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A Bright Future for Rural Health

Editors Ann Larson and David Lyle

Evidence-Based Policy and Practice in
Rural and Remote Australian Health Care



ARHEN
Australian Rural Health Education Network

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Foreword

Remote and rural areas and the people who live in them are important to Australia's economic base, food security and our national identity. But our natural assets of wide open spaces and geographically dispersed populations are also our greatest challenges in equitable health services provision.¹

The rural health and health service development stories presented here have been shaped by the curiosity, inventiveness, and commitment of the health professionals working in their rural and remote communities. They have been supported by the University Departments of Rural Health (UDRH) to improve the health and wellbeing of rural and remote Australians. This important achievement is an evidence base on which to build policy and practice.

These stories are drawn from across the country and provide a window to the future of rural health in Australia. They show how rural and remote health professionals are making a difference locally and give insights, approaches and solutions to similar challenges or problems faced elsewhere.

Evaluated solutions for many pressing health issues are presented, including self management for people with chronic disease; addressing Aboriginal and Torres Strait Islander health through the recruitment and retention of Indigenous medical students and better birthing services for Aboriginal mothers and babies; new models of care that improve access to quality care for rural people in mental health, palliative care and oral health; and workforce development through role expansion of paramedics. Also considered are two big policy issues: building sustainable rural primary health care services, and responding to an ageing health workforce.

Access to services is a major factor explaining poorer outcomes in rural and remote Australia. This publication grew out of a concern that rural health policy makers and practitioners did not have access to the abundance of information generated from efforts in designing, evaluating and improving rural health services.

The range and quality of the work presented here is a testament to the substantial and ongoing Australian Government investment from the mid-1990s to build the intellectual capital of the bush. During this time, a significant academic presence in rural and remote Australia has been built with the establishment of UDRH and Rural Clinical Schools, and programs targeting the development of research capacity in primary health care. Two peer-reviewed journals devoted to rural health are published in Australia and read around the world.

1. NHHRC (National Health and Hospitals Reform Commission) (2009). *Interim Report, December 2008*, Commonwealth of Australia, ACT.

Because of these investments, we have a brighter future in rural health. There is an emerging capacity of the sector to document what it does well and to communicate the good ideas and lessons learned from innovation so that we do not just invest in rediscovering old insights. Rather, we progress the policy debates and respond to the service delivery dilemmas to further develop and promote good, sustainable health care policy and practice into the future.

I would encourage you to read the stories, follow up the publications and contact the authors.



Professor David Lyle

Head, Broken Hill University Department of Rural Health, University of Sydney and
Chair, Australian Rural Health Education Network (ARHEN)

The stories

Section 1: Clinical services

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3. Preventing diabetes through a lifestyle modification program that works

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4. Screening for abdominal aortic aneurysm in Broken Hill, New South Wales

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1. Improving treatment of heart attacks in remote Australia: Implications for thrombolysis in a region with endemic streptococcal infection in rural practice

Nikki Blackwell, Aaron Hollins, Glenda Gilmore and Robert Norton

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The drug streptokinase (SK) is used widely in the treatment of heart attacks. However, clinicians were concerned that a bacterial streptococcal infection commonly found in Indigenous patients in remote settings may cause antibodies to develop that would negatively impact on the drug's effectiveness in breaking up blood clots (thrombolysis).

This project set out to test this theory and determine antistreptokinase (anti-SK) antibody levels in patients with acute coronary syndrome (ACS) from communities with endemic group A streptococcal (GAS) infection.

Results indicated that anti-SK antibodies are highly prevalent in SK naive (ie not previously treated with SK) Indigenous patients presenting with ACS and confirmed that SK should not be used for treating blood clots in populations with endemic GAS infection.

The findings have important clinical implications about using alternatives to standard SK thrombolysis in areas with high rates of GAS infections.

Relevance to rural and remote health

In 2005, the mortality rate from ischaemic heart disease (IHD) for Indigenous Australians was almost twice the Queensland average. For Indigenous adults under 55 years old, IHD mortality rates were 7–12 times greater than the non-Indigenous population. Current data suggest that this situation has not improved.

Indigenous people living in northwestern Queensland, and possibly other rural and remote locations in Australia, are more likely to acquire GAS infections such as rheumatic fever. These infections lead to high levels of the antibody that prevents SK from working properly.

Clinicians in the Northern Territory had noted high levels of anti-SK, which could suggest SK resistance in the Indigenous population. However, their study did not focus on patients with IHD.

Doctors working at the Mount Isa hospital were concerned about this and undertook a chart review, which showed that SK treatment failed in 66% of Indigenous patients and 41% of non-Indigenous patients. Alternative thrombolytic agents were not available in rural and remote areas at that time.

As a result of these clinical concerns, the authors (doctors in Mount Isa and Townsville hospitals) designed and conducted a study to find the true level of anti-SK antibodies in patients presenting with ACS.

The research

Over a six-month period, all SK-naive people presenting to the emergency department of Mount Isa Hospital with chest pain suggestive of ACS were considered for inclusion in the study. Of those presenting, 47 out of a possible 49 patients were recruited, 19 of whom were Indigenous. At that time, Indigenous people made up 20% of the population of this health district, and were therefore over-represented in the sample.

With the consent of patients, blood was taken for anti-SK antibody testing before treatment was administered. There were 36 men and 13 women ranging in age from 26 to 88 years. The mean age was 48 and 58 years in Indigenous and non-Indigenous patients respectively.

Overall, 74% of the Indigenous patients had positive anti-SK levels, compared with 25% of non-Indigenous patients. It was shown that there was a significantly higher prevalence of anti-SK antibody in Indigenous patients with probable IHD in North West Queensland compared with non-Indigenous long-term residents.

It was noted that while definitive (angiographic) evidence of IHD was not obtained, basing the study on symptoms alone was more consistent with practice, because angiography services are not available for patients living in remote areas.

Lessons learned

The recommendation from this research was that SK should not be used as a first-line agent for treating ACS in populations with endemic GAS infections. Alternative agents or doubling the dose of SK will be more effective.

Before starting the research, the issue was discussed extensively with local Indigenous community groups. The high burden of IHD was well known and efforts to reduce mortality were supported.

Wider relevance

The clinical finding from this research is likely to be applicable to all populations with endemic GAS infections, regardless of location.

This research was inspired by a life-threatening clinical dilemma affecting the major killer of Indigenous people in remote Australia. It was made possible by a small grant and academic support from the Mount Isa Centre for Rural and Remote Health.

Despite experiencing the worst health in Australia, clinical research on health problems unique to rural and remote Indigenous people is rare. As the authors wrote in an international journal:

*Resources and infrastructure mitigate against conducting well designed clinical research, and Indigenous peoples are under-represented in the health literature. The relative paucity of studies considering the health needs of Indigenous Australians reflects the operation of inverse care law.*²

Ischaemic heart disease is the major killer of Indigenous adults living in remote Australia, and the successful management of acute episodes is critical to saving lives. A first-line treatment for an acute coronary syndrome is streptokinase (SK), a drug that breaks up blood clots. A medical audit at Mt Isa Hospital found that SK treatment frequently failed, especially for Indigenous patients. Further research found that this was due to high levels of antibodies to the drug, even though the patients had never been treated with SK. These high levels are the result of group A streptococcal infections, which are common in remote Australia, especially in the Indigenous population. People who have had these infections develop antibodies that cross-react with the drug, making them resistant to SK. The study had an immediate effect in improving treatment of suspected acute coronary episodes in northern Queensland and subsequently in other regions.

Contact person: Stephanie De La Rue (stephanie.delarue@jcu.edu.au)

2. Blackwell N, Hollins A, Gilmore G and Norton R (2005). Antistreptokinase antibodies: implications for thrombolysis in a region with endemic streptococcal infection. *J Clin Pathol*. 58(9): 1005–1007.

2. Chronic disease self-management: A pilot training program for people with chronic conditions

Gary Misan, Peter Harvey, Kate Warren, Jeff Fuller and John Petkov

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In Australia, chronic disease accounts for roughly 80% of the total disease burden. More than \$34 billion or 70% of Australia's total health care expenditure is spent on this growing area.

Many of the serious long-term illnesses experienced by Australians are preventable. These include cardiovascular disease, cancer, diabetes, asthma, arthritis and musculoskeletal conditions. Additionally, the patient can often delay the progression and avoid complications of a condition by changing their lifestyle.

Disadvantaged groups, including the elderly, people from poor socioeconomic backgrounds, Indigenous Australians and people living outside the major urban centres, are most likely to be affected by chronic disease.

The Sharing Health Care South Australia (SHCSA) project was established to determine whether community-based patient education and support programs could be implemented successfully. The study also considered whether patient and provider participation leads to improved patient self-management skills and improved quality of life for people with chronic and complex conditions.

Participants were involved in formal care planning and goal setting in partnership with their general practitioner (GP) and local service providers. They were also offered access to a six-week peer-led chronic disease self-management program modelled after the Lorig Stanford program. This training sought to build patients' skills to not only understand and manage their condition better, but also to negotiate the health care system with more confidence.

The study found that helping people to understand their chronic conditions improves their ability to manage and deal with symptoms, and results in decreased hospital and GP visits.

Relevance to rural and remote health

Australians living outside the large urban centres experience poorer health than their metropolitan counterparts. Rural Australians spend more time in hospital; they have higher mortality rates and lower life expectancy. Mortality statistics show that death rates in regional and remote areas are between 10% and 70% higher than in major cities.

Life expectancy decreases with increasing remoteness. People living in rural areas are expected to die a year or two before those living in large urban centres, while people in the most remote areas have a life expectancy of up to seven years lower than city dwellers.

People in regional and remote areas are also more likely to report an acute or chronic injury, to drink alcohol in harmful quantities, and to be overweight or obese. Compared with those in major cities, people in regional and remote areas are also less likely to report very good or excellent health. Males living in outer regional and remote areas are also more likely to show increased levels of psychological distress and are more likely to commit suicide.

And the picture grows bleaker still. Studies of socioeconomic risk factors show that rural Australians are less educated, have lower incomes, are more likely to be unemployed, and are more likely to engage in unhealthy behaviours than their city counterparts — all of which are associated with poorer health outcomes. People in rural and remote zones also have less access to health services compared with urban counterparts, indicating a need for services and strategies that support people to self-manage their health.

Chronic disease self-management (CDSM) and self-management support (SMS) are integral to health care and particularly so in rural areas where access to health services is often limited.

Despite the importance of addressing chronic disease, experience has shown that many rural health professionals lack an understanding of CDSM and SMS. GPs in particular have been difficult to engage. This is because the conceptual model for CDSM and SMS does not fit easily with existing practice models and structures and many GPs are reluctant to make changes in the absence of demonstrable clinical or financial benefits.

Case studies are needed to demonstrate the potential of the CDSM approach in rural Australia if GPs, other health professionals and patients are to be convinced to adopt it.

The research

This project had several parts. A community reference group was established from the outset to provide advice and community leadership for the project and also as a vehicle for community development and capacity building in CDSM.

Project participants included participants with chronic and complex conditions (diabetes, asthma, arthritis, cardiovascular disease and osteoporosis). Non-Aboriginal participants were eligible for inclusion if they were 50 years or older; Aboriginal participants were invited to enrol in the program if they were 35 years or older.

Data were collected for 258 participants using several health assessment surveys before starting the program, and every six months after. Qualitative data were also collected through semi-structured interviews at each stage of the program.

