Rural health care: Paper 1

# Changes in rural medical workforce and health service delivery since 1990

A report to the NSW Ministry of Health

SaxInstitute

August 2021




**Enquiries regarding this report may be directed to:**

Sax Institute
www.saxinstitute.org.au
Phone: +61 2 91889500

**Suggested Citation:**

Sax Institute. Rural health care: Paper 1. Changes in rural health services since 1990. A report to the NSW Ministry of Health. Sax Institute, 2021

# Contents

# Executive summary

This is the first of three papers on rural health services prepared by the Sax Institute at the request of the NSW Ministry of Health. It explores the following questions:

- What are the drivers that have affected the delivery of regional, rural and remote health care internationally and in Australia?
- How have clinical service and workforce models changed in rural areas over the last 20–30 years?
- How have changes in models of care impacted on, influenced or determined workforce requirements in rural areas?

The impetus for this paper is a recognition that, both in Australia and internationally, significant changes in medicine and in society have had a profound impact on the availability and delivery of health services in regional, rural and remote areas. Despite many initiatives designed to ensure safe, high-quality care for all Australians regardless of where they live, the health of rural communities continues to be worse than that of people living in urban areas. A similar pattern is evident in most advanced countries, particularly those which, like Australia, have a large land mass and areas of sparse population. Many reports over the past two decades on rural and remote health in Australia and internationally have noted the concerns of rural communities about the accessibility of high-quality health care, and international reports have described challenges to rural health service delivery similar to those faced in Australia.

## Drivers of change

The most important drivers of change in health care over the last 30 years, specific to rural health services, have been the following:

- Rapid advances in health technology. These advances have dramatically improved patient outcomes and brought faster recovery times than previous therapeutic options, but they also require greater specialisation and a need for more services to be provided in large and better equipped facilities.
- A strong emphasis on evidence-based medicine and on safety and quality in health care internationally, with the creation in Australia of new national and state structures to monitor, enable and support safety and quality. These developments have placed downward pressure on the range of services and procedures available in outlying rural areas.

- The movement of population from small towns to regional centres. This has occurred in Australia and in many other developed countries has also contributed to a reduction in the capacity to support diverse health services in more remote areas.
- The development of high-bandwidth communication technologies. This has presented new options for the delivery of health services – telehealth and virtual care – in rural and remote areas.
- Health professionals' expectations of professional practice and lifestyle. New expectations have made it increasingly difficult to recruit medical practitioners committed to long-term careers in country towns, especially in isolated areas.

## New clinical service models

Health services in regional centres have expanded, but many smaller communities have experienced reduced access to on-site local medical care traditionally provided by general practitioners. New clinical service models are intended to support smaller towns and remote areas, where health care is provided through a mosaic of different services that rely on a networked approach. This is in part to enable access to a broad range of healthcare services, acknowledging that not all services can be safely or effectively provided in smaller or remote areas. The configuration of services and the extent to which they provide seamless care varies by location.

Many aspects of health care in regional centres are now at a similar level to major teaching hospitals. This reduces the need for residents of regional centres and more remote locations to travel to major cities for specialist health care. Health services in medium-sized towns have been modernised and have expanded as populations have grown, but the overall range and organisation of services has not needed to change.

The challenge of rural health service delivery is greatest in small towns and remote areas. In these areas the range of on-site services provided by general practitioners has decreased, and many small hospitals have closed or have been replaced by multipurpose services (MPSs). Care is provided by mosaics of networked services involving local and visiting GPs, MPSs, telehealth, and retrieval services, with linkages to hospitals in regional centres. There is local variation across these networks as a consequence of differing geographic, demographic and social factors.

The component services are funded from different sources, including state government, Australian Government grant or other funding, Medicare and non-government entities, and they have different lines of control and management. As a consequence service delivery is often seen as fragmented and difficult to access by some communities. This is difficult to overcome, as agencies other than those under NSW Government direction have responsibility for a large proportion of the services.

## Workforce models and requirements

The drivers listed above and the changes in service delivery have had a significant influence on workforce requirements. Six workforce issues are particularly significant: the accessibility of primary care in small and remote communities; the future place of the rural generalist model; managing the need for on-call medical capability in multipurpose services and small and medium-sized hospitals;

the role of international medical graduates; sustaining hospital specialists; and providing seamless care.

Over the past 30 years most rural and remote areas have seen an increase in the numbers of general practitioners per head of population. However, the GP-to-population ratio is lower in the more remote rural areas than in regional centres and urban areas, despite the complexities of providing care in remote settings and small rural communities. Rural communities report significant difficulties with the accessibility of high-quality primary care.

Rural generalists – GPs with advanced training in emergency medicine and other fields needed for independent rural practice – have the potential to fill gaps and improve rural health care, but this model is still developing. Rural generalist models will be examined further in the second paper in this series.

Multipurpose services and small and medium-sized hospitals rely on GPs to provide a range of hospital services as visiting medical officers (VMOs). There continues to be a challenge in sustaining VMO services, especially in small hospitals and MPSs. However, the capacity and interest of GPs to provide VMO services is variable, and some GPs do not have the skills or expertise or confidence for this role.

International medical graduates have played a key role in rural primary care. They make up a large proportion of rural GPs in NSW, and their contribution is essential to the viability of the current GP workforce models. While some international graduates have the necessary expertise for rural practice and decide to stay, many do not. Australian graduates who aspire to rural careers are more likely to have obtained specific training for the acute health problems that are managed in rural hospitals. The reliance on international medical graduates contributes to the turnover of rural doctors.

The number of specialists in regional centres has increased, and specialists have also continued their long-standing visiting arrangements to many smaller rural locations. Extensive investment has been made by the Australian Government and state and terriotory governments in the training of health professionals for rural service, in collaboration with universities and professional bodies. However, supplementary arrangements, such as locums, continue to be necessary to sustain rural hospital services. Little coordination exists among the diverse components of the networked models, which have tended to evolve as a consequence of the market failure of fee-for-service general practice. This perpetuates the difficulty of providing seamless care for rural communities, especially those living in smaller towns and remote areas. The third paper in this series will propose some options to address these challenges.

# Introduction

This is the first of three papers on rural health services prepared by the Sax Institute at the request of the NSW Ministry of Health.

The purpose of this first paper is to explore the following questions:

- What are the drivers that have affected the delivery of regional, rural and remote health care internationally and in Australia?
- How have clinical service and workforce models changed in rural areas over the last 20–30 years?
- How have changes in models of care impacted on, influenced or determined workforce requirements in rural areas?

The impetus for this paper is a recognition that significant changes in medicine and in society have had a profound impact on health services in regional, rural and remote areas, both in Australia and internationally.

Despite many new initiatives designed to ensure safe, high-quality care for all Australians regardless of where they live, the health of rural people continues to be worse than that of people living in urban areas. For example, the rate of premature deaths in remote and very remote areas is more than double that in urban areas, and the increase in life expectancy has been less in the country than in the cities.[1] A similar pattern is evident in most advanced countries, particularly those which, like Australia, have a large land mass and areas of sparse population.

Several factors contribute to these differentials, including lifestyle, socioeconomic factors and preventive health behaviours, but attention has focused on the contribution of the changes in health service models. Many reports over the past two decades into rural and remote health in Australia and internationally have recorded the concerns of rural communities about access to high-quality health care, and international reports have described challenges to rural health service delivery similar to those faced in Australia.

.

# 1 A brief history

Over the past 30 years, there have been major changes in the provision of health care for rural, regional and remote areas In Australia and across developed countries.

Throughout much of the 20th Century, rural communities relied on the accessibility of their GPs and local hospitals. The safety and quality of the care that they provided was not questioned – good services were equated with accessible services. 'Accessible' meant available locally and whenever needed. Safety and quality as a methodological discipline had not yet permeated medical practice.

By the 1970s, change had arrived: the shift to modern scientific medicine was in full swing. It created an increasing need for specialisation, led by major metropolitan hospitals, which became academic centres of excellence that defined best practice. Rural practice, however, had hardly changed. Rural medicine was not yet recognised as a distinct field or sector of healthcare endeavour. There were few epidemiological data on the state of rural health or on health outcomes in rural populations. The historical ideal of the tireless country doctor, pillar of the local community, available day and night, was of course not necessarily a reality everywhere, as there had always been an acknowledged shortage of rural doctors.

By the 1980s the ideal of the traditional country doctor was fading. The advancing health delivery paradigm created a gap, as new models of care that could fulfil new expectations did not emerge for some time. It was not until the late 1980s and the 1990s that a confluence of factors put rural medicine on the public policy agenda and engaged the major professional bodies. The policy responses in Australia and internationally are detailed in the timelines in the appendices to this report.

One of the changes of most concern to many rural communities has been the diminishing access to care in their own locations. This has occurred across developed countries, especially those with rural communities dispersed over large areas.[2] For example, a recent Canadian report[3,4,5] noted that:

> Almost one-fifth of Canadians (18%) live in rural communities, but they are served by only 8% of the physicians practising in Canada. These communities face ongoing challenges in recruiting and retaining family physicians and other health care professionals.

The historical trajectory that led to the recognition of rural health as a significant component of the health system is summarised in Table 1.

**Table 1**: Outline of changes in rural health services

| 1960 | 1990 | 2020 |
|---|---|---|
| • Health care depended heavily on GPs who looked after patients from cradle to grave, did surgical procedures, delivered babies, set broken bones, and provided palliative care.<br>• Traditional country doctors (and many in the cities) saw broad-ranging competence as part of their identity.<br>• Standards of safety and quality were not widely specified.<br>• The safety and quality of the care that rural doctors provided was not questioned – good services were equated with accessible services. (i.e. care available locally and whenever needed).<br>• Together with nurses and midwives, GPs ran the rural hospitals, which had facilities that matched the doctor's skills and capacity.<br>• Some specialist care (e.g. from general surgeons and general physicians) was available in regional centres, but patients usually needed to travel to the major cities for specialist care.<br>• Rural medicine was not a specifically recognised component of the health system, and there were few government policies or programs on rural health.<br>• Epidemiological data on the health of rural communities or the outcomes of rural health care were scarce. | • The era of the traditional country doctor had faded.<br>• Many small hospitals had ceased offering various services previously provided by GPs, such as obstetrics and surgery.<br>• Health care in small towns depended on a largely uncoordinated mosaic of external services (e.g. visiting specialists, ambulance, Flying Doctor).<br>• Patients from small towns and remote areas travelled by air, road ambulance or car to regional centres for tests or more specialised care.<br>• By the mid-1990s, new, more structured rural models of care were just beginning to emerge (e.g. Aboriginal medical services).<br>• The first Multipurpose Service (MPS) was opened in 1993, pooling health and aged care resources in a small town.<br>• A state-wide trauma plan was formulated in the early 1990s, introducing new networks to manage serious trauma with minimal delay.<br>• Specialist cancer services were not available outside major cities and cancer patients often spent long periods away from home for surgery, chemotherapy, or radiotherapy.<br>• Specialist cardiology services were not available outside major cities, so people with coronary heart disease or heart failure had to be taken to Sydney, Newcastle, Canberra, Brisbane, or the Gold Coast.<br>• Specialist stroke services were in their infancy and people with strokes received mainly supportive care in regional centres.<br>• The larger regional centres began to grow during the 1990s and their health services became increasingly sophisticated as specialists arrived.<br>• Rural health began to be recognised as a significant component of the health system. | • Regional centres had grown considerably, and most had new hospitals with multiple specialised units including comprehensive cancer services, interventional cardiology and stroke units.<br>• People living in or near regional centres had easy access to safe, high-quality health services that were, for many conditions, equal to those in major cities, and patients needed to travel to major cities only for highly specialised services.<br>• Multidisciplinary care had become the norm, and specialised nursing and allied health services were available in regional centres.<br>• For most services, people living in and around small country towns and in remote areas only needed to travel to a regional centre if they needed anything other than basic primary care; the need to travel to major cities had reduced.<br>• Many new health service models had emerged to overcome the service gaps in small towns and remote areas (see Figure 1).<br>• Many of the new health service models were networked with services in regional centres or across several small towns.<br>• Despite innovations in models of care and little overall change in rural doctor numbers, rural and remote communities perceived that local access to health care was inadequate.<br>• Medical services offered in small towns, even intermittently, could provide an increasing number of on-site investigations as equipment had become more portable (e.g. echocardiography via visiting specialist). |

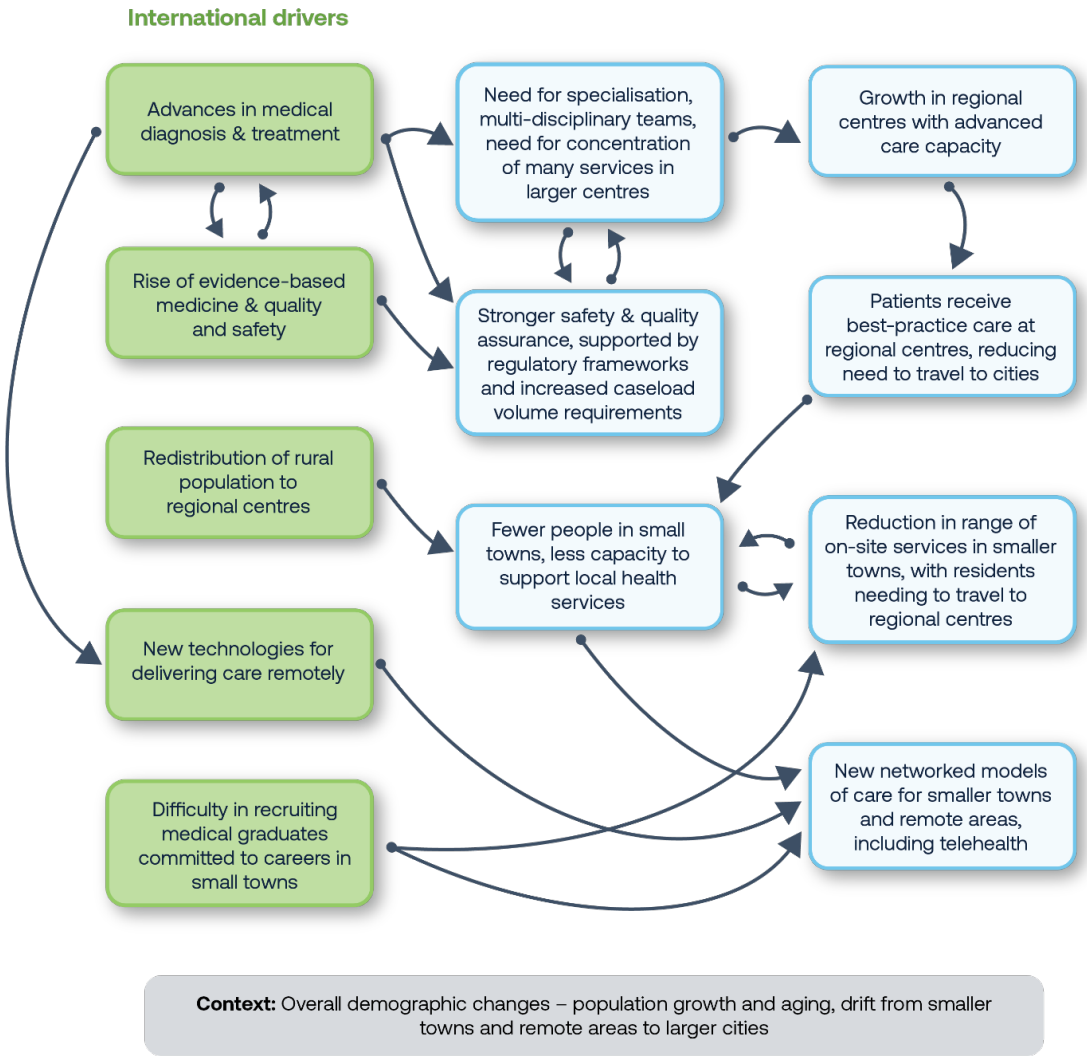
# 2 Drivers of change in Australia and internationally

Major scientific, societal and demographic changes have had profound consequences for health care in regional, rural and remote Australia.

