSW) and (n=21) Victoria (Vic) (including one which also included Queensland). Only 16 of the 84 jurisdictional studies were state or territory-wide. The others were based in a region (such as a cluster of towns or health service/s). Most (n=85) explored both hospital and community (non-hospital) practice settings, a further 23 focused on community (non-hospital) and only 12 on hospital only care.

The main themes were: workforce and scope of practice (n=9); rural pathways to train and support (n=44); recruitment and retention (n=31) and; models of service (n=36).

Of empirical studies, 83 were cross-sectional designs. Many (n=64) involved questionnaires 33 interviews and 11 focus groups. Only 8 studies used multivariate analyses and 15 used comparison groups (metropolitan workers, regular care, public workers or pre and post intervention testing). Putting these quality measures together, only three used longitudinal designs, controlled for confounders and used comparison groups.

3.2 Findings

The findings are summarised according to theme.

3.2.1 Characteristics of the workforce and their scope of work

The first theme described the characteristics of the rural allied health workforce and their scope of work.

SNAPSHOT OF EVIDENCE

Cross-sectional surveys estimated that around 11-35% of various allied health professions worked in rural areas. More than half of rural allied health professionals worked in the public sector; those more privately based were optometrists, podiatrists, pharmacists, physiotherapists and psychologists. Commonly, rural allied health workers serviced large catchments, visiting multiple communities and around a third had more than one job. Rural allied health professionals covered an extended scope of work using generalist and specialist skills to meet diverse community needs with limited infrastructure. Particular skills areas included in paediatrics, Indigenous health, chronic diseases, health promotion and prevention, primary health care and health service management. Service prioritisation and cross-regional networking were used to cope with high service demand.

An allied health workforce survey from South Australia in 2009 included 17 disciplines and achieved 1,539 respondents (response rate could not be calculated). It identified that the proportion of allied health workers working in rural locations varied by discipline (between 35-11%) (36).

In a cross-sectional survey in 2005 of 451 rural allied health workers in NSW, including 12 disciplines to which 49% responded, more than half of the respondents worked exclusively in the public sector and 11% said that they worked in both public and private sectors. The highest proportions of privately based workers were based in optometry, podiatry, pharmacy, physiotherapy and psychology (37). Another survey of allied health workers in rural western Victoria in 2003 to which 28% (n=138) responded, identified that 69% worked in public sector positions (38). In a survey of 84 rural physiotherapists working in Shepparton, Benalla and Wangaratta (response rate 79%), two-thirds worked part-time with most in the public sector (70%), with one third holding more than one position (39). One-third considered themselves generalists and one-third specialists. In a 2008-09 NSW rural allied health survey from 21 different allied health occupations, 1,879 (around 44%) responded showing 84% worked in towns >10,000 population, and were employed publicly (46%), privately (40%) or in both public and private sectors (11%) (40).

A 2005 survey of rural and remote occupational therapy managers (44% response, n=18 people) in South Australia identified that the most prevalent services provided were in areas of rehabilitative, health promotion, prevention and remediation (41). The vast majority were servicing large geographical catchments (89% over 100km), with travel time and distance between clients a key consideration in the service model. Respondents described the challenges for service delivery included the wide range of services needed for diverse client groups, the high client to therapist ratio, and limited human resources.

Merritt et al undertook a national survey of 64 outer regional and remote occupational therapists identified through business listings, receiving 37 complete responses. No practices were based in very remote towns (42). One quarter of respondents visited at least five towns each week and one third had other paid employment.

Adams et al described, based on interviews and surveys with public and private physiotherapists in a large region of one Australian state, that the scope of services was rationalised based on the overall size and skills of the available workforce in both public and private sectors of the region (43).

Bent conducted 17 interviews with allied health professionals in speech therapy, occupational therapy and physiotherapy working in Alice Springs hospital, the work involved supporting many Aboriginal clients, managing a large caseload and geographic catchment, and addressing a wide range client ages and conditions (44). The job involved providing advice and support for health clinical staff, bush nurses, and Aboriginal health assistants in schools. This required clear communication, support and careful prioritisation of workload. Enablers of their work and retention were inter-disciplinary networking and cooperation across the catchment, along with inter-agency mentoring systems and becoming an "expert generalist". Of respondents, 59% liked the diversity of the workload.

In another 2012-13 semi-structured survey of 33 from 40 eligible nutritionists who worked in remote Northern Territory Aboriginal communities in last decade, identified through the Department of Health and by snowballing, it was found that the scope of their work was not supported by their training. They were working across public health approaches, with limited training in cultural awareness and relying on materials that were from the nutritional field pedagogy but did not incorporate Aboriginal concepts of health and healthy eating (45).

In a national cross-sectional survey of 4,684 registered chiropractors to which 41.7% responded and indicated their practice location, 22.8% (n = 435) were based in rural or remote areas, and 4.0% (n = 77) in both urban and rural or remote areas. Statistically significant predictors of rural or remote practice compared with metropolitan work included more patients treated per week, practising in more than one location, working with no imaging facilities on site, often treating degenerative spinal conditions or migraine, often treating people over 65 years, and treating Aboriginal and Torres Strait Islander people. This study provided insights into unique practice challenges for rural or remote chiropractors include a higher workload and fewer diagnostic tools (46).

Hoffman et al reported the results of a self-administered questionnaire sent to 608 occupational therapists (seeking to select those working in adult neurological rehabilitation) in all rural areas of Queensland. Overall, 39 responses were received from relevant practitioners (not possible to calculate the exact response rate). The scope of work involved mainly home visits and modifications, equipment prescription, client/family education, and activities of daily living assessment and retraining. They travelled long distances to see clients, managed large workloads and worked with limited resources (47).

In a study to identify relevant chronic diseases curriculum for remote settings, the Northern Territory and Queensland governments brought stakeholders together (35 key informants) using surveys with remote staff to identify their current scope of work. It was found that there was little difference in the training and skills for chronic diseases work by discipline, although few were trained in population health. There was an identified need to improve the scope of work being undertaken in prevention and early intervention (these components were seen as challenging compared with downstream chronic diseases management) (48).

In interviews and focus groups with 18 participants from 8 disciplines in allied health in remote northern Australia, unique factors related to remote work were being organized but flexible, exhibiting cooperation and mediation, being culturally aware, knowing the community, and showing resourcefulness. resilience and reflectivity. This included being able to be an agent in a system where there were low resources and use knowledge and awareness across communities for shared problem solving (49).

In interviews with 37 GPs, 19 Queensland Health mental health staff and 18 community organisation participants from 8 general practices, 3 mental health services and 2 non-government organisations in 8 rural Queensland towns, consensus was reached that there were significant problems with inter-service communication and liaison in mental health services across the region (50).

In a national survey of 184 public hand therapists (physiotherapists and occupational therapists) working in rural and remote public hospitals and identified through direct contact, 64 responded (17.2% were physios). Over half of respondents reported that their scope of work involved providing initial splinting and exercise prescriptions and over 85% reported that they administered exercise protocols (51). Barriers to providing services in rural/ remote locations included transport, travelling time, limited staff, and lack of expert knowledge in hand injuries or rural/remote health care.

In terms of the non-Australian literature, there were two studies about scope of work, both from Canada. In surveys about rural rehabilitation practice with 6 occupational therapists and 13 physiotherapists in rural British Columbia (BC), Canada, serving a total of 15 rural communities of population <15 000, participants considered their generalist practice was 'a specialty' requiring advanced skills in assessment. They described 'stretching their role' and 'participating in, and partnerships with, community' as ways to overcome resource shortages. Reflective practice, networking and collaboration were deemed essential to maintaining competence. Stretching roles was a way of remaining 'client focused' by not turning people away just because that task is normally done by someone in a sub-specialist unit in the city (52).

Finally, in a self-completed survey of rural occupational therapists in working in rural Alberta and Saskatchewan, more than half worked in sole therapy positions, with challenges related to managing the generalist nature of rural occupational therapy practice. In terms of handling the scope of work, participants recommended "hands-on" experience during rural fieldwork placements, working in an urban setting prior to embarking on a rural career, coming from a rural background, and finding a mentor prior to working rurally. Some recommended increasing management and organisational skills content in the curriculum because they considered them essential skills for effective rural practice (53).

3.2.2 Assistants and training local staff to provide allied health services

There was a range of evidence covering the concept of allied health assistants (AHA) and training health workers in rural and remote locations for allied health tasks and working with visiting allied health teams.

> **SNAPSHOT OF EVIDENCE**
>
> Allied health assistants could be delegated around 17% of allied health work (same for rural and metropolitan areas). Highest delegation was possible in podiatry, speech and exercise physiology and included aspects like exercise, slings, functional therapies and excursions). However professional trust and governance (referral, tailored role, and supervision) are factors underpinning effective implementation. In rural and remote communities, training local health workers, including Indigenous health workers, for allied health tasks and working with allied health teams, facilitates improved early intervention, prevention, service coordination and enables culturally-safe care in areas like eye and oral health and access to medicines.

In Victoria, a state-wide study in 2009-2011 involving focus groups and a quantitative survey of allied health professionals in public health and community service positions, (783 rural respondents and 1,666 metropolitan), suitable allied health assistant (AHA) tasks were delineated along with how allied health professionals use their time. (54) This discerned that allied health professionals spend up to 17% of time undertaking tasks able to be delegated to an AHA (half were clinical tasks). This did not vary by rural or metropolitan context of work. Podiatry, followed by speech pathology and exercise physiology, recorded the highest percentage of AHA-attributable time that could be delegated. Tasks included exercise sessions, hydrotherapy, slings, community outings and functional therapy.

In 2009 in Queensland, 51 new allied health assistant roles were implemented in numerous hospital settings for 6-9 months at one of three levels: trainee, full scope, or advanced scope. There were generic position descriptions and task lists for each level. These were then audited over a two month period by trained allied health professionals working in pairs using systematic data collection methods (55). The main finding was that tailored (not generic) allied health

assistant position descriptions were needed to account for different disciplines and their work context and the level of training of the assistant, They also identified the need for supervision frameworks. There was not enough delegation from allied health professionals to the roles, partly due to professional trust and clarity about roles and responsibilities.