In the qualitative interviews, participants spoke about the program favourably. Through client-centred care planning and peer-led self-management groups, clients with chronic conditions said they had become more informed about their condition and more involved in their own health care. Participants reported that a significant impact of the program was the bringing together of people to share common concerns and to learn from each other. This enabled clients to better come to terms with their condition, which appeared to be an enabler for better self-management.

The results of the health assessments improved significantly over time, indicating that participants demonstrated improved understanding of their condition and improved their ability to manage and deal with the symptoms of their condition.

Quantitative analysis demonstrated that both GPs and participants reported that participants knew more about their condition following the program. Participants who completed the program also reported an improvement in general health and a reduction in pain compared with the beginning of the program. Hospital visits and visits to the GP decreased by 66% and 28%, respectively, over the course of the program.

Lessons learned

These results suggest that involvement in peer-led self-management education programs have a positive effect on patient self-management skill, confidence, coping and communicating with health care providers, as well as improving health-related behaviour.

Participants also enjoy improved overall health and wellbeing, and improved quality of life.

Health professionals commented that involvement in the program improved interdisciplinary collaboration, with positive benefits for clients in terms of clinical care.

Despite initial resistance, health professionals responded positively to the program when they saw the benefits for their patients and their own practice. This shows how important effective communication strategies are before, during and after project implementation.

This program was not able to demonstrate benefits for Aboriginal patients. The Stanford Program has been adapted for use in Aboriginal and Torres Strait Islander communities. Work to develop a suitable model for Aboriginal and Torres Strait Islander peoples is discussed in *Implementing the Flinders Model of Self-management Support with Aboriginal People who have Diabetes: Findings from a Pilot Study*.

Wider relevance

The importance of supporting patients to self-manage is being increasingly recognised in clinical practice, in academia and in health policy. International and domestic studies have demonstrated the clinical effectiveness of this approach.

The current focus of the health system on acute and episodic care is clearly unsustainable and additional effort and funding is required to establish systems that promote self-efficacy, self-management and wellness rather than the current illness models of care. A change in the culture of medical practice is required but can be achieved.

This case study has demonstrated that CDSM and SMS is feasible in rural areas. Wider implementation will require a comprehensive education program aimed at individual patients and their family, health services and individual health professionals.

People suffering chronic conditions can be overwhelmed by their health problems. They may be discouraged that they will develop complications, or they may be struggling to cope with other personal and family issues. International research shows that when patients and their general practitioners (GPs) and other health care providers set goals together, and when patients gain management skills in a peer-led group, their knowledge and confidence increase, their health and quality of life improves, and they use fewer health services.

This South Australian pilot replicated these findings, demonstrating that best practice in chronic condition management can succeed, even in rural areas with shortages of health professionals, busy GPs and smaller numbers of potential participants.

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3. Preventing diabetes through a lifestyle modification program that works

Nathalie Davis-Lameloise, James A Dunbar, Prasuna Reddy and Edward D Janus; on behalf of the Greater Green Triangle University Department of Rural Health team

Authors' affiliations: Greater Green Triangle University Department of Rural Health, Flinders University and Deakin University

The increasing occurrence of type 2 diabetes mellitus (T2DM) is a problem of global significance.

The risk of developing T2DM has been equally attributable to environmental and genetic factors,³ but the recent increase in incidence is mainly due to lifestyle factors.

In 2004–05, around 3.5% of the Australian population had been diagnosed with diabetes.⁴ However, about half of those people who have diabetes are considered to be unaware of their condition. Additionally, approximately 10% of the Australian population has pre-diabetes, with one-in-three of these people expected to go on to develop the condition.⁵

The Greater Green Triangle Diabetes Prevention Project (GGT DPP) was a national demonstrator program that was conducted in Hamilton, Horsham and Mount Gambier by the GGT UDRH in 2004–06.

The project was based on the Finnish Diabetes Prevention Study⁶ and the Good Ageing in Lahti Region Lifestyle Implementation Trial.⁷ It involved a series of group education sessions delivered to people at high risk of developing diabetes. As the positive effect of diabetes prevention programs is already well established, the aim of this study was to evaluate the feasibility of delivering a structured group-based lifestyle modification program in Australian primary care settings with modest resources. A follow-up investigation looked at whether gains achieved by the intervention were sustained longer term and whether telephone support would provide better outcomes.

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Relevance to rural and remote health

T2DM is a chronic and costly disease associated with premature mortality and high rates of health service usage. Complications that result from diabetes include cardiovascular disease, damage to the eyes, kidney failure and nerve damage.

The shortage of health professionals and poor access to diabetes specialists in rural and remote areas amplifies the issues around prevention and treatment of T2DM and its complications.

The prevalence of diabetes in rural Greater Green Triangle has been among the highest in Victoria and South Australia.

The research

Participants were recruited from general practices in three regional centres in Victoria and South Australia by screening patients for high risk of developing T2DM.

Assessments of physical, biochemical and psychological health as they relate to diabetes were performed before the program and at 3 and 12 months, respectively.

A goal setting and planning approach was used to increase behaviour change in physical activity and dietary habits. Regular self-assessment was used to empower participants to make personal short and long-term goals and create structured plans to achieve these.

At the 12-month health assessment, there was an average reduction in weight of 2.52 kg and waist circumference of 4.17 cm. Most importantly, the estimated risk reduction for T2DM and cardiovascular disease was 40% and 16% respectively. Other health assessments conducted as part of the study also showed favourable results.

The GGT DPP was followed up with an investigation regarding whether gains achieved would be sustained at 30 months and whether telephone support would produce better long-term outcomes.

Participants were allocated randomly to a group receiving regular telephone support calls from specially trained nurses, or to a self-care group who received no calls. At the completion of this part of the study, there was no significant difference between the groups. Encouragingly the general health improvements were maintained across the entire study group.

Lessons learned

This study showed that this diabetes-prevention program using lifestyle intervention is possible in primary health care settings in regional Australia.

This group-based prevention program in primary health care settings for individuals at high-risk of T2DM resulted in improved health outcomes, which were sustained after 30 months.

Telephone support on completion of a 12-month lifestyle change intervention was not found to provide additional benefits at 30 months.

Wider relevance

In 2007, the Council of Australian Governments (COAG) developed a national standard for lifestyle diabetes-prevention programs based on the GGT DPP. All Australians aged 40–49 years old who are at risk of T2DM are eligible for accredited, subsidised lifestyle modification programs.

Additionally, the Victorian Government used this project as a basis for the statewide diabetes prevention program: *Life! Taking action on diabetes*. The program began in 2007. It has funding to operate for four years and is targeting 25 000 Victorians who are aged 50 or over. GGT UDRH staff have a strong presence in this project, assisting with evaluation, development and training of group facilitators.

In the face of the accelerating epidemic of type 2 diabetes mellitus, evidence-based prevention programs are the best defence. The Greater Green Triangle University Department of Rural Health conducted a rigorous trial of a structured group lifestyle modification program targeting residents of three regional towns who were at high risk of developing diabetes. Participants lost weight and reduced their risk of illness. These benefits were maintained after the program with no further interventions. This rural-based research has informed new national standards for diabetes-prevention programs and a large-scale program aiming to enrol 25 000 Victorians.

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4. Screening for abdominal aortic aneurysm in Broken Hill, New South Wales

Margaret Lesjak, David Lyle and Stephen Flecknoe-Brown

Authors' affiliations: Broken Hill University Department of Rural Health, University of Sydney; Greater Western Area Health Service

Five men living in Broken Hill died due to abdominal aortic aneurysms (AAA) between 1998 and 2003. Community concern about the deaths prompted the call for a local screening program.

An AAA is a bulge in the main artery that delivers blood from the heart to the lower half of the body. If the pressure inside the bulge becomes too great, it can rupture and cause internal bleeding.

AAA is a result of poor vascular health and affects 5–10% of men over the age of 65 years. It is often undiagnosed and 80% of men with ruptured AAA die before reaching hospital.

The good news is that AAA is easy to detect with a simple non-invasive ultrasound. Early detection allows for an aneurysm to be operated on as a preventative measure. This elective surgery considerably reduces the risk of death.

The detection procedure is easy to carry out and is highly specific and sensitive, making it an ideal screening tool. The United States of America, United Kingdom and Canada have established AAA screening programs, but Australia has been slow to follow. In response to this issue, a Broken Hill research team developed and evaluated a mobile screening service model similar to the Australian Breast Screening program.

Ultrasound equipment and ultrasonographers were brought to Broken Hill for a short period. Westmead Vascular Laboratory (WVL) vascular sonographers performed AAA screening and Toshiba (Medical Division) loaned ultrasound equipment for the trial.

Screening was offered over several weeks in a community building. In addition to the ultrasound, men were given a basic health check and a follow-up consultation. Each attendee was given a letter to give to their usual general practitioner (GP), which described the findings of the screening. Cases requiring immediate action were managed by the clinical team.

Relevance to rural and remote health

Establishing the feasibility of screening for AAA in rural and remote settings is particularly important. People in rural areas have relatively poor vascular health compared with city dwellers. They also have greater distances to travel for both specialist care and emergency medical services. This is critically important in the case of a ruptured aneurysm.

AAA screening programs have been trialled in metropolitan centres, where better infrastructure and staffing enabled models such as referral to a fixed centre or incorporation into large general practices. Remote centres, such as Broken Hill, lack that infrastructure. Research was needed to test whether offering screening through a mobile clinic would be feasible.

The research

The evaluation of the program examined attendance, occurrence of AAA in the target population, and effectiveness of the screening process.

Broken Hill men aged between 65 and 74 years on the electoral roll were invited to participate via a personally addressed letter. Of these, more than 500 men (or 60%) participated. This result was similar to the rates achieved in the Australian breast and cervical cancer screening programs.

Participants reported that the main reasons they attended the screening were that they received a personalised letter, they were convinced that the screening was important, and they wanted to know whether they had an aneurysm.

Fifty-three men were found to have enlarged abdominal aorta. These rates were constant with the average rate of AAA in western countries.

Through follow-up surveys, it was learnt that six months after the screening, 89% of those men who identified as having AAA had consulted a GP or surgeon. Of these, 67% had a management plan and two men with a significant AAA had undergone surgery to treat the aneurysm.

Lessons learned

In the past decade, policy debate about screening for AAA has moved from a discussion of whether to do it, to an examination of how it should work.

Ahead of a national program in Australia, the Broken Hill community worked together to develop this local screening program.

This research shows that targeted screening could be made available to a rural community using a mobile service visiting every three to five years and recruiting men around 65 years of age. Community participation in the screening program, with support from service clubs and other community service groups, would also be possible if screening was scheduled this way.

Our experience in Broken Hill indicates that AAA screening ultrasound should be part of a broader men's health strategy. Because AAA screening appears highly acceptable to men in the target age group, it can serve as an excellent incentive to men who may not otherwise participate in health-related activities.

Wider relevance

The success of a national screening program will ultimately be measured by a reduction in deaths and improved quality of life associated with AAA. However, international studies have already proven the effectiveness of screening. Determining the appropriate and feasible models for screening and follow-up is a high priority.

This study showed that a mobile screening service for AAA is appropriate for remote centres without the infrastructure to maintain a continuing, local program. Mobile screening could be scaled up to be delivered throughout rural and remote Australia.

Many Western countries run screening programs to detect abdominal aortic aneurysms (AAA), a bulge in a main artery that, if it bursts, usually causes death before the patient gets to the hospital. Australia does not have a screening program, but when five men died from AAA in as many years, the people of Broken Hill wanted something done. Being a remote centre, partnerships with metropolitan services proved the answer to creating a sustainable AAA screening program. In its first trial, 60% of local men over 65 years attended the screening, and more than 10% of them had enlarged abdominal aorta. These men were treated through regular management by their general practitioner (GP) or elective surgery.

