

Improving health outcomes in rural and remote Australia: Optimising the contribution of nurses

December 2018

EXECUTIVE SUMMARY

People living in rural and remote areas face particular health challenges, many of which are attributable to their living conditions, social isolation, socioeconomic status and distance from services. Nurses constitute the largest group of health providers in the rural and remote workforce, and many communities are dependent on nurse-led services.

The health status of rural and remote Australians is worse than other populations on almost every indicator of health status. Overall, in remote areas, they experience a 20% increase in disease compared to those living in major cities. Risk factors such as tobacco smoking, alcohol consumption, low levels of physical activity and nutritional insufficiency are higher in rural and remote areas, increasing the likelihood of developing numerous chronic diseases.

This discussion paper drew on case studies in rural and remote settings and a review of policy, discussion papers, editorials and research studies. The paper highlights several nurse-led initiatives that are innovative and person centred. These initiatives highlight talent and potential, however, issues related to security of funding and staffing are also highlighted. There are many opportunities for nurses to play a greater role in chronic disease prevention and management in rural and remote settings. Better outcome data are needed to show how investment and enhancing the role of nursing can benefit rural and remote Australians' health care.

In rural and remote areas, nurses and other health professionals can take on greater leadership roles as "agents of change" in developing innovative practice solutions, engaging individuals, families and communities, maximising the role of other staff groups, for example visiting medical and allied health professionals and resident support care staff, and the incorporation of new technologies into practice. However, adequate investment is vital to ensure there are enough nurses based in rural and remote settings, with adequate education and support and access to such opportunities.

BACKGROUND

Australians have one of the highest life expectancies in the world¹; however, Australia's rural and remote communities experience poorer health outcomes compared with many of their metropolitan counterparts². Rates of potentially preventable diseases and avoidable hospitalisations increase significantly with geographical remoteness³. Mortality rates for men and women are significantly higher in very remote areas compared with major cities⁴. These outcomes reflect both the high proportion of socioeconomically disadvantaged residents and Aboriginal and Torres Strait Islanders with high disease burdens, and inequitable access to health services including primary health care (PHC) services for those living in rural and remote communities^{5,6}. Health disparities related to social determinants and poor access to PHC are reflective of remote and rural communities in countries around the world^{7,8}.

Classifications of rurality and remoteness are not consistent in the international literature. Historically, in Australia, the Australian Standard Geographical Classification Remoteness Areas has been the predominant system in use and this classification groups areas into remoteness categories according to road distance to facilities. It has replaced two previous systems, the Rural, Remote and Metropolitan Areas and the Accessibility/Remoteness Index of Australia. Additionally, the Australian Bureau of Statistics is progressively replacing the Australian Standard Geographical Classification with the new Australian Statistical Geography Standard for reporting on census and surveys. In this discussion paper, the definition of rural and remote refers to non-metropolitan areas including regional towns and other settlements/areas.

While the terms rural and remote are used in this paper, divergence in the context of practice are acknowledged. Kruske et al⁹ argue the generalist role of rural nurses increases as the population declines. Thus, the more remotely nurses are located, the greater the generalist nature of the work. Context of practice is a major influence on the role of the rural and remote area nurses. This includes distance from a tertiary referral centre, the size and composition of the team in which nurses work, the prevailing working conditions, and the size and composition of the community for whom nurses care (including ethnicity).

People who live in rural areas have shorter lives and higher levels of illness and disease risk factors than those in major cities¹⁰. People living in remote areas experience reduced access to a range of health services compared to people in major cities and are:

- more likely to report not having a general practitioner (GP) nearby and this was a barrier to accessing care (20% compared with 3% for people in major cities)
- more likely to indicate that not having a medical specialist nearby was a barrier to accessing care (58% compared with 6%)
- more likely to have been to an emergency department (ED) in the past 12 months because no GP was available when they needed one (17% compared with 10%)¹¹.

The survey¹² also reported that people living in major cities were more likely than those living in outer regional and remote/very remote Australia to have a regular GP (89% compared with 81% and 69%, respectively) and people living in inner regional areas were the group most likely to have a usual place of care (92%).

Overall, participants living in remote areas were less likely than people living in other areas to indicate that their usual GP or key clinician were informed of their follow-up needs after they had seen a health professional for their physical, emotional or psychological health, visited a specialist or had been admitted to hospital.

Continuity of care is linked to improved health care for people who have chronic conditions, a complex medical history, or who take several medications¹³. Barriers to accessing health care have been linked to unmet health care needs including lack of preventive and screening services and treatment¹⁴. Rural and remote communities are dependent on the health of their populations for workforce participation and provision of goods and services. Access to health care does not guarantee good health; however, access to health care is critical for the well-being and optimal health of a population.

Nurses working in very remote areas are the mainstay of health services in these regions¹⁵. They work in complex and isolated settings that are often cross cultural, and for which many are often inadequately prepared¹⁶. Whilst most Aboriginal and Torres Strait Islander peoples live in non-remote areas (79% in 2011), the proportion of Aboriginal and Torres Strait Islander peoples living in remote areas is higher (21%) compared to the non-Indigenous population (2%)¹⁷. The promotion of cultural safety is vital and support for nurses to practice in a culturally competent manner is a priority. A case study on the Swan Hill District Health Refugee Health Nurse Program (Box 1) highlights an example of a nurse-led service responding to the needs identified by the community to support refugees and improve health outcomes.

BOX 1.

The Swan Hill District Health Refugee Health Nurse Program commenced in 2013 as part of the State Wide Refugee Health Program after a number of Afghani refugees settled in the area. Issues identified by local community groups related to access to health services, language barriers and mental health concerns, issues frequently experienced by refugees fleeing from countries in conflict.

