Policy Document

Regional, Rural and Remote Health (2022)

Position Statement

The Australian Medical Students' Association (AMSA) believes that:

1. Addressing rural and remote health outcomes requires a multifaceted approach focused on improving the social determinants of health through a community-centred approach;
2. A well resourced, funded and sustainable rural health workforce, created through proficient training and personal development opportunities, is central to ensuring equitable access to health care for rural and remote populations;
3. Providing sufficient support for the rural health workforce requires an improved understanding of workforce demographics and individual personal, cultural, and social factors.
4. The higher proportion of Aboriginal and Torres Strait Islander people in rural and remote populations mandates that healthcare services and health professionals practice culturally safe care
5. Greater funding for research related to rural and remote health issues is needed due to the paucity of literature on several key problems including infectious disease, trauma care, mental health, workforce, telehealth, and cultural safety.

Policy Points

AMSA calls upon:

1. Federal, state, and territory governments to:
    a. Provide funding to programs and initiatives that address the social determinants of health in regional, rural, and remote areas by:
        i. Improving the minimal standard of educational attainment by:
            1. Promoting the completion of secondary schooling;
            2. Promoting the uptake of vocational education and training opportunities and higher education;
            3. Supporting access to education through initiatives such as scholarships and bursaries;
            4. Improving the quality of educational services.
        ii. Continuing to support public health campaigns and programs aimed at improving health literacy;

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iii. Encouraging a reduction in the price of goods to reduce the cost-of-living and improving the quality of fresh foods and access to safe drinking water;
iv. Improving health service, public transport, housing and hygiene infrastructure to increase service capability at a local level;
v. Supporting access to telehealth services and the internet in regional, rural, and remote areas;
vi. Providing funding to community-led initiatives including sporting and leisure clubs to promote social support;
vii. Prioritise local health care service access to standard resources and technologies in rural and remote area services.

b. Improve health workforce distribution in rural and remote areas by:
   i. Improving funding of Rural Clinical Schools and Regional Training Hubs to support education and professional development in rural and remote locations;
   ii. Introducing incentives, covering a broad range of financial, personal, and social bases, to holistically support the training and retention of all rural health care professionals, including non-GP specialists and allied health professionals;
   iii. Supporting the ability of international medical graduates (IMGs) to provide healthcare to rural populations including but not limited to:
      1. Additional skills training in areas such as advanced life support;
      2. Mental health resilience;
      3. Actively creating educational opportunities;
   iv. Supporting relocation of health professional's partners and families by providing avenues of support to assist in relocation where feasible, in areas such as: partners work, transport, housing, schooling;
   v. Maintain ongoing implementation and review of strategies aimed at identifying and addressing issues faced in rural health.

c. Support program and policy development on the burden of diseases that solely or disproportionately affect rural and remote communities that have been so far neglected (such as several of the Neglected Tropical Diseases) by:
   i. Continuing to fund current programs to eliminate diseases of poverty such as trachoma, strongyloidiasis, rheumatic fever and rheumatic heart disease;
   ii. Establishing better surveillance strategies to close the gap in research and program-development toward aforementioned unique rural health challenges.

d. Improve access and eligibility to the PTSS to alleviate the cost and access to specialist outpatient and tertiary services;

e. Improve financial support of retrieval service organisations by:
    i. Expanding the range of services available to rural and remote communities;
    ii. Improving the organisation of services to better support fly-in specialists.

f. Not place any location-based restrictions on IMG's practice.

2. The National Health and Medical Research Council to:
    a. Develop funding schemes exclusive to rural health research, especially in areas where there is currently a paucity of research literature including the neglected tropical diseases, mental health, retrieval medicine, social determinants of health, and telehealth.
    b. Continue evaluating research output and outcomes regarding the state of rural health research in Australia.
    c. Improve monitoring of current strategies and approaches to the rural health workforce shortage and into their efficacy.
3. Specialty medical colleges to:
    a. Support access to specialist training programs in rural and remote areas, including advocating for increased government support of rural pathways availability of end-to-end training, online and local education, and increased mentorship from local specialists;
    b. Support access to continued professional development opportunities in rural and remote areas for trainees and fellows to increase long-term retention and sustainability of the rural workforce.
4. Universities offering medical, nursing, and allied health care programs to:
    a. Improve opportunities for students to undertake supported rural rotations by;
        i. Providing financial assistance through scholarships and bursaries;
        ii. Providing ongoing opportunities for rural placements across the course;
        iii. Ensuring equitable access to course material and other educational resources, such as tutorials and case presentations, as experienced by metropolitan counterparts.
    b. Promote rural training pathways to current health students;
    c. Engage with high school students from rural areas and/or Aboriginal and Torres Strait Islander communities to promote rural placements and training programs.
5. Rural health care services to:
    a. Improve retention of healthcare professionals by creating supportive workplace environments and providing incentives that address barriers to workplace retention.

b. Improve retention rates of IMGs by encouraging a culturally safe workplace and living environment for IMGs;
c. Continue integration and improvement of telehealth services in rural and remote areas;
    i. However, ensure that core in-person health services are not replaced with telehealth services;
    ii. Improve digital solutions for mental health management as an adjunct and supportive measure to face-to-face mental health services;
d. Address the increased prevalence of chronic disease risk factors by:
    i. Delivering health promotion activities;
    ii. Improving screening for preventative conditions;
    iii. Supporting equitable access to vaccines.
e. Ensure health informatics integration and sharing between metropolitan centres and regional, rural, and remote healthcare providers to maintain continuity of care;
f. Support access to Indigenous Healthcare Workers and support staff for Aboriginal and Torres Strait Islander patients;
g. Address the disparity in mental health outcomes for rural, regional and remote populations by:
    i. Increasing the cultural competency of rural mental health workers, to provide personalised and culturally appropriate mental health services;
    ii. Consider the incorporation of standardised mental health assessments within routine physical checks in primary healthcare settings.
h. Increase funding and support of education programs which offer extra curricular training opportunities for junior doctors, locums and IMG's to increase their competency for rural practice

6. Retrieval services to:
    a. Increase integration of research with other retrieval agencies;
    b. Ensure maintenance of emergency skills to improve prehospital survival rates;
    c. Improve coordination with prehospital services to streamline patient transfer to a Level I or II trauma centre capable of providing definitive care.
7. Rural and remote community councils and leadership groups to:
    a. Support doctors by improving awareness and accessibility to community groups;
    b. Liaise with health care professionals and services to:
        i. Ensure that programs best address community health needs;
        ii. Deliver community-tailored health promotion and health literacy activities;
        iii. Support community programs which empower self-growth and development in relation to mental health and physical health.

c. Support community-led initiatives to improving self-efficacy amongst community members surrounding mental health destigmatisation and first-response

8. AMSA Rural Health, the National Rural Health Student Network, and student rural health clubs to:
    a. Continue advocating for stakeholders at a local and national level to improve rural health opportunities for students;
    b. Provide resources and information to students on rural health careers and rural placements;
    c. Promote rural health opportunities to student bodies through in-person and online events.

Background

The Australian Medical Students' Association (AMSA) is the peak representative body of medical students in Australia. Poorer health outcomes in rural, regional, and remote areas are a complex issue and a large focus of the Australian healthcare system. Inequities are extensive and associated with a variety of factors such as the social determinants of health, a maldistributed health workforce, and geographical isolation [1]. Given these issues, addressing rural and remote health necessitates multidimensional solutions and involves stakeholders across government, healthcare, and other organisational domains to improve the disease burden, mortality, and disability profile of Australia overall.

Defining Remoteness

The Australian Statistical Geography Standard (ASGS) stratifies Australia into 5 classes of remoteness: major city, inner regional, outer regional, remote, and very remote [2]. Remote areas are categorised based on their road distance to service centres, and 'rural and remote' refers to any area outside of a major city [3]. However, in response to the ASGS system's lack of sensitivity to workforce retention-related factors, the Modified Monash Model (MMM) was developed. Also considering population size, the MMM categorises areas on a scale of MM1 (major city) to MM7 (very remote), which better reflects the workforce distribution needs and helps government programs to define their eligibility requirements [4].

Status of Rural, Regional, & Remote Health

Around 28% of the Australian population, or 7 million people, live in rural, regional, and remote areas. The proportion of Aboriginal and Torres Strait Islander people also massively increases from 1.8% in major cities to 32% in remote and very remote areas. Due to a variety of unique challenges, such as geographical isolation, rural and remote residents have poorer health outcomes and reduced access to healthcare services compared to their metropolitan counterparts. Additionally, rural and remote areas record higher rates of hospitalisation, injury, and deaths [5]. The rate of total disease burden in remote and very remote areas is 1.4 times as high as in major cities. In correlation, age-standardised mortality rates are 1.3 times for males and 1.5 times for females,

while potentially avoidable deaths are 1.2 and 3 times higher for males and females respectively [6]. As rural health issues significantly contribute to the health profile of Australia overall, a multitude of government and non-government organisations exist to support rural health outcomes. Within non-government organisations, it is important to note the role of student bodies such as AMSA Rural Health, the National Rural Health Student Network, and student rural health clubs, which support early student engagement in rural health issues.