Major advances in medicine have occurred across all developed countries, together with a greater focus on safety and quality of health care. Population ageing has resulted in more chronic disease and greater demands on health services. The population of small towns and remote areas has decreased as people have relocated to regional centres. Patients have greater expectations of ready access to health information and high-quality health services. Professional and personal expectations among healthcare providers have also changed, and the rural health workforce is ageing.

However, some forces have been particularly influential in driving the changes in the health system in regional, rural and remote areas. These forces interact in complex ways, compounding their effect on health care, as illustrated in Figure 1.

**Figure 2:** Factors driving changes in rural health care and their interactions




## 2.1 Advances in medical diagnosis and treatment

Rapid advances in medical treatments and techniques since 1990 have dramatically improved patient outcomes and provided faster recovery times than previous therapeutic options. These advances have also required greater specialisation and a need for more care to be provided in large and better equipped facilities.

The significance of advances in medical treatments and techniques that have occurred since 1990 cannot be overstated. Few areas of health care practice have been unaltered by the technological innovations of the last 30 years. While these medical advances have led to dramatic improvements in outcomes, their delivery often requires specialist care and specialised equipment, available only in larger facilities. Many of these services cannot be provided in small hospitals because they depend not only on specialised equipment but also on specialists maintaining their expertise by treating a sufficient number of patients. In smaller communities, there are too few people to generate the necessary numbers of patients. This is discussed further in section 2.2. below.

The management of myocardial infarction (heart attack) is an example of treatment advances. In the mid-1980s, typical care for heart attack patients involved pain relief and bed rest. Standard treatments for heart attacks now include many specialist treatments including thrombolytic ('clot-busting') drugs, echocardiography to investigate the extent of heart damage, and cardiac catheterisation to identify narrowed coronary arteries and insert stents as well as advanced surgical techniques for bypass of blocked arteries.[6] The recommended approach to stroke is management in a specialised stroke unit where outcomes are significantly improved.[7]

Likewise, advances in cancer treatment (such as image-guided radiotherapy) and surgery (for example, keyhole surgery for conditions such as appendicitis, hernia repair and perforated ulcer) have significantly improved outcomes but require specialist expertise in well-equipped facilities.

Other new developments include relatively inexpensive items of equipment that enable patients to monitor chronic disease parameters themselves in their own homes. In addition, reductions in the size, cost and power requirements of sophisticated medical equipment have meant that some of the more advanced clinical services can be provided in small towns and remote areas if the expertise to use them is available. Clinicians in the more distant locations can now relay the outputs in real time to specialists in regional centres and major cities (section 2.4). Aircraft now used by medical retrieval services carry sufficient portable rechargeable equipment to set up the equivalent of a temporary intensive care unit anywhere, even by the roadside or in a paddock.

## 2.2 The rise of evidence-based medicine and the safety and quality movement

Since 1990 developed nations have seen an emphasis on evidence-based medicine and on safety and quality in health care. In Australia, these have had major consequences for health care professionals, the delivery of health care and health outcomes. However, they have placed downward pressure on the range of services and procedures available in outlying rural areas throughout Australia.

Evidence-based medicine is an international movement that emphasises rigorous research as the basis for treatment, in contrast to previous reliance on "expert-based medicine".[8] The plethora of new treatments and the burgeoning of research resulted in the development of clinical practice guidelines, underpinned by systematic reviews of research such as those conducted through the Cochrane Collaboration.[9] Across developed health systems, such clinical guidelines established 'best practice' approaches that enabled auditing of practice, accreditation, and other approaches designed to improve quality of care. These have often been led by professional colleges or other agencies such as the Institute of Medicine in the USA and the National Health and Medical Research Council (NHMRC) in Australia.

Several developments in Australia and internationally since the late 1980s resulted in the emergence of safety and quality as a central issue in health policy, the governance of health systems and health care institutions, the training of health professionals, and the delivery of health services. A cascade of safety and quality developments was stimulated by the production of new information on the frequency of preventable adverse outcomes for patients in many countries with advanced health care systems. An important example was the landmark Harvard study from 1991 that found nearly 4% of hospitalisations resulted in patient injury.[10] Second, a series of highly publicised examples of medical misadventure or wrongdoing leading to harm or death, which occurred in numerous countries, drove media and public interest and concern, and subsequently led to political and regulatory action. A prime instance was the inquiry into excess deaths among infants having heart surgery at the Bristol Royal Infirmary in the UK between 1984 and 1995. This was described by the chief executive of the UK National Health Service Confederation as "an extraordinary catalyst to improve standards".[11]

Reflecting the increased focus on safety and quality issues, the NSW Government established the Health Care Complaints Commission as a statutory organisation in 1993. It has provided a mechanism for the investigation of formal complaints lodged by patients and others on medical errors and lapses in health service quality.

Meanwhile, the shortage of information on preventable adverse patient outcomes led to the Quality in Australian Health Care Study (QAHCS), which also began in 1993. The QAHCS reviewed the medical records of over 14,000 admissions to 28 hospitals in NSW and South Australia. It found that almost 17% of these admissions were associated with an adverse event which resulted in disability or a longer hospital stay for the patient and was caused by health care management; 51% of the adverse events were considered preventable.[12]

Legislation and processes to monitor and improve the quality and safety of care internationally included the US *Healthcare Research and Quality Act* (1999) and establishment of the Agency for Healthcare Research and Quality, and the English National Health Service's introduction in 2004 of the Quality and Outcomes Framework, which sought to link general practitioners' remuneration with quality benchmarks and indicators.[13] They also resulted in new accountability and transparency requirements – often, but not always, focused on the system rather than individual practitioner level – with new data analysis techniques allowing the creation of 'early warning' mechanisms to provide alerts when, for example, excess mortality rates were detected in specific areas or among the patients of particular health care providers.

In 2006, the Council of Australian Governments (COAG) recommended the formation of the Australian Commission on Safety and Quality in Health Care (ACSQHC), which commenced as an independent statutory authority in 2011, funded jointly by the Australian Government and state and

territory governments, and replacing an earlier, temporary safety and quality council. The reports, frameworks and standards produced by the ACSQHC have set the agenda for quality and safety in health care across Australia ever since. In 2004, prior to the establishment of the ACSQHC, the NSW Government had formed the Clinical Excellence Commission (CEC), with responsibility for setting clinical safety standards, monitoring clinical safety and quality processes, and improving the safety performance of individuals, teams and systems.

A new National Registration and Accreditation Scheme provided mechanisms to impose safety and quality standards on individual health practitioners. The National Scheme replaced individual state and territory registration systems via nationally consistent legislation passed by each state and territory between 2009 and 2014 (in NSW, known as the *National Practitioner Regulation National Law 2009* (NSW)). The National Scheme has enabled the movement of practitioners across state and territory boundaries, specified conditions for registration and renewal of registration, and specified requirements for international medical graduates (IMGs) seeking registration in Australia. The Australian Health Practitioner Regulation Agency (Ahpra) manages the registration process and serves as the secretariat for 15 national boards, each of which is responsible for one of the 15 health professions covered in the National Scheme. To ensure that practitioners stay up to date, the Ahpra renewal of registration process requires proof of compliance with continuing professional development criteria specified by the professional organisation relating to each practitioner, as well as evidence of currency in the individual's respective field of practice. In addition, since 2017, doctors aged over 70 years have been required to demonstrate fitness and competence to practice.

While these changes have done much to improve outcomes, they have resulted in additional pressure for services to be concentrated in population and clinical service hubs. By 2000, a growing body of research had clearly demonstrated that patients had better outcomes in larger volume hospitals and with doctors who had more patients with similar conditions. An international systematic review in 2002, for example, examined large studies covering 27 procedures and clinical conditions. Seventy-one per cent of studies reported significant associations between better outcomes and hospital volume, and 69% between better outcomes and physician volume.[14]

The combined effect of safety and quality measures, including the need to concentrate sophisticated new technologies in clinical and population centres, and the growing awareness of the relationship between volume and outcomes, have had a significant impact on the organisation of clinical services, and what can and cannot be provided in rural areas. Accreditation, minimum volumes and other requirements may be impossible to fulfil in smaller towns, resulting in a reduction in the local availability of services.

## 2.3 Redistribution of rural population to regional centres

The movement of people from small towns to regional centres seen in Australia and in many other developed countries has also contributed to a reduction in the capacity to support diverse health services in more remote areas.

Urbanisation remains a powerful force internationally. The United Nations estimates that globally, 2007 was the year when people living in cities outnumbered those living in rural areas for the first time. This is forecast to continue, with the balance shifting further to two-thirds urban dwelling by 2050.[15] The same trend is evident across Australia, and in NSW, where between 1991 and 2020 regional centres such as Bathurst, Dubbo and Wagga Wagga grew substantially while most smaller towns shrank. For example, Moree and Narrabri lost 17% of their population, and while Bathurst and Orange grew by around 30%, surrounding areas such as Cowra and Canowindra had a drop in their population of 7%.[16]

While regional centres have diverse and vibrant industries that continue to generate growth, life in smaller NSW towns and remote areas is more difficult. Employment opportunities have diminished as agriculture, the dominant employer, has consolidated, leading to fewer, larger and more highly mechanised farms.[17]. Flow-on effects have made many other local businesses unsustainable. This has created a population movement away from small towns and remote locations, mainly to regional centres rather than major cities.[18] Population ageing has contributed to the attrition. This phenomenon is not unique to NSW or Australia.

A depletion of rural populations undermines the viability of the social and commercial economy of rural communities, of which rural medical practice is one part. Medical services in rural communities experiencing declining populations are challenged not simply in financial terms, but also in professional terms. Smaller communities reduce the financial viability of general practice, creating pressures for GPs to provide care to larger geographic areas. The demand from smaller communities may not be sufficient to enable rural hospitals to continue to provide safe, high-quality services, creating a pressure towards consolidation of services in larger regional centres.

## 2.4 New communication technologies for remote delivery of health care

The development of high-bandwidth communication technologies has opened up new options for the delivery of health services – telehealth and virtual care – in rural and remote areas.

New high-bandwidth communication technologies capable of supporting real-time, two-way remote consultations and the instant sharing of large amounts of data, including high-resolution imaging, have provided new opportunities for the delivery of health services in rural and remote areas, and for the support of health professionals who can seek advice and support from specialists in metropolitan centres. Virtual care platforms (video, audio, or messaging) provide patients in rural and remote environments with a low-cost mechanism for obtaining health care while obviating the need for travel.[19] The terms 'virtual care', 'telehealth' and 'telemedicine' are not clearly distinguished, but 'vitual care' is taken as all-encompassing, while 'telehealth' and 'telemedicine' may refer to telephone or audio consultations.

Evidence from the US, Canada, Scandinavia and other countries supports the use of virtual care services for psychological treatments[20], chronic heart failure with remote monitoring[21], smoking cessation[22], and home-based treatment for diabetes, heart disease and chronic obstructive pulmonary disease[23], among others. Virtual care offers much to support other models of health care in rural settings.

Telehealth began to be used in Australia in the late 1980s. Its use increased with the ready availability of internet access and has expanded much further during the COVID-19 pandemic. However, despite the high-quality care being provided, emerging research suggests that patients may not value these approaches as much as a face-to-face consultation with a medical practitioner.

## 2.5 Changed professional and personal expectations among medical practitioners

Across developed countries, health professionals have changed expectations of professional practice and altered lifestyle expectations that have made it increasingly difficult to recruit medical practitioners committed to long-term careers in country towns.

As in other developed countries, it has become increasingly difficult to recruit and retain health professionals (largely GPs) in rural Australia.

Overall, enrolments in general practice training in Australia have been falling for several years[24], particularly in rural areas. In NSW, the most significant reduction has been seen in Western NSW, where the number of first-year trainees fell 33% over four years, from 91 in 2016 to 61 in 2019. The experience and qualifications required for for entering indepedent general practice were greatly upgraded with the introduction in 1996 of Vocational Registration, tied with eligibility for Medicare payments.[25] Previously, any fully registered medical practitioner could practise as a GP, including graduates whose training had proceeded no further than their internship. Prior to the change, graduates with limited experience and no specific rural training could become country GPs if they wished in their second postgraduate year. Today's requirement for several years of postgraduate vocational training improves standards of practice, but may discourage some graduates from considering a rural career.

Recruitment of health professionals to rural areas is a social endeavour – in the words of a former president of the College of Family Physicians of Canada, "to recruit a physician [to a rural area], you must recruit a family".[26] As well as professional supports, doctors need a viable social network, day care options for children, lifestyle options suitable for a young family, and career options for the doctor's spouse.[27] A parallel phenomenon is the trend towards shifting gender roles, with the balance of family and domestic responsibilities becoming more equal between men and women and an evident wish for better work-life balance than might have been possible in traditional country medical practice.

Further, the work model needs to be attractive, which is increasingly difficult when the local population will only support one or even two doctors, as working with limited professional backup often involves a degree of professional isolation and being on call for extended periods. Anecdotal evidence suggests that the reduced range of interventions and procedures that can be provided by GPs in rural towns is likely to reduce the prospects of a satisfying career for those who have training for such services. The rural generalist model (see section 4) may provide an avenue to resolve this, as arrangements can be made for a rural generalist to participate in networked clinical service models at different levels in a regional health structure.