The key objectives of the program are:

1. Capacity building within local health services to meet the needs of refugees and asylum seekers through improved understanding of visa status, access to language interpreters and re-orientation of service access.
2. Provision of direct assistance to refugee and asylum seeker clients to improve health outcomes (e.g. vaccination catch up).

A community nurse position is funded at 0.5 FTE and the clinic runs on a drop-in basis to accommodate difficulties people can face with keeping to set appointment times. Currently, the role is shared between two nurses who are also employed in other roles and this allows them to provide a more flexible service arrangement over four days per week. Since January 2018 there have been 170 contacts with this group. The service is funded through the Department of Health and Human Services Refugee Health Program.

Evaluation of the service has indicated success in engaging people to agree to referrals to service providers to follow-up on needs identified during consultation with the nurses and these include referrals to:

- GPs
- Mallee Family Care for refugee services, housing services and support
- Allied health staff
- Counselling
- Midwifery
- Antenatal care
- Specialist services e.g. urology, neurology, endocrinology, ENT
- Community services e.g. Small Talk playgroups, St Vinnies, Salvos
- Free legal support services where required e.g. Refugee Legal, Asylum Seeker Support Centre

Clients can return to the clinic for follow up and further referrals to other services can be made as required. Capacity building activities have led to improvements in the use of interpreter services across health services and also improved understanding of the specific needs of the target population groups.

The key strengths of the program are the association with the State Wide Refugee Health Program and partnerships with hospital services and support agencies.

In rural and remote Australia, the complexity of delivering health care is magnified by unique characteristics and challenges, including distance, and access to communities which can be weather dependent; lack of, or minimal resources both personal, power and equipment and access to quality IT and communication systems^{18,19}.

From the patient perspective, there is evidence that people prefer to be cared for in their own environment (homes and communities). This perspective requires an emphasis on high quality integrated care. Current and projected demands for healthcare related to an ageing population, increased prevalence of chronic conditions and multi-morbidity, increasing cultural and linguistic diversity, increased emphasis on healthy lifestyle and prevention, and drive to reduce hospital level care to care closer to home, make the development of new models of primary care delivery essential. This provides an opportunity to concomitantly review the roles completed by professional groups and increased job satisfaction. Expanding nurses' capacity to increase their ability to participate in the primary care workforce has been linked to improved access, efficiency, and quality of care.

THE IMPACT OF NURSING ON THE PREVENTION OF CHRONIC DISEASE AND IMPROVEMENTS IN THE MANAGEMENT OF CHRONIC DISEASE

Several recent reviews have attempted to draw together the evidence on the links between nurse led care and quality, access and costs of treatment and the relationships between nursing education, workload and environment, patient morbidity and mortality^{21,22}. A Cochrane review²² explored the impact of nurses working as substitutes for primary care doctors on patient outcomes and processes of care and utilisation, including volume and cost. The review included randomised trials evaluating the outcomes of nurses working as substitutes for doctors and was limited to primary healthcare services that provided first contact and ongoing care for patients with all types of health problems, excluding mental health problems. Studies which evaluated nurses supplementing the work of primary care doctors were excluded. The authors identified 18 randomised trials evaluating the impact of nurses working as substitutes for doctors. One study was conducted in a middle-income country, and all other studies in high-income countries. The skill mix of nurses was often unclear and varied between and even within studies. The studies looked at nurses involved in first contact care (including urgent care), ongoing care for physical complaints, and follow-up of patients with chronic conditions such as diabetes. In many studies, nurses were able to obtain additional support or advice from a doctor. Nurse-doctor substitution for preventive services and health education in primary care has been less well studied.

The overarching message from the evidence was that care delivered by nurses, compared to care delivered by doctors, generated similar or better health outcomes for a broad range of patient conditions²³. The evidence suggests that nurse-led primary care is not inferior to that of medical-led care. Blood pressure outcomes were slightly improved and other clinical or health status outcomes were similar and patient satisfaction was slightly higher in nurse-led primary care as was quality of life. Whilst the outcomes are positive, there are issues with the quality of many of the studies reviewed. Future studies should seek to maximise the numbers of included health care providers, rather than the numbers of patients, to reduce the effect of any individual provider on outcomes. Studies with longer follow-up periods are needed to more fully understand impact on health outcomes. Process evaluations that collect qualitative data alongside interventions studies, could explore how nurses and doctors work as a team, interactions, the definition of roles and responsibilities and how these impact on behaviour. Few of the studies reviewed explored costs, particularly societal costs and the inclusion of cost-effectiveness analysis is strongly recommended in future studies.

A meta-review of 32 systematic reviews²⁴ explored the socioeconomic benefits attributed to nursing and midwifery in relation to mental health nursing, long-term conditions, and role substitution. General practice nurses providing health checks, lifestyle counselling and health education on risk factors for heart disease in a general community population were reported to have a greater beneficial impact when compared with usual care in relation to blood pressure and dietary fat intake.

Individual studies have reported benefits associated with nurse-led care including reduced costs²⁵ and higher patient satisfaction^{26,27}. Nurse-led interventions for chronic conditions such as HIV and diabetes have resulted in patients making more informed decisions about their care and increased adherence to treatment²⁸. Nurse practitioners (NPs) have been found to not only improve access to services and reduced waiting times, but also delivered the same quality of care as doctors for a range of patients, including those with minor illnesses and those requiring routine follow-up²⁹ and examples in practice are highlighted in the following case study on a heart failure service in Hobart, Tasmania (Box 2).