The Social Determinants of Health

The World Health Organisation (WHO) defines the social determinants of health as

> "the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life" [7].

The social determinants of health encapsulate non-medical factors that determine medical outcomes for patients who access a given medical system [7-8]. The social determinants of health are underpinned by socio-economic, political, cultural and developmental factors which are shown to have marked effects on healthcare outcomes [9]. The differences in these factors create a very specific set of challenges for rural, regional and remote Australians when compared to their metropolitan counterparts [10]. The disparity in these determinants have causative factors (and relating solutions) classified into upstream, midstream, and downstream factors. These relate to international factors and governmental policies; Australian societal, political and cultural factors; and individual patient factors respectively [11-12].

Rural, regional, and remote populations are reported to have a different experience of social determinants than urban communities and, as such, create a gradient in healthcare inequity [13]. For example, rural populations are subject to reduced ability to access health services due to geographical disposition - which is exacerbated by reduced economic production, lower public/affordable infrastructure (public transport), and lower socioeconomic status. These factors reduce health system usage in rural areas and cause preventable hospitalisation and inadequate follow-up for chronic conditions. As a result, the system fails to create upstream preventative measures, and instead incurs higher healthcare costs for both the service and for the patient [10,14].

Upstream Factors

The main upstream factors that influence the social determinants of health include inadequate funding for public and educational services, which predisposes rural and remote communities to lower health literacy levels [11]. Rural and remote Australian schools commonly face lower academic attainment compared to their metropolitan counterparts, which also results in reduced employment opportunities for rural graduates, leading to increased stress, a reduced sense of control and capacity for improvement [15-16]. These

factors are also perpetuated by “digital exclusion” in which rural areas receive less reliable internet access and are unable to access good quality education, employment opportunities, health information, mental health resources and telehealth access. Age and socio-economic status also play a role as the higher rates of elderly and lower-socioeconomic groups who tend to reside in rural areas have lower rates of technology access and proficiency, contributing to a divide in health literacy [17].

Furthermore, these reduced health literacy levels are exacerbated by insufficient publicly-funded transport and greater geographical sparsity. Compared to urban areas, rural and remote residents have greater difficulty in accessing comprehensive medical care and even basic facilities such as grocery stores or fuel [18]. The reduced levels of healthcare cause delays in basic primary healthcare, access to essential preventative screening and acute medical attention. The combination of poor health literacy and inadequate access to routine preventative health checks perpetuates a higher burden of disease in rural, remote and regional areas and may contribute to higher health expenditure long term [18-19].

Midstream and Patient Factors

Reduced levels of healthcare funding perpetuate this health inequity gradient by reducing the capacity of services to adequately screen for, diagnose and manage chronic conditions. Discrepancies in diagnosis and follow up are attributable to poor infrastructure, inadequate access to the internet or telehealth services, and rural health workforce shortages [20,21]. The lack of follow-up perpetuates the course of chronic diseases – which the elderly, rural Aboriginal and Torres Strait Islander peoples are particularly susceptible to – and results in a mortality gap of over five years between metropolitan and some rural areas [22]. Furthermore, although mortality rates were greater in general, race and socio-economic status were not the only sources of healthcare disparity in rural Australia. There also appears to be a gender gap in terms of health outcomes. Males seemed disproportionately affected in remote areas with mortality rates increased by 1.5 times and 1.3 times in females compared to their respective metropolitan counterparts [6].

The aforementioned inequity gradient is also furthered by a socioeconomic disparity between rural and metropolitan populations. Median household income in rural and regional areas has been persistently lower than metropolitan households, likely a result of (and perpetuated by) increased cost of food and transport [18,23]. For example, many household goods and fuel are priced 10-20% higher in rural areas which creates economic stress in the absence of robust public transport or cheaper alternatives. Furthermore, while the lower cost of housing may somewhat buffer the mentioned effects, they may also entice lower-income households to move rurally. This could perpetuate the comparatively reduced ability for economic production and also reduce the perceptions of the region in the eyes of metropolitan residents [23]. These negative perceptions are also fuelled by trends where lower

socioeconomic status is often associated with poorer health and living standards. In particular, people of lower-income families frequently have greater barriers to ensuring a healthy diet, regular physical exercise, tertiary education or personal protective equipment. The latter being especially important in farm and abattoir workers present only in rural areas, these factors all lead to greater health illiteracy and preventable disease progression in rural areas, affecting general quality of life [24-25].

To add, large differences exist in patient populations between the two demographics. It is well documented that regional and remote areas are home to a higher population of elderly, Aboriginal and Torres Strait Islander, and other vulnerable peoples who have existing predispositions to negative health outcomes. These populations are also affected by the lack of timely healthcare access to a greater degree than healthier populations, furthering the inequity gradient [10,26].

Downstream Factors

Insufficient funding into education, transport and local health services results in a higher rate of health illiteracy. This disparity compounds with higher rates of biological predispositions to illness present in Indigenous and elderly Australians who live in rural areas. This combination of factors precipitates and perpetuates the divide in health outcomes between geographical demographics. The increased burden of disease results in an increase in preventable hospitalisations by anywhere from 10% (inner regional areas) to 160% (very remote areas) [27]. These hospitalisations are commonly caused by vaccine-preventable diseases due to inadequate health literacy or missed vaccine appointments from inability to cross large distances. There are also non-medical causes of these disparities. Aboriginal and Torres Strait Islander peoples often hold mistrust in the medical system as a result of past intergenerational trauma, lack of cultural safe and secure care in hospitals. In fact, 32% of Indigenous Australians did not seek early medical care, citing lack of cultural safety and language barriers [24]. Such cultural and socio-economic problems also cause preventable hospitalisations attributed to inadequate follow-up of chronic conditions such as diabetes monitoring or untimely seeking of medical attention for acute conditions (e.g. urosepsis) or acute exacerbations of chronic conditions (e.g. COPD) [10,27].

Another downstream result of these imbalanced social determinants comes in the form of social stigma that creates psychological problems and intensifies existing disparities. Rural Australians were reported to have increasing rates of suicide and self-harm as rurality increases despite higher reported scores of "life satisfaction" compared to metropolitan residents. This is likely attributed to the combination of biological predisposition and imbalanced social determinants such as greater barriers to specialist psychiatric care, higher rates of substance abuse and social stigma which disproportionately affect vulnerable peoples [26,28].

Impact of Climate Change

Climate change has been identified as the greatest threat that the healthcare system now faces and will continue to face moving into the future [29]. It is important to acknowledge the disproportionate effect that climate change has on rural and remote communities, with climate change exacerbating existing healthcare issues for these populations [30-31]. Climate change related natural disasters, such as flooding and bushfires, have caused immense devastation in Australian rural and remote communities. The impact of these events is substantial, and not just from a physical and mental health perspective, but also for health care practitioners and workers that care for these communities in the aftermath [29].

Extreme weather events, food security, and vector-borne diseases are core issues that have been identified as affecting rural Australians as a result of climate change [31]. The Royal Australasian College of General Practitioners (RACGP) has identified the need for urgent action to address the impact climate change is having on health [32]. Additionally, it is important to acknowledge the unique impact of climate change on Aboriginal and Torres Strait Islander Australians due to their spiritual and cultural relationship to the land [32].

Rural Health Workforce

Services and Infrastructure Available within Rural, Regional and Remote Healthcare

There is a clear disparity between the resources and funding provided to rural, remote, and regional healthcare in comparison to that provided to metropolitan healthcare programs. Not only does this disadvantage underfunded communities and worsen patient outcomes, this limits scope of care that doctors are able to provide to their patients, both impacting doctors' mental health and straining doctor-patient relationships. A key challenge for rural and remote Australian healthcare workers (and a major priority of change), is the lack of resources available within their respective communities. In particular, technology related issues such as outdated technology or lack of administrative support, is a key focus point. Other resources that are lacking include radiology services and other medical equipment [33].

Availability of GPs and other Non-GP Specialists

Statistics taken from the Commonwealth Department of Health help to illustrate the reality of workforce shortages and the increasing discrepancy in the availability of doctors as remoteness increases. The following numbers reflect General Practitioner service equivalents per 100,000 population in decreasing order: Major cities: 99.4, Inner regional: 98.4, Outer regional: 88.5, Remote: 69.5, Very remote: 55.1 [34]. This highlights the connection between distance from metropolitan areas and reduction in GP availability. Note the almost 50% reduction in availability of major cities vs very remote areas. These numbers are even more significant when considering other non-GP specialists: Major cities: 162.1, Inner regional: 82.7, Outer regional: 61.5, Remote/very remote: 34 [34]. Especially concerning is the almost 80% reduction in specialist availability in

very remote areas. These numbers are calculated from hours of work logged through the Medicare Benefits Scheme, and are poorly representative of other non-remunerated payments which are more common in smaller rural and remote areas, and hence not only do doctors in these areas have a higher patient volume, but also a greater time commitment involved in their practice.