# 3 Changes in clinical service models

Regional hospitals have expanded, but smaller communities have experienced reduced access to on-site local medical care, largely due to availability of workforce and emerging technologies. New clinical service models are intended to support smaller towns and remote areas, where health care is provided through a mosaic of different services that rely on a networked approach. The configuration of services and the extent to which they provide seamless care vary by location, influenced by local geography, demography and social factors.

The main changes in rural clinical services that have evolved over the last 30 years comprise the following:

- Growth in the capacity and scope of services in regional centres – regional hospitals are now able to offer many services equivalent to those in metropolitan referral hospitals
- Increases in the numbers of GPs across rural areas, but widespread community dissatisfaction with the accessibility of on-site primary care services in small towns and remote areas
- Away from regional centres, dependence on a combination of services comprising GPs who cover adjacent towns on a sessional basis, small nurse-led multipurpose services (MPSs) that pool health and aged care resources, occasional visits by specialists, telehealth links with regional centres, and travel to regional centres for serious conditions, with medical retrieval by air or road if necessary.

The main challenge for rural health care today is to provide accessible, high-quality services for communities that are dispersed in small towns and remote, isolated locations, often over large distances. A range of new service models have been developed in response to the shortage of on-site primary care capacity in small towns. Although the new service models are intended to be integrated as networks, they are operationally fragmented across funding and organisational lines, as they are funded by and report to various entities such as the Australian Government, state and territory governments, and numerous non-government agencies, and no overall management structure exists.

## 3.1 Models of care in regional, rural and remote towns

The models of care are different for regional centres, medium sized towns and smaller rural towns.

### Health services in regional centres

Regional hospitals and community-based services in regional centres now provide many aspects of care at a similar level to major teaching hospitals. They provide high-quality care to people living in regional centres and surrounding towns, and they serve as referral centres for communities in more outlying areas. They reduce the need for residents of regional centres and more remote locations to travel to major cities for specialist health care.

Health services in regional centres have expanded over the last 30 years as their populations have grown, advances in medical technology have become available, communications have improved, and community expectations have risen. The numbers of specialists and the range of specialties represented have also increased. Several factors are likely to explain this, including an oversupply of some specialties in major cities, the relative ease of maintaining professional contact with city institutions and colleagues, the lower cost of housing in regional centres, and lifestyle benefits such as the proximity of rural environments. For those in the private sector, the potential for rapid development of a viable practice is appealing, and the cost of professional premises is lower than in major cities. The growth of regional centres has reduced the lifestyle disadvantages of country life by making goods, services and facilities such as schools more available.

However, while there has been a migration of specialists to the country, especially those who have recently completed specialist training, shortages still exist, and some specialties in particular are in short supply. The numbers of GPs have also increased, as discussed in section 4, but there are numerous anecdotal accounts of long waiting times for both GP and specialist appointments, and of general practices that have closed their books to new patients.

Many hospitals in regional centres that were previously known as ‘base hospitals’ have been redeveloped and upgraded to become ‘rural referral hospitals’. They have increasingly attracted medical specialists and allied health professionals, and many clinical services are now delivered by multidisciplinary teams. Their facilities variously include comprehensive cancer centres, interventional cardiology units, stroke units and advanced imaging technology. In many instances the clinical services that they can provide are indistinguishable from those in major metropolitan teaching hospitals. Examples can be seen in Dubbo, Wagga Wagga and Tamworth.

For communities in and around the regional centres, the local availability of advanced clinical services obviates the need for patients to travel to the major cities in NSW and the ACT for all but the most

specialised services. The size and scope of rural referral hospitals, their patient throughput and the numbers of their staff (and their qualifications and expertise) enable them to meet safety and quality standards across the range of services that they offer.

The regional centres also provide various forms of networked support for the smaller and medium-sized towns. For example, an oncologist in Dubbo regularly conducts clinics in Mudgee (population 12,400), 128 km away by road. Using virtual care facilities, a GP or nurse in the MPS emergency unit in Bourke (population 1,820) can seek advice from an emergency medicine specialist in Dubbo who is rostered to be available for online consultations 24 hours a day, seven days a week.

In some instances, metropolitan specialists also run clinics in regional centres, particularly in fields that are absent or in short supply in regional centres, such as rheumatology, neurology and orthopaedic surgery. Some of these arrangements are longstanding.

The numbers of GPs in regional centres have increased substantially over the last three decades. As outlined in section 4, the numbers of GPs per head of population in regional centres is similar to that in metropolitan areas.

### Health services in medium-sized towns

Health services in medium-sized towns have increased as populations have grown and have modernised as medical advances have become available, but the overall organisation of services has changed less than that in regional centres and in smaller, more outlying towns.

In medium-sized towns the great majority of medical services are provided by GPs, some of whom are GP-obstetricians and GP-anaesthetists. Medium-sized towns may also support one or a few specialists, such as a general physician, as well as allied health professionals. Hospitals in medium-sized towns have retained limited procedural capacity, including low-risk obstetrics, as well as outpatient oncology services and renal dialysis, overseen by visiting specialists. Like the smaller towns, they have become networked with regional centres. Examples can be seen in Kempsey, Mudgee and Cooma.

People living in and around many medium-sized towns also have the benefits of greater proximity to the emerging tertiary-level services in regional centres. For instance, the community of the Kempsey Shire (population 29,900) has access to high-level clinical services in Port Macquarie, 40 km from the town of Kempsey. In the past, people would have had to travel more than 280 km by road to Newcastle for most specialist care.

In many smaller and more remote towns the range of on-site services provided by GPs has decreased and hospitals have closed or have been replaced by multipurpose services. Care is provided by networks involving local and visiting GPs, multipurpose services, telehealth and virtual care, and retrieval services.

Smaller, more remote towns – those with populations less than 5,000 and/or distant from major centres – have struggled to maintain the types of on-site services provided in the past by country GPs. In response, a variety of new primary care models have emerged, networked with clinical services in regional centres. Their goal is to provide safe, high-quality clinical services for people living in areas where distance often presents a formidable challenge. Clinical services in small towns are supplemented by external services, including visiting health professionals, highly organised retrieval services (aerial and road-based), and virtual care facilities. Examples of such towns are Bourke, Walgett and Hillston.

In many small NSW towns, resources for general health care have been pooled with those for aged care to create multipurpose services (MPSs). The intent of the MPS program is to provide integrated health and aged-care services to regional, rural and remote communities that are too small to support an aged care facility and a hospital.[28] They are typically located in rural towns with populations in the range of 1,000 to 4,000 people. Since the inception of the MPS program as a collaboration between the Australian Government and state and territory governments in 1993, some 65 rural hospitals in NSW have been replaced by MPSs, making up more than half of all rural hospitals. Evaluations of the MPS program have focused on aged care rather than acute health services.[29,30] MPSs are thus a key health service model within small towns. They are planned with input from local community members and the scope of services that they offer varies according to local needs.

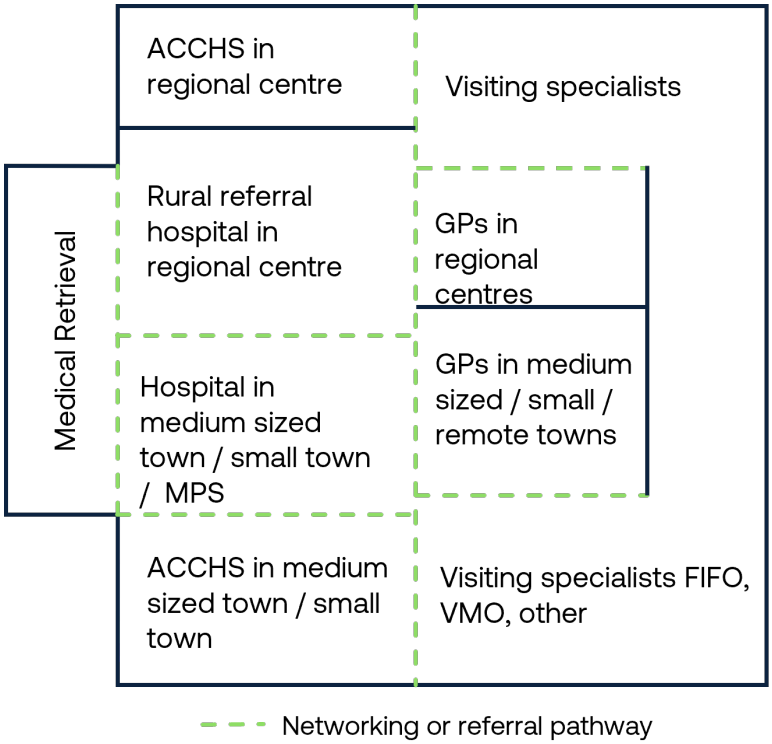
## 3.2 Mosaics of clinical services for regional, rural and remote communities

Health care across rural NSW is provided via a mosaic of networked clinical services that vary between areas. The component services are funded from different sources and have different lines of management, and as a consequence service delivery is often fragmented.

Clinical care in country NSW is delivered via a range of hospital, community-based and external services that relate to each other in different ways to form networks. The services comprise rural referral hospitals, hospitals and MPSs in smaller towns, Aboriginal community-controlled health services (ACCHSs), GPs, specialists in private practice, community-based specialist nursing and allied health professionals, and ambulance and medical retrieval services, plus telehealth and virtual care services. Collectively the services that relate to each regional centre form a mosaic, as shown in Figure 2.

The configuration of services and the ways in which they relate to each other vary, depending on local needs, resources, demography, and geography. To function effectively, the services need to be integrated, and this relies on networking among them. The critical points of interaction are shown by dotted lines in Figure 2.

**Figure 2:** Relationships among regional, rural and remote clinical service and workforce models




In this mosaic, different funding sources support each component, so no clear line of management exists, and seamless care is difficult to achieve. Regional hospitals are funded by NSW Health; GPs by private fee-for-service arrangements subsidised by Medicare; MPSs jointly by the Australian Government and NSW Health; ACCHSs jointly also by the Australian Government and NSW Health, plus fee-for-service via Medicare; telehealth either by NSW Health (in hospitals and MPSs) or by fee-for-service via Medicare (if private providers are involved).

In its totality, the mosaic of services has the potential to deliver excellent care in regional rural and remote areas, bringing high-quality specialist care and on-site local services, but in practice the complexity and tendency towards fragmentation mean that it will work better in some places and at some times than others. The multiplicity of agencies involved inevitably militates against coordination, and no single agency or level of government has overall control. Although the services operate within

the regions of the state, neither the NSW Government nor the leadership of the Local Health Districts can exert the authority needed to provide overall management or integration of each local mosaic of health care.

From a community perspective, care has moved from reliance on the accessible country doctor who provided community and local hospital care, to an interactive model that involves many service providers. While the individual services may meet standards of safety and quality at levels unattainable in the less structured models of the past, the frequent absence of on-site health professionals competent to deal with a wide range of acute and chronic conditions is viewed by rural communities as unsatisfactory. Communities perceive the fragmentation of services and may often be unable to identify the arrangements that are intended to integrate them.

# 4 Workforce impact and requirements

Medical and societal drivers and the changed models of service delivery have had a significant influence on workforce requirements. Seven workforce issues are of particular importance: access to primary care in small and remote communities; the potential of rural generalists; the role of international medical graduates; managing the need for doctors in small and medium-sized hospitals; the availability of medical specialists; education and training for the rural health workforce; and providing seamless care.

## 4.1 Access to primary care in small rural towns and remote areas

Over the past 30 years most rural and remote areas have seen an increase in the numbers of GPs per head of population. However, the ratio of GPs to the population is lower in rural than urban areas, despite the complexities of providing care in remote and small rural communities. Rural communities report significant difficulties with the accessibility of high-quality primary care.

Primary care is and always has been the backbone of rural and remote health services in NSW and in the rest of Australia. High-quality primary care requires sufficient numbers of doctors and nurses to live and work in rural locations from which they can provide coverage for remote communities and communities in small towns. It depends on well-trained health professionals who are competent and confident, understand the communities that they serve, and are committed for the long term. They need to be assured of a satisfactory income, reasonable working hours, and employment arrangements that enable them to spend time in regional centres or cities for continuing professional development and take leave.

There is no overall ‘correct’ ratio to define the size of the community that a GP can cover, and hence to determine the absolute numbers of GPs needed. The figure of 100–120 GPs per 100,000 population is sometimes given as a rough guide, but the ratio is inevitably affected by numerous local circumstances including the distances over which communities are spread, the distances from regional centres, the number of towns in which a GP service runs clinics, the demographic profile of the community (particularly the age distribution), and individual GPs’ scope of practice. The move towards larger group practices and corporate general practices that support group practices in different locations potentially bring economies of scale, flexibility and responsiveness to the enterprise.

While the number of GPs in rural and remote areas per 100,000 population rose between 2014 and 2019, the ratio remains significantly less than that in urban areas and helps to illustrate the extent of the rural doctor deficiency (Table 2).

**Table 2:** NSW general practitioner workforce by remoteness, 2014 and 2019

| Location | Number of GP full-time equivalents per 100,000 population | |
|---|---|---|
| | 2014 | 2019 |
| Major cities | 115.6 | 124.0 |
| Inner regional | 108.3 | 117.0 |
| Outer regional | 82.7 | 86.8 |
| Remote and very remote | 83.8 | 88.3 |
| Statewide (total) | 112.2 | 120.7 |

Source: AIHW National Health Workforce dataset, accessed June 2021

Similarly, as Table 3 shows, the absolute numbers of full-time equivalent (FTE) GPs have increased markedly over most rural Local Government Areas over the last three decades. Table 3 also demonstrates the significant variation between towns in the access to GPs.