**BOX 2. HEART FAILURE SERVICE,
ROYAL HOBART HOSPITAL**

A nurse practitioner led clinic was set up in Hobart to address a gap in service identified by the team in relation to the provision of a chronic cardiac care including education and self-management support. A nurse practitioner (NP) runs a clinic for people assessed as stable and requiring ongoing assessment and support to prevent exacerbations related to heart failure. The NP completes physical health assessments, oversees symptom management, titration of medications and provides ongoing advice and support. Patients with implanted devices see the cardiac physiologist, NP and cardiologist on the same day wherever possible, streamlining the service for patients. The cardiologists refer patients requiring the initiation of medication, monitoring and ongoing medication titration. The NP also provides telephone support for symptom management between clinic visits.

The service has not been formally evaluated but there is a perception that the clinic has reduced readmission rates, especially amongst those who experienced frequent exacerbations resulting in presentation to the emergency department and/or hospitalisation. Feedback from patients attending the clinic is sought continuously and the benefits of the service to patients as individuals noted. The nurse practitioner reports that patients are receiving guideline recommended therapies and that review and treatment are achieved in a timelier manner, preventing unnecessary hospitalisation.

The nurse practitioner described work around the identification of ward-based nurse 'champions' to support in-patient education and their role in providing education and support to nurses to achieve this.

The majority of the publications described in this paper make comparisons between nurses and doctors and the evidence relates to metropolitan areas. The results all show that there are no easy generalisations about impact. All describe positive impacts on quality, access to services and value for money in particular circumstances and for specific population groups. Many studies report on the beneficial impact of nursing across the different settings of homes, communities and hospitals, public health and clinical care.

Understanding the impact of nurses working in rural and remote areas at a macro level is important, but is not available. The case study outlined in Box 3 of a nurse practitioner led service in the Northern Territory helps to contextualise the value and contribution of nurses working in rural and remote areas.

**BOX 3. NURSE PRACTITIONER LED SERVICE IN THE
NORTHERN TERRITORY**

A nurse practitioner working in West Arnhem and Maningrida, part of the Top End Health Service (NT Government) primary health care service shared his experience of providing care to promote the prevention of chronic conditions. The region covered is east of Darwin and delivers service to remote and indigenous communities in the region. The delivery of health care here is challenged by remoteness, social disadvantage and increased burden of disease.

The nurse practitioner role has been to focus on gaps in service delivery based on the identification of the many areas where previous service provision did not match the targets or goals of health care delivery. The role is based within a nursing model with a strong focus on client centred care. This is the first nurse practitioner position the NT Government has created in remote Primary Health and has operated since September 2017. Registered nurses follow standard treatment plans for chronic conditions and reviewed by Medical Officers at follow up.

This role of the nurse practitioner offers a high level of care and access to those with preventable chronic conditions:

- Comprehensive clinical assessments and examinations
- Diagnostic investigations
- Diagnosis
- Therapeutic interventions
- Referral to other health professionals
- Interpretation and evaluation of care

The role highlights the importance and value of providing high level care and coordination of care. There are limited number of doctors and in some health centres no resident doctor. Therefore, increasing access to cost effective health care increases the potential improved outcomes in health. An example provided by the nurse practitioner involved working with a woman in her early 40s, referred to him by the medical officer for poor adherence to medications. She had Stage 4 renal disease, alcoholic liver disease, COPD, and type 2 diabetes. Multiple family stressors and frequent hospital admissions to manage exacerbations of disease were noted. The nurse practitioner met with the client and her family to talk about health concerns and the future in light of deteriorating renal function. The client was frustrated with the health service as the only message she had been given was to stop drinking and smoking. A self-management care plan based around strengths, using the Flinders model of self-management was developed. Turtle hunting was identified as an activity that she enjoyed and health related plans (exercise, stress management, social connections) were based around this activity. The client still drinks at times of stress, but feels more ready to deal with issues related to her health and is now prepared to engage with treatment options. Peritoneal dialysis will mean she can return to her community and continue activities which enhance her well-being such as turtle hunting.

The case study highlights the provision of high-level care within a nursing framework, the nurse practitioner has taken the role of “maxi nurse not mini medic”³⁰. Such roles need to be recognized as a way of providing efficient and cost-effective care rather than simply a cost. It is also important that nurse-led roles including nurse practitioners are not implemented as a form of direct substitution of care by medical practitioners³¹. The ICN³² provides helpful insight into how nurses can influence decisions about how services are delivered, improve health care outcomes, efficiency and reduce waste in collaboration with other health professionals and decision-makers:

- improve prescribing guidance, information, training and practice;
- develop and implement clinical and evidence-based best practice guidelines;
- implement task-shifting and other ways of matching skills to needs;
- adhere to and champion infection control procedures;
- provide more continuity of care;
- evaluate and incorporate into policy evidence on the costs and impact of interventions, technologies, medicines, and policy options.

The evidence suggests that there are many opportunities for nurses to have a greater impact in the improvement of health and health care, however better evidence needs to be collected on where and how investing and developing nursing can have significant benefits.

CHALLENGES TO PROVIDING CARE IN REMOTE AND RURAL AREAS

The challenges facing health care systems globally and the issues raised by nurses worldwide share many similarities. The Triple Impact Report³³ highlighted that whilst the degree to which issues were described by countries differed, the key issues globally are: staff shortages and lack of resources, undervaluing of the nursing contribution, the ability to work to their full potential, poor quality and/or lack of education and training, difficulties with recruitment and retention and diminished and diminishing leadership. The evidence supports all of these areas as issues impacting on the delivery of quality care in rural and remote settings.

STAFF SHORTAGES, SKILL MIX, TRAINING, LEADERSHIP

A key report produced by the Australian Productivity Commission³⁴ reported that the rural and remote nursing workforce was the most stable and sustainable of the health professions. However, it also reports on the differences between health care professionals and population ratios, relative to major city levels, highlighting the disparities.