In terms of competence, a rural Queensland hospital found that a global nutrition assessment (SGA), applied to 45 patients by 5 AHAs with a Certificate IV in Allied Health Assistance, produced equivalent results as those of qualified dieticians (n=3) (56). Although AHAs reported significantly lower confidence than dieticians (t = 4.49, P < 0.001), the mean confidence for both groups was quite high (AHA=7.5, dietitians = 9.0). There was some variation in the results of different components of the assessment tool between the two groups, but the results suggest that assistants could reliably undertake these assessments.

In an exploratory interview based study of 49 rural healthcare workers (including pharmacists) concerning access to community medicines in rural areas (<1500 population), it was found that maintaining continuity of access was challenging as patients moved between hospital and community (57). Generalist nurses and doctors were over-loaded and managing medications was an additional demand on their time. Solutions suggested were developing "extended community medication roles" with oversight of rural pharmacist, along with more long-term scripts.

Based on interviews with 32 health staff attending or working in remote clinics to provide oral care in 2005-2008, there was strong support for oral health roles for Aboriginal and Torres Strait Islander health practitioners (58). These roles could help to stem late intervention and reduce the demand on the visiting dental team along with aeromedical retrievals. Equally, to sustain access, partnerships and coordination of outreach and telehealth services, along with providing culturally safe care in Indigenous eye health, a literature review by Durkin et al considered there is potential to develop an Indigenous eye health role (59). This was particularly to address issues of prevention, early intervention and follow up.

3.2.3 Rural pathways to train and support

A range of literature was focused on factors related to rural pathways, including student selection, training, additional skills attainment and professional support.

Tertiary training

SNAPSHOT OF EVIDENCE

Around half to two-thirds of rural allied health workers had a rural origin and half had some rural training experience. Rural and remote youth had a limited frame of reference for allied health professions, lacked access to required subject choices for course eligibility, needed to relocate to study allied health and faced more costs to participate. University Departments of Rural Health (UDRH) have increased rural training volume but only some provide up to 12 months' training for selected disciplines). One univariate study showed that up to 12 months' training related to 50% working rurally compared with 24% average rural work outcome across the disciplines and another multivariate study identified that 2-18 week rural placement and their self-reported high quality were associated with graduates working in rural areas in their first postgraduate year, once rural background was controlled for. Rural settings provided a range of unique learning environments. Apart from rural clinical placements, UDRHs also provide support for research/teaching and career pathways for mid-career rural allied health professionals.

In a review of the evidence by Durey et al published in 2015, many factors considered effective for training rural doctors could also support the growth of the rural allied health workforce (60). Of 1,539 respondents to an allied health workforce survey in South Australia in 2009 (17 disciplines, response rate could not be calculated), 41% with a rural background and 17% with a metropolitan background worked rurally. (36) In a repeated cross-sectional survey of rural allied health workforce in one NSW region (>200 respondents spanning 12 disciplines with around 50% responding to first survey), the proportion of respondents of rural origin was about two-thirds in both surveys and about half had some rural experience during training (61). In a 2008-09 NSW wide survey of regional, rural and remote allied health professionals from more than 21 different allied health occupations contacted

via diverse communication channels, to which 1,879 responded (approximately 44% response rate), 60% had a rural background (40). Another cross-sectional survey of 605 rehabilitation professionals living and working in Northern Ontario, (occupational therapy, physiotherapy, speech–language pathology and audiology) in 2009 with 345 respondents, nearly two thirds were originally from Northern Ontario (62).

Attracting rural background students to allied health courses may be challenging. In interviews with 126 students in years 10-12, 52 parents, 10 grandparents, 76 teachers and 4 Aboriginal and Islander Education Officers (AIEO) from 15 secondary schools in rural and remote Western Australia in 2000, Durey at al identified structural and cultural barriers for rural and remote secondary students being attracted to and accessing health courses (63). Structural barriers included cost and information about courses and cultural barriers such as feeling capable and seeing allied health role models in the community. In terms of the rural training path, a national integrative review (up to 2012) of rural allied health training (14 disciplines) identified that pathways into tertiary studies in rural and remote communities were vague and often interrupted along with the return of graduates being haphazard (64). Rural secondary students had poorer access to subject choices for course eligibility and there were financial barriers to participating. Issues of daunting social isolation and separation from families and support systems are problematic to attend city-based courses. Students may also lack a frame of reference for accessing rural placement options. More tailored entry criteria, along with coordination and capacity building for rural training within rural courses were considered important.

Rural allied health training opportunities appear to be growing in Australia but many remain of short-duration. A survey of University of South Australia Division of Health Sciences Schools (training a range of allied health disciplines) in 2000, showed that between 5-20% of all allied health tertiary students did rural training, usually as a fieldwork placement in the final two years, but this was only short-term (65). The Schools identified strong potential to grow these opportunities. At the University of Newcastle, over a 12-year study period, the UDRH delivered 3,964 physiotherapy placements. Between 2003 and 2005 the average proportion of clinical placements occurring in metropolitan areas (MMM1) was 78% and in rural areas (MMM categories 3–6) was 22% (presumably no placements in MMM2 or 7 based on the location of the UDRH). In 2014, the proportion in MMM3-6 increased to 40%. There were also lower assessment marks for students trained in MMM1 than other categories (66). The UDRH model was conceptualised by Smith et al as facilitating all of clinical work, teaching and research, along with providing rural clinicians with career paths (schematically represented in Figure 2) (67). The article described an increase of rural placements (in placement weeks) at the University of Newcastle in dietetics, occupational therapy, radiography, pharmacy and physiotherapy from 300 in 2003 to nearly 800 in 2008. Another national cross-sectional survey of UDRHs in 2014-15, including 3,204 students who participated in rural training (46% were allied health respondents, the rest were from nursing/medicine), described strong ruralisation effects of rural training, with enablers being the quality of the experience, the supervisors and interaction with the community (68). Financial support, accommodation and internet were deterrents of ongoing rural practice intention.

Figure 2: Adapted from Smith et al depicting the integrated rural health education, research and clinical practice of UDRHs (67)
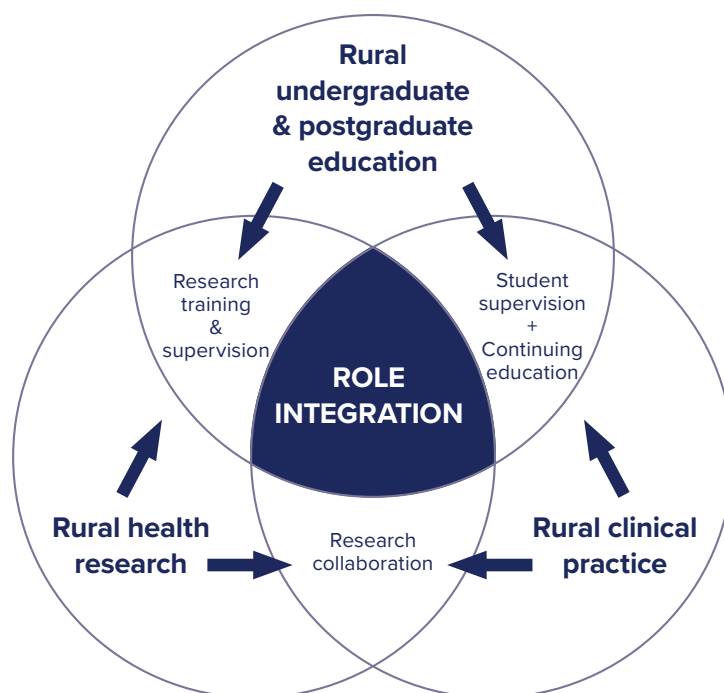
Two studies explored the quality of training for allied health workers in unique rural settings. One was of physiotherapists learning musculoskeletal therapy in rural emergency department. The training did not impact on the time it took to care for patients, and emergency department data showed that it provided an appropriate case-mix where the students gained experience for managing a range of conditions common in physiotherapy practice.(69) The other study was of training occupation therapists and speech pathologists in a brain injury rehabilitation unit in a regional hospital with supervisors who had dual roles of clinical work and case management. Focus groups and interviews identified that students placed with dual role supervisors gained a broad perspective holistic care (70).

Only two studies were identified which evaluated the outcomes of rural training on rural practice. Of 98 allied health students who completed 257 end-of-placement surveys (most completed one year of rural training) in Tamworth and Taree as of June 2014, 73% intended to work rurally at the end of the placement and by one year after graduation, 50% were working rurally compared with an average figure of 24% of graduates from the same disciplines (71). The other study, after controlling for rural background, identified that among 429 students from 12 health disciplines who did 2-18 week rural placements in Western Australia, rural placements and their perceived quality, related to working rurally in the first postgraduate year (72).

Additional skills and professional development

SNAPSHOT OF EVIDENCE

Approaches to developing more skills for rural practice and ongoing professional development included examples of rural curriculum for clinical skills, safety and quality, equity and cultural safety, and primary care and other practice models. Educational modules were delivered online and face-to-face, and participants appreciated flexible delivery on the basis that it improved their capacity to access training around their workload. Programs structured around service objectives and professional's learning needs were successful. Victoria implemented 12 months' advanced regional paediatrics training helping the physiotherapists to meet client needs in a catchment and helping to keep skilled professionals in the region. For professional development, NSW and Qld both described rural staff rotating into other units, including metropolitan tertiary paediatric units, to address specific learning objectives and develop professional networks relevant to their rural practice.

There were several examples of training for qualified rural allied health workers to develop specific scope for rural practice, community work and rural-specific service models. These included a rural and remote distance education program

in mental health, delivered by technology in 1999 across 10 rural sites to 31 health professionals (including nursing, allied health and Aboriginal health workers). The program consisted of three formal modules of learning, 3 written assignments, five days of residential school (either at the psychiatric unit in a region or in the city) and five days of clinical practice in a mental health setting. Six tutors with extensive mental health experience provided support to students by responding to general enquiries, marking assignments, arranging and participating in group discussions and co-ordinating a week of local clinical community placements. Immediate post-course learning outcomes were high and at four months, participants reported more clinical practice in liaison with the mental health team (73).