Australian Government strategies to Alleviate Workforce Shortages

The Stronger Rural Health Strategy is a recent 2018-19 10 year ongoing plan created by the Australian Government Department of Health. It prioritises rural and remote communities that struggle in retaining doctors, nurses and allied health professionals. There are 3 current themes in the strategy: Teaching, aimed at medical students; Training, aimed at junior doctors, GPs, Australian non-citizen doctors and Aboriginal and Torres Strait Islander health professionals; and Recruitment/Retraining, which encompasses a variety of programs aimed at increasing rural retention.

The teaching component focuses on increasing medical student engagement with rural health and is based on evidence showing students are more likely to work in rural areas if they 1) come from a rural background and 2) undertake long-term rural training [35]. The Murray–Darling Medical Schools Network is a recently formed joint network between 5 medical schools, consisting of end-to-end rurally-based medical school programs for students to undertake the majority of their medical education in the Murray-Darling region. This reduces their need to move to metropolitan areas and aims to increase their likelihood of working in rural areas after graduation [35]. This also has future-focused benefits of increasing facilities available for students and trainees in regional areas, as well as increasing staffing and workforce stability [35]. The teaching theme also encompasses expansion of the Rural Health Multidisciplinary Training (RHMT) program. Annually, this program currently facilitates over 13,000 students from across 21 rural universities to complete rural and remote clinical placement as part of their degree. The program also supports rural department and rural clinical schools to build training pathways to careers in rural and regional health [36].

The training component consists of several programs aimed at increasing support for junior medical professionals, GPs, and Aboriginal and Torres Strait Islander health professional organisations. The Junior Doctor training program provides salary funding for junior doctors to complete rotations in rural primary care settings and private hospitals, as well as providing access to high-quality training throughout the duration of their rural training [37]. The Stronger Rural Health Strategy also involved changes to the medicare billing service for non-vocationally recognised doctors working in general practice settings. Non-vocationally trained doctors complete the same work as their fully accredited counterparts, however, have historically had lower medicare rebates. Changes implemented in 2018 increased the rebate to 80% of what VR doctors bill, as well as increasing the base rate for non-VR doctors by 20% in regional, rural, and remote areas. These changes encourage doctors to pursue specialising in

general practice in non-metropolitan areas [37]. An additional change to boost GP training numbers involved the streamlining of general practice training from 9 to 2 GP colleges, the RACGP and the Australian College of Rural and Remote Medicine (ACRRM), with the aim of simplifying the training process and giving colleges greater independence to support their trainees [38]. As 4,900 doctors are not yet vocationally registered in Australia, an 100 additional GP training places, for a total of 1,600 each year, were added to support non-VR doctors to gain their fellowship to ensure a continual supply of skilled doctors in rural and remote areas [new reference 3]. Additionally, the Stronger Rural Health Strategy provides funding and support to play a key role in increasing the number of Aboriginal and Torres Strait Islander people in the health workforce as well as increasing cultural competency in all health workers [36].

The final component in the Health Strategy involves broad initiatives in recruiting and retaining future and current doctors and allied health professionals. The HeaDS UPP (Health Demand and Supply Utilisation Patterns Planning (HeaDS UPP)) tool is a new resource which visually represents data highlighting the implementation and community use of services to highlight workforce issues on both a national and local level, providing more data to inform agencies and networks involved in health workforce planning [39]. A well-known component of the Health Strategy is the Bonded Medical Program, providing a student with a Commonwealth Supported Place. Although this program has undergone changes since its implementation, the current strategy underwent substantial reforms in 2020, with the introduction of a consistent three-year Return of Service Obligation (RoSO) for its participants [40]. At a basic level, this strategy addresses the undersupply of doctors in rural and regional areas, addressing workforce distribution issues. However, due to the long-term nature of the program with greater emphasis on workforce numbers than quality improvement and retention, this scheme has not shown significant positive improvement in retention when compared to programs that target trainees at earlier stages, and continual collaboration with other programs is vital to support doctor retention [new reference 5]. For existing rural doctors who work in primary health, the 2020 remodelled Workforce Incentive Program offers financial incentives for doctors working in areas that struggle to attract and retain practitioners [new reference 6]. Participants located between MM areas 3-7 can receive an annual payment between $4,500 - 60,000, depending on rurality and workforce need, with payment increasing as the length of involvement increases [41]. Finally, Rural Bulk Billing Incentives also provide increased financial payments for concession patients, which increases with remoteness, reflecting the increased complexity of care for patients in rural, regional and remote settings [42].

<u>IMG Working Requirement</u>

Overseas trained doctors form a vital part of the rural medical workforce, as rural, regional and remote areas are continually affected by issues of understaffing and reduced access to specialist care. Hence, overseas trained

doctors help to fill the many available positions that would otherwise be unstaffed [43].

As part of the Australian Government's strategy to reduce workforce shortages in rural, regional and remote areas, International Medical Graduates (IMGs) are required to work in priority areas for a minimum period of 10 years in order to be able to bill patients through the medicare system [44]. This 10-year moratorium applies to all overseas trained doctors and graduates of international graduates of accredited medical schools. Qualified General Practitioners must work in Distribution Priority areas, which have been identified to have a lower level of GP services than national benchmarks. This automatically excludes inner metropolitan areas, and more typically includes rural and remote areas [45]. Non-GP specialists are required to practice in a District of Workforce Shortage, areas which either have a reduced ratio of specialists per population compared to national standards, or are classified as RA3-5 according to the Australian Statistical Geography Standard of Remoteness [46].

Moratorium time requirements can also be shortened depending on the remoteness of practice. For example, IMGs working in R2 areas have a reduced moratorium period of 9 years, while those in RA5 areas have a period of 5 years [34].

Challenges Faced by Doctors in Rural, Regional and Remote Healthcare

Healthcare professionals in rural, regional, and remote Australia must work through a number of challenges that can negatively affect their experience in rural healthcare, on both professional and personal levels. This begins with the numerous social determinants previously mentioned, such as geographical location, isolation, and lack of facilities or services, as well as a number of challenges specific to the rural health workforce, most notably, a lack of other healthcare professionals. For example, in regards to medical specialists, to quote [47], "Approximately one-third of Australia's population lives in regional or remote areas, but only 15% of medical specialists are employed in these areas". This lack of workforce is a major contributor to a number of consequences such as doctor burnout, a blurring of professional and private life, and minimal opportunities for professional growth [48].

Specialists

Understanding the reasoning behind the lack of doctors, in particular specialists, is crucial in developing practical strategies to combat this disparity. There are a wide variety of reasons behind why specialists choose to stay and work in rural communities; a key reason was strong personal connections to the community, making personal and social factors important to their decisions [47].

Despite medical specialists being in high demand, they are significantly lacking in regional, rural and remote communities. This is especially exacerbated when on call. Studies have shown that many specialists who have left rural work (or "leavers") mention "professional tipping points" when describing their justification for leaving. These "tipping points" include factors such as excessive workloads, unreasonable expectations of their abilities, and fear of not being able to work in a metropolitan area in the future [47].

Currently, there are a number of initiatives in place to advance rural healthcare and address the lack of healthcare professionals. However, a large proportion of these initiatives are focused on improving access to and increasing the number of GPs, compared to any speciality. While this is an important step, as a higher number of well trained GPs will ease the burden of existing rural doctors, this will not adequately address the workload for specialists, as the scope of knowledge and skill required between each speciality varies. Medical specialists are still required, as well as GPs, and the challenges that specialists face will not be counteracted to the appropriate level without systemic change in factors such as the number of specialists trained and working in rural areas of Australia [47].

Junior Doctors

Many junior doctors take on jobs or are assigned to work in rural and remote areas. This can create additional challenges on top of the challenges of being a junior doctor. A study in the Journal of Rural and Remote Health explored particular issues reported by junior doctors in rural and remote Queensland. Barriers to confident and competent practice included [49]:

- Minimal prior clinical experience in rural settings impacted junior doctors' confidence in their ability to care for the needs of their specific rural population.
- Lack of supervision or on-site support from more senior doctors. Many seniors were also new to the area and could not provide assistance regarding that specific rural population. Lack of seniors also impacted education opportunities and created an increased burden of responsibility on junior doctors who often felt underprepared for the increased workload and independence of rural medicine.
- Inadequate orientation regarding expectations of junior doctors. This in part related to the previous points of staffing pressures, lack of continuity and lack of ongoing adequate orientation for each new arrival of workers, which sometimes was left up to already-overworked employees.
- Limited access to education impacted junior doctors' confidence to develop their skills to an appropriate level and also decreased their ability to feel supported in their new position.
- Relative isolation in a new area with unfamiliarity in region, climate, population, location of shops and recreational facilities, and the challenges of leaving behind social and support networks.