Research into factors that influence the recruitment and retention of rural and remote nurses in Queensland found that management practices in rural health facilities, emotional demands of work, poor workplace communication, family responsibilities, and a lack of management recognition for work well done, were the main reasons for nurses changing employers³⁵. The factors that rural nurses considered important to retention were being part of a team, job satisfaction, a rural lifestyle, relationships with nursing colleagues in the health facility and a sense of belonging to the community³⁶ and these findings have been supported in subsequent studies^{37,38}.

Over the past 12 years, all States and Territories have undertaken a review of legislation that regulates nurses and midwives. The most significant change for nurses employed in rural and remote areas has been the implementation of registration, endorsement or authorization provisions for the nurse practitioner role. These provisions recognize that communities in rural areas rely heavily on nurses with advanced practice skills³⁹. Associated Acts, such as drugs and poisons legislation, have also been amended to accommodate the expanded role of nurse practitioners, however, there are a number of issues related to nurse practitioner prescribing including barriers to prescribing, attitudes to nurse practitioner prescribing, frequency of prescribing, types of medications prescribed, prescribing practice behaviours and confidence in prescribing⁴⁰.

The vast majority of nurses employed in rural areas are not nurse practitioners, however, reports suggest that to fulfil their roles in their communities they are required to work to their full potential or preferably an advanced scope of practice to ensure that communities are provided with care that meets their needs. The issues of “role creep” and work demands have been identified as significant issues requiring critical review particularly for nurses in rural and remote settings⁴¹.

It is important that additional barriers to practice are not introduced, for example, mandating credentialing in rural and isolated practice, rather the role of the nurse should be recognised and legitimised and their role clarified, supported through appropriate changes to legislation, funding and policy⁴². Nurses working in rural and remote areas need to be ‘jack of all trades and master of many’⁴³ and adopt a primary health care approach that encompasses all people, belief systems and life circumstances⁴⁴. The current nursing workforce has been prepared for practice through predominantly hospital based training and a focus on an illness orientated medical model⁴⁵.

Increased accessibility to educational programs that address the specific requirements of nurses employed in these locations will promote safe, effective practice⁴⁶. The Health Workforce Scholarship Program established in 2017 to provide scholarships and bursaries to eligible remote and rural medical, nursing and allied health professionals, to improve their skills goes some way to supporting nurses working in rural and remote settings, however further opportunities to support experienced nurses to secure nurse practitioner status need to be explored to promote high standards of care within legal boundaries regardless of geographical location of employment.

Developing a culture that supports learning in the workplace is an ongoing project for many rural nurses who demonstrate leadership attributes in their practice⁴⁷. Mentoring as a strategy to improve the retention of rural undergraduates was introduced as part of the Australian Government Rural and Remote Nurse Scholarship Program in 2003⁴⁸. Since then, research has shown that experienced rural nurses often act as a translators of local culture, guides to the politics of rural nursing, and are clinical teachers for new or novice rural nurses, cultivating and growing staff through a variety of mentoring relationships⁴⁹. Accidental mentoring has also been reported when an experienced rural nurse observes or senses a critical incident has occurred for a new or novice rural nurse and supports them for a short time to manage and understand the situation⁵⁰. Supportive

activities appear to be important in improving recruitment and retention of nurses in rural or remote areas.

The Federal Budget in May 2018 included initiatives that aimed to improve access to health care for Australians including a \$550 million Stronger Rural Health Strategy with a promise to increase the nursing workforce in rural, regional and remote areas. Kylie Ward, CEO, Australian College of Nursing, commended the investment and highlighted that:

“Aboriginal and Torres Strait Islander peoples, low income families, those who live outside our major metropolitan cities, or people who are new to Australia, do not always have the same access to best practice care that many of us take for granted...By investing in and supporting our nursing workforce, the Australian community can feel confident that nurses will be available to provide care now and into the future.”

Funding to enhance the role of nurse practitioners was also announced and endorsed by the Australian College of Nurse Practitioners CEO Mark Monaghan who stated: “This will assist in raising the profile of nurse practitioner and will help attract more nurses to undertake extra study to become a NP.”

However, the Consumers Health Forum (CHF) remained concerned about people’s ability to access the care they need due to expense. Leanne Wells, CEO stated “While the additional funding for hospitals, Medicare, aged care and medicines is welcome, there is a strong case for greater emphasis on primary health care that focuses on local health services to respond to local need for integrated care, particularly for chronic illness.”

It is vital that discussions on how and where to invest the resources pledged for rural and remote care are driven by the communities and that nurses are included to promote the importance of community focussed, patient centred care.

UNDERVALUING OF THE NURSING CONTRIBUTION

Nurses throughout the world frequently express concern on the undervaluing of the nursing contribution and not being supported to work to their full potential. This lack of recognition is manifest in terms of autonomy and freedom to make decisions about patient management. Advanced practice/specialist nurses are particularly restricted in their scope to practise despite having extensive qualifications and experience. The Triple Impact Report⁵¹ noted that despite differences in wealth, population and staff to patient ratios, nurses from around the world reported similar issues which included:

- pressure caused by shortages of staff and poor or missing equipment;
- the ‘invisibility’ of nurses and underestimation of the nursing contribution;
- not being permitted and enabled to work up to the limit of their competence;
- migration of nurses from poorer to richer countries and, internally, from rural to urban areas and from government services to disease-specific ones, nongovernmental organisations (NGOs) and private practice;

- lack of involvement in policy and planning; and
- inadequate training and development.