Contact person: David Lyle (DLyle@gwahs.health.nsw.gov.au)

Clinical services projects: Related publications

Improving treatment of heart attacks in remote Australia: Implications for thrombolysis in a region with endemic streptococcal infection

Blackwell N, Hollins A, Gilmore G, Norton R (2005). Antistreptokinase antibodies: implications for thrombolysis in a region with endemic streptococcal infection. *Journal of Clinical Pathology* 58:1005–1007.

Chronic disease self-management: A pilot training program for people with chronic conditions

Ahkit J, Prideaux C, Harvey P, Collins J, Battersby M, Mills PD, Dansie S (2003). Australian Chronic disease self-management in Aboriginal Communities. *Journal of Primary Health* 2&3 (9):168–176.

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Preventing diabetes through a lifestyle modification program that works

Kilkkinen A, Heistaro S, Laatikainen T, Janus E, Chapman A, Absetz P and Dunbar J (2007). Prevention of type 2 diabetes in a primary health care setting. Interim results from the Greater Green Triangle (GGT) Diabetes Prevention Project. *Diabetes Research and Clinical Practice* 76:460–462.

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Screening for abdominal aortic aneurysm in Broken Hill, New South Wales

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Section 2: Indigenous health

5. Footprints Forwards: Better strategies for the recruitment, retention and support of Indigenous medical students

Drysdale M, Chesters J, Faulkner S

6. Implementing the Flinders Model of self-management support with Aboriginal people who have diabetes: Findings from a pilot study

Battersby M, Ah Kit J, Prideaux C, Harvey P, Collins J, Mills P

7. Regional Family Birthing and Anangu Bibi Birthing Program: A partnership model between Aboriginal maternal infant care workers and midwives caring for Aboriginal mothers and babies

Stamp G, Champion S, Zanet P, Anderson G, Taylor J, Newbury J

5. Footprints Forwards: Better strategies for the recruitment, retention and support of Indigenous medical students

Marlene Drysdale, Janice Chesters and Susan Faulkner

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The importance of Indigenous Australians pursuing health careers has been identified in the Council of Australian Government's National Partnership Agreement (COAG NPA) signed in February 2009 on *Closing the Gap in Indigenous Health Outcomes*. The increase in the number of Aboriginal and Torres Strait Islander people in the health workforce has been set as a performance indicator of sustainability. Other indicators include the number of Aboriginal and Torres Strait Islander people in tertiary education in health-related disciplines and recruitment and retention of Indigenous people in the health workforce. One of the six main targets is to halve the gap in employment outcomes between Indigenous and non-Indigenous Australians within a decade.

This nexus between a representative health workforce, greater participation in higher education and increased employment for Aboriginal and Torres Strait Islander people are the factors at the core of a recent research project undertaken by a team led by Monash University Department of Rural and Indigenous Health in collaboration with the Indigenous Health Unit at James Cook University and the Muru Marri Indigenous Health Unit at The University of New South Wales. The study was undertaken in Victoria, Queensland and New South Wales.

The research project looked at opportunities for, and barriers against, Indigenous students entering medical education. The National Aboriginal and Torres Strait Islander Health Council and the Australian Indigenous Doctors Association (AIDA) refer to this research in *A Blueprint for Action: Pathways into the Health Workforce for Aboriginal and Torres Strait Islander People*.⁸

Relevance to rural and remote health

There have been many calls for action from bodies such as AIDA, the Australian Medical Association (AMA) and Oxfam, among others, to increase the number of Indigenous Australians in medicine and other health professional careers, and ensure Australia has a culturally appropriate health workforce.

As the COAG NPA shows, this is an important national issue. It involves a number of significant factors, including increasing the opportunities for individual Indigenous students to pursue careers in medicine or other health professions; addressing the huge disparity in the proportion of Indigenous doctors, nurses and other health professionals

8. National Aboriginal and Torres Strait Islander Health Council (2008). *A Blueprint for Action, Pathways into the Health Workforce for Aboriginal and Torres Strait Islander People*, Commonwealth of Australia, Canberra.

when compared with the proportion of non-Indigenous population working as health professionals by increasing the number of people in the Australian health workforce with an Indigenous background; and potentially increasing the number of Indigenous professionals providing health services to Indigenous people. Seeking to close the gap between both the health and education outcomes for Indigenous people in Australia through promoting health courses and careers is now a national priority.

Given this context, this project provides valuable insights and understandings of many of the factors that are impeding Aboriginal and Torres Strait Islander people from entering medicine and other health courses.

The research

The key objectives of the project have been to examine existing information relating to Indigenous recruitment and support strategies of Australian medical schools; identify reasons for low Indigenous recruitment, enrolment and completion in medical schools; review existing promotional materials; develop an interactive multimedia product; and design and pilot flexible and sustainable models of recruitment.

Activities in the first stage of the project included:

- forming a reference group to provide informed guidance
- reviewing the literature to examine the barriers to, and opportunities for, Indigenous Australian students entering medical courses in Australia using work from 1996 to 2006
- auditing the number of Indigenous Australian medical students, including first-year enrolments in the 15 medical schools in 2006
- analysing existing promotional materials for Indigenous Australian students currently considering medical careers
- conducting focus groups with Indigenous students in Frankston and Mildura
- developing a recruitment resource for use in all Australian secondary schools using the message *You Can Do It!*
- reviewing various models to recruit Indigenous medical students
- surveying secondary school principals and career counsellors in Victorian secondary schools
- developing a self-administered questionnaire of Indigenous Community Education Counsellors and Indigenous Student Support Officers in the Townsville region that looked at the number of Indigenous students enrolled in their high schools, the career advice provided, the participants knowledge of university entrance processes and issues facing Indigenous Australian students wanting to pursue a health career
- surveying Indigenous Australians who withdrew from their medical studies about the reasons impeding their course completion.

The second stage of the project involved dissemination of the project findings and extensive consultation with a diverse range of stakeholders. Two Indigenous consultancies were commissioned to explore some of the key recommendations from the first phase of work. One study outlined sustainable means for information delivery by scoping options for an ongoing model for health careers information collection and dissemination. The other considered information needs and support mechanisms for those working in career development of Indigenous Australian students.

Lessons learned

The literature review identified a number of opportunities to help Indigenous students. Interaction with health professionals and tertiary students were found to be effective in providing information on health careers. The quality of the education experience rises when teachers recognise and value the potential of students. Good career advice was found to raise career expectations. The literature review also identified a range of barriers. Indigenous students were found to have lower expectations of themselves and lower year 12 retention than non-Indigenous students. Career advisors were found to encourage Indigenous students into VET streams and discouraged them from higher education and medicine in particular.

An analysis of current approaches taken by Australian universities to Indigenous students found a lack of consistency in the recruitment and retention strategies among medical schools. It was found that there is much to do in the future to build knowledge and awareness of what they offer Indigenous students and to develop appropriate programs that will dramatically increase Indigenous student numbers to parity with their non-Indigenous counterparts. Much of the information about Indigenous entry to medical schools was seen as complex, changing and varied between medical schools. Orientation of materials was found to display a one-way approach to information provision, whereas the analysis indicated that engagement with two-way dialogue is desirable.

It was found that Indigenous Australian secondary students depended on career advice from teachers and expos and, to a lesser extent, families for information and support about potential careers in medicine or other health professions. Given this reliance, it was of concern to find that many of those providing career development services did not themselves have current information of medical courses or programs, or ready access to such information.

Responses from career counsellors indicated that most of the advice they provided to Indigenous students was limited to subject choice or academic work requirements. Almost 90% of respondents could not correctly describe possible pathways for students who lacked the requisite entry score. A strong theme that emerged from a study involving participants who provide career support to Indigenous students in the Townsville region was the need for regularly and easily updated information. This needed to be clear, simple and include elements that were targeted and relevant, such as local role models and success stories.

Indigenous Australian students were found to be highly interested in pursuing careers as health professionals. In general, they are motivated by altruistic reasons, such as the

desire to improve the health of Indigenous people. Students were found to need high levels of information and support. The participants in student groups in Victoria stated that they needed more specific course information.

Although the sample size of Indigenous Australians who had withdrawn from their medical studies was small, participants raised a number of issues about the reasons behind their decision not to continue with their studies. Respondents raised support for Indigenous Australian students as important in a number of their answers. It was felt that better support from their medical faculty could have encouraged students to continue their studies. The most common advice that students who withdraw could give to new Indigenous medical students was to gain all possible support. Issues with course work were not raised as the reason students withdrew from courses. Financial reasons were the most common reason for withdrawing.

Wider relevance

The project highlighted the need for universities to strengthen their approaches to recruiting and retaining Indigenous Australian students. What has emerged is that there is a disconnection between the nature, style and form of the information and support that is required and the way in which it is provided. Opportunities for greater collaboration and better targeting of efforts among stakeholders could result in benefits such as a move towards greater consistency in information delivery, currency of information and sharing of resources.

Since the second stage of the project formally ended, members of the project team have continued to consult and discuss future stages of the project. The response from those working in career development has been extremely positive and supportive of the future stages of the project.

The challenge now is to implement initiatives that will bring about change. Further project work is planned, and two key elements are proposed. The first element is a dedicated resource centre with a help line supported by what is described as a 'second generation' style of clearinghouse. This would be a resource for students, their families, their career development practitioners and others. The resource centre will significantly increase access to higher education for Indigenous students — in this instance, to health courses and careers, but also more widely to all higher education.

The second element is designed to improve career development. Professional development modules for career development practitioners are proposed. The modules would include cultural safety training, as well as culturally appropriate ways to encourage interest and knowledge about medicine and other health careers.

It is hoped that the work undertaken in this project to date can be extended to realise its potential. What is needed is a coordinated and collaborative national approach to be adopted to address this issue and significant funding support.

The national goal of increasing the number of Indigenous people working in the health sector will only succeed if the strategies identified by this multi-state, Indigenous-led research program are followed. Conventionally, students are recruited into medicine through encouragement from family and teachers, and information material produced by universities. This study revealed that these methods were inadequate, confusing and irrelevant for Indigenous students. Career counsellors, on whom Indigenous students often rely for advice, have very little understanding about pathways into university courses such as medicine. A nationally coordinated approach would significantly increase the number of Indigenous people studying and working in health.

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6. Implementing the Flinders Model of self-management support with Aboriginal people who have diabetes: Findings from a pilot study

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Compelling evidence shows that structured self-management programs are effective in improving the health and wellbeing of patients who suffer chronic diseases. Very few of these programs have been implemented successfully with an Aboriginal client group and through Aboriginal community controlled health services.

Consultation with elders in the Aboriginal community identified that there was widespread concern about health, and about diabetes specifically. The concept of patients being encouraged to engage in self-management was strongly supported by the community.

This 12-month pilot program explored the acceptability and impact of using more structured systems of care for Aboriginal people with diabetes on Eyre Peninsula, South Australia.

The project adapted an existing 'Partners in Health' program to develop patient education, behaviour change and self-management strategies that were culturally appropriate for Aboriginal communities. The researchers investigated whether the modified self-management program delivered by Aboriginal and Torres Strait Islander Health Workers (AHW) was acceptable to an Aboriginal community and whether it helped people to make positive changes. To answer these questions, the researchers developed and tested a revised self-management assessment scale.

Relevance to rural and remote health

Finding ways to support Aboriginal people to manage their own chronic conditions is critical to reducing mortality and morbidity.

This pilot study is a valuable example of developing chronic disease self-management programs in collaboration with Aboriginal people. Particular attention is given to the real-world problems encountered in implementing the program and these experiences can inform similar efforts in other jurisdictions.