Suggested factors which improved confidence and competence included [49]:

- Clarification and identification of required core skills and knowledge, creating reassurance regarding work expectations.
- Supervised integration of these skills into rural practice enabling doctors to feel confident to support their patients.
- Orientation with a rural focus to ensure they felt equipped to deal with situations and ask for help when needed.
- Initiatives in university studies to increase rural exposure and integration into training.
- Hospital-organised social events and leisure activities for junior doctors

Increased satisfaction with rural experiences at an early stage increases likelihood of doctors remaining or returning to rural areas at later stages of their careers [49].

Interestingly, although many challenges of working as a rural doctor were identified, junior doctors in rural hospitals reported higher rates of job and lifestyle satisfaction than their metro counterparts. In a study analysing data from the Medicine in Australia: Balancing Employment and Life (MABEL) survey, rural junior doctors reported higher satisfaction with choosing their method of work, with their levels of responsibility, working conditions, recognition of excellence, closeness with other hospital staff and supervised time with specialist consultants being something undifferentiated junior doctors appreciated. They also reported higher satisfaction with overall work-life balance in accessing leisure activities, due to proximity to natural environments and a culture of socialisation with colleagues outside of work [50].

The study identified additional areas of worry for junior doctors, including the perception that rural practice meant less opportunities for partners and children. Positive factors increasing retention rates include social networks and education and employment opportunities for partners and family [50].

<u>Impact on Specialisation Training for Junior Doctors</u>

Several studies have demonstrated that junior doctors perceive that rural work impacts on ability to enter non-GP specialist pathways and limits future career progression opportunities. This perception has been linked to avoidance of rural pathways by junior doctors [50]

The study highlights that the opportunity to complete specialist training pathways in rural and regional settings is a strong positive factor that should continue to be developed to attract junior doctors to complete their specialist training in the county. Regional organisations like Rural Clinical Schools for medical students and Regional Training Hubs for junior trainees are essential to increase workforce retention in these areas [50].

Additional strategies to implement include a greater level of senior specialist support and mentorship as well as more active professional development

opportunities such as research opportunities, skills-based development, and goal-oriented mentorship [50].

International Medical Graduates

Practising medicine in a country different from one's country of origin creates unique challenges and it is imperative that working and training conditions are optimised to create positive experiences for overseas trained doctors. Many high income countries over rely on IMGs to fill workforce shortages, however these doctors experience similar barriers to domestic graduates but to a larger extent [51]. The following examples are taken from a Qualitative study based on overseas-trained doctors' experiences working throughout rural Victoria, and factors influencing their decision to leave or stay in a rural community. The study explored professional, personal and community issues that IMGs faced in their new communities.

Personal issues [51]:

- Better understanding and immersion in rural communities, including the lifestyle and opportunities that living in a rural area can offer, was a positive factor leading to higher rural retention rates.
- Location of first settlement and its effect on relationships formed. Doctors tend to prefer areas in which they have connections, and this often meant leaving for the city once moratorium requirements had been satisfied. However, doctors who did create connections to their rural community were more likely to stay.
- Loneliness of being a foreign professional in a new country, with doctors preferring areas where cultural and religious needs could be met.
- Education of their children - many doctors felt that schools and universities in metropolitan and large regional areas offered better education, and moving between different rural areas was perceived as disruptive.
- As well as this, spouse adjustment was also an issue with many having difficulty securing employment, especially for non-health care workers.
- Fears of increased racism, xenophobia, stigma and ‘closed-mind’ thinking in rural towns

Professional issues:

- The workload of doctors in rural areas is generally high, understandably due to the reduced volume of doctors catering for increasingly complex patients, that doctors perceived as sometimes beyond their level of skill.
- The demanding hours and on-call work also created a barrier to successful doctor retention. This became less of an issue as population sizes increase, in general with retention rates increasing as level of remoteness decreased.
- Professional isolation affects doctors’ levels of confidence to provide care to rural communities. These problems were multifactorial and compounded by a variety of issues based on geographical and interpersonal isolation, including: distance from other specialists

affecting access to in-person education and mentoring, reduced access to specialised equipment affecting familiarity and perceived competency with equipment, frequent relocating affecting the connections to professional sources of support, distance from city-based in-person bridging courses for IMGs exacerbating the experience of isolation, and a large amount of personal time spent preparing for qualifying exams without local supports.

- Factors associated with increased professional satisfaction included support from Rural Workforce Agencies, RACGP and other training colleges, as well as colleagues and supervisors.

<u>Underrepresentation of Aboriginal and Torres Strait Islander Healthcare Workers</u>

There is a major disparity between the number of Indigenous and non-Indigenous healthcare workers in Australia, particularly within medical practitioners, nurses, and allied health professionals [52]. As discussed in the AMSA policy *Aboriginal and Torres Strait Islander Health (2019)*, this contributes to minimising accessibility to culturally safe practice and healthcare for Indigenous patients, leading to potentially poor outcomes and continued distrust between patients and the medical community. Research shows that Indigenous patients prefer to have Indigenous employees within their treating team, for many reasons, such as similar values and upbringing, higher levels of trust, and a better understanding of the barriers to healthcare within their community [53]. Furthermore, Aboriginal and Torres Strait Islander healthcare workers are able to bring unique perspectives to discussions on Indigenous health, as they have had experience as both Indigenous patient and practitioner [52].

Unfortunately, a similarly significant disparity is especially seen within regional, rural and remote Australia. For example, within "Inner and Outer Regional areas, there are 302.8 non-Indigenous employed medical practitioners for every 100,000 people, compared to 28.5 Indigenous practitioners. Similarly, there are 371.4 non-Indigenous employed medical practitioners for every 100,000 people, compared to 17.3 Indigenous practitioners in "Remote and Very Remote" areas [52], despite Aboriginal and Torres Strait Islander peoples making up a large proportion of these communities [54].

The reasoning behind these disparities are important to address, such as distrust for Western medicine and Australian healthcare system, disparity in education, and racism within the healthcare system as both practitioner and previously as patient, from both patients and other healthcare professionals [53]. A number of initiatives from organisations and institutions such as the Australian Government are currently in place to address these concerns, however the current increase in Indigenous healthcare workers is still not in appropriate ratio to the rising Australian population [52]. While some improvements have been made, there is still room for significant improvement in reaching a more proportionate ratio of Indigenous healthcare workers.

Challenges Faced by Locum GPs

Locum doctors may gain many rewarding and clinically enriching experiences through providing relief work and filling in for areas of workplace need. The experience can be both professionally and logistically challenging, particularly for rural locums, who face not just a new environment but also the unique challenges of medicine in a rural setting [55]. In an article published by the RACGP, locum doctors discussed both benefits and challenges they encountered while pursuing locum work. Overwhelmingly, rural doctors highly valued the reprieve that rural locums offer [55].

A major issue faced by locums, regardless of rurality, is the difficulty adjusting to new locations. At each new location, there are new administration and technological systems to adjust to. This includes differences in medical software, booking and logistics of seeing patients, as well as familiarisation with staff and new building locations, equipment and procedures undertaken in each clinic. As well as this, a large part of the work of GPs involves ongoing management of chronic care. Creating appropriate connections and understanding the particular intricacies of each patient case can be difficult when doctors and patients are unfamiliar with one another [55].

Issues faced by locums travelling to rural areas are compounded by the unique challenges of rural locations and patient populations [55]. Rural GPs often manage patients with higher care needs that, if in a metropolitan or large regional setting, may well be managed by hospitals and specialist staff. Due to the nature of specialist availability in metropolitan areas, doctors who travel to rural areas may lack procedural skills in areas such as obstetrics, anaesthetics or emergency medicine, areas which are commonly the responsibility of rural GPs.

Work as a locum rural GP can also be psychologically and physically taxing. Locum shifts can be as short as one day at a time or upwards of 4 weeks, and can involve shifting to a wide variety of locations. Frequent movement from place to place, lacking close connections as well as being away from family can be physically and mentally isolating. Even if travelling with family is a possibility, this creates additional burdens of travel logistics, arranging time off from work or school as well as disruption to established routines [55].

Work Relief Challenges Faced by Rural Doctors

As previously discussed, many rural GPs in small towns either work with very few other doctors or are solo practitioners in their area, and this may face immense pressure to fulfill local health needs [55]. This high workload can lead to increased rates of burnout and higher rates of physical and mental health issues [56]. GPs may be unable to take adequate leave due to difficulty in finding suitably trained doctors to appropriately cover the complex patient needs. Locum GPs from metro areas may not have the same amount of training or patient understanding appropriate for covering the complex and diverse scope of rural GP practice [55].