There were also many common features in all the nursing roles described. In particular nurses:

- are frequently the first and in some cases the only health care professionals with whom patients come into contact;
- spend considerable amounts of time with their patients and, mostly, provide very personal and intimate care as well as continuity throughout a period of illness or treatment;
- work within a shared system of humanitarian and person-focused values; and
- are generally part of the local community and have a good understanding of local issues and culture, which also affect them and their families.

There is good evidence internationally that enabling nurses to lead and shape delivery of care and health services not only improves patient outcomes but promotes innovation and leads to better recruitment and retention⁵². An example found in The Netherlands in 2006/07 is the Buurtzorg district nursing system, which was nurse-led and demonstrated to be cost effective. Buurtzorg was set-up by Jos de Blok who envisaged a reformed district nursing system in The Netherlands. Prior to Buurtzorg, home care services in The Netherlands were described as fragmented, with patients being cared for by multiple practitioners and providers, financial pressures and a decline in patient health and satisfaction. The critical feature of the Buurtzorg system has been described as giving its district nurses far greater control over patient care.

The widely cited issue that nurses are not being permitted to carry out the full range of the work they were trained for indicates that there is an opportunity to provide high quality care with existing resources given the right models and support for nurses to work to the extent of their scope of practice.

SUMMARY

In summary, rural and remote populations are smaller, more isolated and more highly dispersed than metropolitan and urban populations. Through a variety of mechanisms, including socioeconomic disadvantage, especially in Aboriginal and Torres Strait Islander communities, morbidity and mortality rates are higher, especially in remote areas. Workforce issues, supply, retention, training and education further decrease access to health services in rural and remote areas. Models of service delivery have developed in response to these conditions with a high reliance on visiting and/or locum services. Policymakers and planners are mandated to direct resources and programs to address the health needs of populations in these areas. Account needs to be taken of the distinctive features of this challenging environment, including the costs of delivering services and attendant infrastructure, appropriate workforce planning and relevant workforce preparation. This knowledge will assist in guiding the monitoring and evaluation of the effectiveness of policies, programs and practices in order to appropriately meet population health needs. It is through better understanding of the rural and remote context and through timely and commensurate response

to health need that we will ensure a more equitable distribution of improvements in resources and health outcomes. A number of opportunities to address the issues highlighted have been identified and are discussed in the next section.

STRATEGIES TO IMPROVE ACCESS TO NURSING CARE IN RURAL AND REMOTE COMMUNITIES

Addressing the health disparity and the inequities in access to care faced by remote and rural communities in Australia requires a systematic national response. Considerable evidence exists to show that good PHC is associated with better health outcomes, lower costs and greater equity in health (reducing disparities across population subgroups)^{53,54,55}. In 2008, the World Health Assembly urged countries to use national funding mechanisms to fast-track access to comprehensive PHC services that are equitable, efficient and sustainable⁵⁶. The health reform process⁵⁷ sought to ensure that all Australians, including those in rural and remote areas, receive appropriate, high quality and affordable primary and community health services. However, to achieve this goal, evidence of a more equitable distribution of resources and better access to comprehensive PHC services are required. The National Rural Health Alliance reports an annual 'rural health deficit' of approximately \$2.1 billion. This deficit reflects an underspending on doctors, nurses, dentists and pharmacists in rural and remote communities, and an overspend of \$829 million on hospitals responding to the unmet PHC needs of rural and remote residents⁵⁸. The PHC system in Australia needs to increase its capacity to provide a range of services to Australians in rural and remote communities.

There are significant challenges related to establishing equitable access to sustainable PHC services in rural and remote areas, including the availability of local services, workforce shortages, inadequate infrastructure, costs and distance⁵⁹. Work undertaken by Carey et al⁶⁰ and Thomas et al⁶¹ have sought to define core PHC services, those services that should be available to all people living in remote and rural areas with as local access as possible. Of note is the call for services in the space of health promotion, chronic disease management and social care; these are all domains of practice within the scope of nurses working in primary health care.

PROVIDING CARE THAT REFLECTS THE NEEDS OF THE COMMUNITY

Improving equity of access to core PHC services in rural and remote communities requires more than ensuring health workers are on the ground. Penchansky, for example, describes the five dimensions of access as availability, accessibility, accommodation, affordability and acceptability as important to achieving an optimal degree of fit between health consumers and the health system⁶². Ensuring utilisation of PHC services is commensurate with community needs will require attention to all these dimensions⁶³. For instance, acceptability is particularly important in communities with a high proportion of Aboriginal and Torres Strait Islander peoples where

health services need to reflect community preferences, connection to culture and provide opportunity for self-determination⁶⁴.

FINDING SOLUTIONS

A key issue is how best to deliver core PHC services for Australia's rural and remote communities which are distributed over a vast geographical expanse. Specifically, considering what is fair and reasonable in a relatively wealthy country such as Australia, what PHC services should residents of different-sized communities, located in different geographical locations, be able to access from resident health workers as opposed to some alternative means of delivery such as visiting or tele-health services? While this is difficult and relatively uncharted, discussion can assist policy makers and service planners to plan PHC service provision more equitably, thereby improving access to core PHC services for residents of rural and remote communities.

OPTIMISING SERVICES

There is an important role for consumers in the process of community planning, however, it is vital that people are aware of the potential range of PHC services in order to plan effectively. Planning for community health needs must take into account community diversity and perceived needs and be informed by knowledgeable consumer advocates and quality health data⁶⁵.

Developing a systematic approach to health workforce strategies which address gaps in service provision and the rural-urban maldistribution, including the training of generalists as opposed to specialists, ensuring professional support is available in small communities where maintenance of skills may be difficult, and providing necessary infrastructure in those communities most in need, are key to enhancing PHC in rural and remote settings.