The research

The model required AHW to conduct patient-specific assessments and coordinated care planning and goal setting with each patient, their usual general practitioner (GP) and other allied health professionals as required. AHW and other Aboriginal community members received extensive training in implementing chronic disease self-management strategies.

Results were measured using a patient diabetes self-management assessment tool, goal achievement, quality of life and clinical measures at the start and six months later.

Sixty Aboriginal people with type 2 diabetes were recruited for the study and received assessment and care planning. These patients stated that their main problems were family and social dysfunction, access to services, nutrition and exercise. These problems improved by 12% and goals by 26%, while quality of life scores showed no significant change. Self-management scores improved in five of six domains. The mean glycated haemoglobin (HbA1c) levels reduced significantly from 8.74 to 8.09, and average blood pressure remained unchanged.

In addition, at the end of the project, a workshop was held to review the evaluation tools and obtain feedback from the AHW and medical and nursing staff about the strengths and weaknesses of the program.

The program demonstrated that AHW are in a unique position to assess the needs of individual patients and their families.

AHW reported that the program was acceptable to most patients. Those patients who did not benefit were facing other problems that were much more urgent than their personal health.

Lessons learned

The study found that an AHW-led program of self-management support, in partnership with the patient and their GP, is acceptable to Aboriginal patients with diabetes. There were indicators that this approach leads to improved self-management capacity along with improvements in clinical outcomes.

However, time pressures on staff, social problems and available services were factors that need to be considered in planning and implementing such programs so that patient and staff expectations are met. There were delays in getting clients to services and inadequate time given to filling in forms and preparing for care plans.

In conclusion, the pilot showed that an approach of targeted self-management support and addressing main life problems and goals may lead to significant changes in self-management behaviour, and, possibly, clinical measures. This study was a necessary intermediate step towards achieving reductions in complications of diabetes and improved wellbeing.

Wider relevance

Given staff and health care service shortages and the high chronic care needs of Aboriginal people, this study is both relevant and important to rural and remote Aboriginal communities nationally.

Finding ways of enabling Aboriginal people to self-manage their chronic conditions in an informed manner could also be extended to other acute diseases.

This project's strength is the idea of health programs designed with, for and by Aboriginal people.

Due to the high Aboriginal involvement from inception, there is a high potential for wider application, especially for other models of care and project design within Aboriginal communities.

This project has shown the potential of improving consultation methods, practices and information dissemination and could be applied on a wider level. More rigorous and longer-term studies are required to measure the potential for improvements in clinical indicators and quality of life for Aboriginal people with chronic illness.

Programs to increase patients' capacity to manage their chronic disease are growing in popularity with policy makers, health professionals and the general public. However, until this pilot in regional South Australia, Indigenous people rarely participated in such programs. The pilot included extensive consultations with the Indigenous community, ownership of the program by an Aboriginal community-controlled health service, and a key role for Aboriginal and Torres Strait Islander Health Workers as the main coordinators of self-management support. The result was that 60 Aboriginal people participated and achieved notable improvements in health outcomes and personal goals. This pilot demonstrates that mainstream programs are relevant for Aboriginal communities as long as Aboriginal people lead the adaptation process.

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7. Regional Family Birthing and Anangu Bibi Birthing Program: A partnership model between Aboriginal maternal infant care workers and midwives caring for Aboriginal mothers and babies

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Australia's perinatal mortality is low; however, it is double for Aboriginal and Torres Strait Islander births.

To tackle the important issue of Aboriginal mothers' and babies' health, a culturally focused perinatal care model was developed. The Anangu Bibi Family Birthing Program partnered Aboriginal maternal and infant care (AMIC) workers and non-Aboriginal midwives.

The program was developed in response to the concerns raised by senior women of the region during the 2003 South Australian statewide Aboriginal women's workshops. At this time, a clear statement was delivered:

Healthy pregnancy and birthing is a life process and is an important issue for the health of all our communities. This issue should be a priority in health planning processes, with appropriate and adequate ongoing funding. Aboriginal and Torres Strait Islander women want to be cared for by Aboriginal and Torres Strait Islander midwives and Health Workers.

At the time of the report, the Northern and Far Western region had a population of more than 50 000 people over a 756 742 square kilometre area, making the area the largest and most sparsely populated geographical region in South Australia. The Aboriginal first peoples of the region comprise 6002 people — just over 11% of the population. Port Augusta and Whyalla hospitals provide birthing services.

At Port Augusta Hospital, there were concerns about considerable discrepancies between Aboriginal and non-Aboriginal pregnancy outcome statistics, with Aboriginal women more likely to have fewer than seven antenatal visits; be under 20 years of age; and have an emergency caesarean section. In addition, 58% of Aboriginal women were smokers at their first antenatal visit compared with 19% of non-Aboriginal women.

Funding from the Federal Alternative Birthing Program was used to introduce the birthing program in the regional towns of Whyalla and Port Augusta. Later stages of the program were funded by the South Australian Department of Health and administered by the Northern and Far Western Regional Health Service (now known as Country Health SA). Both these locations are home to highly respected Aboriginal communities. Furthermore, Port Augusta has cultural and kinship connections for many Aboriginal language groups from remote communities.

The key elements of the program were:

- expert cultural guidance from an Aboriginal Women's Advocacy Group that included elders from language groups local to the area
- creation of a new AMIC worker position in a leadership role
- education and training for AMIC workers in antenatal, birthing and postnatal care, as appropriate
- intercultural partnerships and skill exchange between AMIC workers and midwives, with general practitioner (GP) assistance
- commitment to continuity of care and primary health care principles
- a management group for program support.

Five part-time AMIC workers and five part-time midwives were allocated a case load following a structured selection process. Both sites provided ante and postnatal care until babies were six to eight weeks of age. In Port Augusta, women were also cared for during delivery. Health workers at the Pika Wiya Aboriginal Health Service in Port Augusta had already been providing antenatal care for around two years before the project commenced in February 2004. The AMIC workers provided a critical link between Aboriginal mothers and pregnant women and health professionals.

Relevance to rural and remote health

The evidence has long been known and often repeated: Aboriginal and Torres Strait Islander mothers receive less antenatal care and their babies fare worse than non-Aboriginal or Torres Strait Islander Australian babies — being more likely to weigh less than 2.5 kg at birth, to be small for gestational age, or to be born pre-term.⁹

Maternity services in rural and remote Australia continue to be hamstrung by chronic shortages of general practitioner obstetricians and midwives, and closures of smaller maternity units. Lack of access to maternity health care is an everyday reality for childbearing Aboriginal and Torres Strait Islander women living in rural and remote areas. As pregnancy progresses, travel to regional centres to await the birth, incurring huge out of pocket expenses and separation from community and cultural connections, is the norm.

One aim of improving the pregnancy care of Aboriginal and Torres Strait Islander mothers and babies is to increase the number of antenatal visits. Based on the rationale that this will in turn lead to early identification of issues and therefore to healthier mothers, babies and children, several Aboriginal and Torres Strait Islander-initiated partnership models had been reported. This project is the first for South Australia.

9. Laws P and Hilder L (2008). *Australia's Mothers and Babies 2006, Perinatal Statistics Series no. 22*, National Perinatal Statistics Unit, Australian Institute of Health and Welfare, Sydney.

The research

The evaluation team comprised four Aboriginal and four non-Aboriginal researchers. All the interviews and focus groups with Aboriginal people were conducted by Aboriginal researchers.

Evaluation objectives were to seek participants' views and experiences of the program; document the process of establishing the program and any implementation barriers; investigate working relationships between AMIC workers and midwives; describe participants' demographic profiles and perinatal outcomes; and obtain information about behaviours that may affect birth outcomes (eg smoking, antenatal visits).

University of South Australia and Aboriginal Health Council of South Australia research and ethics approval were obtained.

Following consent, Aboriginal researchers conducted focus groups with the Aboriginal Women's Advocacy Group and Whyalla program participants, interviews with 10 mothers using the modified Victorian new mothers' questionnaire, and semistructured interviews with AMIC workers. Six stakeholders were also interviewed and the midwife researcher conducted semistructured interviews with the program midwives and nurse unit managers. Demographic and outcome data were collected from the program database and supplementary birth records. Baseline data for comparison were obtained from the Pregnancy Outcome Unit Aboriginal births for 2004 and a study in progress of non-Aboriginal rural South Australian women, also using the Victorian questionnaire.

Despite marked differences between the two sites and initial resistance by hospital staff to AMIC workers, findings demonstrate that the model is acceptable and beneficial, and that consultation and partnerships are crucial to its success.

Whyalla women commented favourably on their relationship with the AMIC worker, transport, and appointment support and antenatal care. Women would have liked continuity with labour and birth care and were disappointed with the six-week postnatal cut-off. Interview responses with 10 women were compared with 54 non-Aboriginal rural women. Program women were more likely to rate birthing staff as very friendly and welcoming and to know the midwife who cared for them in labour. However, they were also more likely to have had someone in the labour room whose presence was not wanted; to have wanted more information during labour; and to have found feeding advice contradictory. They were also less likely to be breastfeeding at six to eight weeks.

More program women had more than seven antenatal check-ups compared with all South Australian Aboriginal women in 2004, while smoking rates at first visit were similar (56.4% versus 57.8%, respectively).

Lessons learned

Interviews with the AMIC workers and midwives provided a snapshot of a living, developing, intercultural partnership. Development of the partnership took commitment and time. Skill sharing and two-way learning engendered mutual respect. Clear benefits of the care model were highlighted by both AMIC workers and midwives while cultural safety was maintained for the Aboriginal mothers and families.

The AMIC workers provide an important link between the Aboriginal mothers and pregnant women, and midwives.

The role of AMIC workers needs promotion, acknowledgment, support and development. It is also important to acknowledge that AMIC workers, as members of their communities, have obligations and priorities within their own family systems, as well as their work in the program. It is clear that building on the AMIC workers and midwives relationships is essential in sustaining the program.

AMIC workers and midwives were successful in developing rewarding intercultural partnerships. As one of the AMIC workers described it:

...I think non-Aboriginal people and Aboriginal people working together is a good way. Non-Aboriginal people can't offer the service without us, but we can't do it without them either... the clinical knowledge that we learned from the midwives, you know, without that, we couldn't do our work properly. But the same thing, they couldn't do it without us because they need our cultural knowledge. They need to know the way we deal with people... So it just works really well like that and in the partnership... That's the way it can work, you know, you feel like you can make a difference for our people if we work that way.

Future programs should factor in the time required to build and sustain partnership relationships.

Wider relevance

Aboriginal and Torres Strait Islander life is maintained by the kinship network, which has roles and responsibilities that ensure the maintenance of essential protocols. It is important that protocols are adhered to during interventions that aim to improve health of Aboriginal and Torres Strait Islander people.

This partnership model between Aboriginal and Torres Strait Islander Health Workers and non-Aboriginal midwives caring for Aboriginal mothers has the potential for much wider introduction and evaluation.

Country Health South Australia has implemented a number of these project recommendations, including supporting AMIC workers to participate in established courses that lead to professional qualifications. The long-term aim is for AMIC workers to progress to direct entry midwifery courses. Country Health South Australia has also provided adequate equipment, space and infrastructure at both sites for the AMIC

workers and midwives who work together on the program. Additionally, the birthing model has also been introduced to the Whyalla site.