Education and Further Training Opportunities

Many rural doctors, especially trainees, must undertake mandatory medical training and education programs in metropolitan centres, reflecting a lack of ongoing professional education and support for rural doctors. This creates the additional challenge of finding a locum who is not only available at the time and location, but also at an appropriate level of competency. If locum cover is unavailable, this creates a higher workload for other doctors who will be covering the absence. Relative isolation, travel times and education delivered by metropolitan areas decreases rural doctor retention [51], however, doctors with access to local training are more likely to create stronger community connections and remain practising rurally [57].

Rural Allied Healthcare Workforce

Distribution

Allied health refers to all health professional groups with the exceptions of medicine, nursing, midwifery, dentistry, and emergency services [58]. Comprising up to 25% of the registered health workforce, the allied health workforce is one of the largest in the health industry. Despite this, recruitment and retention of allied health services remains poor in rural and remote areas [1,5]. In 2016, 17% of psychologists, 19% of physiotherapists, 21% of optometrists, 23% of pharmacists, and 25% of podiatrists worked in rural locations. As observed across all healthcare disciplines, the demand for allied health services in rural and remote areas is underserved by both a limited number and range of providers [5,59]. To manage such high demand, rural allied health professionals (AHPs) are often required to have an extended scope of practice to address community needs. A poorly diversified rural health workforce also highlights the importance of refocusing services away from disciplinary silos in favour of more holistic and complementary services [60].

Training

While rural allied health training opportunities have expanded in recent years, placements are typically short-term and discipline specific. Studies show that shorter placements poorly translate to strengthened intent to practice rurally. In fact, for allied health students who experienced up to a 12-month rural placement, 50% continued to work rurally as graduates compared to an average of 24% for the same discipline. As well as placement duration, perceived quality of placement is an important factor in directing early career rural work [1]. Therefore, to improve the rural allied health workforce, it would benefit if universities applied rural selection policies, facilitated training in rural areas, and improved the quality of rural placements [60]. Further research is also required to identify appropriate supports for allied health students to receive education in rural areas given the current paucity of evidence [61].

Personal and Professional Factors Affecting Retention

AHPs practice in rural and remote areas for a range of professional and personal reasons, including the diversity of clinical work, familial support,

lifestyle, or past positive rural experiences [5]. However, the majority only stay in rural areas for up to 3 years, with a yearly 25% turnover. One study investigating the retention of publicly working allied health professionals found a median turnover of 18 months for dieticians, 3 years for physiotherapists, and 4 years for social workers. Improved turnover rates were associated with a higher job grade and an age of more than 35 years. As such, employing higher grade staff may not only improve retention but help create career paths to retain emerging graduates [60].

Most initiatives and incentives introduced to improve workforce distribution focus on medicine rather than allied health [1,5]. Likewise, the challenges faced by medical practitioners are well documented but limited literature specifically explores those of rural allied health professionals [58,61]. As such, understanding factors affecting retention may drive increased allied health care coverage in rural areas. Accommodating career progression in a rural setting is an important consideration as many AHPs cite a lack of career advancement opportunities as a key reason for leaving rural areas. Moreover, early-career AHPs have lower job security, pay, reimbursement for relocation expenses, and access to training compared to doctors. Therefore, developing more robust training pathways may decrease turnover associated with the perception of better support and training in metropolitan areas [5,58].

Retention may also be improved by targeting workplace and social supports. Studies highlight that being away from family or a partner is particularly challenging for rural AHPs. Given that family and friendships are critical motivators for AHPs to work in rural settings, consideration of the location and needs of family or a partner may promote a more positive experience. Another frequent challenge is improving workplace support. AHPs are expected to become autonomous earlier than doctors and bear a heavy workload, which may negatively impact retention. Compounding this issue, a lack of clinical and/or discipline-specific supervision for AHPs is a well-known issue related to staff shortages [1]. Conversely, a supportive workplace environment and collegiality are associated with reduced turnover [1,62]. Bundled incentives have also been shown to improve retention as they are applicable across a wide range of professional and personal factors [60]. However, financial incentives alone are insufficient to address the complex personal and professional factors affecting retention [1].

The Tyranny of Distance

Coordination and delivery of Australian healthcare is made complex due to the unique and vast landscape it operates on. Whilst the majority of Australians inhabit the coastline, 28% of the Australian population reside in rural and remote areas [63]. The vastness of the Australian landscape and sparse populations in some areas, means that comprehensive services will not always exist in every township. Medical isolation is often experienced by smaller or more remote populations, with poorer health outcomes often experienced by rural Australians compared to their metropolitan counterparts [64]. This often means

that networks of services must exist to cater to various levels of complexity and acuity. Additionally this tyranny of distances renders retrieval and transfer services as vital to ensuring that individuals can access appropriate and timely care [65].

Access to Specialist Services

Australia currently suffers from a maldistribution of physicians, and in particular specialist physicians, in which rural and regional communities have severely limited access to specialists from a range of fields [66]. This means that rural Australians who may need to access specialised services such as psychiatry, oncology or surgery, have to travel great distances to attend appointments or have procedures performed. Programs have been established to provide fly-in-fly-out specialist services for providing specialist services. These services play an important role in rural and remote contexts, however, they require existing primary healthcare services to be appropriately resourced and staffed to run effectively [66]. Issues may arise with this structure of services, concerns have been expressed that it dismantles community care, has a high administrative burden, may not involve culturally safe staff and may negatively affect the fly-in staff due to working in a foreign system with limited support [67].

The Trauma System

The sparse nature of the Australian population mandates a hub and spoke model of trauma care and well-coordinated retrieval services to ensure injured people access appropriate care [68]. In 2019-2020, people living outside of major cities were 2.3 times more likely to be hospitalised due to injury and had a 2 times greater chance of dying from injury [69]. In 2016-2020, land transport accidents were a leading cause of death for very remote populations. Land transport accidents are not considered a leading cause of death in any other remote area and age-standardised mortality rates are 4 and 3 times higher in very remote and remote areas respectively [6]. Despite this, the cause of injury with the largest difference in hospitalisation rates in very remote areas compared to major cities was assault, which is 18 times greater [69]. In addition to injury, rural residents experience higher rates of preventable secondary complications, which can cost up to three times as much as patients in major cities [70].

Trauma Services & Time Until Definitive Care

Where Level I trauma centres are resourced to provide the most comprehensive care, Level IV trauma centres are most common in rural and remote areas and provide early care to major trauma patients and facilitate their transfer to Level I or II services for definitive care. Definitive care for medium to minor trauma is mostly provided by Level III centres. Approximately one-third of trauma patients are transferred to a second facility to receive definitive care [68]. As such, the importance of coordinated prehospital and retrieval services is implicated in improving rural trauma outcomes [71].

Increased trauma hospitalisation and mortality rates associated with remoteness are said to reflect prolonged time away from accessing definitive care. Rural and remote retrieval times may extend to up to 12 hours or longer. Conversely, urban retrieval times often range within 15 to 90 minutes. Dissimilar to urban patients, rural trauma patients are likely receiving treatment outside of the therapeutic window of standard therapies. For example, despite Royal Flying Doctor Service (RFDS) retrievals of rural and remote stroke patients showing a median transfer time of 4 hours, which is beyond the critical time for standard thrombolysis treatment without access to sophisticated imaging technology [70,72]. Most trauma deaths occur prehospital, and some studies have even estimated a 19% increase in the risk of death per hour for major trauma patients [68,70].

Trauma Data Collection

Addressing these inequalities in rural trauma has been an ongoing challenge for federal and state governments for decades, but progress has been slow. Changes in the trauma system are informed by data contained in the Australian Trauma Registry. However, the centralisation of data in metropolitan areas, as well as the mixing of rural and urban data, obscures the inequities associated with remoteness. For example, a recent finding of the Australian Trauma Quality Improvement Program showed that 66% of trauma patients were transferred to definitive care in a median time of 1.42 hours. However, this data did not address retrieval delays or the effect of remoteness. Therefore, collecting more comprehensive data may drive change in rural and remote areas [70].

Chronic Disease

Non-fatal disease burden rates and age-standardised DALY rates are 1.1 times and 1.4 times higher in remote and very remote areas than in major cities respectively [73]. Chronic diseases, as well as adverse health outcomes resulting from chronic diseases such as premature death, illness, and disability are also higher for rural and remote living people [74]. Chronic disease risk factors, such as alcohol, smoking, high blood pressure, and a poor diet are also more prevalent in rural and remote areas. For example, rates of smoking for people aged 14 and over increased from 9.8% in major cities to 19.2% in remote and very remote areas. However, the prevalence of multimorbidity is similar across remoteness areas [6].