Technology may facilitate improved access for residents in some rural and remote areas through point-of-care testing, tele-radiology, e-health, tele-health and video-conferencing. However, such tools should be part of a broader strategy, and not be relied upon as a substitute for solving the problems of PHC workforce undersupply or maldistribution. The main concern remains firstly maximisation of access to, and availability of, local services provided by a nurse resident in the area. Being based in, and developing a sense of belonging to, their local community means that nurses can understand the local culture, customs, belief systems and social norms. Cultural competency and sensitivity are important and they underpin conversations about sensitive areas of health and illness, encouraging engagement in preventive health activities and in self-care of existing chronic conditions. The nursing contribution is unique because of its scale and the breadth of the roles that nurses play. This combination means that nurses are very well positioned to respond to the growing need for more person and community-centred care, and for a greater focus on health promotion and disease prevention⁶⁶.

KEY ISSUES

1. The number of nurses being educated and employed in the rural and remote setting needs to increase. The World Health Organization global strategy on human resources for health, *Workforce 2030*, adopted by member states in 2016, proposes a framework for making the most effective use of health workers and developing country-specific investment plans to address workforce shortages.

There are shortages of health workers globally – not all of which can be ameliorated by finding more effective ways of deploying staff and delivering services.

2. Support for growth and development in nurse leadership. Experienced nurse leaders are needed in the right places to help nursing deliver its potential and ensure that the distinctive nursing perspective is included in the delivery of care, policy-making and decision making.

3. It is in everyone's interest for nurses to work to their full potential. Nurses report that they are often not permitted or enabled to fulfil their full potential.

4. The evidence of the impact of nursing on access to care, quality of care and health outcomes supports at least comparable, and in several cases, better patient outcomes when compared to doctor-led care. However, evidence on cost-effectiveness and research in rural and remote areas are minimal. The case studies provided in this discussion paper highlight examples of good practice and areas of potential.

CONCLUSION

Residents of rural and remote communities continue to experience poorer health outcomes compared to many city residents. Nurses have the potential to improve health outcomes. Nurses are well positioned, due to their education, skills and values, to address the need for holistic care that acknowledges the social determinants of health. By being embedded within communities, nurses are able to promote public health and disease prevention to make healthier choices, and empower individuals and families through the provision of support and working alongside local populations. Nurses can create knowledge, skills and confidence within communities around ownership of health, and help to build health resilience in their communities. In the current climate of increasing health burden related to chronic conditions and multi-morbidity, the nurse's role as a culturally attuned promoter of health as well as provider, are invaluable.

Nursing needs to be central to policy and plans to achieve the goals of improved health outcomes in the rural and remote setting. We challenge the government to raise awareness of the opportunities and potential of nursing, create political commitment, and establish a process for supporting development. It is a tragedy to waste the education and training nurses have gained when they are unable to work to their full potential and the co-commitment risk of failing to retain them in the workforce. Much of what nurses do is necessarily small-scale and invisible to the wider world and their collective impact, capability and potential needs to be much better understood.

More equitable access to PHC services in rural and remote communities can undoubtedly contribute to reductions in rates of preventable diseases, avoidable hospitalisations and to lowering mortality rates.

COLLABORATORS

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References

1. OECD (2017) Health at a glance 2017. <http://www.oecd.org/health/health-at-a-glance-19991312.htm>. Accessed 10 September 2018.
2. Australian Institute of Health & Welfare (2017) Rural and Remote Health. <https://www.aihw.gov.au/reports/rural-health/rural-remote-health/contents/rural-health>. Accessed 14 August 2018.
3. Australian Institute of Health & Welfare (2018) Potentially preventable hospitalisations in Australia by small geographic areas <https://www.aihw.gov.au/reports/primary-health-care/mhc-potentially-preventable-hospitalisations/contents/overview>. Accessed 14 August 2018
4. COAG Reform Council (2012) Healthcare 2010–11: comparing outcomes by remoteness. Sydney: COAG Reform Council.
5. Australian Institute of Health & Welfare (2016) National Key Performance Indicators for Aboriginal and Torres Strait Islander primary health care: results from June 2016. <https://www.aihw.gov.au/reports/indigenous-health-welfare-services/nkpi-indigenous-australians-health-care-2016/contents/table-of-contents>. Accessed 14 August 2018
6. Zhao Y, You J, Wright J, Guthridge SL, Lee AH. (2013) Health inequity in the Northern Territory, Australia. *Int J Equity Health*. 12(1):79. doi: 10.1186/1475-9276-12-79.
7. Garcia MC, Faul M, Massetti G, et al. Reducing Potentially Excess Deaths from the. *MMWR Surveillance Summary* 2017;66(No. SS-2):1–7. DOI: <http://dx.doi.org/10.15585/mmwr.ss6602a1>.
8. Lavergne M, Kephart G. Examining variations in health within rural Canada. *Rural and Remote Health* 2012; 12: 1848. Available: www.rrh.org.au/journal/article/1848
9. Kruske, S., Lenthall, S., Kildea, S., Knight, S., MacKay, B., & Hegney, D. (2008). Rural and remote area nursing. In D. Brown, H. Edwards, S. Lewis, M. Heitkemper, S. Dirksen, P. O'Brien, & L. Bucher (Eds.), *Medical-surgical nursing: Assessment and management of clinical problems* (2nd ed., pp. 200–214). Sydney: Mosby Elsevier
10. National Rural Health Alliance Ltd (2018) Fact Sheet, August 2018. <http://ruralhealth.org.au/sites/default/files/publications/nrha-factsheet-about-us-august-2018.pdf> Accessed 10 September 2018
11. Australian Institute of Health & Welfare (2017) Rural and Remote Health. <https://www.aihw.gov.au/reports/rural-health/rural-remote-health/contents/rural-health>. Accessed 14 August 2018.
12. Australian Institute of Health & Welfare (2017) Rural and Remote Health. <https://www.aihw.gov.au/reports/rural-health/rural-remote-health/contents/rural-health>. Accessed 14 August 2018.
13. Freeman, G., Hughes, J. (2010) *Continuity of care and the patient experience*. The King's Fund, London. https://www.kingsfund.org.uk/sites/default/files/field/field_document/continuity-care-patient-experience-gp-inquiry-research-paper-mar11.pdf. Accessed 10 September 2018.
14. MacKinney, A.C., Coburn, A.F., Lundblad, J.P., McBride, T.D., Mueller, K.J., & Watson, S.D. (2014). Access to Rural Health Care – A Literature Review and New Synthesis. Rural Policy Research Institute. <http://www.rupri.org>. Accessed 10 September 2018.
15. Lenthall, S., Wakerman, J., Dollard, M., Dunn, S., Knight, S et al (2018) Reducing occupational stress among registered nurses in very remote Australia: A participatory action research approach *Collegian* Volume 25, Issue 2, Pages 181-191
16. Lenthall, S., Wakerman, J., Opie, T., Dollard, M., Dunn, S., Knight, S et al. (2011) The nursing workforce in very remote Australia, characteristics and key issues. *Australian Journal of Rural Health*, 19, pp. 32-37
17. Australian Institute of Health & Welfare (2015) The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples: 2015. <https://www.aihw.gov.au/reports/indigenous-health-welfare/indigenous-health-welfare-2015/contents/table-of-contents>. Accessed 10 September 2018.