**Table 3:** Numbers of FTE general practitioners in selected NSW rural Local Government Areas, 1991–2019

| Local Health District | Local Government Area | Numbers of general practitioners – full-time equivalents | | | |
|---|---|---|---|---|---|
| | | 1991 | 2000 | 2010 | 2019 |
| Western NSW | Bourke | 6.8 | 13.7 | 15.1 | 9.6 |
| | Cobar | 0 | 5.26 | 5.26 | 4.21 |
| | Western Plains Regional | 21.7 | 28.7 | 52.0 | 68.3 |
| Far West | Balranald | 1.1 | 3.2 | 3.2 | 2.1 |
| | Broken Hill | 10.5 | 17.2 | 24.0 | 39.7 |
| | Wentworth | 0 | 1.0 | 3.2 | 4.8 |
| Hunter New England | Dungog | 6.8 | 7.8 | 6.8 | 9.7 |
| | Gwydir | 1.7 | 1.7 | 4.2 | 7.5 |
| | Tamworth Regional | 21.1 | 38.4 | 43.7 | 52.0 |
| Northern NSW | Ballina | 13.5 | 28.2 | 42.4 | 56.5 |
| | Kyogle | 2.5 | 4.9 | 4.9 | 6.7 |
| | Lismore | 18.7 | 37.4 | 38.1 | 38.9 |
| Mid North Coast | Bellingen | 5.1 | 11.7 | 14.6 | 22.7 |
| | Kempsey | 14.2 | 27.6 | 33.4 | 39.3 |
| | Pt Macquarie/ Hastings | 31.8 | 53.2 | 76.1 | 126.0 |
| Southern NSW | Goulburn-Mulwaree | 5.7 | 14.4 | 20.8 | 33.7 |
| | Snowy Mountains Regional | 6.7 | 17.5 | 24.2 | 24.2 |

| Local Health District | Local Government Area | Numbers of general practitioners – full-time equivalents | | | |
|---|---|---|---|---|---|
| | | 1991 | 2000 | 2010 | 2019 |
| | Upper Lachlan | 7.4 | 9.5 | 11.6 | 10.5 |
| Murrumbidgee | Carrathool | 0 | 1.3 | 1.3 | 1.3 |
| | Hay | 2.1 | 5.3 | 3.2 | 4.3 |
| | Wagga Wagga | 27.2 | 39.9 | 67.9 | 80.6 |

Source: Data supplied by the NSW Rural Doctors Network, July 2021.
Note: Some LGAs merged during the period. Table 4 refers to current LGAs and incorporates the areas that merged.

As shown in Table 4, when the data are broken down by remoteness, there is again an increase in the number of FTEs at each level.

**Table 4:** Total numbers of full-time equivalent general practitioners by remoteness, 1991–2019

| Modified Monash Model (MMM) level | Total number of GPs – full-time equivalents | | |
|---|---|---|---|
| | 1991 | 2000 | 2019 |
| 3 – Large rural towns | 315 | 522 | 962 |
| 4 – Medium rural towns | 182 | 326 | 552 |
| 5 – Small rural towns | 221 | 346 | 560 |
| 6 – Remote communities | 7.8 | 22.4 | 34.1 |
| 7 – Very remote communities | 16.4 | 26.0 | 17.8 |

Source: Data supplied by the NSW Rural Doctors Network, July 2021

People in small towns and remote communities continue to report an absence of on-site doctors for urgent health problems and the need to travel for medical attention. As noted in section 3.1, anecdotal reports from people in medium-sized towns also draw attention to very long waiting times to see a GP and inability of some new residents to see a local GP at all because the GPs in the town have ‘closed their books’ to new patients.

Several factors may contribute to the apparent discrepancy between the rising numbers of GPs and the lived experience of communities in many small towns and remote areas. As data are lacking (they

are only available in aggregated form as above), the following comments are speculative. First, anecdotally, GPs prefer to be based in towns of sufficient size to provide them with at least some of their professional needs, rather than in the isolated settings of a small, remote town; there is some evidence for this in Table 4 which suggests a significant increase in medium-sized rural towns relatively to smaller towns and communities. The advantages of group practices will be more readily supported by medium-sized towns than smaller locations. While such practices might provide sessional outreach services, smaller locations may not have a GP based on-site and their communities may not experience continuity of care.

Second, information from the RDN suggests that at least two contemporary GPs are needed to cover the workload of the country GP of yesteryear. The RDN attributes this to GPs being unwilling to work long hours with disrupted home life and to the significant amount of travel time required of GPs who practise across multiple sites.

Regardless, it is evident that recruitment and retention of sufficient GPs to provide quality care that is satisfactory to smaller rural communities remains an ongoing challenge. There is a continuing demand for GP services, and therefore it has been argued that the shortage of GPs in rural areas indicates a degree of market failure, as the private fee-for-service market has failed to respond to demand by providing sufficient suppliers (GPs) to meet the evident need. It has been suggested that alternative funding models to fee-for-service may be required in rural areas.

The future of rural primary care, which is discussed in the third paper in this series, points to an increasing involvement and recognition of nurse practitioners and other advanced nurses who can practise independently in isolated settings, supported by telehealth, virtual care and medical retrieval.[31] The nursing profession already plays a vital role in delivering remote health care, and it is often under-recognised. Anecdotal evidence suggests that nurses with advanced clinical skills are more willing to live and work in places that do not attract doctors, but data on attrition suggests that the turnover of nurses working in isolated locations is high.[32]

## 4.2 The potential of rural generalists

Rural generalists have the potential to improve rural health care but this model is still developing.

The rural generalist has become a major theme in rural primary care workforce planning in Australia[33] and elsewhere.[34] A rural generalist is a medical graduate who has a Fellowship of the RACGP or ACRRM and advanced training in emergency medicine and at least one other field that is important for rural practice, such as obstetrics, anaesthetics, paediatrics, or psychiatry. Trainee rural generalists spend at least one extra year of their training acquiring these advanced skills through hospital placements. Rural generalists have a broader scope of practice than GPs, as denoted by their

advanced training, and it is likely that they will fill some of the gaps in health service capacity that have been exposed by the changes of the last 30 years.

Substantial Australian Government and state government investment has been made in training programs, in conjunction with the RACGP and particularly the ACRRM.[35] This is discussed further in section 4.6 below. Ideally, local workforce needs for rural generalists with particular advanced skills should dovetail with the skills and interests of the locally available rural generalist workforce.

While it is evident that rural generalists represent a promising approach to enhancing the workforce in rural communities, it is still a developing model. Further definition of workforce requirements is needed, along with mechanisms to ensure that they can maintain competency across their scope of practice. The personal and professional needs of a rural generalist are analogous to those of other practitioners – reasonable working hours, acceptable remuneration, opportunities to maintain competence in their advanced practice fields as well as their broader general practice competence, and arrangements for leave.

The extent to which rural generalists improve care in the more remote and smaller communities remains to be understood; funding models that go beyond fee-for-service arrangements should also be explored. The roles of rural generalists and their place in rural health networks vary among Australian states and internationally. The second paper in this series will, *inter alia*, examine this variation, and the third paper will formulate options pertinent for NSW.

## 4.3 The role of international medical graduates

International medical graduates play a key role in rural primary care but contribute to the higher turnover of rural doctors.

International medigal graduates (IMGs) play a key role in rural primary care.[36] Estimates of the proportion of rural GPs who are IMGs vary from 45% to 60%. Most IMGs are undertaking a period of rural practice as part of the 10-year moratorium arrangements for Medicare access, rather than because of rural career aspirations.[37] Their contribution is essential to the viability of the current GP workforce models.

While some IMGs have the necessary expertise for rural practice and decide to stay, many do not. Australian graduates who aspire to rural careers are more likely to have obtained specific training for the acute health problems that are managed in rural hospitals.[38] The reliance on international medical graduates results in a higher turnover of rural doctors.

## 4.4 Managing the need for doctors in small and medium-sized hospitals

Ensuring medical staff capacity for rural hospitals and remains a challenge. Supplementary arrangements, such as locums, continue to be necessary to sustain rural hospital services.

In medium-sized towns, GPs often have a role in the local public hospital, as noted in section 3.1. They are usually appointed as visiting medical officers (VMOs) and may be remunerated on a sessional or per-patient basis. They may work in the emergency department, provide obstetric care with the hospital midwives, or take responsibility for inpatients, according to their qualifications, skills, experience and interests. VMOs may also admit their own patients.

Small towns also often depend on the local GP or GPs to provide VMO services for the local hospital or MPS, particularly emergency services. VMO payments can play a key role in maintaining the viability of general practices in small towns. However, the capacity and interest of GPs to provide VMO services is variable. Some GPs, including some IMGs, do not have the skills and expertise to provide emergency services or the types of medical care that hospital inpatients require.

In order to ensure medical coverage for small towns that have difficulty recruiting and retaining GPs, some Local Health Districts have contracted with corporate practices to supply on-call services for MPSs and small hospitals. Corporate practices can have the capacity to draw on the larger numbers of GPs that they engage in their multiple practice, thereby filling the local gap and fulfilling contractual obligations if there is attrition of GPs.

In regional centres and medium-sized towns, hospitals often employ non-specialist doctors, known as career medical officers, to supplement or support interns and resident medical officers, many of whom are seconded to regional centres and rural hospitals from metropolitan teaching hospitals. Regional and rural hospitals also often employ locum doctors when they are unable to fill rosters because of staff leave or resignations. This is a costly short-term solution to an ongoing or repeated problem, as locum pay rates are high and Local Health Districts are obliged to pay for their transport and accommodation. It is also unsatisfactory from the perspective of workforce development; while many locums are competent and experienced practitioners, their short-term engagement in a health service militates against review, training, and the attainment of consistent health service quality.

## 4.5 Sustaining the specialist workforce

The number of specialists in regional centres has increased, and specialists have also continued their long-standing visiting arrangements to many smaller rural locations.

One of the consequences of the growth of scientific medicine and advances in health technology has been an increasing reliance on specialisation and super-specialists. As regional centres expand, Local Health Districts recruit a mixture of staff specialists and VMO specialists, and gradually work towards building a sufficient specialist workforce to meet population needs. A stable local specialist workforce relies on a sufficient volume of patients to maintain viability, and also on a sufficient number of specialists to provide 24-hour, seven-day cover without burnout. For specialties where the volume of emergency presentations is likely to be high, such as orthopaedic surgery, gastroenterology and cardiology, the presence of only a single on-call specialist is undesirable.

Several models of medical specialist service delivery have evolved to provide for residents of regional, rural and remote NSW. They may either be staff specialists employed by a Local Health District, or VMOs working on a fee-for-service basis, or a combination. Many specialists have visiting arrangements in regional, rural and remote sites, including ACCHSs, either on a short fly-in, fly out basis, or for longer periods.

## 4.6 Education and training for the rural health workforce

The Australian Government, in collaboration with states, territories, local health authorities and professional bodies, has made extensive investments in the training of doctors for rural service. The numbers of medical students have greatly increased throughout Australia over the last 20 years, and 25% of domestic students are of rural origin.

The expanding numbers of specialists provide a mechanism for supporting the training of medical students and junior doctors working in regional centres and other rural hospitals, and also the training and updating of rural generalists. The Australian Government, with cooperation from state and territory governments, has invested substantially in rural health professional education (especially medical education) over the last 25 years. This investment has been made through several funding programs, which since 2016 have been consolidated into the Rural Health Multidisciplinary Training

(RHMT) Program, managed by the Department of Health. Funds have been allocated to establish university departments of rural health, which provide rural placements throughout Australia for students in medicine, nursing, and allied health, and rural clinical schools, and which provide clinical placements for medical students. Since 2018, the RHMT Program has funded the establishment of a number of full-length medical programs in NSW and Victoria, with student intakes commencing in 2021 and 2022. The investment is based on consistent evidence that students who experience rural environments are more likely to pursue rural careers, as are students of rural origin.[39] Students contribute to rural and remote health care by participating in health professional teams under appropriate supervision, an approach known as 'service-led learning'.

The expansion of support for rural medical student placements has parallelled a large growth in the numbers of medical students – and graduates – throughout Australia. This has been achieved both by the establishment of new medical schools and increases in student enrolments. Reports from Medical Deans Australia and New Zealand indicate that, between 2008 and 2018, the total number of medical students in Australia increased by 28%. In 2018, 3,822 styudents began studying medicine – approximately double the number in 2002. Of these, 83% were domestic and 17% were international.[40] Universities participating in the RHMT Program are required to ensure that at least 25% of commencing domestic students have a rural origin. The observation that students of rural origin are more likely to pursue rural careers[39], coupled with the increased student numbers overall, suggests that the number of graduates who might take up country practice will grow in coming years. Approximately one-quarter of commencing medical students are bonded to serve for a limited time in an 'area of need' after they graduate, but these include peripheral urban locations as well as rural sites.

At the postgraduate level, it is now commonplace for rural group general practices and ACCHSs to provide placements for GP registrars, who significantly supplement the rural GP workforce and account for some of the growth in GP numbers shown in Tables 3 and 4. In addition, since 2017 the RHMT Program has provided funding for Regional Training Hubs which support the training of rural specialists and generalists in regional centres, in collaboration with the professional colleges and Local Health Districts. The Australian Government is planning to expand this model to rural allied health professional training.

An evaluation of the RHMT Program has indicated positive trends[41], summarising its effects as follows:

> This evaluation found that overall, the RHMT program has been an appropriate response and important contributor to addressing rural workforce shortage. After two decades it is a strong foundation for rural health workforce training and research in rural, remote and regional areas which is now considered routine... The evaluation found strong evidence of the positive impact of longer-term rural medical placements on rural workforce outcome. This is supported by the available literature that demonstrates after controlling for rural background, students who are RCS [rural clinical school] participants are significantly more likely to take up rural practice; and those exposed to clinical training in both general practice and rural hospital settings were associated with subsequent practice in smaller regional and rural centres.

## 4.7 Providing seamless care

There remain challenges in coordinating the diverse rural workforce to provide seamless care for rural communities.

As described above. the workforce and service models introduced to develop and sustain rural health care capacity form a complex mosaic, the elements of which also interact in complex ways. In each area, the aim is to use the available resources of expertise and technology to maximum effect. Collectively, the capacity of clinical services to provide continuity of care for patients depends on networking and communication technology, and on overcoming the inevitable fragmentation due to disparate funding and organisational mechanisms.

As with the service delivery models, there are many different and evolving approaches to workforce. While primary care forms the core of rural health services, evidence suggests that current models are not meeting the needs of rural communities; fee-for-service models may not be the most effective approach to providing seamless primary care and efforts to attract and retain more rural general practitioners continue to be needed. The increasing diversity of different kinds of health practitioners (including rural generalists and nurse practitioners) has the potential to improve services in rural areas. However, it will be critical to ensure that the workforce is organised to provide seamless care that puts patients at the heart of delivery models.

The second and third papers in this series examine how the components of networked services are implemented in other health systems, and proposes options to ensure their stability and effectiveness in NSW.