A new Graduate Certificate in Health (Remote Health Practice – Allied Health) was introduced for rural allied health workers employed with Queensland Health in early 2000s. It was based on an environmental scan of existing courses (74). The qualification incorporated learning about personal organisation (time, case-load and information management), models of service delivery (primary care) for Indigenous and other rural and remote communities and opportunities for advanced clinical skills development through a clinical placement. Students enrolled in the training pilot included four social workers, four occupational therapists, two speech pathologists, one pharmacist and one physiotherapist. Based on a review of the course via teleconference, email feedback and a written survey, there was strong support and participants considered that it helped them to improve their primary care skills and culturally safe practice, areas where they had limited previous exposure. The assignments were relevant, feedback was timely, and the clinical placement opportunities of 2 weeks were valuable.

In Western Australia, a new competency framework was developed and released in 2009. It addressed learning needs of senior rural allied health practitioners, to guide training and performance monitoring (75). The competencies covered learning for audiology, dietetics, occupational therapy, podiatry, physiotherapy, social work and speech pathology (excluding mental health and aged care), covering 88 areas of practice (service delivery, equity, professional practice, ethical practice, development and support, quality and safety and clinical skills), delineated based on literature review and consensus.

In Victoria, new postgraduate paediatric physiotherapy training was implemented over 12 months in 2008 with pilot funding for two new senior positions (76). The program was developed in consultation with various committees and an expert reference group. Weekly tutorials, case studies and presentations formed an important part of clinical rotations between hospital outpatients, specialist schools and the disability sector. The program resulted in increased access to skilled paediatric physiotherapy services for the regional catchment. Training increased knowledge and confidence, and provided a career pathway for local physiotherapists. The senior clinicians valued the introduction of appropriately skilled younger peers to their clinical practice.

An Allied Health Rural and Remote Training Scheme (AHRRTS) was implemented in Queensland in 2010 to support education and professional support for rural and remote allied health professionals working within Queensland Health (77). It incorporated distance-based and face-to-face delivery covering eight domains of service delivery, equity and diversity, professional skills, ethical practice, development and support, quality and safety, and clinical management, in line with an Allied Health Capability Framework. Participation was flexible and tailored to requirements of each worker. The AHRRTS included options for participating in the Allied Health Education Program (AHEP) as well, which was a clinical learning placement with an experienced professional. The AHEP was rolled out over two years across Queensland since July 2009 (78). In the rollout phase, 170 of 380 eligible allied health professionals participated. A review of barriers and enablers for accessing the program via 55 stakeholders semi-structured interviews suggested that flexible (online as well as FTF) delivery was important (some people like to get away from work, others couldn't access it unless online options were available), support from employers, particularly line managers, and time to participate.

Another educational secondment model was described in 2001 in Queensland. This involved 29 rural and remote Queensland speech pathologists, occupational therapists and dieticians spending time in a tertiary paediatrics specialist practice environment for two weeks over a 2-6 month period (79). The program enhanced clinical skills in clinical areas of interest (through observation, sharing ideas, practice and learning) along with networking and liaison between rural and metropolitan participants. Participants valued the support and the locum coverage provided by the Program.

NSW also developed a new educational secondment model to enable allied health staff in rural and remote areas to access tertiary-level hospitals or specialist health facilities to learn and network in areas of care important for their scope of practice for paediatric care (80). The '*Allied to Kids*' program, a collaboration between the Children's Healthcare Network and NSW Health, involved rural clinicians nominating a learning objective and undertaking a secondment for up to 5 days, with travel and accommodation paid by the program. Of 106 expressions of interest over 2011-2014, 89 were eligible and could be supported and were completed – most were physiotherapists and speech pathologists. Pre and post program evaluations showed that secondments improved skills and confidence, extended networks and increased development of resources for rural units.

There was limited information about allied health mentorship and supervision, however, a review of the literature by the UDRH in Shepparton included 39 articles to discern models of mentorship that would be applicable to rural and remote settings. Four models identified were cloning, nurturing, friendship and apprenticeship. The latter three were considered applicable for rural and remote early professional learning. These need to be trialled and evaluated (81).

3.2.4 Recruitment and retention

SNAPSHOT OF EVIDENCE

Tertiary scholarships with rural return of service requirements could increase the uptake of rural work if coupled with the right support. Only one study measured retention longitudinally in rural health services, showing that between 2004 and 2009, median turnover of dieticians was 18 months, physios 3 years and social workers 4 years. Reduced turnover was predicted by employment at higher grade (2/3 versus 1) or aged >35 years. Part-time work did not predict turnover but turnover tended to increase with remoteness. Factors related to retention had substantial overlap across the literature (mainly cross-sectional surveys and interviews). These were broadly related to career path, access to relevant professional development (topic, time and cost), working in a supportive practice environment (clearly documented role, orientation to workplace, culturally safe work environment, having professional colleagues and allied health involved in decision-making) and the nature

of work (independence in role, variety of work, community focused and a feasible workload). Social and personal determinants were also factors. Intention to stay and turnover have the potential to vary between public and private sectors warranting tailored approaches.

One survey, conducted with international physiotherapy graduates (Victoria) seeking to be assessed on the Standard Pathway to become registered for practice in Australia found that, of fifty-seven (from 73) participants who responded to the question about work location, 56% said that they would consider working in a rural location (>100km from central business district). (82) Of those not open to working in a rural location, 12 cited family reasons.

Another study outlined a 2010 review of the Queensland Health Rural Scholarship Scheme (Allied Health) (QHRSS-AH). The Scheme involved two years' of university scholarship funding valued at $21,000 per year for applicants agreeing to a 2-year rural return of service period upon graduation (83). The scholarships started in 1998 for students in physiotherapy, occupational therapy, speech pathology, social work, podiatry, psychology, pharmacy, radiography, sonography, and nutrition and dietetics. Participant data (n=146) and semi-structured interviews suggested 69% had completed or were completing the service period and of these, 86% were working rurally (57% rural or remote and 29% regional). Only 14% did not complete the return of service obligations and 3% deferred. Rural training during the undergraduate degree, health service orientation, mentoring and professional support were considered important for enhancing the program's outcomes.

A range of other studies explored recruitment and retention issues. One study outlined six focus groups with a total of 30 individuals from nine allied health professions and some managers in rural NSW (who had self-nominated from a 2008 NSW rural allied health workforce survey) to reach consensus about recruitment and retention factors (84). The key factors related to recruitment and retention were categorised as: personal (from rural area or attracted to rural life); workload related (breadth of clinical work and high demand/workload); professional development, career progression and recognition; and management-related including effort to recruit vacant positions. Key recommendations to address these factors were summarised:

- Involve local communities in attracting rural allied health workers
- Regionally-based universities
- Access to CPD through back-fill, travel subsidy and management
- Develop regional professional networks
- Invest in IT infrastructure
- Support extended practice roles and career development options
- Address workplace culture and stress management
- Train allied health managers and involve them in decision-making
- Preserve clinical work roles for allied health managers (84)

In a survey of rural physiotherapists based in regions of Shepparton, Benalla and Wangaratta, recruitment and retention issues noted included lack of career path, professional support, access to professional development and postgraduate education (39). Additional issues were the costs and time to attend courses, travel/distance and inadequate resources. Positive elements of rural practice were part-time employment opportunities, independence as primary health providers, practice variety and community recognition.

A review of international literature (up to 2009) about recruitment and retention of the occupational therapy and physiotherapy rural workforce identified 12 included articles (qualitatively focused) which suggested that the biggest factors related to recruitment and retention were practice support and career growth (85).

Keane et al identified different retention efforts needed for public and private sector rural allied health workers using data from the NSW rural allied health workforce survey inclusive of n=833 public and n=756 public allied health workers (86). Multivariate analysis showed that high clinical demand predicted intention to leave rural work both public and private allied health models (odds 1.4 and 1.6 respectively) and professional isolation and participation in community (OR 1.4 and 1.6) also contributed to private practitioner's intention to leave. In another cross-sectional survey of 451 rural allied health workers (12 disciplines) in NSW in 2005 (50% response rate), the mean time in current position was 10 years and half intended to leave in five years (37).

In a state-wide questionnaire distributed to 2,736 allied health professionals across Tasmania, identified from registration boards, professional associations, yellow pages directories and the Principal Allied Health Advisor in 2008 (response rate of 45%), univariate analysis showed retention (intention to stay for next two years) is multifactorial. Using multivariate analysis, job satisfaction was the strongest independent predictor (odds of staying 6 times higher if satisfied) (87).

A literature review (up to 2017) including 15 articles, identified that the factors important for the retention of Aboriginal and Torres Strait Islander health practitioners have some similarities and differences with those of non-Indigenous health workers. Notable factors were the need for a supportive and culturally safe workplace; clear documentation and communication of roles, scope of practice and responsibilities; and being appropriately supported and remunerated (88).

The only study to predict turnover using longitudinal data was based in Victoria. Eighteen health services were invited and 11 participated by providing de-identified individual level employment entry and exit data for dietitians, occupational therapists, physiotherapists, podiatrists, psychologists, social workers and speech pathologists employed between 1 January 2004 and 31 December 2009 (total of 901 allied health workers) (89). The median survival in the job by podiatrists and dieticians was lowest (18 months), then physiotherapists (3 years) and social workers (4 years). Proportional hazards modelling indicated profession and employee age (over 35) and grade (2 or 3) upon commencement were significant determinants of lower turnover risk (better retention). Turnover was not associated with part-time employment. Median costs of replacing allied health workers were between $23-47,000 per worker depending on remoteness of health service (direct and indirect costs of turnover).