Most policies to improve Aboriginal health call for better partnerships between Aboriginal and mainstream services. Although there is no more urgent need than to improve the health of Aboriginal women and their babies during pregnancy and beyond, partnerships often falter because there are not clearly defined roles for the different services. The solution, in the form of Aboriginal Maternal Infant Care (AMIC) workers, was born when an Aboriginal women's workshop in regional South Australia resolved that Aboriginal women should be cared for by Aboriginal midwives and Aboriginal and Torres Strait Islander Health Workers. After relevant clinical training and time for mutual respect to grow between AMIC workers and non-Aboriginal midwives, the program flourished. Participating women were very satisfied with service they received from AMIC workers and midwives working together, and they attended a higher than average number of antenatal visits. In the future, AMIC workers may be able to progress to a direct-entry midwifery program.

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Indigenous health projects: Related publications

Footprints Forwards: Better strategies for the recruitment, retention and support of Indigenous medical students

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Implementing the Flinders Model of self-management support with Aboriginal people who have diabetes: Findings from a pilot study

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Regional Family Birthing and Anangu Bibi Birthing Program: A partnership model between Aboriginal maternal infant care workers and midwives caring for Aboriginal mothers and babies

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Section 3: Mental health

8. The Women's Referral and Access Project : An integrated care model for rural women dependent on illicit drugs

Passey M, Sheldrake M, Leitch K

9. Better mental health emergency care access for rural and remote Australians

Saurman E, Perkins D, Roberts R, Patfield M, Lyle D

10. Practice nurses as case managers in a collaborative-care model for managing depression in patients with heart disease or diabetes: The D_TECT and TrueBlue studies in primary care

Morgan M, Reddy P, Coates M, Leahy R, Schlicht K, Dunbar J

8. The Women's Referral and Access Project: An integrated care model for rural women dependent on illicit drugs

Megan Passey, Michelle Sheldrake and Kerry Leitch

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Treating rural women with drug dependence by focusing on improving quality of life, rather than abstinence from drugs, is showing significant results.

The Women's Referral and Access Project (WRAP) provided community-based case management support for drug-dependent women in the Northern Rivers area of New South Wales.

Before the project, a needs assessment revealed that both drug-dependent women and service providers were concerned that the few local services available struggled to meet demand.¹⁰ The project, which was a recommendation from the 1999 NSW Drug Summit, was developed to combat this situation.

Pregnant women, mothers with dependent children, Aboriginal and Torres Strait Islander women and women living in Nimbin took part in the trial. Many of the participants were also participating in a methadone program.

The project took a holistic approach to improving these women's lives by meeting their broader health and social needs, rather than just focusing on cessation of illicit drugs. This was achieved through protocols designed for the project that included client self-assessment of her needs, development of a case plan, frequent contact between the case manager and the client, and a three-monthly formal review. Referrals to medical and therapeutic treatment, as well as ongoing counselling, were also provided.

Case managers (CMs) were recruited across the region and trained in the WRAP model. They were based in both government and nongovernment services and most received no additional funding to case manage their clients (nonfunded case managers). Most of the CMs were qualified counsellors, some working in the alcohol and drug field. However, most of the program was not delivered from traditional drug and alcohol treatment facilities. Nonfunded CMs managed one or two clients in addition to their other roles, while funded CMs saw up to 20 people. One of the CMs' roles was to assist clients to access services, such as counselling and training that would help them to reach their goals. Funding was made available to pay for private services directly related to clients' goals.

10. Sheldrake M, Leitch K, Keevers K, Gilmore V, Passey M (2003). *A WRAP UP of the Needs Assessment, November 2001–February 2002: An Integrated Care Trial for Drug (Illicit) Dependent Women and their Families (Report 1 of 3)*. NSW Department of Health, Sydney.

Relevance to rural and remote health

Women's experience of substance dependence may be negatively affected by living in rural areas.

Drug dependence and the problems it creates are a source of personal shame for many women. Compared with men, drug-dependent women experience greater social stigma due to their roles as mothers,¹¹ suffer higher levels of shame and self-blame,¹² are more likely to use several different types of drugs, and are more likely to have additional mental illnesses.

Other barriers to recovery for rural drug-dependent women are limited infrastructure (eg transport and accommodation), insufficient health services and trained staff, and geographical isolation.¹³ Consequently, it can be harder for women in rural and regional locations to recover from drug abuse and lead productive lives.

The research

WRAP was evaluated using both qualitative and quantitative methods.

The women participating were assessed at the start of the project and every three months afterwards. A variety of assessment methods and surveys were used to monitor health and wellbeing, as well as drug use.

After six months, more than 60% of the women who started the program were still participating. Older women and those with relatively better health when starting the trial were most likely to stay in the program.

Assessments at the conclusion of the trial showed the women were enjoying significant improvements in self esteem, psychological wellbeing and social functioning, as well as reduced drug dependency and drug use.

Many women participating developed a valuable positive relationship with their case manager. Feedback highlighted the importance of having access to one trusted nonjudgmental individual who both listened and provided practical assistance. Other positive characteristics that were highlighted by program participants were the case planning and review process, which helped participants to identify and address unmet needs and achieve goals.

11. Swift W, Copeland J, Hall W (1996). Characteristics of women with alcohol and other drug problems: findings of an Australian national survey. *Addiction* 91:1141–1150.
12. Hunter GM, Judd A (1998). Women injecting drug users in London: the extent and nature of their contact with drug and health services. *Drug and Alcohol Review* 17:267–276.
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O'Connor LE, Berry JW, Inaba D, Weiss J, Morrison A (1994). Shame, guilt, and depression in men and women in recovery from addiction. *Journal of Substance Abuse Treatment* 11:503–510.
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New South Wales Government (2000). *New South Wales Ministerial Committee on Health Service in Smaller Towns. Report to the NSW Minister for Health. A Framework for Change*, NSW Government, Sydney.

Lessons learned

WRAP used a holistic case-management model that linked women to services to meet their health and social needs and improve their quality of life. It was well accepted by the women who experienced significant improvements in quality of life and health and social circumstances. While funding for the trial was for a limited period, the services involved have attempted to continue to provide this model of care.

The study shows that it is possible to achieve positive outcomes in specific areas of service, like drug and alcohol support, using existing staffing and organisations when they are provided with training, support and resources. This is particularly important in a rural setting where specialist care is limited.

More broadly, this research demonstrates that drug dependence can be addressed by dealing with the range of needs people have and not simply by tackling the drug use alone.

Wider relevance

Drug and alcohol-dependent women in regional and rural areas face the special challenge of limited services and support.

The WRAP model was developed in rural New South Wales to work within these limitations. The study's results show that a creative approach to drug dependence in women can improve their lives and reduce drug use.

With sufficient ongoing funding for training and support of case managers, this flexible new approach to helping women could be implemented and have positive impacts wherever there are women dependent on illicit drugs.

Rural women dependent on illicit and other drugs usually have few or no options for treatment locally. In Northern New South Wales, the lack of service capacity was severe. The solution was a flexible service model that increased capacity by training counsellors and other workers based in community services to be case managers.

Using a holistic approach, case managers helped women to set and achieve their own health and social goals. Of the women who enrolled in the program, 60% participated for at least six months. Systematic assessments showed improvements in self-esteem, psychological wellbeing, and reduced drug dependence and drug use. The community services were sufficiently committed that they have tried to continue the program after funding ended.

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9. Better mental health emergency care access for rural and remote Australians

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*It is 1 am on a Sunday morning.
An extremely distressed patient has just presented to an emergency department (ED) in remote New South Wales.
The ED staff don't know quite what to do.
There is no psychiatrist or mental health nurse within 400 kilometres.
The safest option is to transfer the patient to a mental health inpatient unit at the regional centre, more than four hours' travel away... but this might not be necessary.*

A novel approach to mental health emergencies in remote settings has resulted in fewer patients being transported out of their community.

The Mental Health Emergency Care — Remote Access Project (MHEC-RAP) was designed to fill a gap in access to prompt specialist emergency mental health care for residents and health care providers in rural and remote communities in western New South Wales.

The service provides around-the-clock access to specialist mental health assessment, including video assessment, and referral for further care and review, either in the community or as an inpatient.

MHEC-RAP is available to everyone in the region. Patients, families and health professionals can access the service using a 1800 free-call telephone line.

When a call is received at MHEC-RAP headquarters, the mental health nurse on duty decides whether further assessment or treatment is required. If so, the patient may be referred to local community mental health services or for a video assessment by a nurse or a psychiatrist. Following the assessment, a patient may be discharged home, referred to a local mental health team or their general practitioner (GP), admitted to the local hospital for further care and review, or transported to a mental health inpatient unit.

Relevance to rural and remote health

Mental health is an Australian national health priority. One in five people suffer from a diagnosable mental health disorder each year.

Many rural communities receive specialist care via outreach services because they do not have resident specialists. Only 14 psychiatrists live and practise in remote areas throughout Australia.

While outreach services make a valuable contribution, they are not usually available when emergency care is needed.

Mental health patients in crisis present regularly to the nearest emergency department (ED) where staff often report being inadequately equipped in training or resources to care for their needs.

In these situations, the decision to transport patients to access specialist assessment or treatment may be required at night or on the weekend. This can involve families, police, ambulance services and local health staff.

Decisions must be made promptly but carefully. The MHEC-RAP first-year evaluation has shown that the ability to obtain a specialist assessment and timely advice via phone or video conference can make the difference between a good and bad decision. This access can ultimately prevent unnecessary transfers, resulting in better care for the patient and reduced costs to the health system and community emergency services.

The research

The first-year evaluation has collected data to inform program development and management. An action research or 'learn by doing' methodology was used to observe the service as it was implemented.

This process described the service activity and assessed its performance in improving access, safety and service coordination; and finally gauged stakeholder satisfaction about the service.

The service commenced in 2008. In the first 10 months of operation, the MHEC-RAP team received more than 10 000 telephone referrals. Just over 18% of these calls required an emergency mental health assessment.

Use of the service has increased steadily with impressive results. Previously, about 60% of patients who presented at participating EDs would have been transported. Now almost half are discharged with a local care plan, more than a quarter are admitted to the local hospital, 7% have a further assessment during office hours, and just 19% are transported to a mental health inpatient unit.

Patients who had a video consultation were more likely to be admitted to a hospital after the consultation compared with patients with a telephone consultation. However, patients with a video consultation were more likely to be admitted to their local hospital rather than being transferred to a specialist unit.

Remote patients and their families particularly benefited from this new service. Video conference consultations were used more often in isolated communities and this resulted in fewer patients being transferred.

Based on an average ambulance/air ambulance transport cost of around \$3000, using the service has saved up to \$52 890 per month in ambulance and associated fees. The police service has made similar savings. Additionally, police, ambulance and escort nurses can now spend more time in their local communities.

Lessons learned

The evaluation demonstrates that the new service is valuable. Use of the service has increased steadily, patients are receiving more appropriate treatment, and cost savings are being made by health and emergency services.

The results show that the more a site uses MHEC-RAP, the less frequently patients are referred to other mental health services. This means more patients can be cared for close to home and shows increased confidence in local staff to care for them. Formal evaluation before and after the introduction of MHEC-RAP shows a significant increase in the skills and confidence of medical and nursing staff.

One success factor in this project was staff willingness and ability to adapt their clinical practice. The project team has implemented an effective communication process, while the local staff receive education and ongoing support. This process enables the model to be fine tuned and creates a positive relationship between the MHEC-RAP team and service users.

The MHEC-RAP has been recognised by two state health awards: the Improving Access to Services category of the Creating Better Patient Journeys Award, and the Minister for Mental Health Award for Excellence in the Provision of Mental Health Service.

Wider relevance

The problem of limited emergency access to mental health care specialists is not unique to western New South Wales.