# Appendix 1 – Timeline of initiatives impacting rural health services

***Legend:***

*Safety and quality* | *Government/ legal* | *Professional association*

*Tertiary education* | *Professional indemnity*

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| 1973 | Aus Govt / RACGP | RACGP establishes Family Medicine Program (FMP) for GP training with $1.1m funding from Australian Govt. |
| 1982 | Aus Govt / RACGP | Australian Govt-instigated review of FMP recommends improvements and changes to the program. A Certificate of Satisfactory Completion of Training is added as a formal end point. |
| 1985 | WA Govt | WA Govt commissions a review (the 'Kamien Report') to identify factors affecting the recruitment and retention of rural doctors. |
| 1986 | NSW | Health services in NSW delivered through 17 Area Health Services with separate governance. |
| May 1987 | Aus Govt | May Budget includes several announcements that adversely affect rural GPs, effective from 1 Aug 1987. These include removal of after-hours loading for all GP consultations, removal of payment for administering IV fluids and reducing payment for ECG reading. |
| 1987 | Aus Govt | NSW Rural Doctors' Dispute triggered by changes to Medicare Benefits Schedule, including the removal of the after-hours loading. The dispute led to the resignation of almost all rural GPs from more than half of rural hospitals across NSW. |
| 1987 | RDA NSW | Rural Doctors Association formed in NSW – the first RDA in Australia |
| 1988 | NSW | Foundation of what was to become the NSW Rural Doctors Network, offering practical assistance and advice to GPs and rural communities including for recruitment and retention. |

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| 1 August 1988 | NSW | Resolution of the NSW Rural Doctors' Dispute with the introduction of a new fee structure known as the NSW Rural Doctors Association Settlement Package (RDASP). The RDASP became the national benchmark for rural and remote GPs and has been credited in the literature as a successful measure in reducing migration to cities of experienced country doctors. |
| 23 March 1989 | Qld | Qld Industrial Relations Commission grants a number of additions to the industrial award between Queensland Health and Medical Superintendents with Right of Private Practice (MSRPP), including recreation, study leave and locum cover provisions. The development contributes to the formation of the Rural Doctors Association of Queensland (RDAQ). |
| 1989 | WA | Funding of $2m granted to Uni of Western Australia to establish the Western Australian Centre for Remote and Rural Medicine (WACRRM), which was set up the following year. WACRRM's role was to assist in the recruitment and retention of rural GPs and as a point of focus for rural general practice in WA, and became a template for rural GP support and collaboration nationally. |
| 1989-1995 | Aus Govt | Introduction of Vocational Register for GPs, recognising general practice as a distinct professional discipline, with existing GPs initially able to apply for grandfathering subject to minimal criteria. |
| August 1990 | Aus Govt | Establishment of the Rural Health Support Education and Training (RHSET) program to enhance rural communities' access to effective health services. |
| 1990 | State and Aus Govts | First rural health training unit (Cunningham Centre, Toowoomba Qld) is created in response to rural health workforce shortage. |
| October 1990 | RACGP | RACGP Convocation (an advisory body to the College governing Council) votes in favour of creating a National Rural Faculty of the College. |
| January 1991 | Monash Uni | Monash Uni School of Rural Health is formed in Moe, Victoria. |
| 14–16 February 1991 | RDAQ/National | First National Rural Health Conference is held in Toowoomba, Queensland. |
| 1991 | RDAA | Rural Doctors Association of Australia (RDAA) is incorporated. |
| 26 April 1991 | RACGP | RACGP Council votes to form a national Faculty of Rural Medicine. |
| May 1992 | Aus Govt | Federal Budget 1992–93 announces funding to establish Divisions of General Practice; development of standards for general practice; and $15.2 million annually from 1993–94 |

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| | | onwards (indexed) for a GP Rural Incentives Program with the following five elements:<br>• Relocation incentive grants worth ~$20,000 each<br>• Training grants of up to $50,000 each to enable GPs to upskill as necessary<br>• Remote area grants of ~$50,000 each for recruitment and retention of GPs in very remote or isolated areas<br>• Undergraduate rural support grants to increase medical students' exposure to rural practice and gain skills<br>• Rural continuing medical education (CME) and locum support grants. |
| 1992 | RACGP | Rural Training Stream created within FMP to recognise the distinct characteristics and need of rural general practice, especially the requirement for procedural skills. |
| October 1992 | Cochrane Centre | The Cochrane Centre opens in Oxford, UK. The Centre is an organised attempt to disseminate and implement the ideas espoused in Archie Cochrane's 1972 book *Effectiveness and Efficiency: random reflections on health services*, which argued for the importance of randomised controlled trials in assessing the evidence behind new treatments. |
| 1993 | Aus Govt | Introduction of Rural Undergraduate Support and Coordination Program (RUSC) which (with the subsequent Rural Clinical School and Rural Clinical Training and Support programs) require that:<br>• 25% of federally funded medical school intakes be students from rural backgrounds<br>• Students undertake a four-week rural placement<br>• At least 12 months of students' clinical training takes place in a rural area. |
| 1993 | RACGP | The FMP is renamed the RACGP Training Program |
| 1993 | All jurisdictions | Introduction of MPS model nationally. |
| October 1993 | Cochrane Collaboration | The Cochrane Collaboration is launched at the first Cochrane Colloquium in Oxford, UK, a watershed moment in the global movement for evidence-based medicine (EBM). |
| 2 December 1993 | NSW | *Health Care Complaints Act 1993* (NSW) receives vice-regal assent. The Act establishes the NSW Health Care Complaints Commission. |
| February 1994 | Cochrane Collaboration | The Australasian Cochrane Centre is established at Flinders University in South Australia. |
| 1 July 1994 | NSW | NSW Health Care Complaints Commission commences operations. |

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| August 1994 | Qld | In response to a case brought by the State Public Services Federation of Queensland (SPSFQ), seeking increased payment for doctors working under the Queensland State Medical Specialist and Medical Officers' Award, the Qld Industrial Relations Commission hands down an in-principle judgement that states doctors holding a Fellowship in rural medicine – as and when such a qualification is created and recognised by the RACGP – should be "rewarded by increasing their award to two increments above that of an FRACGP". This fuels both the push for a rural fellowship from rural doctors (particularly those from Queensland) within the RACGP, and, when the existence of this conditional finding becomes known among the RACGP Council members in 1996, further resistance to it. |
| October 1994 | Cochrane Collaboration | First public demonstration of the Cochrane Database of Systematic Reviews |
| 3 December 1994 | RACGP | RACGP Council resolves to award a Graduate Diploma in Rural General Practice to doctors who complete the rural training scheme, rather than a separate Fellowship in Rural Medicine, on the grounds that a Fellowship risks undermining the primacy of the FRACGP and creating a cadre of 'super-GPs'. The decision further alienates rural GPs and Rural Faculty Members. |
| 1994/95 | Aus Govt | The Better Practice Program (BPP) is introduced to provide supplemental income to accredited Australian general practices and an incentive for practices to seek accreditation. |
| 1994 | AHMC | Aus Health Ministers' Conference endorses the first National Rural Health Strategy. |
| 22–23 July 1995 | RACGP | RACGP Faculty of Rural Medicine presents College Council with four non-negotiable demands to forestall a split, being:<br>• Establishment of a Faculty of Rural Medicine (rather than a rural faculty of the RACGP)<br>• Replacement of the Graduate Diploma with Fellowship in Rural Medicine<br>• The College's Faculty of Rural Medicine to have oversight of Fellowship curriculum and examinations<br>• Establishment of a separate four-year rural training program, rather than a supplementary year to College training scheme. |
| April 1996 | Cochrane Collaboration | The Cochrane Library, including the Cochrane Database of Systematic Reviews, becomes available worldwide as a quarterly publication on CD-ROM. |
| August 1996 | RACGP | The RACGP Council rejects the Faculty of Rural Medicine's demands. |

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| 1996 | Aus Govt / tertiary education sector | Announcement of seven Uni departments of rural health, a key component of incoming Coalition Govt's rural workforce strategy. |
| 1996 | Aus Govt | Announcement of John Flynn Scholarships for GP students to allow rural placement during vacation. The program comes into effect in 1997. |
| 1996 | Aus Govt | Vocational registration (obtained either through grandfathering, or successful completion of RACGP Training Program) is made a condition of eligibility for higher VR Medicare rebates. Places in the RACGP Training Program are limited to 400 per year, with provider numbers restricted accordingly. |
| May 1996 | RDAA | RDAA releases results of a plebiscite of rural doctors testing their views on rural training and representation. Two-thirds (1000/1500) of rural GPs say they are unhappy with rural training standards and with RACGP representation, creating the opportunity to form ACRRM. RACGP President Dr Col Owen and RACGP Rural Faculty representative Dr Bruce Chater announce they are foundation members of ACRRM. |
| July 1996 | RACGP | RACGP publishes first edition of the *Entry Standards for General Practice*, used as the criteria for awarding general practice accreditation. |
| September 1996 | Cochrane Collaboration | The Cochrane Database of Systematic Reviews becomes globally available for download via the internet. |
| 1996 | RACGP | The criteria for the Graduate Diploma in Rural General Practice and the Rural Fellowship are finalised. |
| January 1997 | ACRRM | Formal establishment of Australian College of Rural and Remote Medicine (ACRRM), which publishes its first curriculum in 1998. The split that led to ACRRM's creation is described by Kamian as 'the biggest calamity to befall the RACGP since its inception in 1958'. |
| February 1997 | RACGP | First Graduate Diploma in Rural General Practice is awarded by the RACGP Council. |
| March 1997 | COAG | National Expert Advisory Group on Safety and Quality in Australian Health Care is established to provide practical advice to health ministers on further steps to improve the safety and quality of health care services. |
| May 1997 | RACGP/ ACRRM | RACGP recognises ACRRM as having expertise in rural medicine and establishes a consultative structure, but mistrust and poor relations continue for at least another three years. |
| May 1997 | Aus Govt | The 1997–98 Federal Budget allocates $17.4m over four years to establish National Rural and Remote Health Support Program to: |

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| | | • Commission a range of projects focusing on best practice models of care in rural and remote areas<br>• Develop a national rural and remote health research agenda, in consultation with states and territories and other stakeholders<br>• Consult with specialist medical colleges regarding selection of trainees and accreditation of training positions<br>• Negotiate with states and territories on funding arrangements for additional training places in areas of need. |
| 1997 | Aus Govt | Federal Health Minister Michael Wooldridge establishes the General Practice Strategy Review group to review the 1992 strategy (*The Future of General Practice: A Strategy for the Nineties and Beyond*). |
| 1997 | Aus Govt | Australian Divisions of General Practice (ADGP) established |
| 1997 | Aus Govt/ tertiary education sector | First University Departments of Rural Health are established in Broken Hill and Mount Isa. |
| 19 December 1997 | NSW | *Health Services Act 1997* (NSW) receives Assent, consolidating previous legislation from 1929 and 1986 and including several new provisions. The Act defines Visiting Medical Officers as independent contractors requiring their own personal accident and public liability insurance arrangements. |
| 1998 | Aus Govt | Development of Rural Workforce Agencies in each state and territory to address rural GP shortfall and provide support and training for existing rural GPs. |
| 1998 | Aus Govt | General Practice Partnership Advisory Council (GPPAC) is established. |
| 18 June 1998 | UK Govt | The UK Health Secretary announces to the UK Parliament the establishment of the Bristol Royal Infirmary Inquiry to investigate concerns over standards of care and suspected excess mortality in the hospital's paediatric coronary surgery unit. The Inquiry's report is provided to the UK Government in July 2001. |
| February 1999 | RACGP/ ACRRM | RACGP and ACRRM establish a Joint Venture Board (JVB) to develop a shared approach to GP training, which is then largely controlled by the RACGP with Australian Government funding. |
| 1999 | Aus Govt | Australian Government commissions a 'Rural Health Stocktake' by Dr Jack Best OAM. |

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| 1999 | Cochrane Collaboration | The Australasian Cochrane Centre relocates to Melbourne. |
| July 1999 | Aus Govt | Better Practice Program is abolished and replaced by Practice Incentives Program (PIP), including the GP Immunisation Incentives Program. The PIP is restricted to accredited general practices. As well as quality-related payments covering topics such as quality prescribing and clinical care for asthma, diabetes and cervical screening, the PIP also includes several components of particular benefit to rural practices including:<br>• Aboriginal health<br>• After-hours care<br>• Teaching<br>• Tiered payments for procedural skills<br>• A rural loading applied to the total PIP practice payment. |
| August 1999 | Aus Govt, RDAA, AMA, RACGP, ADGP | Aus Govt and four medical bodies sign the GP Memorandum of Understanding (MoU), which provides for guaranteed annual increases in MBS rebates over the life of the agreement, and includes an extra $26.5m over three years for rural initiatives including an extra $12m for rural retention grants. |
| 1999 | Aus Govt | Introduction of Rural Retention Program which pays GPs quarterly lump sums based on rurality and activity level, as financial incentivisation for rural medical practice. |
| 1999 | Aus Govt | Introduction of Enhanced Primary Care Program which provides annual payment for health care assessment for older people, care planning and multidisciplinary care (and in 2005, payment for referred allied health services) through new EPC MBS items. |
| 1999 | Aus Govt | Announcement of a Medical School at James Cook University in Townsville. |
| January 2000 | Aus Govt Min for Health | Australian Council on Safety and Quality in Health Care is established as a time-limited, expert advisory body (term due to end June 2006). |
| 31 January 2000 | Preston Crown Court (UK) | British general practitioner Harold Shipman is found guilty at Preston Crown Court of the murder of 15 patients in his care and is sentenced to life imprisonment. A subsequent inquiry chaired by former High Court judge Dame Janet Smith estimates Shipman killed about 250 patients between 1971 and his arrest in 1988. An analysis published in 2003 suggested Shipman could have been apprehended in 1996 had a system of statistical monitoring been in place, as by then 67 excess deaths among his female patients aged over 65 years was apparent. The number of excess deaths grew to 119 by the time of his arrest. |

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| 2000 | Aus Govt | Implementation of Rural Australia Medical 2000 Undergraduate Scholarship (RAMUS) scheme to help people from rural areas train in General Practice. |
| 3 May 2000 | Aus Govt | Minister Wooldridge informs RACGP and others that arrangements for GP training will move to competitive tender, ending the role of the RACGP as sole provider of GP education. The new arrangements are to be run by General Practice Education and Training (GPET), with the new system to be running by 2002. |
| May 2000 | Aus Govt | Minister Wooldridge announces moves to recruit overseas-trained doctors to fill places in areas of medical workforce shortage. |
| 2000 | Aus Govt / USyd | Establishment of first Rural Clinical School at Wagga providing at least one year of rural-based clinical training for 25% of Australian medical students. |
| 2000 | JCU | First regional medical school founded by James Cook Uni, Townsville. |
| 2000 | Aus Govt / tertiary education sector | Expansion of University Department of Rural Health program to include four additional departments. |
| May 2000 | Aus Govt | More Doctors, Better Services: Federal Budget 2000–01 initiatives for rural health include:<br>• $102.1m over four years to increase GP training places from 400 to 450 per year, 200 of which to be in rural and regional areas<br>• $49.5m over four years to increase the range of allied health services available in rural and regional areas<br>• $48.4m to increase the availability of medical specialist services in rural areas, through outreach incentives, travel costs and mentorship program funding<br>• $10.2m over four years for Divisions of General Practice to enhance their recruitment and retention activities.$162m for doctors to undertake GP training in rural areas, supported by measures allowing 100 extra medical students annually to gain university places in exchange for rural practice; allowing graduates to 'work off' their HECS debt by practising in rural areas; and expanding the RAMUS scheme. |
| November 2000 | National | The market-leading medical indemnity provider, United Medical Protection (UMP), imposes a 'call' on its members, requiring them to pay an entire extra year's subscription. The move disproportionately affects doctors practising anaesthetics and obstetrics, including rural procedural GPs. UMP's membership comprises about 70% of all practising doctors in Australia, |