Based on interviews with 17 of 20 invited participants in a remote health service in 1997 (physiotherapy, speech pathology and occupational therapy), Bent indicated that lack of supportive management was a barrier to staying in remote allied health work, along with absence of orientation, delays in recruiting positions, and high turnover from lack of adequate professional development or support. Overall, 40% staff intended to leave in next 3 months.(44)

In a study with 26 nursing and allied health professionals (inclusive of 19 social workers, psychologists, Aboriginal Mental Health Workers and diversional therapists) in their first 5 years of work in community mental health services in rural New South Wales, issues for retention were: workplace conditions, career advancement opportunities and social and personal determinants (90). A "turnover theory" was developed positing that the gap between individuals' professional and personal expectations and the reality of their current employment and rural-living experience stimulates turnover. In adjustment phase, this gap was mainly impacted by professional factors but in the adapted phase, personal factors become more important.

In terms of non-Australian studies, qualitative interviews with 26 long term employed allied health workers in rural Canada (6 speech language pathologists, 4 psychologists, 4 occupational therapists, 8 social workers, and 4 physiotherapists) revealed that they worked rurally because they could access rural education where they currently work, had a rural background, had positive rural experiences and recognised a community need for healthcare professionals (91). Variety and challenge of work, as well as enjoyment of adventure were other reasons.

Finally, a survey study of allied health workers in south-western Victoria in 2003 to which 28% (n=138) responded, identified that 69% worked in public sector positions. Only 53% (n = 50) of the professionals in the public sector intended to stay more than 2 years in their present position, compared with 84% (n = 27) of the professionals who worked privately (38). Reasons for intending to leave were mainly lack of professional support, poor management, lack of career structure and personal factors. Receiving orientation was related to increased intention to stay in the job.

3.2.5 Models of service

SNAPSHOT OF EVIDENCE

The number and range of allied health services available in regional catchments depends on the number and mix of professionals, their skills and local community need. Partnerships and networks between public and private providers and hospitals regionally, including shared care, maximises utility of available workforce for more comprehensive services. A rehabilitation network of 5 rural hospitals involving a

team leader/coordinator, clear referral pathway and staff training, also provided first ever access to rehabilitation in a rural catchment. Critical success factors included information and referral for eligible rural participants, staff education and leadership. Access to services in smaller communities is effective through outreach, telehealth and consideration of viable business models For example, Medicare funded Chronic Disease Management was the main income source for 50% of occupational therapists working in outer regional/remote. Individual and home based cardiac rehabilitation (internet and phone-based) can be as useful as hospital-based models. Online consultations could provide equivalent quality service to that provided face-to-face for diabetic foot healing, rehabilitation and speech pathology. Some services need face-to-face delivery and providers and clients may prefer this. Where outreach and telehealth were used, training local staff to maintain service engagement and foster ongoing participation was important for success. An oral therapy program for Indigenous children was successfully implemented in Canada by using trained community workers who identified and engaged people for treatment by visiting dental therapists and hygienists.

The theme about models of service identified the importance of models of care for increasing access and maximising the comprehensiveness of services within limited resources. In a 2012 survey (n=34) and in-depth interviews (n=19) with physiotherapists and health service managers in regional, rural and remote services in Queensland, it was found that the physiotherapy services provided were decided based on available staff and their skills, along with the community need. (92) Overall public service decisions were driven by organisational priorities whereas private ones were driven by financial viability and skills. In a further article using this data, a matrix for decision-making showed the complexity of rural health service decisions.(93) Further work identified that public sector physiotherapists were more focused on acuity, relying on private physiotherapists to support the outpatient load. (94)

In terms of promoting patient care pathways, one NSW study identified, based on interviews and focus groups with 78 carers and 10 rural clients needing rehabilitation services, that many people were regularly: (i) travelling to access therapy; (ii)

waiting a long time to get therapy; and (iii) getting limited access to therapy after early childhood (95). A person-centred model was proposed for planning increased access to address client needs (Figure 3). It identified building the right services involved using multiple resources - local resources, travel, online service options and responsive outreach.

To cope with large geographic catchments and high client to occupational therapist ratios, a South Australian study identified using less labour-intensive service delivery models, multi-skilling of staff (recruiting right range of people skilled in different areas), networking (to manage waiting lists and access enough support for diverse client needs), and problem-solving (41). Further, to cope with barriers to accessing hand therapy rehabilitation (occupational therapy and physiotherapy) in rural/ remote locations, the service model incorporated flexible and realistic

goals and interventions, along with a shared care approach between metropolitan/regional and rural/remote therapists (51). Shared care approaches were also suggested to address earlier intervention in mental health, based on a study of rural services in Queensland, involving interviews with 37 GPs, 19 Queensland Health mental health staff and 18 participants from community organisations (50).

In Victoria, a survey of private rural rehabilitation therapists (physiotherapists, occupational therapists and speech pathologists) (40% response rate), about policies to support access to rural services, identified that more partnerships between private and public practitioners in rural and regional areas is likely to increase the comprehensiveness of programs (more available skills, supervision options and better service coordination). (96)

Figure 2: Rural and Remote Person-centred Approach
Adapted from Dew et al depicting a person-centred approach to planning (95)
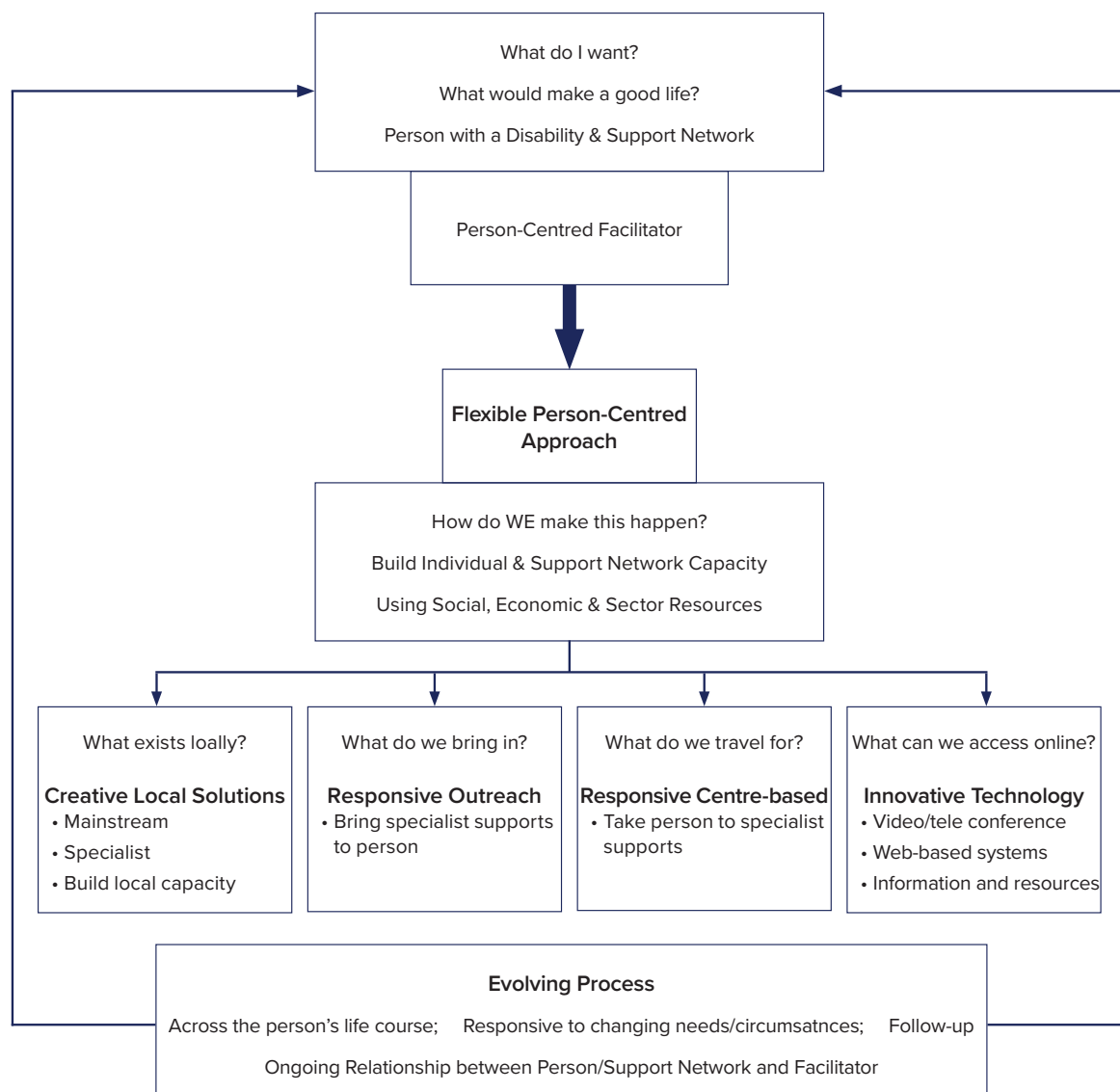
Collaboration between rural hospitals was equally important. In south-western Victoria five rural hospitals worked together to deliver the first ever rehabilitation service in the area (97). The model was based on a local assessment of community needs and health service capacity. The aim was to address functional recovery goals by delivering services across the rehabilitation team (different hospital sites and across a multi-disciplinary workforce), with dedicated project leadership. It involved staff education, team meetings, early intervention, and discharge planning. It achieved 112 admissions (2005-2006), (median clients aged 74 years), mainly for orthopaedic rehabilitation. Participants improved functionally at least as well as the Victorian State average for similar client groups (BI change 26.5 compared with 22.3 points, p<0.001), with a shorter length of stay (13.8 compared with 22.3 days). Enablers were an approachable team leader and cross community referral pathway systems. Barriers were that rehabilitation beds were set up in the acute ward and not all staff were on board with a rehabilitation mindset.