The MHEC-RAP service model has achieved positive results responding to the concerns of communities, health and emergency personnel. The project's success in implementing a flexible program that enables local staff to consult a team of mental health specialists using a variety of technologies could be duplicated across regional, rural and remote Australia.

Rural and remote hospitals are staffed with skilled generalists. When mental health emergencies occur, they can be overwhelming. Without specialist knowledge to keep patients, family and staff safe, evacuation to a distant mental health inpatient unit is often the only option. The evaluation of a western New South Wales program indicated that 24-hour access to mental health specialists through telephone and videoconference consults led to better local management of mental health emergencies, including fewer transfers to distant cities. The local community, health professionals and police all benefited from this flexible, award-winning service.

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10. Practice nurses as case managers in a collaborative care model for managing depression among patients with heart disease or diabetes: The D_TECT and TrueBlue studies in primary care

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A successful feasibility study called D_TECT (Depression Treatment Evaluation Care Team) used a collaborative approach to detect, monitor and treat depression among patients with existing type 2 diabetes mellitus (T2DM) or coronary heart disease (CHD) in primary care. It was developed by the Greater Green Triangle Department of Rural Health and conducted in general practices in rural areas.

The model mobilised existing resources and funding paths available in general practice, including general practitioners (GPs), practice nurses (PNs) and existing Medicare-funded enhanced primary care items.

PNs received additional training in detecting and managing depression, as well as use of electronic medical recording, which up-skilled them to take on a case manager role for individual patients. Participants in the program attended regular appointments with both the nurse and their usual GP.

The D_TECT pilot study showed that the collaborative model was feasible, acceptable and affordable in rural settings. More than one-third of patients were assessed as having depression, and patients described positive attitudes and relief that their mental health concerns were being addressed as part of a comprehensive care package. PNs and GPs were in favour of continuing the model of care.

As a pilot study, D_TECT was not designed to investigate the clinical benefits of the collaborative model. A randomised control trial called TrueBlue was developed for this purpose. The trial is still in progress but preliminary results are available.

Relevance to rural and remote health

It is anticipated that within 20 years, diabetes will become the leading contributor to the overall burden of disease in Australia.¹⁴ As the population ages and the trend toward obesity continues,¹⁵ general practice will deal with more cases of the many resulting conditions, including diabetes and heart disease.

14. Begg SJ, Vos T, Barker B, Stanley L, Lopez AD (2008). Burden of disease and injury in Australia in the new millennium: measuring health loss from diseases, injuries and risk factors. *Medical Journal of Australia* 188(1):36–40.

15. Adam RJ, Tucker G, Hugo G, Hill CL, Wilson DH (2008). Projected future trends in hospital service use for selected obesity-related conditions. *Obes Res Clin Pract* (2):133–141.

Depression is increasingly being recognised as a major factor that leads to poor clinical outcomes. In patients with either diabetes or heart disease, the presence of depression leads to increased morbidity and mortality.¹⁶ Unfortunately, this depression is often missed in routine general practice¹⁷ and it remains under diagnosed and under treated, especially when in the presence of diabetes and heart disease.

There is a particular need for new approaches to this problem in rural and remote areas where the shortage of health professionals means that GPs have less access to specialist and allied health services for their patients. Across Australia, there is an increasing number of PNs being employed in general practices. The Australian Practice Nurse Association (APNA) reports 60% of general practices employ at least one PN. Models of care that expand the role of PNs provide one method of alleviating the shortage of health professionals, particularly in rural areas.

The research

Eleven practices in South East Australia employing PNs are participating in the TrueBlue trial. Six practices were randomly assigned to the intervention group and five to the control (usual care) group. Approximately 150 patients were recruited to each group.

Before implementing the model, the PNs attended a two-day workshop to prepare for their new role. The workshop introduced the rationale of the collaborative care model before presenting a range of topics, including screening for depression, and identification and measurement of physiological and lifestyle risk factors, such as high cholesterol, blood pressure, blood glucose, central obesity, smoking, alcohol and physical inactivity. Training to educate patients in diabetes and heart disease risk reduction and to assist patients with goal setting and problem solving was undertaken. Administrative activities, such as coordinating referrals, timetabling follow-ups, and preparing the draft GP management plan, were also covered.

An important aspect of the model is goal setting, in which the patient (guided by the PN) develops up to three goals that the patient feels are achievable to help reduce the risk factors. This means that patients become more active participants in their own care. Patients are recalled automatically and systematically every 13 weeks so that the progress of their care can be monitored and their goals can be reassessed to ensure that they remain timely and relevant. Special tools and protocols were put into place to identify and manage patients at risk of suicide or self-harm.

16. Lin EH, Katon W, Von Korff M, et al. (2004). Relationship of depression and diabetes self-care, medication adherence, and preventive care. *Diabetes Care* (9):2154–2160.
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Bunker SJ, Colquhoun D, Esler MD, Hickie IB, Hunt D, Jelinek VM, et al. (2003). “Stress” and coronary heart disease: psychosocial risk factors. National Heart Foundation of Australia position update statement. *Med J Aust* 178:272–276.
17. Harris MF, and Zwar NA (2007). Care of patients with chronic disease: the challenge for general practice. *Med J Aust* 187(2):104–107.

Because the study was still in progress at the time of writing, no final results were available. However, the preliminary results suggested a mean reduction in depression score of 33% after six months of collaborative care compared with a 16% reduction after six months of usual care. (The 95% confidence limits are a 23% to 39% reduction for the intervention clinics, and an 8% to 26% reduction for the control clinics.) These observations are supported by anecdotal comments from the PNs who report a visible improvement in appearance and manner of many of their TrueBlue patients. Case review and qualitative interviews with the PNs have demonstrated clearly that the protocols put in place to deal with positive responses to the self-harm question and worsening depression scores have been followed.

Lessons learned

The pilot study and preliminary results of the TrueBlue trial indicate that collaborative models of primary care for diabetes help to identify and successfully address depression and other mental health issues of patients with diabetes. Up-skilling nurses and providing a structured way for them to take on more responsibility and work closely with a GP assists rural health professionals to work effectively as a team. A supportive GP, training for the PNs and protected time of at least 30 minutes for the PN to consult were important requirements for the model's success. By completing GP management plans or team care arrangements, and diabetes annual cycle of care Medicare item numbers, practices could more than recoup the costs of the PN's time.

These studies are an excellent demonstration of the value of rural research capacity building. The 18-month trial of D_TECT was conducted entirely in rural areas, demonstrating the value of rural research capacity to develop and test innovative ideas in partnership with local health professionals. After demonstrating the feasibility of the model, the rural-based research team was able to launch a randomised control trial to rigorously test clinical outcomes in urban and rural sites across three states.

Wider relevance

The strength of this collaborative care model is that it provides a sustainable way to manage chronic illness with particular attention to monitoring and self-management of mental health. Sustainability comes through building on the skills of existing health care workers and systematically accessing funding opportunities available.

The model can be used readily in any primary care setting with PNs and GPs.

Rural researchers found that more than one-third of patients seeing a general practitioner (GP) for diabetes or coronary heart disease also have depression. In a typical busy general practice, mental health conditions may go undiagnosed or unaddressed. This was the motivation to develop a new model of care using existing general practice health teams and taking advantage of Medicare funding opportunities for complex care. Practice nurses (trained in assessment, patient education, and patient-centred goal setting and problem solving) held individual sessions with patients and attended consults with the GP and patient. Preliminary results from a randomised controlled trial show significantly greater reduction in depression among patients receiving collaborative care.

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Mental health projects: Related publications

Evaluation of the Women's Referral and Access Project: An integrated care model for rural women dependent on illicit drugs

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Practice nurses as case managers in a collaborative care model for managing depression in patients with heart disease or diabetes: The D_TECT and TrueBlue studies in primary care

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Section 4: Service delivery

11. Accessing expert clinical support in the bush: Lessons from implementing a store-and-forward imaging system for managing chronic wounds

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11. Accessing expert clinical support in the bush: Lessons from implementing a store-and-forward imaging system for managing chronic wounds

Melissa Barrett, Isabelle Ellis and Ann Larson

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Chronic wounds are a classic rural health challenge. High prevalence of chronic diseases and trauma mean that wound care is a part of daily rural health practice.

For several years, researchers and colleagues at the Combined Universities Centre for Rural Health (CUCRH) have been involved in trials of wound imaging and shared electronic records of wound care management in Western Australia. These projects have demonstrated the benefits and barriers to adopting new technologies and processes.

Following the successful application of wound imaging processes in the Kimberly, researchers developed a similar project for the Midwest. The results of this project were discouraging due to some fundamental weaknesses of rural health service provision.

Relevance to rural and remote health

Managing wounds places a heavy burden on rural health care services because patients require frequent assessment and treatment. Wound care is also an area of specialist care. Most rural nurses working in a generalist role have received little training in wound care and do not know the range of treatment options or what healing rates can be achieved.

The research

In the early 2000s, a study in the Kimberley found that digital imaging and remote expert advice were the keys to improved remote wound care management.¹⁸ CUCRH's Professor Isabelle Ellis and three colleagues conducted research into the clinical outcomes and costs of providing a synchronistic remote expert wound consultation. The Alfred/Medseed Wound Imaging System was used in conjunction with expert consultation in a 12-month prospective randomised trial in four sites in the Kimberley region.

A control group received standard wound care management for leg and foot ulcers. The intervention group had their digital records transmitted to Perth every two weeks for remote review by a wound care consultant with wound management advice provided to the treating clinician. The images enabled easy tracking of healing rates.

Findings from the study provided early evidence of the clinical and cost effectiveness of the intervention. The intervention group had a positive healing rate compared with a

18. Santamaria N, Carville K, Ellis I, Prentice J (2004). The effectiveness of digital imaging and remote expert wound consultation on healing rates in chronic lower leg ulcers in the Kimberley region of Western Australia. *Primary Intention: The Aust J Wound Management* 12(2):62–70.

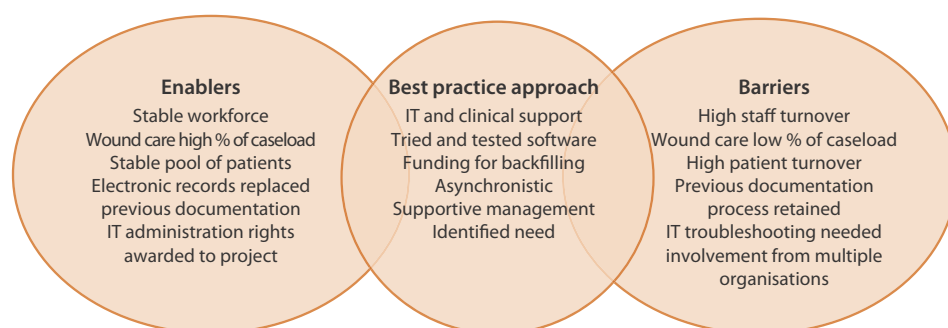
negative rate in the control group; there were also five fewer amputations and a cost saving of \$191 000 in the intervention group. Some of the same team of researchers replicated the successes with another trial based in residential aged care homes around the country.¹⁹ In these settings, pressure ulcer prevalence and severity declined precipitously, while health care workers' confidence to identify and manage wounds effectively increased.

Following those studies, CUCRH researchers began to discuss wound care with health care providers in the Midwest, where the care of chronic wounds was a major burden on services. There was also a view, backed by a survey, that nurses lacked intensive training and confidence to deal with chronic wounds. History taking and documentation were poor, and there were no established referral pathways for health care providers to obtain expert advice.