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| | | including 12,600 GPs nationally. The move triggers the national medical indemnity crisis of 2000–01. |
| 5 March 2001 | Aus Govt | Establishment of General Practice Education and Training (GPET) to establish the Australian General Practice Training (AGPT) program as a regionalised training program through 22 Regional Training Providers (RTPs). |
| 5 July 2001 | NSW | *Health Care Liability Act 2001* (NSW) receives vice-regal assent. The Act introduces a number of provisions that end the medical indemnity crisis, including:<br>• A requirement for doctors to take out indemnity insurance<br>• A ban on imposition of exemplary or punitive damages<br>• A cap on awards for loss of earnings<br>• A $350,000 cap on damages for non-economic loss, with a requirement that no damages for non-economic loss be awarded unless the case is assessed as at least 15% of "a most extreme case"<br>• Exclusion of awards for interest for non-economic loss, and introduces a sliding scale for damages between 15–33% of a most extreme case. |
| October 2002 | Cochrane Collaboration | The resources of the Cochrane Library become freely available to all Australians with internet access following the Australian Government's decision to fund a national subscription. |
| 11 February 2003 | Medical Board of Queensland | The Medical Board of Queensland approves an application for Dr Jayant Patel, a doctor from the United States, to be granted medical registration for one year so as to take up a position at the Bundaberg Base Hospital, in an area of workforce need, as a Senior Medical Officer in surgery. He is later in 2003 made Director of Surgery at the hospital. |
| 2003 | Aus Govt | Objectives of lapsing UDRH program revised to emphasise increasing and improving rural experiences for undergrad health students, research on rural and remote health issues, and innovating in service delivery models. |
| May 2004 | Aus Govt | Rural Health Strategy announced in 2004–05 Federal Budget with key elements:<br>• Bonded Medical Places Scheme<br>• Prevocational General Practice Placement Program. |
| May 2004 | Aus Govt | 2004–05 Federal Budget replaces Enhanced Primary Care (EPC) MBS items with Chronic Disease Management (CDM) MBS items (items 721 to 732). |
| May 2004 | Aus Govt | 2004–05 Federal Budget allocates $302.4 million over four years to refund the Divisions of General Practice. |

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| 20 August 2004 | NSW | Amendment to *Health Services Act 1997* (NSW) establishes NSW Clinical Excellence Commission. |
| 1 January 2005 | NSW | Health services in NSW reorganised into eight Area Health Services with departmental governance (reducing from the previous 17 AHSs). |
| March 2005 | Aus Govt | Australian Government requests Productivity Commission to review health workforce issues. |
| 22 March 2005 | Queensland | Allegations regarding inadequate care provided at Bundaberg Base Hospital are aired in the Queensland Parliament. |
| 23 May 2005 | Queensland Govt | The Bundaberg Hospital Commission of Inquiry (the 'Morris Inquiry') commences hearings in Brisbane. |
| 1 September 2005 | Queensland Govt | The Queensland Government disbands the Morris Inquiry following a ruling by the Supreme Court of Queensland that upheld allegations of bias against government health officials. |
| 8 September 2005 | Queensland Govt | The Queensland Government establishes the Queensland Public Hospitals Commission of Inquiry (the 'Davies Inquiry'). |
| December 2005 | Productivity Commission | Productivity Commission delivers *Australia's Health Workforce* report (released January 2006). |
| 2006 | RACGP | RACGP replaces its Diploma in Rural General Practice with a new Fellowship in Advanced Rural General Practice (FARGP). |
| 2006 | Monash Uni | Monash Uni establishes Dept of Rural and Indigenous Health. |
| May 2006 | Aus Govt | 2006–07 Federal Budget introduces Better Access scheme through Medicare to increase access to psychiatrists and psychologists. |
| July 2006 | COAG | COAG agrees to establish a single national registration scheme for health professionals. |
| 2006 | RACGP | RACGP Diploma in Rural General Practice is accredited as a formal tertiary qualification; the RACGP replaces it with a new Fellowship in Advanced Rural General Practice (FARGP). |
| 2006 | COAG | Australian Commission on Safety and Quality in Health Care is established, initially for five years. |
| February 2007 | AMC | Australian Medical Council grants initial accreditation to ACRRM "as a standards body and provider of specific training and professional development programs for the specialty of general practice, subject to conditions". This includes accreditation of education and training leading to Fellowship of the ACRRM. |

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| 29 January 2008 | NSW Govt | Following ongoing controversy over the quality and safety of health care, including the death of a 16-year-old girl who died in November 2005 after being struck by a golf ball, the NSW Government sets up a Special Commission of Inquiry into Acute Care Services in NSW Public Hospitals (the 'Garling Inquiry'). |
| March 2008 | COAG | Prime Minister, Premiers and Chief Ministers sign intergovernmental agreement to establish national registration and accreditation scheme by 1 July 2010. |
| 2008 | Aus Govt | Evaluation of the UDRHs and Rural Clinical Schools Program. Recommended maintaining flexibility and innovation of both programs, increased collaboration, consideration of further expansion |
| May 2008 | Aus Govt | 2008–09 Federal Budget allocates $181.7m to set up 36 GP Super Clinics in areas of need. |
| May 2009 | Aus Govt | The Rural Health Workforce Strategy is announced in 2009–10 Federal Budget with the following key elements:<br>• GP Rural Incentives Program (commenced 1 July 2010) – combined two previously available retention payments plus a relocation incentive<br>• Scaling initiatives (weighting incentives according to rurality; enabling reduction in 10-year Medicare moratorium for overseas-trained doctors (OTDs) practising in regional, rural and remote areas)<br>• Rural GP Locum program<br>• HECS repayment scheme to fast-track repayments for rural and remote doctors. |
| 2009 | Aus Govt | Rural Clinical Schools at the University of Notre Dame Sydney, Deakin University and University of Western Sydney are all approved. |
| 1 September 2009 | NSW | Amendment to *Health Services Act 1997* (NSW) establishes NSW Bureau of Health Information (BHI). |
| 11 January 2010 | NSW | Amendment to *Health Services Act 1997* (NSW) establishes NSW Agency for Clinical Innovation (ACI). |
| 2010 | Aus Govt | Health Workforce Australia is established, with mandate to explore innovations in clinical training. |
| 7 April 2010 | Aus Govt | Aus Govt announces eight successful projects for funding under the $560m Regional Cancer Centres program, intended to fund up to 20 such centres nationally. |
| 29 June 2010 | Queensland Supreme Court | Dr Jayant Patel is found guilty in the Queensland Supreme Court of the unlawful killing of three patients and causing grievous bodily harm to a fourth, and on 1 July 2010 is jailed |

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| | | for seven years. (In 2012 these convictions are quashed on appeal to the High Court of Australia.) |
| 1 July 2010 | COAG | The National Registration and Accreditation Scheme starts in all states and territories except Western Australia. Ten professions are included in the new scheme: chiropractic, dental, medical, nursing and midwifery, optometry, osteopathy, pharmacy, physiotherapy, podiatry, and psychology. |
| October 2010 | WA | The National Registration and Accreditation Scheme starts in Western Australia. |
| 10 Dec 2010 | Aus Govt | Launch of MyHospitals website providing hospital-level ED and elective surgery waiting times data for 2009–10, data on outpatient services in 2008–09, and some capacity data such as bed numbers. |
| 2011 | COAG | National Strategic Framework for Rural and Remote Health approved by Ministers. |
| 1 January 2011 | NSW | NSW replaces its eight Area Health Services with 17 Local Hospital Networks (in alignment with COAG model of National Health and Hospitals Network). |
| February 2011 | COAG | Heads of Agreement – National Health Reform agreed by COAG. |
| July 2011 | Aus Govt | The 108 Divisions of General Practice nationally begin to be replaced by 61 Medicare Locals. |
| 1 July 2011 | NSW | Legislation comes into force to reorganise the NSW LHNs as Local Health Districts, responsible for the management and governance of clinical services in their respective areas. |
| 1 July 2011 | Aus Govt | Medicare rebates and financial incentives for specialist video consultations are introduced to address barriers to accessing medical services for Australians in remote, regional and outer-metropolitan areas. |
| August 2011 | COAG | National Health Reform Agreement is signed, including:<br>• The national introduction of activity-based funding (ABF) for public hospitals where practicable<br>• A focus on improving performance through establishment of National Health Performance Authority and local-level reporting against various measures including those in the Performance and Accountability Framework. |
| 2012 | COAG | The Australian Commission on Safety and Quality in Health Care is established as a permanent portfolio agency of the Australian Government Department of Health, jointly funded by all jurisdictions. |

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| 1 July 2012 | National | Four more professions – Aboriginal and Torres Strait Islander health practice, Traditional Chinese Medicine, medical radiation practice and occupational therapy – are included in the National Registration and Accreditation Scheme. |
| March 2013 | Aus Govt | The National Health Performance Authority launches the MyHealthyCommunities website to host local-level performance reports on population health, patient experiences of care and primary health care services, with data broken down at the level of various geographic areas, including Medicare Local (later Primary Health Network) catchment areas, Statistical Areas Level 2 and 3 (SA2s and SA3s), and for some measures, postcodes.. |
| 2013 | Aus Govt | Mason Review of Australian Government health workforce programs recommends development of rural training pathways especially generalist training. |
| December 2013 | Aus Govt | Australian Government Minister for Health asks former Chief Medical Officer Prof John Horvath to conduct a review of Medicare Locals. |
| 6 Aug 2014 | Aus Govt | Health Workforce Australia is abolished and its functions absorbed into the Australian Government Department of Health. |
| 2015 | Griffith Uni | Griffith Uni Rural Clinical School is established. |
| 1 July 2015 | Aus Govt | The 61 Medicare Locals nationally are abolished and replaced by 31 Primary Health Networks (10 in NSW, 7 in Qld, 6 in Vic, 3 in WA, 2 in SA, and 1 each in Tas, NT and ACT). Govt states key difference is that PHNs commission, not provide, services. Role of PHNs is:<br>• To improve the efficiency and effectiveness of medical services for patients, particularly those at risk of poor health outcomes<br>• To improve the coordination of care to ensure patients receive the right care, in the right place, at the right time. |
| 2015 | Aus Govt | Rural Health Multidisciplinary Training Program is established to integrate rural workforce strategies administered by universities |
| 2015 | Aus Govt | Medical Rural Bonded Scholarship Scheme closes at the end of 2015, with its 100 places transferred to Bonded Medical Places Scheme. |
| Nov 2015 | ACSQHC, NHPA | The Australian Commission on Safety and Quality in Health Care and National Health Performance Authority publish the first *Australian Atlas of Healthcare Variation*, reporting local-level (SA3s and hospitals) results across a range of measures |

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| 2016 | Aus Govt / tertiary education sector | Expansion of University Departments of Rural Health within new Rural Health Multidisciplinary Training Program. |
| 2016 | Aus Govt | Rural Locum Assistance Program funded under Health Workforce Program (administered by Aspen Medical) – $35.6m to June 2019 to enhance ability of obstetricians, anaesthetists and procedural GPs to take leave for CME/CPD purposes and to assist metro-based GPs to upskill in emergency medicine as preparation for rural locum work. |
| 1 July 2016 | Aus Govt | National Health Performance Authority abolished, local-level performance reporting functions transferred to Australian Institute of Health and Welfare. |
| 2016 | NSW | ACI develops the 'Living Well in an MPS' Toolkit, including eight principles of care and self-assessment checklist. |
| 13 Apr 2017 | Aus Govt | Locations announced for planned 26 regional training hubs, the concept of which was earlier announced under the Integrated Rural Training Pipeline for Medicine (IRTP) and implemented through the Rural Heath Multidisciplinary Training Program. |
| 2017 | Aus Govt / tertiary education sector | Three additional UDRHs established in Kimberley, Southern Qld and Three Rivers (NSW). |
| 7 June 2017 | ACSQHC and AIHW | ACSQHC and AIHW publish the *Second Australian Atlas of Healthcare Variation*. |
| June 2017 | Health Ministers | Health Ministers endorse *National Safety and Quality Health Service (NSQHS) Standards (second edition).* |
| 2017 | Aus Govt | Rural General Practice Program is merged with the Rural Health Professional Program to create the new Rural Workforce Support Activity (RWSA) focusing on access, quality, and sustainability. |
| 2017 | Aus Govt | Health Workforce Scholarship Program is established with $33m over three years to June 2020, replacing a number of previous schemes. |
| September 2017 | National | The Australian Health Ministers' Advisory Council endorses the Australian Health Performance Framework as a tool for reporting on the health of Australians and the performance of health care services in Australia. The framework has indicators grouped into four domains: determinants of health, health status, the health system (including effectiveness, safety, appropriateness, continuity, accessibility, efficiency and sustainability of health care), and health system context. |
| November 2017 | ACSQHC | *National Safety and Quality Health Service (NSQHS) Standards (second edition)* publicly released. |