In an integrative review (16 included studies) to identify barriers, enablers and pathways to cardiac rehabilitation for adults living independently in rural and remote areas of high-income countries, including Australia, it was found that access was driven by being referred to the rehabilitation program and knowing that it existed in the first place (98). The following recommendations were made for rural rehabilitation models:

- Eligibility criteria
- Flexible programs, face-to-face, internet and phone
- Education about cardiac rehabilitation for clinicians, patients and families
- Systems for easy referral and improving access by Indigenous populations
- Comprehensive programs - primary and secondary prevention, risk factor management
- Improved funding

Outreach services were one model for increasing access to allied health services in smaller communities. A study was undertaken on outreach service planning for allied health chronic disease management across a large geographic catchment in Queensland (99). Consensus based planning identified that outreach services were best if regular, reliable, included case conferences and in-service education for local workers involved in ongoing local care.

A successful oral therapy outreach model for Indigenous children was implemented in Canada using trained community workers who identified and engaged people for screening by visiting dental therapists and hygienists (100). Piloted in 41 communities in 2004, the program was rolled out to 320 communities by 2012 and achieved screening and treatment of 23,000 Indigenous children.

Online services were also described as alternatives to face-to-face models. A systematic review analysed the international evidence for the effectiveness of alternative models of cardiac rehabilitation, including 83 articles published since 1999. Eight models emerged, but only individualized telehealth (telehealth addressing multiple risk factors and providing individualized assessment and risk factor modification) and community- or home-based cardiac rehabilitation were considered effective alternative models of cardiac rehabilitation, producing similar reductions in cardiovascular disease risk factors compared with hospital-based programmes (101).

Other studies considered the validity and applicability of online consultations in allied health. In Ottawa, Canada, online consultations with 12 allied health disciplines were made available to primary care providers (doctors and nurse practitioners) in a metropolitan and rural region in 2011-2016 (102). Primary care providers submitted requests online and allied health workers had 7 days to respond. Good uptake was demonstrated with minimal demand for additional face-to-face consultation and good resolution of the referral problem. The main services accessed were clinical pharmacy, addiction support and musculoskeletal services.

Another scoping review of Australian literature (44 studies published up to 2015) suggested that services provided by online consultations were equivalent in quality with face-to-face services for diabetic foot healing, rural rehabilitation and speech pathology (103). Some aspects of allied health work were suggested to not be amenable to online delivery. This was reinforced in another study of 5 allied health disciplines who undertook a health assessment on each of 12 patients in a high dependency unit 250km away through online (video) consultation and the following week, the same assessment face-to-face (104). In 35 cases out of 60, two independent raters agreed that the therapists' care plans were the same using the different methods. However, the providers preferred face-to-face work (based on Likert scale agreement). In each case, only the dietician's assessments did not differ significantly between the two modalities (as opposed to other disciplines - occupational therapy, physiotherapy, podiatry and speech pathology).

The costs of video-consultation based service delivery were deducted from real costs of face-to-face delivery of speech, podiatry, physiotherapy, occupational therapy and dietetics services (from a metropolitan hospital to a rural high dependency facility) over a three month period in Queensland (105). Costs were estimated based on fixed and variable components. Given an annual workload of 1,000 occasions of service (estimated based on three months' services), each video-based assessment was identified as costing $84.93, compared with $90.25 for face-to-face assessments.

A cross-sectional survey was done of 600 clinicians in around 2000 in NSW, inclusive of 125 allied health staff (e.g. psychologists, social workers, play therapists), along with doctors and nurses working in paediatrics aimed to understand attitudes to telemedicine by discipline, distance, and sector of practice (106). Based on a 31% response rate, the highest application of telehealth was for education, rather than patient management. Medical staff, and those in private practice considered telehealth had lowest utility for their practice. Rural clinicians had similar attitudes. Telehealth was considered to have limited capacity to replace traditional methods of face-to-face contact, phone and letter.

"*Come N See*" was a video-conferenced allied health speech therapy services from Sydney to rural and remote school children in NSW, with email follow-up (107). Over a 12-week period, children were offered therapy blocks of six fortnightly sessions, 30 minutes long. Sessions were delivered via low-bandwidth videoconferencing, with email follow-up. Instructions were provided to a therapist assistant and family member supporting the child. Interviews with school executives and therapy assistants noted that the program addressed a number of unmet needs for speech services, however, communication could be strengthened between providers.

In Victoria and Queensland, community participation in the implementation of oral health initiatives was enabled where the program was perceived as viable, sustainable and relevant to their needs, and when trusting relationships occurred with "the right people" and advisory groups (108).
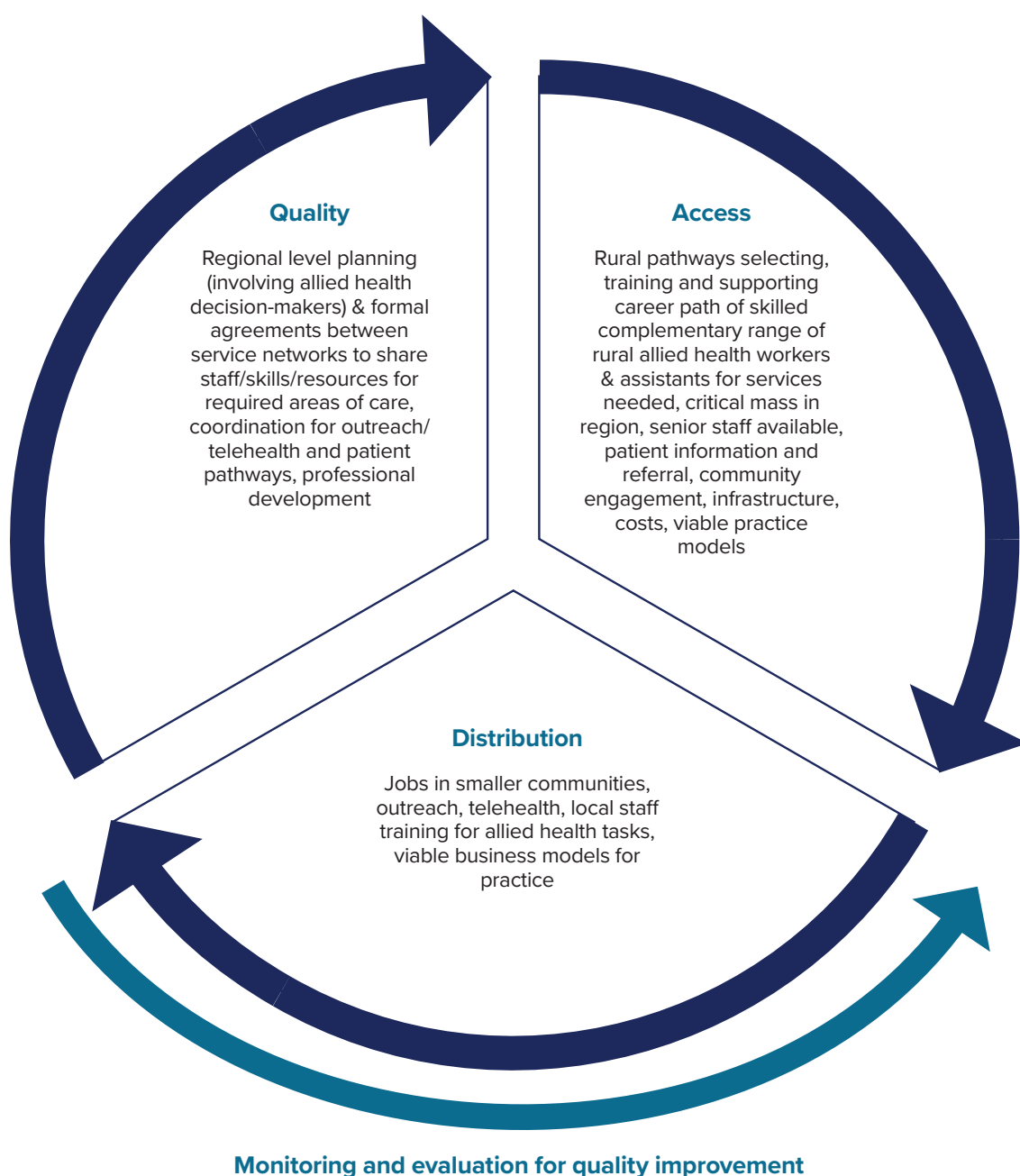
Viable models of funding was an important source of income for occupation therapists working in smaller communities. Medicare Chronic Disease Management was the main income source of around half of occupational therapists working in this context (42).

Section 4: Discussion

This scoping review has uniquely drawn on the most up-to-date published evidence about rural and remote allied health workforce and services to inform Australian policy. With 89% of the evidence from Australia, our country is relatively advanced in rural allied health research. Nineteen other literature reviews were identified, but this review included the largest volume and range of material. With a diverse range of allied health disciplines and rural contexts included, the findings provide an important backdrop for policy-making, and key inter-related factors for addressing access, distribution and quality can be deducted (Figure 4).

Based on the evidence, increasing access is likely to rely heavily on increasing skilled rural workforce development and retention by rural training and career pathways including more senior staff availability. Distribution of services requires jobs in smaller communities along with viable business models, training and service models like telehealth. Finally, quality demands a degree of integration of skilled providers and their coordination to address the patient pathways for rural and remote people. This is challenging given the multiplicity of professions working in different sectors, practice models and remuneration structures, but not impossible and strong examples were evident in the literature.