Adoption of software similar to that used in the Kimberley appeared to be the obvious solution. We already had evidence that the system was acceptable to clinicians and brought health improvement for less cost. Funding was obtained to trial a program that installed the software on computers in 12 health care sites (a public and a private hospital, three rural community health clinics, two residential aged care homes, two general practices, a domiciliary nursing service, and a podiatrist). The medical records (with patient consent) rested in a separate server and could be accessed by all participating sites to improve the coordination of wound management across services. A wound care specialist was contracted to review records regularly and there was significant investment in IT support, training and regular contact with a clinical champion.

The intention of the pilot was to test the factors involved in replicating the Kimberley program on a wider scale. The results were discouraging.²⁰ Only one site was able to fully adopt the new system. Despite implementing all the factors known to influence adoption of telehealth, new barriers characteristic of rural primary health care emerged. The figure below summarises the core best-practice elements of the intervention and the additional barriers and enablers encountered.

19. Santamaria N, Carville K, Prentice J, Ellis I, Ellis T, Lewin G, Newell N, Haslehurst P (2009). Reducing pressure ulcer prevalence in residential aged care: results from phase II of the PRIME Trial. *Wound Practice and Research* 17(1):12–24.
20. Barrett M, Larson A, Carville K, Ellis I (2009). Challenges faced in implementation of a tele-health-enabled chronic wound care system. *Rural and Remote Health* (online): 1154.



Lessons learned

The barriers were principally about workforce shortages. Other factors involved lack of autonomy to make decisions related to IT systems and problems with funding models that did not compensate providers for wound care management.

Not surprisingly, enablers involved a stable workforce. But there were other factors as well. Especially important was a high number and proportion of patients with chronic wounds. Health care workers were more likely to try, to gain experience with and value the system if they regularly encountered patients with wounds. Funding models that did not rely on fee for service and covered the cost of dressings and other products were also more conducive to the use of wound care system.

Wider relevance

E-health measures have excellent potential to save needless suffering and death in rural and remote settings, but some of the fundamental weaknesses of rural health services have to be addressed before patients can fully benefit.

Some promising strategies are the use of the wound care system (and similar innovations) in the outpatient and subacute health care settings attached to regional hospitals and with domiciliary nursing. A proposal by the Australian Government Department of Veterans' Affairs may mean that the primary care providers of all veterans will be able access the software and receive compensation for wound management and the cost of care products — something that is not possible through current Medicare procedures.

E-Health innovations hold promise for patients in rural and remote Australia. Rural researchers and their health service collaborators were impressed with the excellent results of a wound care imaging system that assisted health professionals to heal wounds faster. The system enabled timely access to expert advice, measured healing rates and had the capacity to share information with other health professionals and patients.

Implementation of this system in a large rural area of Western Australia led to some sobering conclusions. Major barriers proved to be severe nursing workforce shortages, lack of autonomy in information technology decision making, too few clients with chronic wounds seen at some sites, and anomalies in funding arrangements that did not cover the full cost of wound care. No matter how well planned, ad hoc introduction of e-health innovations depend on a strong rural health sector.

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12. Improving rural palliative care services

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In Australia, palliative care is provided primarily by family members. However, the strain of providing that care places a significant burden on caregivers, which often results in patients being hospitalised. Short-term assistance in the home can give carers a respite from their duties, enabling them to complete chores, socialise or be physically active as a way of reducing their stress. Many palliative care services train volunteers to accompany patients when their carer is out, but carers can be unwilling to leave their family members with people who are not health care workers.

The palliative care service in Geraldton, a regional centre 400 kilometres north of Perth, was facing those difficulties. Melissa Barrett, who was then the clinical nurse specialist, sought advice from researchers at the Combined Universities Centre for Rural Health, who in turn contacted palliative care expert Professor Linda Kristjanson. Together, they developed a project to offer eligible carers a limited amount of respite care in their home by an enrolled nurse (EN) with palliative care training. The project would provide immediate assistance to carers showing signs of stress with their caring responsibilities. It would also address a gap in the literature regarding acceptability and outcome of in-home respite services by qualified health care workers.

The project was piloted in Geraldton through Silver Chain, the organisation responsible for palliative care services at that time. Using a simple standardised form, all patients and carers were screened regularly for characteristics identified in the literature to be the most common reasons for requesting respite care. This assessment tool was repeated fortnightly to ensure that the carer was still eligible. Once assessed, carers were offered limited hours of respite care during weekdays.

Relevance to rural and remote health

In rural Western Australia, carers of palliative patients at home face particular challenges. First, there are very few hospital or hospice beds, resulting in longer waiting lists and a greater period of time at home for the average rural palliative patient compared with those who live in a city.

Second, in rural towns, volunteers are likely to be personally known to carers. Rural palliative care services report that carers frequently voice concerns about maintaining confidentiality with local volunteers and express a reluctance to be perceived as a 'charity case'.

The research

The palliative care service had 41 patients over the 25-week trial period — an average caseload of 29 patients per week. Fourteen patients/carers were assessed as eligible for respite, and 12 of these accepted care. The amount of care provided depended on availability. An EN was only available for seven hours per week. An individual carer may have received between one and five hours. To estimate the impact on reduced hospital days, each patient was matched to historical controls drawn from an existing palliative care database. Controls from the previous five years were matched by diagnosis, age (within five years) and sex. To compare hospitalisation rates (proportion of days spent in hospital) at similar stages of illness, the control group's experience was limited to the same period up to death, for patients who died, or a period of time when routine measures (such as Karnofsky scores) were similar.

Conditional logistic regression showed that patients/carers who had received EN respite were 80% less likely to be hospitalised than historical controls. The saving from reduced bed days was more than twice the cost of providing the EN service.

Following positive results, the service was continued in Geraldton and introduced in Albany — another Western Australian regional centre of similar size to Geraldton. A third centre, Busselton, was used as a control site. The same method was used to assess eligibility in all three sites, but EN respite care was offered only in Geraldton and Albany. For this study, 17 patients/carers accepted care and were in the program for an average of 61 days. They received a mean of only 11.5 hours of respite. Despite this small amount, the effect on hospitalisations was remarkable. Compared with the eligible patients in Busselton, Geraldton and Albany patients spent 80% fewer days in hospital. Compared with a new set of historical controls (matched to the patients but from the same town), patients receiving respite care were 65% less likely to be hospitalised.

Lessons learned

The carers expressed unreserved satisfaction with the program, remarking only that they wished it was available more often or at other times. Having an EN provide the care was reassuring, not only because the EN would be able to look after the patient but because they could answer questions that the carer had. As one person said, 'You knew they knew what they were talking about. They could reassure us.' In the second study, three carers turned down the offer of respite care because they had enough family support. When asked, the carers with the respite service said that respite did not change the amount of support they received from family and friends and that they felt it had made it possible to avoid hospitalising the patient.

Wider relevance

If the program was implemented throughout non-metropolitan areas, there would be an annual direct saving of \$1.08 million. Although this study specifically considers the provision of palliative respite care, the results may have applications for other health issues, such as chronic disease management, which can be delivered profitably at home by skilled health workers.

This research has been presented at five conferences and in a publication. Both intervention sites are continuing the service, and, as a result of the studies, funding has been secured for all regions in Western Australia to implement a rural model of palliative care that will incorporate respite care.

Most rural patients receiving palliative care remain at home by personal choice or because of the lack of hospice beds. Caring for a palliative patient can be challenging and family carers sometimes struggle, leading to a temporary hospital admission, which is expensive and distressing. It was hypothesised that a little home respite care at the right time would reduce hospital admissions, but programs where trained community members volunteer to stay with a patient have been shown to be unacceptable to many carers. Two trials using enrolled nurses for respite care to eligible carers demonstrated that this simple service, averaging about one hour a week for each carer, was associated with far fewer days in hospital compared with matched controls. The program has been adopted as part of Western Australia's rural palliative care policy.

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13. Bringing oral health care to remote New South Wales

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Visiting the dentist can be unaffordable for many Australians. In rural areas, the problem is greater because there is often no dentist for hundreds of kilometres.

In 2007, the Greater Western Area Health Service (GWAHS), Maari Ma Health Aboriginal Corporation (Maari Ma) and the Royal Flying Doctor Service (RFDS) signed an agreement to collaboratively provide improved and flexible public oral health services in Broken Hill and surrounding remote regions. This agreement included a full range of services, including pain relief, extractions, oral health promotion, preventive care and treatment available without charge to eligible patients.



Communities covered by the Agreement

RFDS dentists, with dental assistants and dental therapists, provide services in Broken Hill and fly to remote communities (see map). The population that the service covers consists of 16 383 adults, including 8093 health care and pension card holders.

In preparation for renegotiation of the agreement, the Broken Hill University Department of Rural Health evaluated whether the service met the objectives and performance targets of the original agreement. The evaluation also examined the impact of the agreement on local service providers and patients.

The evaluation showed a positive impact on the provision of oral health care within the region. Collaborative services based on effective partnerships and transparent agreements are an important key to providing services in rural and remote areas.

Relevance to rural and remote health

This project is relevant to the delivery of rural and remote dental health care services throughout Australia, and specifically for the under-served Aboriginal population.

Poor oral health can be linked with other health conditions, including cardiovascular disease, hepatitis C and otitis media. Research has shown that oral health is also linked to wellbeing and quality of life. Suffering from poor oral health can lead to pain, disfigurement, disability and, in some cases, death.²¹

The New South Wales component of the National Survey of Adult Oral Health 2004–2006 found that oral disease is disproportionately higher among health care cardholders, uninsured people and people living outside Sydney, and that these groups are less likely to visit the dentist than the rest of the population. These issues have a major impact on people living in rural and remote communities.²²

The research

A mixed methods evaluation was conducted, including a literature review on rural and remote oral health, and an analysis of service delivery and operation documentation. Interviews were also conducted with service staff, and patients were asked to complete a satisfaction survey.

The questions asked related to professionalism and courteousness of staff, explanation of treatment, the type of treatment received, respectfulness and appropriateness of treatment, and waiting times for appointments.

The evaluation showed that, although complex, the service was achieving its aim of providing improved and flexible oral health services in partnership with relevant health services.

Before the agreement, public dental services were difficult to obtain and many communities did not have access to a dentist. The vast area expected to be covered proved to be too ambitious within the resources available. Still, in the first two years, one in 12 eligible people used the service.

The patient survey indicated that they were very satisfied with the treatment. Most (88%) patients had not seen a dentist in the past 12 months and most of the treatment involved extractions and restorative work.

The funding was used efficiently and equitably. The evaluation found that the number of patients seen was directly related to the amount of money available: doubling the funding

21. National Health and Medical Research Council (2009). *A Healthier Future for all Australians — Interim Report: Interim Report of the National Health and Hospitals Reform Commission December 2008*, NHMRC, Canberra.

22. Sivansewaran S (2009). The oral health of adults in NSW, 2004–06. *NSW Public Health Bulletin* 20, 3–4: 49.

resulted in twice the number of patients using the service. The relatively high rate that Aboriginal clients access the service (four times more frequently than non-Aboriginal clients) remained unchanged with the additional resources, providing a level of equity to a disadvantaged community group.

Lessons learned

The evaluation showed that the agreement was working and was having a positive impact on the provision of oral health care within the region. Collaborative services based on effective partnerships and transparent agreements are key to providing services in rural and remote areas.

Interviews conducted with service providers, management and staff indicated that the service was well supported by the organisations.

The oral health needs are so great, and the delivery of services to small communities so time intensive, that most providers felt that more people could be served only if resources were made available for employing more staff.

The other issues raised concerned management issues, governance, effective communication and shared record keeping systems between the organisations. Addressing these issues would improve the operation of the agreement.