18. McCullough, K., (2018) Developing a theory of remote area nursing practice. Unpublished PhD.
19. Paliadelis P, Parmenter G, Parker V, Giles M, Higgins I. The challenges confronting clinicians in rural acute care settings: a participatory research project. *Rural and Remote Health* 2012; 12: 2017. Available: www.rh.org.au/journal/article/2017
20. Laurant M, van der Biezen M, Wijers N, Watananirun K, Kontopantelis E, van Vught AJAH. (2018) Nurses as substitutes for doctors in primary care. *Cochrane Database of Systematic Reviews*, Issue 7. Art. No.: CD001271. DOI: 10.1002/14651858.CD001271.pub3.
21. Caird J, Rees R, Kavanagh J, Sutcliffe K, Oliver K, Dickson K, Woodman J, Barnett-Page E, Thomas J (2010) The socioeconomic value of nursing and midwifery: a rapid systematic review of reviews. London: EPPI Centre, Social Science Research Unit, Institute of Education, University of London.
22. Laurant M, van der Biezen M, Wijers N, Watananirun K, Kontopantelis E, van Vught AJAH. (2018) Nurses as substitutes for doctors in primary care. *Cochrane Database of Systematic Reviews*, Issue 7. Art. No.: CD001271. DOI: 10.1002/14651858.CD001271.pub3.
23. Laurant M, van der Biezen M, Wijers N, Watananirun K, Kontopantelis E, van Vught AJAH. (2018) Nurses as substitutes for doctors in primary care. *Cochrane Database of Systematic Reviews*, Issue 7. Art. No.: CD001271. DOI: 10.1002/14651858.CD001271.pub3.
24. Caird J, Rees R, Kavanagh J, Sutcliffe K, Oliver K, Dickson K, Woodman J, Barnett-Page E, Thomas J (2010) The socioeconomic value of nursing and midwifery: a rapid systematic review of reviews. London: EPPI Centre, Social Science Research Unit, Institute of Education, University of London.
25. JWH. (2003) Hospital Cost Drivers: An Evaluation of 1998–2001 State-Level Data. *The American Journal of Managed Care* 13–24.
26. ICN (2015) Nurses: A Force for Change – Care Effective, Cost Effective. International Council of Nurses.
27. CAR, C S, W S. (2008) Hospitalizations Related to Pressure Ulcers, 2006. Rockville, MD: Agency for Healthcare Research and Quality.
28. RCN (2016). Nurses for Public Health. Available at: <http://publichealth.testrcnlearning.org.uk.2016>. Accessed July 5 2018
29. Department of Health and Public Health England report. Available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/208842/Evidence.pdf. Accessed 22 June 2018
30. Henry H. (2016) Time to market nursing. *Nursing Standard*. 30, 44, 27–27
31. All-Party Parliamentary Group on Global Health (2016) Triple Impact – how developing nursing will improve health, promote gender equality and support economic growth; London, 17 October 2016; <http://www.appg.globalhealth.org.uk/>
32. ICN (2015) Nurses: A Force for Change – Care Effective, Cost Effective. International Council of Nurses.
33. All-Party Parliamentary Group on Global Health (2016) Triple Impact – how developing nursing will improve health, promote gender equality and support economic growth; London, 17 October 2016; <http://www.appg.globalhealth.org.uk/>
34. Productivity Commission (2005) Australia's Health Workforce Research Report, Canberra.
35. Hegney, D., McCarthy, A., Rogers-Clark, C., & Gorman, D. (2002). Retaining rural and remote area nurses: The Queensland, Australia experience. *Journal of Nursing Administration*, 32 (3), 128–135.
36. Hegney, D., McCarthy, A., Rogers-Clark, C., & Gorman, D. (2002). Retaining rural and remote area nurses: The Queensland, Australia experience. *Journal of Nursing Administration*, 32 (3), 128–135.
37. Mills, J., Francis, K., & Bonner, A. (2008). Getting to know a stranger—Rural nurses' experiences of mentoring: A grounded theory. *International Journal of Nursing Studies*, 45 (4), 599–607.
38. Teasley, S., Sexton, K., Carroll, C., Cox, K., Riley, M., & Ferriell, K. (2007). Improving work environment perceptions for nurses employed in a rural setting. *The Journal of Rural Health*, 23 (3), 179–182.
39. National Rural Health Alliance. (2005). Advanced rural and remote nursing practice (Position Paper). Canberra: National Rural Health Alliance.
40. Fong, J., Buckley, B., Pont, L. (2017) Nurse practitioner prescribing in Australia: A comprehensive literature review. *Australian Critical Care*, Volume 30, Issue 5, 252 - 259
41. CRANaplus (2016) Summative Literature Review Report Factors Effecting Engagement and Disengagement for Rural Nurses CRANaplus Professional Services, October 2016. <https://crana.org.au/uploads/pdfs/Rural-Nursing-Summative-Literature-Review-Oct-16.pdf>. Accessed 10 September 2018.