Figure 4: Matrix of factors to consider for quality, access and distribution based on the literature

Quality

Regional level planning (involving allied health decision-makers) & formal agreements between service networks to share staff/skills/resources for required areas of care, coordination for outreach/telehealth and patient pathways, professional development

Access

Rural pathways selecting, training and supporting career path of skilled complementary range of rural allied health workers & assistants for services needed, critical mass in region, senior staff available, patient information and referral, community engagement, infrastructure, costs, viable practice models

Distribution

Jobs in smaller communities, outreach, telehealth, local staff training for allied health tasks, viable business models for practice

Monitoring and evaluation for quality improvement

As depicted in Figure 4, monitoring and evaluation underpins the achievement of access, distribution and quality. There are a number of elements required to strengthen the current evidence base in this field: both quantitative and qualitative studies, multi-disciplinary and outcomes-focused methods, and national scale. This will be enhanced by broader access to routinely collected data, linked data and an impetus to target evidence towards understanding impact of training, career support and employment and service models on access, distribution and quality. Understanding the effect of policies and programs helps to target interventions and optimise cost-benefits. UDRHs could lead this evidence generation, given the right resources and systems, noting that in 2008-2010 only 56% of UDRH research output was about rural health issues.(109)

Critically, the evidence suggests that accessible and high quality rural allied health services is depicted by: *An appropriately skilled and distributed workforce, working in viable, regionally-coordinated ways, to promote prevention, early intervention, and appropriate follow up and referral for additional care as required, through a closely networked array of services, suitable for the population's needs.*

4.1 What are the policy implications of these data?

Although there were few metropolitan to rural workforce comparisons, the rural allied health providers described had distinctive scope of practice fit to providing a breadth of services for wide population needs and using additional skills. Defining and recognising these rural skills could be a key driver of training for and uptake and retention in rural and remote allied health work. A key enabler would be to agree on rural practice credentials in key disciplines and relevant training and professional development avenues. Developing and recruiting more allied health generalist workers needs to also accommodate a sufficient staff base to release people for additional roles in training, teaching/supervision, telehealth and multi-site practice.

The largest critical mass of rural allied health services is publicly based and this needs to be continually fostered through jurisdictional approaches. Importantly, growing the primary health service base should complement salaried roles and provide a crucial buffer for more upstream prevention/management services. Private growth opportunities is particularly relevant for enabling

access to optometry, pharmacy, psychology, physiotherapy and podiatry. Opportunities for integration with the NDIS, My Aged Care and other sector revenue streams could also enable greater growth in the private sector.

Training and using allied health assistants and potentially micro credentialing of other health workers to undertake allied health tasks is likely to improve access to allied health services across wider catchments. It may useful to adopt national frameworks for this to occur over time, ensuring roles are adaptable to context and discipline (public and private sector), in consultation with rural health services and allied health professionals.

The evidence clearly points to the need for rural pathways to train and support rural allied health workers. Pathways start with attracting rural youth to allied health careers and connecting them with virtual or local mentors and rural pathways. Evidence in medicine demonstrates that return to region is enhanced by selecting and training people from the region (110). Rural scholarships and course bridging opportunities allow interested rural students to access integrated pathways between rural secondary and technical schools, rural TAFEs (allied health assistant courses) and universities.

Agreeing national targets and incremental growth for the selection of rural background students and longer, high quality distributed rural training is important. These could particularly target rural primary care workforce development for vision, hearing, mental health, maternal and child health, rehabilitation, chronic disease and Indigenous health outcomes as well as access to medicines and relevant (non-dentistry) oral health options. The current requirement under RHMTP is to provide "placement weeks" but "academic years" may be more valuable for rural return based on the emerging allied health literature and lessons learnt from rural medicine (111-113). Commonwealth RHMT Program funding to the may require specific delineation and possibly augmentation for this to be achieved (111). A range of issues including course accreditation, partnerships, placements, accommodation and supervisors may require targeted policy work and investment.

Implementing rural-facing curriculum to address the workforce and service needs of rural communities is also important (9). Evidence has shown that high quality rural allied health training can occur in non-traditional clinical settings (including primary and community care), beyond

hospital training commonly occurring in cities (69). Enabling medical students to experience a mix of distributed primary care and regional hospital placements improves their distribution compared with regional hospital placements alone (113). To achieve this in allied health, the RHMT Program staff may need more formal roles within curriculum and rural curriculum development for the various allied health professions.

Rural pathways include allied health workers being able to access jobs where there is senior clinician along with professional development. Good examples were of professional exchange programs where learning needs specific to the local service were addressed with flexible, tailored education modules for rural practice. Selected UDRHs and the Queensland rural allied health generalist pathway also have good professional development models for early career allied health workers (67). The RHMT Program could extend the expectation for activity in this area. The Government's Health Workforce Scholarships Program, which is well subscribed, supports professional development for allied health workers engaged in any private allied health work, but its outcomes haven't been published (114).

Scant evidence suggests that any compulsory rural return of service scholarships may be effective if coupled with the right support. Evidence from medicine suggests that bonded places have a mild positive impact on rural supply (113). However, medical students participating in rural training through real-time choice can achieve better distribution outcomes than contracting people to it (115).

The evidence suggests that building the size of allied health teams, including recruiting senior allied health worker roles (in public and private practice), can improve retention. Senior professional positions increase the potential for regional supervision and career advancement opportunities. All services, whether public or private, could improve orientation processes, provide clear positions for interesting jobs, give autonomy in role and involve allied health in decision-making. Bundled retention incentives have been suggested to work best for rural primary care, allowing tailored response to individual needs (116).

To attract and retain private providers, viable practice models are critical, including access to Medicare benefits that fit with population need and complexity. Allied health assistants may be useful to supplement private allied health teams in some instances, especially if they have cross-disciplinary roles of carrying out care plans in multiple sectors.

Integrating local providers for particular models of service can optimise patient care pathways in a region. Regional level planning of teams around catchment priorities, with clear eligibility and referral improves coordinated services. The different drivers at play in the public and private systems (financial viability) and the unique disciplinary practice models require consideration for brokering networked services. Dew provided a useful framework for patient-centred planning around what can be provided locally, supplemented by outreach or telehealth and what needs to be sought elsewhere through travel (95). This is acknowledged to be more complicated when public and private entities and multiple sectors are working to different agendas.

Outreach and telehealth are important options for extending the distribution of selected services. They work best if supported by a sufficient volume of staff, visiting regularly and providing training and real-time support for local health workers who implementing allied health care plans between visits. The Commonwealth currently funds a range of rural outreach programs, however, these have the potential to be expanded to more specifically address service coordination roles and effective sustained allied health multi-disciplinary teams (117). Telehealth items and its associated infrastructure are a clear way of promoting its use, however uptake depends on relevance, clinical equivalence, cost, provider interest and patient satisfaction.

Viable business models for practising sustainably in smaller communities is an important consideration for the Commonwealth. Policies such as strengthening access to Chronic Disease Management and Medicare telehealth items may help, along with subsidies or grants to cover travel time and infrastructure.

Conclusion

Australia is leading the evidence base with respect to rural allied health workforce and services. Findings suggest that allied health providers are working as generalists and need particular skills to maximise their effectiveness. Access and quality depends on a critical mass of skilled providers, working in complementary teams to address needs of regional catchments. This could be aided by selecting rural background students, providing more rural-based training, rural curriculum, supported rural jobs and rural career pathways including addressing job satisfaction. At the regional level, patient-centred service planning and coordination of public and private providers underpins access to more comprehensive and high quality services. For smaller communities, outreach and virtual consultations are critical for early intervention and continuity of care, but viable business models and an adequate staff base are essential to improve service distribution. A number of these areas have direct application to Commonwealth Department of Health policy and equally require strong engagement with jurisdictions and rural representation across the sector.

References

1. Australian Institute of Health and Welfare. Australia's allied health workforce growing. Canberra: AIHW; 2014.

2. Allied Health Professions Australia. What is allied health? Melbourne: AHPA; 2019.

3. Department of Health and Human Services Victoria. Allied Health Workforce. Victoria: DHHS; 2018.

4. Australian Allied Health Leadership Forum. Australian Allied Health Leadership Forum. 2019.

5. NSW Health. Allied health portfolio. North Sydney: NSW Health; 2018.

6. Queensland Health. Allied Health. Brisbane: Queensland Government; 2017.

7. SARRAH. Services for Rural and Remote Allied Health. Canberra: SARRAH; 2019.

8. Australian Rural Health Education Network. ARHEN. Canberra: ARHEN; 2019.

9. Urbis. University Departments of Rural Health Program. Canberra: Commonwealth Department of Health; 2008.

10. Commonwealth Department of Health. Health workforce data: fact sheets. Canberra: Australian Government Department of Health; 2016.

11. Thomas SL, Wakerman J, Humphreys JS. What core primary health care services should be available to Australians living in rural and remote communities? BMC Family Practice. 2014;15:1-9.

12. Thomas SL, Wakerman J, Humphreys JS. Ensuring equity of access to primary health care in rural and remote Australia - what core services should be locally available? International Journal For Equity In Health. 2015;14:1-8.

13. Caffery L, Bradford N, Meurer M, Smith A. Association between patient age, geographical location, Indigenous status and hospitalisation for oral and dental conditions in Queensland, Australia. Australian Journal Of Primary Health. 2017;23(1):46-52.

14. Barker CL, Ross M. Paediatric aeromedical retrievals in the 'Top End' of the Northern Territory. The Australian Journal Of Rural Health. 2014;22(1):29-32.

15. O'Callaghan AM, McAllister L, Wilson L. Barriers to accessing rural paediatric speech pathology services: health care consumers' perspectives. The Australian Journal Of Rural Health. 2005;13(3):162-71.

16. Bristow S, Jackson D, Shields L, Usher K. The rural mother's experience of caring for a child with a chronic health condition: An integrative review. Journal Of Clinical Nursing. 2018;27(13-14):2558-68.

17. Mitsch V, Curtin M, Badge H. The provision of brain injury rehabilitation services for people living in rural and remote New South Wales, Australia. Brain Injury. 2014(12):1504-13.

18. Jesus TS, Landry MD, Dussault G, Fronteira I. Human resources for health (and rehabilitation): Six Rehab-Workforce Challenges for the century. Human Resources For Health. 2017;15(1):1-12.

19. Leach AJ. Otitis media in Australian Aboriginal children: an overview. International Journal Of Pediatric Otorhinolaryngology. 1999;49 Suppl 1:S173-S8.

20. Stoneman J, Taylor SJ. Pharmacists' views on Indigenous health: is there more that can be done? Rural And Remote Health. 2007;7(3):1-16.

21. Hunter E. Disadvantage and discontent: a review of issues relevant to the mental health of rural and remote Indigenous Australians. The Australian Journal Of Rural Health. 2007;15(2):88-93.