Challenges Associated with Continuity of Care

People with chronic diseases are typically managed by multiple health care providers, and collaboration between these providers is referred to as 'continuity of care.' In Australia, there is a significant difference between the level of continuity of care provided in rural and remote areas compared to metropolitan areas. Continuity of care emerges from effective coordination and communication, which are both reduced with remoteness. Information sharing between health care professionals decreases outside of major cities. Studies show that primary care providers are typically not informed of additional care requirements provided following hospital admission or consultation with a

specialist. Poor documentation and incomplete discharge documentation are also cited to lead to inconsistent management of a patient's condition. Therefore, ensuring comprehensive documentation may enhance continuity of care by controlling the risk of knowledge loss. Where funding permits, having a dedicated role specific to coordination of care is also shown to improve collaboration between healthcare providers and rates of follow-up appointments [74].

A decreased availability of suitably skilled health care providers also impacts continuity of care in rural and remote areas. For example, a lack of access to specialist services due to scarcity in rural areas and issues associated with travel disrupts continuity of care. Access may be provided by arranging telehealth services and specialist outreach services. However, when delivering telehealth services, it is important to consider the impact of increased patient costs due to decreased Medicare coverage. For Indigenous patients, access to Indigenous Health Workers is invaluable in improving their continuity of care experience [74].

Telehealth

Telehealth - involving the use of internet and phone technology to conduct remote assessment and medical appointments - has become commonplace within healthcare partly as a result of the COVID-19 pandemic. Telehealth services range from medical consults, specialist appointments, virtual emergency department assessment, mental health services and a vast array of other healthcare services [66]. Telehealth has been widely used in rural and remote health care delivery, due to the capacity to access specialist staff and services not typically available onsite.

Telehealth can provide a multitude of benefits to rural Australians as it reduces the need to travel far distances to see their medical practitioner which may reduce the financial, fatigue and stress burden of having to make these trips [75]. Additionally, the telehealth model may allow for patient flexibility, upskilling of staff, and provide more time for patients to ask questions [66,72]. That being said, there are fears about telehealth becoming a 'replacement model' in rural health care delivery opposed to being used as an adjunct tool, particularly in emergency contexts. Rural practitioners and communities have fears that this does not provide the equivalent of trained on-site staff, may reduce connection and relationships, and may lead to diagnostic gaps [75]. Further, issues in remote and rural areas have arisen regarding telecommunications infrastructure, which may not always be reliable to facilitate telehealth consults [76]. More research needs to be done to determine the impact of telehealth services in rural areas in relationship to health outcomes in the long term [75]. Telehealth also needs to continue to be adequately funded; however, it should not be used as the 'answer' to address the maldistribution of doctors in rural and remote Australia.

Retrieval Services

Retrieval services have been identified as integral to helping provide a route of acute care access for people living in rural areas with limited services [77]. Due to the acuity of some medical emergencies, timely, specialised care is required for the appropriate transport of these patients. Primary retrieval refers to the direct transport of a patient to their initial hospital location, whilst secondary retrievals refer to the movement of patients from non-specialised hospitals to those with higher clinical care services [78]. Within rural Australia, both primary and secondary retrievals often occur to ensure patients receive appropriate care. Issues have arisen in the lack of available integrated data from the array of retrieval and pre-hospital care providers [77]. Currently retrieval services range in Australia from state-run ambulance services, military, not-for-profit organisations and private contractors. These services typically have internal staffing, training and protocol, and their deployment is determined by a variety of factors such as severity, staffing, weather and logistical factors [78].

Rural Mental Health

History of Mental Health in Australia

The problem that is mental health in rural and remote communities is a historical issue deeply rooted in years of reactive reforms. It is useful to scope the brief history of mental health in Australia to address its specific complexity in rural and remote areas.

Up until the Deinstitutionalisation Movement of the 1950s, mental health in Australia was heavily stigmatised. Historically, underfunding of mental health services – due to the view of psychiatric patients as 'incurable' – and overcrowding of psychiatric institutions saw a rise in restraint and seclusion [79]. Historians believe that governmental intervention in mental health was a tool for exercising power. Patients were subjected to unethical treatments and police brutality, which disproportionately affected rural populations. However, following political changes of 1992 onwards, the Deinstitutionalization Movement moved to medicalise mental health and shifted the delivery of services to primarily community-oriented programs. The success and evolution of such programs, led by non-government agencies, has seen various benefits in the rural community today [80]. Despite this, programs were not sustainable without the input of federal funding, which fluctuates depending on the government in power. Rural mental health also suffered as a result of the anti-psychiatry movement damaging the trust of the general public in mental health services. Remnants of this movement are still observed in rural and remote Australia, as inaccessibility to services stem from personal beliefs surrounding mental illness [81]. Despite years of reform and state/federal funding towards mental health, the National Mental Health Commission of 2014 identified serious failings within this system. Their findings state that the "inefficiency and fragmentations of the mental health system" resulted in limited access to mental health services, despite similar prevalence of mental illness in rural areas in comparison to metro. Such fragmentation and limitations of the mental

health workforce is seen in addressing Aboriginal and Torres Strait Islander health, in rural areas [82].

The mental health of Aboriginal and Torres Strait Islander people is strongly intertwined with the impact of British colonisation. This has been extensively addressed in the AMSA policy *Aboriginal and Torres Strait Islander Health (2019)*. However, in reference to rural mental health – it must be noted that one of the most vulnerable populations living in non-metropolitan areas are Aboriginal and Torres Strait Islander people. When considering the complexities and long-lasting impacts of 'intergenerational trauma' lived by Aboriginal and Torres Strait Islander people, we must consider the phrase "Colonial Domination". Fanon described this as [83]:

"…the negation of national reality, by new legal relations introduced by the occupying power, by the banishment of the natives and their customs to outlying districts by colonial society, by expropriation, and by the systematic enslaving of men and women…"

Unfortunately, early British psychiatry did not view Aboriginal and Torres Strait Islander mental health through the lens of this quote. More so, symptoms were pathologized in accordance to their own British understanding of mental illness. The inability to understand the subjective socio-cultural experiences of Aboriginal and Torres Strait Islander peoples set precedence for paternalism and ethnic cleansing, enacted through misguided advocacy and social policies. Historical records are scarce on the institutionalisation of Aboriginal and Torres Strait Islander people, however, it was noted in 1870, the first Aboriginal and Torres Strait Islander man was admitted to a psychiatric asylum for assault [84]. Many admissions afterwards in history were similar in circumstance, rooted in policing measures on little or misleading information on the social background of indigenous patients. It may be plausible to think that the clinically insane believe they do not have a mental illness, however as early as the mid-1960s, psychiatrists labelled Aborginal and Torres Strait Islander populations as "sick societies", undergoing a breakdown in social functioning manifesting as generalised mental illnesses [85]. Ironically to this day, policies still consider Aboriginal and Torres Strait Islanders as 'sick societies', but through sensitive language. Historically psychiatrists pathologized their mental health as defects in 'integration' into current society, which could be solved through 'assimilation'. Hence through this assumption, we observed the Stolen Generations from the 1910s to 1970s through government policies, believing they were addressing indigenous mental health. Recent reconciliation policies have acknowledged the atrocities committed by the government, however the mental health gap between indigenous and non-indigenous Australians still remains high [86].

Impact of Mental Illness in Regional, Rural and Remote Australia

It is understood that the prevalence of mental illness in regional, rural, and remote Australia is similar to that of major cities, with higher rates of suicide in non-metropolitan areas. According to the RFDS, one in five rural Australians

experience a mental health disorder [87]. It was further reported that males were 1.6 times more likely than females to be attended by the RFDS for mental health disorders [87]. Mental health disorders in non-metropolitan settings that were most commonly attended to were schizophrenia, depression and drug-induced psychosis [87]. Unfortunately, rate of suicide and self-harm are higher per 100,000 in rural communities in comparison to major cities [88]. Even though individuals who have committed suicide may or may not have suffered from mental health disorders, there is a strong correlation between suicide and mental health disorders [89]. Hence increased rates of suicide in non-metropolitan areas may denote towards under reporting of mental health disorders in non-metropolitan areas. Furthermore, Aboriginal and Torres Strait Islander people are 1.2 times as likely to die from mental health disorders than non-Indigenous Australians - and this is at high risk within the ages of 12-24 years [90]. Indigenous Australians are also grouped into another category of high-risk demographics who are subject to committing suicide, alongside farmers, young men and older people [88].