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| 28 November 2017 | Ahpra | Medical Board of Australia releases a new Professional Performance Framework for medical practitioners, in response to the final report of the Board's Expert Advisory Group on revalidation. The framework has five key components:<br>• Strengthened continuing professional development (CPD) requirements<br>• Active assurance of safe practice<br>• Strengthened assessment and management of medical practitioners with multiple substantiated complaints<br>• Guidance to support practitioners<br>• Collaborations to foster a culture of medicine that is focused on patient safety, based on respect and encourages doctors to take care of their own health and well-being. |
| May 2018 | Aus Govt | Aus Govt announces *Stronger Rural Health Strategy – Overseas Trained Doctors in areas of doctor shortage* initiative as part of 2018–19 Budget, including a range of incentives, targeted funding and bonding arrangements to increase opportunities for medical training in rural areas and to encourage rural medical practice. |
| December 2018 | National | Paramedics become the 15th professional group to be included within the National Registration and Accreditation Scheme. |
| 10 Dec 2018 | ACSQHC and AIHW | ACSQHC and AIHW publish the *Third Australian Atlas of Healthcare Variation*. |
| 2019 | Aus Govt | Stronger Rural Health Strategy is launched, and includes changes to bonded medical places, support for nursing workforce, OTDs in areas of workforce shortage, focusing of bulk-billing incentives on rural areas, and the Workforce Incentive Program which is allocated $513.6 million in 2020–21 for two streams of incentive payments (one for doctors, one for practices). |
| 2019 | Aus Govt | 2019–20 Federal Budget commits $62.2m to create a National Rural Generalist Pathway to attract, retain and support rural generalists. |
| 2019 | Aus Govt | A Review of the MPS program finds the program to be 'a sound model for delivering integrated health and aged care services in rural and remote communities' and makes 12 recommendations. |
| 2020 | All Govts | All Australian governments sign an Addendum to the National Health Reform Agreement 2020–2025, committing IHPA to integrate safety and quality into the pricing and funding mechanisms for public hospital services, with reforms already under way in three key areas: sentinel events, hospital- |

| Date | Jurisdiction or agency | Initiative |
|---|---|---|
| | | acquired complications (HACs), and avoidable hospital readmissions. |
| 13 March 2020 | Aus Govt | Introduction of temporary MBS telehealth items to reduce risk of COVID-19 transmission (time-limited, measures extended to 31 Dec 2021). |
| 12 October 2020 | Aus Govt | Roll-out of Rural Generalist Pathway program commences in Murrumbidgee region. |
| 28 April 2021 | ACSQHC and AIHW | ACSQHC and AIHW publish the *Fourth Australian Atlas of Healthcare Variation*. |
| May 2021 | ACSQHC | The ACSQHC releases an updated version of the *National Safety and Quality Health Service (NSQHS) Standards (second edition)*. The update includes the Preventing and Controlling Infections Standard, which supersedes the NSQHS Preventing and Controlling Healthcare-Associated Infection Standard (2nd ed.). The revision accommodates lessons learned from the response to SARS-CoV-2 (COVID-19), and better supports health service organisations to prevent, control and respond to infections that cause outbreaks, epidemics or pandemics, including novel and emerging infections. |
| 11 May 2021 | Aus Govt | The Federal Budget 2021–22 allocates $123m for rural health workforce initiatives, including:<br>• $29.5m to increase non-GP medical specialist training in areas of workforce shortage<br>• $12.4m to increase rural primary care rotations for doctors through the John Flynn Prevocational Doctor Program<br>• $9.6m to expand the Allied Health Rural Generalist Pathway. |
| 11 May 2021 | Aus Govt | Federal Budget 2021–22 allocates $65.8m to increased bulk-billing incentives for GPs working in rural locations. From 1 January 2022, the Rural Bulk Billing Incentive (RBBI) will progressively increase from the current rate of 150% of the incentive in metropolitan areas as classified under the Modified Monash Model (MM) to:<br>• 160% in MM 3–4, large and medium rural towns<br>• 170% in MM 5, small rural towns<br>• 180% in MM 6, remote areas<br>• 190% in MM 7, very remote areas. |
| 16 June 2021 | Aus Govt | The *Health Insurance Amendment (General Practitioners and Quality Assurance) Act* receives vice-regal assent, leading to the discontinuance in August 2020 of the Vocational Register of GPs. The change means the higher VR Medicare rebates from 16 June automatically flow to GPs registered with the Medical Board of Australia within the specialty of general practice. |

# Appendix 2 – Position papers, reports and other documents with implications for rural health services

***Legend:***

*Safety and quality*

| Date | Organisation or entity | Title |
|---|---|---|
| 30 September 1987 | NSW Govt | Report by Sir Nicholas Shehadie, commissioned by NSW Health Minister Peter Anderson, on methods and levels of remuneration for rural GPs in modified fee-for-service rural hospitals, is handed to govt. The report recommends improvements to rural GPs' access to CME and locums, and better recruitment practices. |
| Dec 1987 | WA Govt | *Report of the Ministerial Inquiry into the Recruitment and Retention of Country Doctors in Western Australia* (the 'Kamien Report') is provided to the WA Govt. |
| 1990 | Royal Commission into Deep Sleep Therapy (the 'Chelmsford Inquiry') | Final report |
| July 1992 | Aus Govt DoH, AMA, RACGP | *The Future of General Practice: A Strategy for the Nineties and Beyond* |
| February 1993 | AIHW | *Telemedicine in Australia: A discussion paper* |
| November 1995 | Aus Govt | *Review of Professional Indemnity Arrangements for Health Care Professionals (Australia). Compensation and professional indemnity in health care: final report* |
| November 1995 | MJA | The Quality in Australian Health Care Study is published. A review of the medical records of over 14,000 admissions to 28 hospitals in NSW and South Australia, it finds that 16.6% of these admissions were |

| Date | Organisation or entity | Title |
|---|---|---|
| | | associated with an adverse event, which resulted in disability or a longer hospital stay for the patient and was caused by health care management; 51% of the adverse events were considered preventable. In 77.1% the disability had resolved within 12 months, but in 13.7% the disability was permanent and in 4.9% the patient died. |
| 1998 | Aus Govt | Report of the Ministerial Review of General Practice Training: *General Practice Education: The Way Forward* |
| March 1998 | Aus Govt | Report of the General Practice Strategy Review Group: *General Practice: Changing the Future Through Partnerships*, which among other things calls for a greater focus on quality, better information management and use of IT, and more financial certainty for GPs including scrapping the BPP and replacing with the PIP. |
| July 1998 | National Expert Advisory Group on Safety and Quality in Australian Health Care | Interim report *Commitment to Quality Enhancement* presented to Health Ministers. |
| 1999 | National Rural Health Alliance | Release of *Healthy Horizons: A framework for improving the health of rural, regional and remote Australians.* |
| August 1999 | National Expert Advisory Group on Safety and Quality in Australian Health Care | Final report *Implementing Safety and Quality Enhancement in Health Care* presented to Health Ministers. |
| July 2001 | The Bristol Royal Infirmary Inquiry (UK) | *The Report of the Public Inquiry into children's heart surgery at the Bristol Royal Infirmary 1984–1995* is handed to the UK Government. The report finds about one-third of the children who underwent open heart surgery at the BRI during the period received sub-optimal care, resulting in the deaths of between 30 and 35 babies aged less than 1 year between 1991 and 1995. The report makes nearly 200 recommendations, which include calls for:<br>• Very sick children to be cared for in a "child-centred environment, by staff trained in caring for children and in facilities appropriate to their needs"<br>• More action to reduce barriers to safe care, including a focus on unsafe practices and aspects of professional culture that inhibit openness |

| Date | Organisation or entity | Title |
|---|---|---|
| | | • Tighter safeguards to ensure clinical competence of healthcare professionals<br>• The introduction of standards of care for healthcare professionals and separately for hospitals<br>• Openness about clinical performance through publication of hospital performance data<br>• Effective systems within hospitals to monitor clinical performance. |
| May 2002 | Australian Government | Publication of first Intergenerational Report. |
| July 2002 | Australian Council for Safety and Quality in Health Care | Publication of report *Lessons from the Inquiry into Obstetrics and Gynaecological Services at King Edward Memorial Hospital 1990-2000*, which summarises the findings of the Western Australian inquiry into care offered at the hospital and draws parallels with factors identified in the Bristol Inquiry in the UK the previous year, as both resulted from problems being identified by whistle-blowers rather than by routine monitoring systems. |
| 2003 | Productivity Commission | *General Practice Administrative and Compliance Costs: Research Report* finds workforce, financial, IT and other pressures on GPs are more pronounced in rural areas. |
| July 2004 | Australian Council on Safety and Quality in Health Care | *Standard for Credentialling and Defining the Scope of Clinical Practice: A National Standard for credentialling and defining the scope of clinical practice of medical practitioners, for use in public and private hospitals* |
| July 2004 | Australian Council on Safety and Quality in Health Care and National Institute of Clinical Studies | *Charting the Safety and Quality of Health Care in Australia* |

| Date | Organisation or entity | Title |
|---|---|---|
| 30 November 2005 | Queensland Public Hospitals Commission of Inquiry | The Davies Inquiry into the events at Bundaberg Hospital and some other public hospitals in Queensland recommends criminal charges be brought against Dr Jayant Patel, the former director of surgery at Bundaberg Base Hospital, and criticises officials for failing to address a culture hostile to open airing and investigation of errors. |
| 22 December 2005 | Productivity Commission | *Australia's Health Workforce* report proposes streamlining registration arrangements then split across 90-odd registration bodies into a national registration board. |
| March 2006 | Clinical Oncology Society of Australia | *Mapping Rural and Regional Oncology Services in Australia* – first national mapping of cancer services inn Aus finds significant service shortfalls in rural and regional areas, with COSA concluding that quality and availability was directly linked to lower survival in regional areas. |
| 13 April 2007 | COAG | Communiqué stating each of the nine health professions subject to regulation would establish their own national boards. |
| 2008 | ACSQHC | First *Australian Charter of Healthcare Rights* published. |
| 27 November 2008 | Special Commission of Inquiry into Acute Care Services in NSW Public Hospitals | Publication of the Inquiry's Final Report (the 'Garling Report). The Inquiry makes 139 recommendations and numerous observations in relation to rural hospitals, including the difficulties experienced in recruiting and retaining staff at all levels, progressive ageing of the rural hospital workforce, a reliance on expensive fly-in, fly-out arrangements as a consequence of recruitment difficulties, and gaps in on-the-ground training including a shortage of clinical nurse educators. Recommendations 12–14 of the report propose consideration of various solutions, including enhanced employment packages to make rural practice more attractive, and arrangements to facilitate the transfer of staff from metropolitan to regional and rural hospitals. |
| March 2009 | Commission for Healthcare Audit and | *Investigation into Mid Staffordshire NHS Foundation Trust* report finds higher than expected mortality rates |

| Date | Organisation or entity | Title |
|---|---|---|
| | Inspection (UK) ('The Healthcare Commission') | among patients aged 18 and over admitted to the Trust's hospitals as emergency patients. For the three years from 2005–06 to 2007–08 the Trust's standardised mortality ratio for patients aged 18 and over admitted as emergencies varied between 127 and 145. If the outcomes had been the same as expected in comparison with similar trusts, the SMR would have been 100. The report finds many examples of poor record-keeping, poor patient evaluation, inadequate staffing and equipment, insufficient nursing staff, poor supervision of junior doctors, poor infection control standards, and other failings, with patient care deemed 'unacceptable'. The Healthcare Commission report makes numerous recommendations to improve processes and procedures regarding the Trust's accident and emergency department, medical and nursing staffing, patient assessment and care, data collection and analysis, governance, and other areas. |
| 30 June 2009 | National Health and Hospitals Reform Commission | Final report presented to Australian Government. |
| 2009 | Clinical Oncology Society of Australia | *Bringing multidisciplinary cancer care to regional Australia: requirements for a regional cancer centre of excellence* |
| October 2009 | Clinical Oncology Society of Australia and Medical Oncology Group of Australia | *Improving cancer care for rural Australians* |
| November 2009 | RACGP | Position Statement – 10-year Moratorium for International Medical Graduates. |
| 24 February 2010 | The Mid Staffordshire NHS Foundation Trust Inquiry (UK) | *Independent Inquiry into care provided by Mid Staffordshire NHS Foundation Trust January 2005–March 2009* ('the Francis Inquiry) is provided to the UK Secretary of State for Health. The report makes a number of recommendations, the first being that the Trust should prioritise delivery of a high standard of patient care, and "not provide a service in areas where it cannot achieve such a standard". |
| December 2010 | ACSQHC | *Australian Safety and Quality Framework for Health Care* published after endorsement by Health Ministers |

| Date | Organisation or entity | Title |
|---|---|---|
| 15 January 2011 | NRHA | *An overview of the shortage of primary care services in rural and remote areas* |
| 6 June 2011 | NRHA | *Plan for a greater number of interns for rural, regional and remote settings in 2012* |
| 13 October 2011 | NRHA | *Plan to ruralise junior doctor training* |
| October 2011 | ACRRM | Physician Assistant Policy Position Statement |
| 2 February 2012 | NRHA | *Developing a national approach to brain injury rehabilitation services in rural and remote Australia* |
| 15 April 2012 | NRHA | *Achieving the best possible outcomes for people with acquired brain injury who live in rural and remote communities* |
| 26 April 2012 | NRHA | *Supporting and promoting rural medical prevocational training and practice* |
| 16 May 2012 | NRHA | *The NRHA's 20-point plan for improving health services and health workforce in rural and remote areas* |
| 18 June 2012 | NRHA | *Wanted: A uniform system for assessing health workforce strategies and targeting programs to attract health professionals* |
| 29 August 2012 | NRHA | *Locums and short-term contractors in the health workforce* |
| September 2012 | ACSQHC | *National Safety and Quality Health Service (NSQHS) Standards (first edition)* published |

| Date | Organisation or entity | Title |
|---|---|---|
| January 2013 | ACRRM | *Defining the Specialty of General Practice* Position Statement |
| February 2013 | Qld Health | *Evaluation and Investigative Study of the Queensland Rural Generalist Program* |
| November 2013 | ACRRM | International Statement for Rural Medical Generalism: Cairns Consensus Position Statement |
| May 2014 | Aus Govt | Review of Medicare Locals: Report to the Minister for Health and Minister for Sport, by Prof John Horvath |
| May 2014 | ACRRM | National Rural Generalist Pathway Position Statement |
| 3 June 2014 | RACGP | RACGP National Rural Faculty Position Statement on supporting the next generation to ensure a future rural general practice workforce. |
| 3 June 2014 | RACGP | RACGP National Rural Faculty Position Statement on advanced skills in rural general practice |
| 24 July 2014 | RACGP | RACGP National Rural Faculty Position Statement on Geographic Provider Numbers |
| 2014 | Royal Australasian College of Surgeons | Rural and regional surgical services position statement |
| 2014 | ACSQHC and AIHW | Publication of *Exploring Healthcare Variation in Australia: Analyses Resulting from an OECD Study,* a forerunner to the Australian Atlas of Healthcare Variation series |
| 2014 | NSW Ministry of Health | *NSW Rural Health Plan: Towards 2021* |