22. Baeza J, Bailie R, Lewis JM. Care for chronic conditions for indigenous Australians: key informants' perspectives on policy. Health Policy. 2009;92(2-3):211-7.

23. Gussy MG, Waters EB, Riggs EM, Lo SK, Kilpatrick NM. Parental knowledge, beliefs and behaviours for oral health of toddlers residing in rural Victoria. Australian Dental Journal. 2008;53(1):52-60.

24. Ha DH, Crocombe LA, Mejia GC.
Clinical oral health of Australia's rural children in a sample attending school dental services. The Australian Journal Of Rural Health. 2014;22(6):316-22.

25. Mayze L, Pawlak J, Rogers M, Smith M.
Oral health of adolescents in the Colac-Otway Shire. The Australian Journal Of Rural Health. 2019;27(1):93-8.

26. Bell N, Kidanie T, Cai B, Krause JS.
Geographic Variation in Outpatient Health Care Service Utilization After Spinal Cord Injury. Archives Of Physical Medicine And Rehabilitation. 2017;98(2):341-6.

27. Boudville AI, Anjou MD, Taylor HR.
Improving eye care for Indigenous Australians in primary health care settings. The Australian Journal Of Rural Health. 2013;21(2):121-7.

28. Briggs AM, Slater H, Bunzli S, Jordan JE, Davies SJ, Smith AJ, et al.
Consumers' experiences of back pain in rural Western Australia: access to information and services, and self-management behaviours. BMC Health Services Research. 2012;12:1-12.

29. Brooks J.
Building a Perinatal Service Model with a Western Australian Indigenous Community. Aboriginal and Islander Health Worker Journal. 2009(1):16.

30. Wilson RL, Cruickshank M, Lea J.
Experiences of families who help young rural men with emergent mental health problems in a rural community in New South Wales, Australia. Contemporary Nurse. 2012;42(2):167-77.

31. Tamwoy E, Haswell-Elkins MR, Wong M, Rogers W, D'Abbs P, McDermott R.
Living and coping with diabetes in the Torres Strait and Northern Peninsula Area. Health Promotion Journal of Australia: Official Journal of Australian Association of Health Promotion Professionals. 2004(3):231.

32. Arksey H, O'Malley L.
Scoping studies: towards a methodological framework. International Journal of Social Research Methodology. 2005;8:19-32.

33. Berndt A, Murray CM, Kennedy K, Stanley MJ, Gilbert-Hunt S.
Effectiveness of distance learning strategies for continuing professional development (CPD) for rural allied health practitioners: a systematic review. BMC Medical Education. 2017;17(1):117-.

34. Dolea C, Stormont L, Braichet J-M.
Evaluated strategies to increase attraction and retention of health workers in remote and rural areas. Bulletin of the World Health Organization. 2010;88(5):379-85.

35. Braun V, Clarke V.
Using thematic analysis in psychology. Qualitative Research in Psychology. 2006;3(2):77-101.

36. Whitford D, Smith T, Newbury J.
The South Australian Allied Health Workforce survey: helping to fill the evidence gap in primary health workforce planning. Australian Journal Of Primary Health. 2012;18(3):234-41.

37. Smith T, Cooper R, Brown L, Hemmings R, Greaves J.
Profile of the rural allied health workforce in northern New South Wales and comparison with previous studies. The Australian Journal Of Rural Health. 2008;16(3):156-63.

38. O'Toole K, Schoo A, Stagnitti K, Cuss K.
Rethinking policies for the retention of allied health professionals in rural areas: a social relations approach. Health Policy 2008;87(3):326-32.

39. Williams E, D'Amore W, McMeeken J.
Physiotherapy in rural and regional Australia. The Australian Journal Of Rural Health. 2007;15(6):380-6.

40. Keane S, Smith T, Lincoln M, Fisher K.
Survey of the rural allied health workforce in New South Wales to inform recruitment and retention. The Australian Journal Of Rural Health. 2011;19(1):38-44.

41. Boshoff K, Hartshorne S.
Profile of occupational therapy practice in rural and remote South Australia. The Australian Journal Of Rural Health. 2008;16(5):255-61.

42. Merritt J, Perkins D, Boreland F.
Regional and remote occupational therapy: a preliminary exploration of private occupational therapy practice. Australian Occupational Therapy Journal. 2013;60(4):276-87.

43. Adams R, Jones A, Lefmann S, Sheppard L. Rationing is a reality in rural physiotherapy: a qualitative exploration of service level decision-making. BMC Health Services Research. 2015;15:1-12.

44. Bent A.
Allied health in Central Australia: Challenges and rewards in remote area practice. The Australian Journal Of Physiotherapy. 1999;45(3):203-12.

45. Colles SL, Belton S, Brimblecombe J. Insights into nutritionists' practices and experiences in remote Australian Aboriginal communities. Australian & New Zealand Journal of Public Health. 2016;40:S7-S13.

46. Adams J, de Luca K, Swain M, Funabashi M, Wong A, Pagé I, et al.
Prevalence and practice characteristics of urban and rural or remote Australian chiropractors: Analysis of a nationally representative sample of 1830 chiropractors. The Australian Journal Of Rural Health. 2019;27:34-41.

47. Hoffmann T, Cantoni N.
Occupational therapy services for adult neurological clients in Queensland and therapists' use of telehealth to provide services. Australian Occupational Therapy Journal. 2008;55(4):239-48.

48. Smith JD, O'Dea K, McDermott R, Schmidt B, Connors C.
Educating to improve population health outcomes in chronic disease: an innovative workforce initiative across remote, rural and Indigenous communities in northern Australia. Rural & Remote Health. 2006;6(3):1-15.

49. Thomas Y, Clark M.
The aptitudes of allied health professionals working in remote communities. International Journal of Therapy & Rehabilitation. 2007;14(5):216-20.

50. Bambling M, Kavanagh D, Lewis G, King R, King D, Sturk H, et al.
Challenges faced by general practitioners and allied mental health services in providing mental health services in rural Queensland. The Australian Journal Of Rural Health. 2007;15(2):126-30.

51. Kingston GA, Williams G, Judd J, Gray MA. Hand therapy services for rural and remote residents: Results of a survey of Australian occupational therapists and physiotherapists. The Australian Journal Of Rural Health. 2015;23(2):112-21.

52. Roots RK, Brown H, Bainbridge L, Li LC. Rural rehabilitation practice: perspectives of occupational therapists and physical therapists in British Columbia, Canada. Rural & Remote Health. 2014;14(1):1-16.

53. Wielandt PM, Taylor E.
Understanding rural practice: implications for occupational therapy education in Canada. Rural & Remote Health. 2010;10(3):1-13.

54. Somerville L, Davis A, Elliott AL, Terrill D, Austin N, Philip K.
Building allied health workforce capacity: a strategic approach to workforce innovation. Australian Health Review. 2015;39(3):264-70.

55. Stute M, Hurwood A, Hulcombe J, Kuipers P. Pilot implementation of allied health assistant roles within publicly funded health services in Queensland, Australia: results of a workplace audit. BMC Health Services Research. 2014;14:1-9.

56. Newman CS, Cornwell PL, Young AM, Ward EC, McErlain AL.
Accuracy and confidence of allied health assistants administering the subjective global assessment on inpatients in a rural setting: a preliminary feasibility study. Nutrition & Dietetics: The Journal Of The Dietitians Association Of Australia. 2018;75(1):129-36.

57. Tan ACW, Emmerton LM, Hattingh HL. Issues with medication supply and management in a rural community in Queensland. The Australian Journal Of Rural Health. 2012;20(3):138-43.

58. Walker D, Tennant M, Short SD.
An exploration of the priority remote health personnel give to the development of the Indigenous Health Worker oral health role and why: unexpected findings. The Australian Journal Of Rural Health. 2013;21(5):274-8.

59. Durkin SR.
Eye health programs within remote Aboriginal communities in Australia: a review of the literature. Australian Health Review: A Publication Of The Australian Hospital Association. 2008;32(4):664-76.

60. Durey A, Haigh M, Katzenellenbogen JM. What role can the rural pipeline play in the recruitment and retention of rural allied health professionals? Rural & Remote Health. 2015;15(3):1-11.

61. Smith T, Fisher K, Keane S, Lincoln M. Comparison of the results of two rural allied health workforce surveys in the Hunter New England region of New South Wales: 2005 versus 2008. The Australian Journal Of Rural Health. 2011;19(3):154-9.

62. Winn CS, Chisolm BA, Hummelbrunner JA. Factors affecting recruitment and retention of rehabilitation professionals in Northern Ontario, Canada: a cross-sectional study. Rural & Remote Health. 2014;14(2):1-7.

63. Durey A, McNamara B, Larson A. Towards a health career for rural and remote students: cultural and structural barriers influencing choices. The Australian Journal Of Rural Health. 2003;11(3):145-50.

64. Spiers M, Harris M. Challenges to student transition in allied health undergraduate education in the Australian rural and remote context: a synthesis of barriers and enablers. Rural & Remote Health. 2015;15(2):1-17.

65. Laurence C, Wilkinson D. Towards more rural nursing and allied health services: current and potential rural activity in the Division of Health Sciences of the University of South Australia. Rural & Remote Health. 2002;2(1):1-9.

66. Johnston C, Newstead C, Sanderson M, Wakely L, Osmotherly P. The changing landscape of physiotherapy student clinical placements: An exploration of geographical distribution and student performance across settings. The Australian Journal Of Rural Health. 2017;25(2):85-93.

67. Smith T, Brown L, Cooper R. A multidisciplinary model of rural allied health clinical-academic practice: a case study. Journal Of Allied Health. 2009;38(4):236-41.

68. Smith T, Cross M, Waller S, Chambers H, Farthing A, Barraclough F, et al. Ruralization of students' horizons: insights into Australian health professional students' rural and remote placements. Journal of Multidisciplinary Healthcare. 2018;11:85-97.

69. Leys J, Wakely L, Thurlow K, Hyde Page R. Physiotherapy students in rural emergency departments: A NEAT place to learn. Australian Journal of Rural Health. 2017;25(2):130-1.