42. Sullivan, E., Francis, K., and Hegney, D. (2008) Review of small rural health services in Victoria: How does the nursing-medical division of labour affect access to emergency care?. *Journal of Clinical Nursing*; 17: 1543–1552
43. Hegney D. (1996) The status of rural nursing in Australia: a review. *Australian Journal of Rural Health*, 4, 1–10.
44. Francis, K., Chapman, Y., Hoare, J., & Birks, K. (2013) *Promoting healthy partnerships with rural populations*. In Community as partner: Theory and practice in nursing. Wolters Kluwer/Lippincott/Williams and Wilkins, Philadelphia; 372–385
45. Francis, K., Chapman, Y., Hoare, J., & Birks, K. (2013) *Promoting healthy partnerships with rural populations*. In Community as partner: Theory and practice in nursing. Wolters Kluwer/Lippincott/Williams and Wilkins, Philadelphia; 372–385
46. National Rural Health Alliance. (2005). Advanced rural and remote nursing practice (Position Paper). Canberra: National Rural Health Alliance.
47. Gibb, H., Anderson, J., and Forsyth, K. (2004) Developing support for remote nursing education through workplace culture that values learning. *Australian Journal of Rural Health*. 12: 2001–2205.
48. Mills, J, Lennon, D, and Francis, K (2006). Mentoring Matters: developing rural nurses knowledge and skills. *Collegian*, 13(3), 32–36.
49. Gibb, H., Forsyth, K., and Anderson, J. (2006) Culture of rural nursing practice: A critical theoretical analysis of determinants of power in nursing. *Australian Journal of Advanced Nursing*. 23: 34–39.
50. Mills, J., Francis, K., and Bonner, A. (2007) The accidental mentor: Australian rural nurses developing supportive relationships in the workplace. *Rural and Remote Health*. 7
51. All-Party Parliamentary Group on Global Health (2016) Triple Impact – how developing nursing will improve health, promote gender equality and support economic growth; London, 17 October 2016; <http://www.appg.globalhealth.org.uk/>
52. King's Fund (2015), 'Is lack of leadership talent a long-term condition for the NHS?'
53. Kringos DS, Boerma WG, Hutchinson A, van der Zee J, Groenewegen PP. (2010) The breadth of primary care: a systematic literature review of its core dimensions. *BMC Health Serv Res*. 10(1):65.
54. Thomas SL, Wakerman J, Humphreys JS. (2014) What core primary health care services should be available to Australians living in rural and remote communities? *BMC Fam Pract*. 15:143.
55. Wakerman J, Humphreys J. (2011) Sustainable primary health care services in rural and remote areas: Innovation and evidence. *Aust J Rural Health*. 19(3):118–24.
56. Van Lerberghe W. (2008) The world health report 2008: primary health care: now more than ever. Geneva: World Health Organization.
57. COAG Reform Council (2012) Healthcare 2010–11: comparing outcomes by remoteness. Sydney: COAG Reform Council.
58. National Rural Health Alliance. (2016). The extent of the rural health deficit. <http://ruralhealth.org.au/sites/default/files/publications/fact-sheet-27-election2016-13-may-2016.pdf>. Accessed 10 September 2018.
59. Bywood P, Katterl R, Lunnay B. (2011). Disparities in primary health care utilisation: Who are the disadvantaged groups? How are they disadvantaged? What interventions work? Adelaide: Primary Health Care Research and Information Service (PHCRIS), Policy Issue Review.
60. Carey T, Wakerman J, Humphreys J, Buykx P, Lindeman M. (2013) What primary health care services should residents of rural and remote Australia be able to access? A systematic review of "core" primary health care services. *BMC Health Serv Res*; 13(1):178.
61. Thomas SL, Wakerman J, Humphreys JS. (2014) What core primary health care services should be available to Australians living in rural and remote communities? *BMC Fam Pract*. 15:143.
62. Penchansky R, Thomas JW. (1981) The concept of access: definition and relationship to consumer satisfaction. *Med Care*. 19(2):127–40.
63. Levesque J-F, Harris MF, Russell G. (2013) Patient-centred access to health care: conceptualising access at the interface of health systems and populations. *Int J Equity Health*. 12(1):18.
64. Rowley KG, O'Dea K, Anderson I, McDermott R, Saraswati K, Tilmouth R, et al. (2008) Lower than expected morbidity and mortality for an Australian Aboriginal population: 10-year follow-up in a decentralised community. *Med J Aust*.;188(5):283–6.
65. Thomas SL, Wakerman J, Humphreys JS. (2014) What core primary health care services should be available to Australians living in rural and remote communities? *BMC Fam Pract*. 15:143.
66. All-Party Parliamentary Group on Global Health (2016) Triple Impact – how developing nursing will improve health, promote gender equality and support economic growth; London, 17 October 2016; <http://www.appg.globalhealth.org.uk/>