| Date | Organisation or entity | Title |
|---|---|---|
| March 2015 | RACGP | Position statement: *Provision of mental health services in rural Australia* |
| May 2015 | ACRRM | Telehealth Position Statement |
| 23 July 2015 | NRHA | Policy proposals endorsed by NRHA based on recommendations from 13th Nat Rural Health Conference |
| September 2015 | NRHSN | Quality Indigenous Health Curriculum position paper |
| September 2015 | NRHSN | Extended scope of practice position paper |
| October 2015 | ACRRM | Rural Workforce Development Position Statement |
| November 2015 | ACRRM | End of Life Care Position Statement |
| March 2016 | RACGP | *GP-led palliative care in rural Australia* |
| July 2016 | RACGP | Position statement: *GP-led aged care in rural Australia* |
| September 2016 | NSW Ministry of Health | *Reshaping the Multipurpose Service (MPS) Model in NSW* |
| October 2016 | ACRRM & RDAA | Position Statement: *The Role of the Rural GP in Disaster Response and Pre-Hospital Care* |
| 1 October 2016 | NRHA | *Food security and health in rural and remote Australia* |
| November 2016 | CPMC | Obesity CPMC Consensus Position Statement |
| November 2016 | RACGP | Position Statement: Integrated Rural Training Hubs |
| 22 February 2017 | Canadian Collaborative Taskforce | Society of Rural Physicians of Canada and College of Family Physicians of Canada release the *Rural Road* |

| Date | Organisation or entity | Title |
|---|---|---|
| | | *Map for Action*, which contains 20 recommendations to enhance rural care. These include:<br>• Improving rural medical education through the creation of visible rural generalist pathways, and enhanced skills training for rural practitioners<br>• Standardise policies to support effective consultation and transfer of patients between healthcare facilities<br>• Develop infrastructure and networks of care at local and regional levels to support access to care, including for mental health patients<br>• Support staff to understand and deliver culturally safe care for Indigenous patients<br>• Work with local communities and rural practitioners to provide "system-wide, coordinated, distance technology to enhance and expand local capacity". |
| May 2017 | RACGP | On-demand telehealth services – Position statement |
| 3 July 2017 | RACGP | Rural Generalism 2020 – Position Statement |
| August 2017 | NRHSN | Indigenous health position paper |
| August 2017 | NRHSN | Climate change position paper |
| 23 November 2017 | Australian Medical Association | Rural Workforce Initiatives 2017 |
| December 2017 | Australian Health Care Reform Alliance | Policy Position Paper: Health Workforce |
| March 2018 | National Rural Health Commissioner | National Rural Health Commissioner Annual Report 2017 |
| March 2018 | NRHSN | Nurse practitioners position paper |
| March 2018 | NRHSN | Bonded schemes position paper |
| May 2018 | ACRRM | Rural Generalist Medicine Position Statement |

| Date | Organisation or entity | Title |
|---|---|---|
| May 2018 | ACRRM | *Defining safe and quality procedural and advanced care in rural and remote locations* |
| 23 May 2018 | NRHA | Position paper on Federal Budget 2018–19 |
| August 2018 | NRHSN | Mental health position paper |
| August 2018 | NRHSN | Uluru Statement from the Heart position paper |
| August 2018 | NRHSN | *Mental Health within the Nursing and Allied Health Workforce position paper* |
| August 2018 | NRHSN | Rural Generalism position paper |
| September 2018 | ACRRM | *The Delhi Declaration: Health for all Rural People* – WONCA Rural Health Position Statement |
| December 2018 | Australian College of Nursing | *Improving health outcomes in rural and remote Australia: Optimising the contribution of nurses* |
| December 2018 | National Rural Health Commissioner | Advice to the National Rural Health Commissioner on the Development of the National Rural Generalist Pathway |
| February 2019 | National Rural Health Commissioner | National Rural Health Commissioner Annual Report 2018 |
| 16 May 2019 | AMA | 2019 AMA *Rural Health Issues Survey* |
| June 2019 | ACRRM | Uluru Statement from the Heart Position Statement |
| June 2019 | ACRRM | Pharmacist Prescribing Position Statement |

| Date | Organisation or entity | Title |
|---|---|---|
| July 2019 | National Rural Health Student Network | *Availability and accessibility of positive rural placement experiences for allied health students in Australia* |
| July 2019 | ACRRM | Pill Testing Position Statement |
| October 2019 | ACRRM | Climate Change and Rural Health Position Statement |
| December 2019 | RANZCP | Rural psychiatry: Position statement |
| December 2019 | ACRRM | Audit template: Minimum standards for small rural hospital emergency departments |
| December 2019 | ACRRM | Recommended minimum standards for small rural hospital emergency departments |
| 3 December 2019 | IHPA | Independent Hospitals Pricing Authority publishes *Innovations in Health Funding – Global Horizon Scan*, which considers alternative approaches to health care funding that could be applied in Australia, including options focused on value-based health care, with models considered including regionally coordinated service responses. |
| 24 December 2019 | NRHA | *Climate change and rural health* |
| January 2020 | Australian College of Rural and Remote Medicine | Rural Maternity Position Statement v2 |

| Date | Organisation or entity | Title |
|---|---|---|
| February 2020 | National Rural Health Commissioner | Review of rural allied health evidence to inform policy development for addressing access, distribution and quality |
| March 2020 | National Rural Health Commissioner | Interim Report to the Minister for Regional Health, Regional Communications and Local Government Improvement of Access, Quality and Distribution of Allied Health Services in Regional, Rural and Remote Australia |
| March 2020 | National Rural Health Commissioner | National Rural Health Commissioner Annual Report 2019 |
| March 2020 | Australian Rural Health Education Network | ARHEN Position Paper: *Rural Generalist Pathways for Allied Health Professionals* |
| June 2020 | National Rural Health Commissioner | Final report |
| June 2020 | National Rural Health Commissioner | Report for the Minister for Regional Health, Regional Communications and Local Government on the Improvement of Access, Quality and Distribution of Allied Health Services in Regional, Rural and Remote Australia |
| 16 July 2020 | NRHA | Government support for individuals and communities affected by the COVID-19 pandemic |
| 28 January 2021 | National Rural Health Alliance | Position paper: *Rural health policy in a changing climate: three key issues* |
| June 2021 | Australian Healthcare and Hospitals Association | Rural and Remote Health position statement |

# References


1 NSW Government. Life Expectancy. HealthStats NSW. NSW Ministry of Health, Sydney [accessed June 2021].

2 OECD. Deliving quality education and health care to all: preparing regions for demographic change. OECD Rural Studies, OECD, Paris, 2021; https://doi.org/10.1787/83025c02-en

3 Wilson CR, Rourke J, Oandasan IF, Bosco C. Progress made on access to rural health in Canada. Canadian Family Physician, 2020; 66(1): 31-36.

4 Bosco C, Oandasan I. Review of family medicine withion rural and remote Canada: education, practice, and policy. College of Family Physicians of Canada, Mississauga, ON,. 2016.

5 CIHI. Supply, distribution and migration of physicians in Canada 2015 – data tables. Canadian Institute for Health Information, Ottawa ON, 2016.

6 Braunwald E. The treatment of acute myocardial infarction: ther past, the present and the future. European Heart Journal Acute Cardiovascular Care, 2012; 1(1): 9-12.

7 Macrae IM, Allan SM, Strokje: the past, present and future. Brain and Neuroscience Advances, 2018; 2: 1-5.

8 Smith R, Rennie D. Evidence-based medicine – an oral history. British Medical Journal, 2014; 348: g371; doi: 10:1136/bmj.g371.

9 Starr M, Chalmers I, Clarke M, Oxman AD. The origins, evolution, and future of *The Cochrane Database of Systematic Reviews.* International Journal of Technology in Health Care, 2009; 25, supplement S1: 182-195.

10 Brennan TA, Leape LL, Laird N, Hebert L, Localio AR, Lawthers AG, Newhouse JP, Weiler PC, Hiatt HH. Incidence of adverse events and negligence in hospitalised patients: results of the Harvard Medical Practice Study. New England Journal of Medicine, 1991; 324: 370-376.

11 Dyer C. Bristol Inquiry condemns hospital's "club culture". British Medical Journal, 2001; 323: 181.

12 Wilson RM, Runciman WB, Gibberd RW, Harrison BT, Newby L, Hamilton JD. The Quaslity in Australian Health Care Study. Medical Journal of Australia, 1995, 163(9): 458-471; doi: 10.5694/j.1326-5377.1995.tb124691.x.

13 Roland M. Linking physicians' pay to the quality of care – a major experiment in the United Kingdom. New England Journal of Medicine, 2004; 351: 1448-54.

14 Halm EA, Lee C, Chassin MR. Is volume related to outcome in health care: a systematic review and methodologic critique of the literature. In: Database of Abstracts of Reviews of

Effects (DARE): Quality-assessed Reviews [Internet]. York (UK): Centre for Reviews and Dissemination (UK); 2002. Available from: https://www.ncbi.nlm.nih.gov/books/NBK69189/

15 UN World Urbanisation Prospects, https://esa.un.org/unpd/wup/Download. In: Ritchie H. How urban is the world? Our World in Data, University of Oxford, 2018.

16 ABS. Data by region. Australian Bureau of Statistics,2021, www.dbr.abs.gov.au (viewed June 2021)

17 New South Wales Parliamentary Research Service. Regional NSW: a demographic and economic snapshot. Briefing Paper No 01/2020. Sydney: Parliamentary Research Service, NSW Giovernment, 2020.

18 ABS. Census of Population and Housing: reflecting Austyralia – stories from the Census, 2016. Cat no 2071.0. Australian Bureau of Statistics, Canberra,m 2018.

19 Bradford N, Caffery L, Smith A. Telehealth services in rural and remote Australia: a systematic review of models of care and factors influencing success and sustainability. Rural and Remote Health 2016; 16: 3808. https://doi.org/10.22605/RRH3808

20 Barak A, Hen L, Boniel-Nissim M, Shapira N. A comprehensive review and a meta-analysis of the effectiveness of Internet-based psychotherapeutic interventions. Journal of Technology in Human Services 2008; 26(2-4): 109-160.

21 Clark RA, Inglis SC, McAlister FA, Cleland JG, Stewart S. Telemonitoring or structured telephone support programmes for patients with chronic heart failure: systematic review and meta-analysis. BMJ. 2007 May 5;334(7600):942. doi: 10.1136/bmj.39156.536968.55.

22 Myung S-K, McDonnell DD, Katzinets G, Seo HG, Moskowitz JM. Effects of web- and computer-based smoking cessation programs. Meta-analysis of randomizewd cointrolled trials. Archives of Internal Medicine, 2009; 169 (10): 929-938.

23 Polisena J, Cioyle D, Coyle K, McGill S. Home telehealth and chronic disease management: a systematic review and an analysis of economic evaluations. International Journal of Technology Assessment in Health Care, 2009; 25(3): 339-349.

24 Australian Government. Opportunities for the reform of GP training employment arrangements. Discussion paper for the General Pracrtice Training Advisory Committee (GPTAC) meeting, 2 November 2020. Department of Health, Canberra, 2020.

25 Woodhouse F. Medicare, mayhem, and the Vocational Register. Royal Australian College of General Practitioners, Sydney, undated.

26 Charbonneau G. Recruiting physicians to practise inrural communities. Canadian Family Physician, 2018; 64(8): 621.

27 Cosgrove C, Malatzky C, Gillespie J. Social determinants of rural health workforce retention: a scoping review. Interrnational Journal of Environmental Research and Piublic Health, 2019; 16: 314; doi: 10.3390/ijerph16030314.

28 Australian Government Department of Health. About the Multi-Purpose Services Program. Commonwealth of Australia, Canberra, 2020a [accessed 30 June 2021];

https://www.health.gov.au/initiatives-and-programs/multi-purpose-services-mps-program/about-the-multi-purpose-services-mps-program.

29 Sheehan J. Position paper: reshaping the multipurpose service (MPS) model in NSW. Health System Planning and Investment, NSW Ministry of Health, Sydney, 2016.

30 Woods M, Edwards K, Naghsh Nejad M, Haywood P, Wise S. Aged care in MPS: Response to the Australian Government's terms of reference. Centre for Health Economics Research & Evaluation, University of Technology Sydney, 2019 [accessed 30 June 2021]; https://www.health.gov.au/resources/publications/aged-care-in-mps-response-to-the-australian-government-terms-of-reference.

31 Australian College of Nurse Practitioners. Steps to becoming a nurse practitioner. Australian College of Nurse Practitioners, 2021; https://acnp.org.au/how-to-become-a-np.

32 Bragg S, Bonner A. Degrewe of value alignment – a grounded theory of ruralk nurse resignations. Rural and Remote Health, 2014; 14: 2648; doi: 10.22605/RRH2648.

33 Wakerman J, Humphreys J, Russell D, Guthridge S, Bourke L, Dunbar T, Zhao Y, Ramjan M, Murakami-Goild L, Jones MP. Remote health workforce turnover and retention: what are the policy and practice priorities? Human Resources for Health, 2019; 17(1): 99.

34 Schubert N, Evans R, Battye K, Sen Gupta T, Larkins S, McIver L. International approaches to rural generalist medicine: a scoping review. Human Resources for Health, 2018; 16: 62; doi: 10/1186/212960-018-0332-6.

35 Australian Government Department of Health. National Rural Generalist Pathway. Updated 29 March 2021. Australian Government, Canberra, 2021; https://health.gov.au/initiatives-and-programs/national-rural-generalist-pathway.

36 Australian Government Department of Health. Medical Worklforce 2016 Factsheet. Department of Health, Canberra, 2017.

37 Australian Government Department of Health. Section 19AB [of the Health Insurance Act 1973. Department oif Health, Canberra,m updated 17 July 2021.

38 O'Sullivan B , Russell DJ, McGrail MR, Scott A. Reviewing reliance on overseas-trained doctors in rural Australia and planning for self-sufficiency: applying 10 years' MABEL evidence. Human Resources for Health, 2019; 17:8;l doi.org/10.1186/s12960-018-0339-z.

39 Ogden J, Preston S, Partanen RL, Ostini R, Coxeter P. Recruting and retaining general practitioners in rural practice: systematic review and meta-analysis of rural pipeline effects. Medical Journal of Australia, 2020; 213(5): 228-236.

40 MDANZ. Student Statistics Report 2017-8. Medical Deans Australia and New Zealand Inc, Sydney, 2018.

41 Battye K, Sefton C, Thomas JM, Smith J, Springer, S, Skinner I, Callander E, Butler S, Wilkins R, Gordon J, Kelly K. *I*ndependent Evaluation of the Rural Health Multidisciplinary Training Program: Final Report to the Commonwealth Department of Health. KBC Australia, Orange, 2020

SaxInstitute

**Visit:** saxinstitute.org.au
**Email:** communications@saxinstitute.org.au
**Phone:** (02) 9188 91500