70. Thomasz T, Young D. Speech pathology and occupational therapy students participating in placements where their supervisor works in a dual role. The Australian Journal Of Rural Health. 2016;24(1):36-40.

71. Brown L, Smith T, Wakely L, Wolfgang R, Little A, Burrows J. Longitudinal Tracking of Workplace Outcomes for Undergraduate Allied Health Students Undertaking Placements in Rural Australia. Journal Of Allied Health. 2017;46(2):79-87.

72. Playford D, Larson A, Wheatland B. Going country: rural student placement factors associated with future rural employment in nursing and allied health. The Australian Journal Of Rural Health. 2006;14(1):14-9.

73. Aoun S, Johnson L. Capacity building in rural mental health in Western Australia. The Australian Journal Of Rural Health. 2002;10(1):39-44.

74. Cox R, Hurwood A. Queensland Health trial of an allied health postgraduate qualification in remote health practice. The Australian Journal Of Rural Health. 2005;13(3):191-2.

75. Lin IB, Beattie N, Spitz S, Ellis A. Developing competencies for remote and rural senior allied health professionals in Western Australia. Rural & Remote Health. 2009;9(2):1-11.

76. Williams EN, McMeeken JM. Building capacity in the rural physiotherapy workforce: a paediatric training partnership. Rural & Remote Health. 2014;14(1):1-11.

77. Ducat WH, Burge V, Kumar S. Barriers to, and enablers of, participation in the Allied Health Rural and Remote Training and Support (AHRRTS) program for rural and remote allied health workers: a qualitative descriptive study. BMC Medical Education. 2014;14:1-9.

78. Martin P, Kumar S, Stone M, Abernathy L, Burge V, Lizarondo L.
Impact and feasibility of the Allied Health Professional Enhancement Program placements - experiences from rural and remote Queensland. Advances In Medical Education And Practice. 2016;7:41-8.

79. Parkin AE, McMahon S, Upfield N, Copley J, Hollands K.
Work experience program at a metropolitan paediatric hospital: assisting rural and metropolitan allied health professionals exchange clinical skills. The Australian Journal Of Rural Health. 2001;9(6):297-303.

80. Blayden C, Hughes S, Nicol J, Sims S, Hubbard IJ.
Using secondments in tertiary health facilities to build paediatric expertise in allied health professionals working in rural New South Wales. The Australian Journal Of Rural Health. 2017;25(6):376-81.

81. Bourke L, Waite C, Wright J.
Mentoring as a retention strategy to sustain the rural and remote health workforce. The Australian Journal Of Rural Health. 2014;22(1):2-7.

82. Foo J, Storr M, Maloney S.
The characteristics and experiences of international physiotherapy graduates seeking registration to practise in Australia. New Zealand Journal of Physiotherapy. 2017;45(3):135-42.

83. Devine SG, Williams G, Nielsen I.
Rural Allied Health Scholarships: do they make a difference? Rural & Remote Health. 2013;13(4):1-13.

84. Keane S, Lincoln M, Smith T.
Retention of allied health professionals in rural New South Wales: a thematic analysis of focus group discussions. BMC Health Services Research. 2012;12:1-11.

85. Roots RK, Li LC.
Recruitment and retention of occupational therapists and physiotherapists in rural regions: a meta-synthesis. BMC Health Services Research. 2013;13:1-14.

86. Keane S, Lincoln M, Rolfe M, Smith T.
Retention of the rural allied health workforce in New South Wales: a comparison of public and private practitioners. BMC Health Services Research. 2013;13:1-9.

87. Bond A, Barnett T, Lowe S, Allen P.
Retention of allied health professionals in Tasmania. The Australian Journal Of Rural Health. 2013;21(4):236-7.

88. Lai GC, Taylor EV, Haigh MM, Thompson SC.
Factors Affecting the Retention of Indigenous Australians in the Health Workforce: A Systematic Review. International Journal Of Environmental Research And Public Health. 2018;15(5).

89. Chisholm M, Russell D, Humphreys J.
Measuring rural allied health workforce turnover and retention: what are the patterns, determinants and costs? The Australian Journal Of Rural Health. 2011;19(2):81-8.

90. Cosgrave C, Maple M, Hussain R.
An explanation of turnover intention among early-career nursing and allied health professionals working in rural and remote Australia - findings from a grounded theory study. Rural & Remote Health. 2018;18(3):1-17.

91. Manahan CM, Hardy CL, MacLeod MLP.
Personal characteristics and experiences of long-term allied health professionals in rural and northern British Columbia. Rural & Remote Health. 2009;9(4):1-13.

92. Adams R, Jones A, Lefmann S, Sheppard L.
Service Level Decision-making in Rural Physiotherapy: Development of Conceptual Models. Physiotherapy Research International: The Journal For Researchers And Clinicians In Physical Therapy. 2016;21(2):116-26.

93. Adams R, Jones A, Lefmann S, Sheppard L.
Towards understanding the availability of physiotherapy services in rural Australia. Rural & Remote Health. 2016;16(2):1-14.

94. Adams R, Jones A, Lefmann S, Sheppard L.
Towards understanding the availability of physiotherapy services in rural Australia. Rural & Remote Health. 2016;16(2):1-14.

95. Dew A, Bulkeley K, Veitch C, Bundy A, Gallego G, Lincoln M, et al.
Addressing the barriers to accessing therapy services in rural and remote areas. Disability And Rehabilitation. 2013;35(18):1564-70.

96. O'Toole K, Schoo AM.
Retention policies for allied health professionals in rural areas: a survey of private practitioners. Rural & Remote Health. 2010;10(2):1-12.

97. Dow B, Moore K, Dunbar JM, Nankervis J, Hunt S.
A description and evaluation of an innovative rural rehabilitation programme in South Eastern Australia. Disability And Rehabilitation. 2010;32(9):781-9.

98. Field PE, Franklin RC, Barker RN, Ring I, Leggat PA.
Cardiac rehabilitation services for people in rural and remote areas: an integrative literature review. Rural & Remote Health. 2018;18(4):1-13.

99. Battye KM, McTaggart K.
Development of a model for sustainable delivery of outreach allied health services to remote north-west Queensland, Australia. Rural & Remote Health. 2003;3(3):1-14.

100. Mathu-Muju KR, McLeod J, Walker ML, Chartier M, Harrison RL.
The Children's Oral Health Initiative: An intervention to address the challenges of dental caries in early childhood in Canada's First Nation and Inuit communities. Canadian Journal Of Public Health. 2016;107(2):e188-e93.

101. Clark RA, Conway A, Poulsen V, Keech W, Tirimacco R, Tideman P.
Alternative models of cardiac rehabilitation: a systematic review. European Journal Of Preventive Cardiology. 2015;22(1):35-74.

102. McKellips F, Keely E, Afkham A, Liddy C.
Improving access to allied health professionals through the Champlain BASE™ eConsult service: a cross-sectional study in Canada. The British Journal Of General Practice: The Journal Of The Royal College Of General Practitioners. 2017;67(664):e757-e63.

103. Iacono T, Stagg K, Pearce N, Hulme Chambers A.
A scoping review of Australian allied health research in ehealth. BMC Health Services Research. 2016;16(1):1-8.

104. Guilfoyle C, Wootton R, Hassall S, Offer J, Warren M, Smith D.
Preliminary experience of allied health assessments delivered face to face and by videoconference to a residential facility for elderly people. Journal Of Telemedicine And Telecare. 2003;9(4):230-3.

105. Hassall S, Wootton R, Guilfoyle C.
The cost of allied health assessments delivered by videoconference to a residential facility for elderly people. Journal Of Telemedicine And Telecare. 2003;9(4):234-7.

106. Cohn RJ, Goodenough B.
Health professionals' attitudes to videoconferencing in paediatric health-care. Journal Of Telemedicine And Telecare. 2002;8(5):274-82.

107. Fairweather GC, Lincoln MA, Ramsden R.
Speech–language pathology telehealth in rural and remote schools: the experience of school executive and therapy assistants. Rural & Remote Health. 2017;17(3):1-13.

108. Taylor J, Carlisle K, Farmer J, Larkins S, Dickson-Swift V, Kenny A.
Implementation of oral health initiatives by Australian rural communities: Factors for success. Health & Social Care In The Community. 2018;26(1):e102-e10.

109. Gausia K, Thompson SC, Lindeman MA, Brown LJ, Perkins D.
Contribution of university departments of rural health to rural health research: An analysis of outputs. Australian Journal of Rural Health. 2015;23:101-6.

110. McGrail M, O'Sullivan B, Russell D.
Rural training pathways: the return rate of doctors to work in the same region as their basic medical training. Human Resources for Health. 2018;16(56):1-10.

111. Australian Government Department of Health.
Rural Health Multidisciplinary Training Program. Canberra: DoH; 2019.

112. O'Sullivan BG, McGrail MR, Russell D, Chambers H, Major L.
A review of characteristics and outcomes of Australia's undergraduate medical education rural immersion programs. Human Resources for Health. 2018;16(8):1-10.

113. O'Sullivan B, McGrail M, Russell D, Walker J, Chambers H, Major L, et al.
Duration and setting of rural immersion during the medical degree relates to rural work outcomes. Medical Education 2018:1-13.

114. Commonwealth Department of Health.
Health Workforce Scholarship Program. Canberra: DoH; 2018.

115. O'Sullivan B, McGrail M, Major L, Woodfield M, Holmes C.
Rural work outcomes of medical students participating in a contracted Extended Rural Cohort (ERC) program by course-entry preference. Medical Teacher. 2019:1-9.

116. Russell D, McGrail M, Humphreys J. Determinants of rural Australian primary health care worker retention: A synthesis of key evidence and implications for policymaking. Australian Journal of Rural Health 2017;25:5-14.

117. O'Sullivan B, Joyce C, McGrail M. Adoption, implementation and prioritization of specialist outreach policy in Australia: a national perspective. Bulletin Of The World Health Organization. 2014;9:512-9.

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