Rates of suicide in rural and remote communities are a major concern that needs addressing. Residents of major cities reported 9.5 deaths per 100,000 population in 2011 to 11.7 in 2017, which was the lowest of all community populations [88]. The number of deaths per 100,000 increases in correlation with the remoteness of areas [88]. Concerningly, very remote communities reported a rise in suicide rates from 22.2 deaths per 100,000 population in 2010 to 29.4 in 2019 [88]. Studies have reported Depressive Disorder to be strongly linked to suicidal behaviours. Handley and Colleagues reported that the number depression symptoms were significantly higher among those with a history of suicide ideation from their rural population sample [91]. The demographics that are consistent with trends of suicide are young men and middle-aged women. As suicide rates are high in non-metropolitan areas with ‘similar’ rates of mental health disorders across metropolitan and non-metropoltian areas, the conclusion can be drawn towards inaccessibility to mental health services - leading to under reporting within data collations. Interestingly, rural young men reportedly are less likely to seek professional help in comparison to metropolitan young men [92]. This may be due to inadequate resource management and/or stigma associated with accessing mental health services.

Within literature, it is noted that people with poor mental health are at risk of developing chronic physical conditions. Generally, within the rural population, people suffer from cardiovascular disease, diabetes, cancer and preventable injury. People with mental disorders also experience higher rates of disability than in comparison to people without mental disorders [93]. In the 2007 National Survey of Mental Health and Wellbeing, approximately 1.9 million Australians reported to have a physical comorbidity with their mental health disorder [94]. Another report from the Australian Institute of Health and Welfare into chronic conditions and multimorbidity, stated that multimorbidity increased with increasing socioeconomic disadvantage with 21% of the inner to outer regional areas [95]. Predictably, alcohol consumption is strongly linked with

depressive disorder and suicide risk. In rural areas, men consume more alcohol than metropolitan communities [96]. Hence mental health comorbidities with physical health is important to address. Theories note that addressing mental health does improve physical health and vice versa [97,98].

Factors Affecting Mental Health in Regional, Rural, and Remote Populations

Mental health within non-metropolitan communities can be affected by cyclic patterns such as the social determinants of health, better termed as the social causation pathway. However, it should be noted that populations can be more vulnerable to social causation if they already have a mental disorder [87]. The risk factors of having a mental disorder, as described by Beyond Blue, include a family history of mental disorders, ongoing stressful events, physical health problems, substance abuse, personality factors and brain morphology [99]. These factors are impacted by socio-cultural and environmental factors. Many rural and remote communities face risk factors such as low socioeconomic status such as low income and low education – which feeds into inadequate housing. Furthermore, environmental events such as climate change and natural disasters can impact the livelihoods, especially of farmers who rely on their environment for an income [87]. In addition to this, Aboriginal and Torres Strait Islander people are subject to systemic racism and cultural trauma through their restricted access to country. Therefore, the breakdown in prevalence of mental illness is mainly seen in young adults with women having rates of anxiety and men reporting rates of depression [100].

From a systemic perspective, mental health is poorly managed by healthcare providers. We may solely argue that stigmatism exists from community members to discourage access to services, however this may be instigated by the poor delivery of service. Discrimination amongst healthcare providers propagate this problem, with lack of clarity on who is responsible for managing conditions [101]. Furthermore, mental health services are distinctly separated from physical health services, resulting in not only missing key mental health diagnoses but reducing the importance of mental health overall. Due to this, calls for mental health and cardiovascular assessments to be done at the same time have been made by rural doctors to mitigate this correlation relationship [102]. And when individuals do receive mental treatment, significant care is not taken when prescribing drugs and inability of subsequent management that is needed for adverse side effects such as obesity, metabolic syndrome, cardiovascular disease and type 2 diabetes [103]. A study also noted weaknesses in the addressing of mental health stigma within mental health programs such as no widespread education program for cognitive restructuring – which is only available to healthcare workers and students – contributing to the inaccessibility of mental health services [104].

Even though delivery of mental health services is poorly managed, rural community sentiments inhibit the access of mental health treatment. Stigma surrounding the topic of mental health is prevalent amongst rural communities. Various studies have noted that rural and remote communities negatively

characterise mental illness through fear and rejection [105, 106]. One study described mental health stigma as social cognitive biases which cements the health status of an individual into a stereotypical group [107]. Amongst rural communities, there exists beliefs that individuals with a mental disorder have a psychiatric disability, preventing them from participating in society. This may lead to prejudice and discrimination by members of the community. Progressing with this scenario, discrimination leads to ostracisation of those with a mental disorder, subjecting them to social isolation. Studies have reported that mental health stigma exacerbates mental health conditions, as it can affect self-esteem, employability and relationships [108, 109]. This has undoubtedly created fear amongst rural patients, who are worried their mental health would be on display, labelling them as weak and different. This is a significant shock to the stoic nature of individuals living rurally, as they feel highly responsible for the management of their health. As a result, mental illnesses are not identified by rural individuals but rather dismissed as stress. This blatant rejection of mental health may explain why individuals may fail to identify their need for mental health attention – leading to under reporting. Therefore, strategies aimed at improving mental health amongst rural communities should also address community self-efficacy, existing stigmas and sociocultural factors that perpetuate the gap between rural and metropolitan mental health support service accessibility.

Proposed Methods to Address Mental Health in Regional, Rural, and Remote Areas

Considering the historical backlash and socio-cultural influence of psychiatry in rural and remote areas, the National Mental Health Commission conducted a holistic review of services and advised what can be done [82]. Their stance mainly revolves around community engagement and improving the lived conditions of rural individuals. This is understandable as low socioeconomic status is correlated with self-growth and mental prosperity. The National Mental Health Commission advised five key areas to improve on: Improving Wellbeing, Working Together, Facilitating Access, Delivering Quality and Personalised care. The following sections will state and analyse their recommendations. Other recommendations such as the Orange Declaration by Perkins and Colleagues is a useful opinion piece but similar in advice [110].

Mental health of rural and regional populations can be improved if their wellbeing is improved. The National Mental Health Commission states that there is a strong correlation between socio-economic factors and depression, suicide, substance abuse and psychotic disorders [82]. A study has shown that in the poorest one-fifth of Australians, 1 in 4 people have psychological distress, as opposed to 1 in 20 of the richest one-fifth of Australians [111-112]. Therefore, it is plausible to conclude that developing strategies to increase income, education, wage protection and minimum wage policies can serve as protective factors against mental health disorders [67]. Furthermore, implementation of growth programs is invaluable to rural communities, enabling them to be job

ready and achieve further fulfilment. In saying this, programs need to be well organised across government and non-governmental sectors.

The enduring inaccessibility of mental health programs have been additionally targeted by specialist colleges. The recent Royal Australian and New Zealand College of Psychiatrists' (RANZCP) mapping of the Rural Psychiatry Roadmap (2021-2031) has set out a strategic direction and a set of recommendations that envision a dedicated and sustainable regional, rural and remote training pathway to Fellowship [113]. The RANZCP's roadmap emphasises the need to develop a dedicated Rural Psychiatry Training Pathway (RPTP) to fellowship, and thus focuses on extending opportunities for training psychiatrists to live, practice and continue professional development rurally, coupled with optimising support services available for doctors who take up these opportunities [113].

Inaccessibility of mental health services also stem from fragmented governance, hence sectors need to work together to minimise disorganisation. It has been understood, delivery of mental health is not a sole government initiative anymore. Non-governmental bodies and community members need to closely work together to be on the same page in planning and implementing services. Currently communication between sectors are lacking, with lack of clarity around roles and responsibilities. The National Mental Health Commission advises a one standardised approach with established goals and responsibilities across sectors. Governance structures must ensure rural community leaders and carers participate in the design of programs [82]. Furthermore, services must operate within the community and not remotely. This will create more empathetic practice and minimise fragmentations of service [110]. By working together collaboratively, this will improve the facilitation and access to mental health services.

Rural communities are diverse in ethnic and Indigenous backgrounds, hence personalised access to mental health services needs to be prioritised. According to Aboriginal concepts of mental health, health is described as [114]:

"…not just mean the physical well-being of the individual but refers to the social, emotional and cultural well-being of the whole community. This is a whole of life view and includes the cyclical concept of life–death–life."

This is different to the World Health Organisation's definition, as this encompasses the cultural and spiritual indigenous people feel with their land and people [115]. Hence mental health services need to adapt to the needs of marginalised rural communities, to maximise the holistic care of mental health. This can be done through increasing indigenous and trusted personnel from the community into the mental health workforce. We also need to educate all systems of governance in cultural sensitivity and safety. And finally, the implementation of culturally appropriate mental health treatment options within programs such as traditional healing that may be beneficial for the patient. By

doing so, trust can be rebuilt between mental healthcare workers and traumatised communities.

As mental health stigma is a pivotal barrier to overcome, policy needs to address the specificity of programs. Morgan and colleagues have identified that education programs on mental health illnesses are poorly understood as they are generalised rather than 'specific' [104]. As it is known that associated stigma varies with mental health disorders, this may be a necessary measure to address complex conditions to further assist with misconceptions. Furthermore, these programs are missing culturally sensitive resources that can support marginalised communities such as Aboriginal and Torres Strait Islander people.

The State of Australian Rural Health Research

Health research is critical to the ongoing assessment, improvement and evaluation of health systems in rural, regional and remote Australia [116]. Although increases in rural health research funding over the past 10 years have been noted, this is unmatched to the extent of health service deficits and health status inequity experienced by rural and remote Australian communities [117, 118]. Systematic neglect in program funding and policy development continues to be prominent in many health burdens exclusively confined to rural communities – including tropical health burdens that disproportionately impact Aboriginal and Torres Strait Islander peoples[119, 120].

Literature published on the extent of rural health research in Australia have supported the growing need for greater funding and research to address unique health disparities faced by rural Australian communities [118]. Addressing health inequality for rural and remote Australians has been a priority for the Australian Government [121], and currently, the National Health and Medical Research Council (NHMRC) provides approximately $800 million to medical research annually [122], however there is no explicit indication to address rural inequity or disadvantage [117,122]. In the period 2000-2014, 1.1% of NHMRC-funded projects were defined as 'Australian Rural Health Research', increasing by 2.4% over the measured period of time [117]. The disparate health outcomes of Australians in rural and remote areas reflect not only the social determinants, but also lower levels of access to efficient and appropriate public and private health services [123, 124]. Literature has supported the need for greater research to understand and improve rural and remote social determinants – and how health services be re-oriented and designed in ways that enable optimal health service provision [117,125].

Currently, the NHMRC has a precedent to support and emphasise funding and research toward the health of Aboriginal and Torres Strait Islander peoples. However, rurally focussed and located research has not been emphasised [117], despite literature demonstrating that building the rural health sector's research capacity can contribute positively to health service and expenditure outcomes [126, 127]. This is true of various health burdens that have been systematically

neglected in the Australian research landscape and thus continue to pose severe health burdens in rural and remote under-served communities. Neglected health burdens that cause significant morbidity and mortality in Australia include the soil-transmitted helminthiases (*Strongyloides stercoralis, Trichuria trichuris, Ancyclostoma spp*).

Neglected Tropical Diseases

The Neglected Tropical Diseases (NTDs) are a group of 20 diseases of poverty and disadvantage deemed by the World Health Organisation as posing a significant burden to the most vulnerable tropical and subtropical populations of the world. They are deemed 'neglected' due to their continued absence from the public health research, policy and program development [128]. In Australia, the NTDs of leprosy, soil-transmitted helminthiases and trachoma continue to pose severe health challenges to those in remote and rural communities [129-131], and particularly to remote Aboriginal and Torres Strait Islander communities [129-135].

Soil-Transmitted Helminthiases

Soil-transmitted helminthiases are a group of neglected tropical diseases (NTDs), recognized by the World Health Organisation due to their substantial impact upon the wellbeing of under-served tropical populations [128]. In 2010 globally, it is calculated that STHs contributed to 4.98 million years lived with disability (YLDs) with 65% by hookworm infections, and 13% for whipworm [136]. In remote Australia, the soil-transmitted helminths, *Strongyloides stercoralis*, *Trichuria trichuris* (whipworm), and *Ancyclostoma spp.* (Hookworm) are endemic to remote Aboriginal and Torres Strait Islander communities [132-135]. *Strongyloides* in particular has been referred as one of the 'most neglected' of the twenty NTDs [137], with up to 60% incidence in Aboriginal remote communities, and in up to 87% of disseminated strongyloidiasis cases, there is fatality [132,138,139]. Whilst there is little available research, latest literature have shown continued infection of *Ancyclostoma spp* and *T. trichuris* in Aboriginal remote communities, the latter at 48.2% [140, 141]. In Australia, STHs remain to be systematically neglected in both research and public health, and this is largely due to their high focality in only vulnerable remote communities [120,142-144].

The largest STH burden by far in Australia is *S. stercoralis* – which although mildly presenting in many cases, can precipitate two life-threatening sequalae: Hyperinfection syndrome (HIS) and Disseminated Strongyloidiasis (DS) [145]. In Australia, *Strongyloides* is exclusively a rural health burden [146], characterised by high prevalence and incidence in remote and rural Indigenous communities. Strongyloidiasis is hyperendemic in remote Australian Aboriginal communities; hyperendemicity is defined as prevalence exceeding 5% in any community, and yet in many remote Indigenous communities, prevalence can rise up to 60% [145,147, 148]. Literature and research published on this area is lacking despite the high mortality and morbidity associated with it. Insights into

the true magnitude of the problem have been estimated and community-based, with a lack of formal surveillance and national prevalence data [120,142].

In Australia, significant morbidity and preventable deaths are associated with strongyloidiasis infection in remote Aboriginal communities. Rather than a lack of diagnostic capability, preventable deaths from strongyloidiasis most often occur due to under-recognition of the disease, and subsequent poor clinical management, (for instance, a failure to exclude latent strongyloidiasis disease prior to immunosuppressive therapy) [132]. This is particularly important in light of the increasing use of immunosuppressive medication in rural and remote Australia as well as the high prevalence of diseases that predispose patients to an immunosuppressed state – such as HTLV-1, COPD, Chronic Alcoholism, and Acute Rheumatic Fever [142,149]. In these cases, above, where DS and HIS are at elevated risk, fatality rates can reach up to 100%, and even with treatment, exceeding 25% [145]. There is a general lack of research and exploration into avenues of public health control as well as improving the capacity of clinical management regarding strongyloidiasis [132,142,150]. The paucity of literature on *Strongyloides* has advocated the importance of strongyloidiasis to the perpetuation of rural and urban health disparities – particularly for Aboriginal and Torres Strait Islander communities [120,142].

Trachoma

Trachoma is a preventable infectious disease caused by the bacteria *Chlamydia trachomatis* affecting the eye, and the world's leading cause of preventable blindness [151]. Australia is the only developed country in the world where trachoma still occurs [152], and is endemic to remote and very remote Aboriginal communities in Northern Territory, South Australia and Western Australia [151]. Currently, the national trachoma prevalence in screened children (ages 5-9) is 4.5% (falling from 14% in 2009) [152]. Poor living conditions, lack of access to water supply and sanitation, overcrowding, and unhealthy environments are the main perpetuating social determinants of trachoma transmission in remote Aboriginal communities [153]. In 2019, the Australian Trachoma Surveillance Report found that of the original 13 regions identified as high risk since the beginning of Australia's national response to trachoma (2006), 8 were found to have non-endemic levels of trachoma, 6 regions with a decreasing prevalence, and 5 regions increasing in prevalence [154].

The current strategy undertaken involves facilitation of the 'SAFE' strategy proposed by the World Health Organisation: Surgery for trichiasis, antibiotics for active trachoma cases and all household contacts, facial cleanliness, and environmental improvements (such as reducing overcrowding, improving water and sanitation facilities) [155]. The Australian government has invested large sums of money to combat trachoma, having had the goal of eliminating trachoma in 2020 [155] - however, was unsuccessful. While treatment approaches have been effective in reducing trachoma prevalence in general,

they are currently insufficient to reach set targets in the identified high risk regions of rural and remote Australia [154].

In response to the continued endemicity of trachoma to Aboriginal remote communities, non-government organisations such as the Fred Hollows Foundation have continued to play an important role in this health disparity. The Indigenous Australia Strategy (2020-2024) with the goal of eliminating trachoma by 2024, by: strengthening the capability and coverage of eye health workforce, the provision of eye care within Aboriginal Community Controlled Health Services (ACCHSs), as well as having Aboriginal and Torres Strait Islander led programs [157].

Rheumatic Heart Disease

Although not under the NTD category, Rheumatic heart disease (RHD) remains a problematic health issue in rural and remote Australia, disproportionately burdening Aboriginal and Torres Strait Islander peoples [158]. RHD refers to the long-term cardiac damage caused by a single or multiple recurrent episodes of acute rheumatic fever (ARF). ARF is caused by a Group A Streptococcus bacterial infection of the throat and skin and can result in permanent damage to the heart [159, 160] .

Rural and remote living conditions, with poorer social determinants of health, predispose to infection. RHD is a disease of poverty and disadvantage and although entirely preventable, incidence in Far North Queensland in tropical Australia, and Top End of the Northern Territory still high [158, 161] . Highest disease burdens are in northern, remote Australian regions [162]. Many studies have highlighted the relationship between the social determinants of health and RHD [161] , and socioeconomic factors are an important perpetuating factor to disease transmission and barrier to prevention. In Australia, there is a known underdiagnosis of ARF, and there is a need to improve diagnostic capability, especially within rural and remote Australian populations who often enter the health system at later stages of disease [162].

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