Wider relevance

The oral health service agreement reflects an innovative solution to providing much-needed dental services in remote communities, and the model could be used in other regions and for other disciplines.

A collaborative partnership structure with strong communication and organisational frameworks provides a mechanism for providing a service with far more reach than previously possible. This approach could be key to improving services in other rural and remote areas.

The Royal Flying Doctor Service's (RFDS) role in bringing essential health care to rural and remote Australians is legendary. In western New South Wales, they also bring dental care to communities that have no public dental care options. RFDS dentists and other oral health workers fly into Broken Hill and outlying remote communities. The demand for this service has been great because of the large number of communities without dental care, but it has been able to keep growing as funds become available. A program evaluation indicated the people with the greatest oral health needs were getting care, and Aboriginal community controlled and state health services were very supportive.

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14. Benefits of outsourcing in Tasmanian rural hospitals

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Outsourcing is common, particularly in the business and information technology sectors and in metropolitan hospitals. However, it is not often considered by rural and remote health services.

Outsourcing is generally accepted as the contracting out of activities previously performed inhouse. In several states, outsourcing has been associated with improving cost efficiency by extending opportunities for competition. In Tasmania, outsourcing is viewed primarily as a mechanism to address needs that cannot be met locally.

The pilot study on health outsourcing in Tasmanian rural hospitals examined the views, principles and rationales on which outsourcing is based in regional and rural Tasmania.

The study identified the health benefits of outsourcing.

Relevance to rural and remote health

In every state of Australia, the demand for health care has increased. There are not enough health workers to take care of the population, particularly in rural and remote areas. Various suggestions and solutions have been developed to deal with the shortage crisis, and health outsourcing is one of the potential solutions to address health workforce shortages in remote and rural areas. By 'purchasing' health professionals from larger centres, rural communities can have reliable access to services.

Tasmania has the highest proportion of rural population of all Australian states, but it has a major advantage in that the distance between the three major cities is not great. Contracting human and other resources is feasible and relatively inexpensive.

The research

Both primary and secondary sources were used in the study. Secondary data were gathered through a review of literature, books, articles, press releases, public policy documents, database reports and information, as well as information on the internet.

Interviews were conducted with nine key informants. They were purposely selected to represent the views of regional health service management, clinical heads of departments in public and private hospitals, and people responsible for rural workforce development.

The findings confirmed the importance of outsourcing to improving health services in rural and remote areas.

Informants explained that health outsourcing makes possible a range of services that would otherwise be unavailable to rural Tasmanian communities. It has been used to increase the health workforce in small rural hospitals through the recruitment services of

general practitioners (GPs) from overseas and of allied health professionals from regional centres. Outsourcing gives rural managers the flexibility they need to deliver the health care that their community needs.

Outsourcing also enables structured collaboration between small and large hospitals. For example, smaller services can save money on purchasing or leasing advanced equipment when the services are purchased from larger services on an as-needed basis. Also, health outsourcing can facilitate a small number of beds from private hospitals being available for patient transfers.

Lessons learned

This study revealed that there are two distinct goals underpinning why and how outsourcing occurs in Tasmania: cost efficiency and need. Metropolitan and larger regional hospitals are motivated to outsource to increase the efficiency of their service. Small rural hospitals and health care services outsource to maintain a particular level of service.

Informants from both regional and rural perspectives observed that while there are a number of agencies and bodies to help maintain workforce and assist rural services to identify health professionals, the efforts to supply the health workforce are uncoordinated. A cohesive organisation with expertise in anticipating health workforce needs, recruitment and procurement procedures would be of great benefit.

Wider relevance

This study identified issues and problems of outsourcing, such as reasons for outsourcing, strengths and weaknesses and relationships among outsourcing participants.

It is important to note that this research opened a window onto health outsourcing in rural Tasmania. The findings are necessarily limited to the reports of key informants. Further research is needed to provide a more comprehensive picture of health outsourcing in rural Tasmania.

Future study should focus on the impacts of health outsourcing on the social fabric of rural communities considering health services' contribution to community cohesion and sustainability. The analysis could chart the responsiveness of policies to strategic and tactical health care imperatives, such as unexpected vacancies or rapid population change.

Rural health managers' greatest challenge is acquiring health resources – people and equipment – needed by small communities. In this formative study, key informant interviews shed light on regional and rural health service managers using outsourcing as a tool. Larger regional hospitals use outsourcing in the conventional way to increase the efficiency of their service. In small rural hospitals and health care services, outsourcing is used to maintain a basic level of service by employing part-time clinicians who travel from urban centres, leasing equipment from larger hospitals, and establishing private–public partnerships.

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15. Sustainable models of primary health care in rural and remote Australia — what the evidence says

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Since the first National Rural Health Strategy in 1994, many new programs and models aimed at improving access to health services have been trialled. Many of these research projects and government programs have focused on ways to increase medical workforce supply, recruitment and retention as a solution to fix rural health. Less attention has focused specifically on the systematic development of sustainable comprehensive primary health care (PHC) service models that work across the diverse communities characterising rural and remote Australia.

The studies summarised here have documented and analysed what models work best where, and why. As a result, we developed a conceptual framework for PHC services that has been useful to policy makers and health services.

Relevance to rural and remote health

One-third of all Australians live outside a major city. These people have relatively less access to health services and as a result poorer health than people who live in the city. Of this non-metropolitan population, almost 20% is dispersed across more than 1500 rural and remote communities with fewer than 5000 residents. However, collectively these communities and their hinterlands have a population the size of Sydney, Australia's largest city.

Generally, mortality and illness levels increase with distance from major cities. Often these isolated rural and remote communities are too small to support traditional models of health delivery locally, so residents must access care from larger urban centres or periodic visiting and emergency services, such as the Royal Flying Doctor Service. This can be difficult and as a result health needs are not always met adequately. Moreover, evidence suggests that good locally available primary care produces the greatest impact on health behaviour and outcomes. To service these small and dispersed populations, it is clear that models of care in rural and remote areas must differ from those in metropolitan communities.

The research

A systematic review was undertaken of qualitative and quantitative research into primary health care in Australian rural and remote settings conducted between 1993 and 2005. A follow-up study entailed detailed case studies of successful models, providing further depth to, and confirmation of, the findings.

To assist in the development and implementation of this study a reference group was formed, consisting of 11 recognised experts in rural and remote health, health economics, consumer issues, evaluation, PHC service provision and government policy making.

A systematic review of all relevant peer-reviewed and ‘grey’ literature was carried out. From more than 5000 unique published abstracts, full copies of 76 rural papers and 17 remote papers were selected as meeting the agreed inclusion and exclusion criteria. Forty nine rural and 19 remote ‘grey’ publications were also reviewed.

A typology of common, but not necessarily mutually exclusive, models of PHC services emerged: discrete services, integrated services, comprehensive PHC services and outreach services. The literature revealed the following:

- Discrete services are suited to rural areas with larger communities. They have a fixed location and aim to sustain a general practitioner (GP) service. Often, they are supported in this effort by the local government, a university or other organisations.
- Integrated services offer coordinated access to a range of services, including allied health and specialist services. They serve communities that are not large enough to sustain these services in their own right. These services usually emerge where state and federal funding resources are combined so that several services like acute and aged residential care can be co-located.
- Aboriginal community controlled health services are examples of the comprehensive PHC service model. They aim to improve health in the communities they serve by providing improved access and addressing social reasons for poor health.
- Outreach services are suited to the most remote populations. They involve a GP or other practitioner travelling to provide periodic services over a large area.

The type of model changes according to population density and distance from major centres — from larger rural communities through to small, isolated communities in very remote Australia.

The research also identified that, regardless of which model or combination of models worked for a community, successful PHC services shared a number of common factors. First, the services operated in an environment that addressed three enabling factors: a supportive policy, coordination between state and federal agencies, and community readiness.

Second, five essential service requirements were common to successful services: competent governance, management and leadership; adequate funding; relevant linkages within the service and to other organisations; adequate infrastructure, including information technology (IT) systems; and adequate workforce supply and appropriate

mix of staff. Addressing each of these factors systematically improves effectiveness and lessens the threat to service sustainability.

A follow-up study entailed a detailed analysis of six exemplary services identified from the literature. This study confirmed the usefulness of the conceptual framework previously developed. It also highlighted the need for improved governance, management and community involvement, as well as strong, visionary political leadership to achieve a more responsive and better coordinated health system.

Lessons learned

There has been a significant amount of ‘innovation’ over the past 15 years, but with an overall lack of rigorous health services evaluation. What is required to improve access to health services in small rural and remote communities is not more and more innovation. Rather, we need to apply what we already know works.

It is now well recognised that there is no ‘one size fits all’ solution to providing rural and remote health. Different PHC model types suit different geographical and demographic contexts. The nature of population distribution is the critical factor in designing PHC services. Successful models meet the needs of small populations by gathering a critical population mass either in a country town or across a wide area and matching it to an appropriate model listed above. Evidence suggests a minimum population base of roughly 5000 people for rural areas, and 2000–3000 people for remote areas, is required to support an appropriate, comprehensive and sustainable range of health care activities.

Importantly, evidence from this research showed that successful PHC services addressed the entire range of essential requirements. As a result, attracting and retaining an adequate workforce became less of a problem. For example, recruitment and retention is easier when adequate infrastructure, good management, professional development opportunities, clear role delineation and a supportive group of practitioners are developed.

Wider relevance

The work has developed a conceptual framework for PHC services that can be applied in different rural and remote contexts, as well as policy guidelines that are built on the principles underpinning successful PHC services. The lessons learned can be more widely generalised and applied throughout remote and rural Australia, as well as other similar parts of the world where populations are spread over large geographical areas.

The model types identified are highly relevant to rural and remote Australia and can be adapted to any region. This systematic and systemic approach is also able to meet the continual changes that characterise the health system.

The results of the work have received very positive feedback from national policy makers, health services, academics and students. This work provided the evidence base for a major discussion paper for the National Health and Hospital Reform Commission review of the Australian health system. This research has also been influential and useful

in planning rural and remote services. Here is one example of feedback from a health service leader:

...thanks for a great article - I am using this info as a template to push for our move to community control in [region] - particularly to urge a fairly high level task force from feds and [the state health authority]...

What is required to improve access to health services in small rural and remote communities is not more and more innovation. Rather, we need to apply what we already know works. Successful primary health care services address the full range of essential service requirements. As a result of this systematic and systemic approach, attracting and retaining adequate workforce becomes less of a problem. The evidence highlights the need for improved governance, management and community involvement, as well as strong, visionary political leadership to achieve a more responsive and better coordinated health system. This helps to eliminate existing health status differentials between cities and rural areas.

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Section 5: Workforce development

16. Baby boomer doctors and nurses: Demographic change and transitions to retirement

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16. Baby boomer doctors and nurses: Demographic change and transitions to retirement

Deborah J Schofield and John R Beard

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Demographic shifts over the next 20 years will create major change in Australia's society, economy and health system.

The ageing of the baby boomer generation will place an unprecedented demand on health services that will need to be met by a shrinking pool of employed younger people. Adjusting to this new health service scenario will be expensive and potentially politically fraught.

A careful analysis of the current and past health workforce helps policy makers prepare for the future.

In 2005, Professors Schofield and Beard, both then at the Northern Rivers University Department of Rural Health, used census data from 1986 onwards to investigate the effect of demographic change on employment and retirement patterns of general practitioners (GPs), medical specialists and nurses.

The study used Australian census data from 1986 to 2001. Age cohorts representing the different generations — pre-depression; war and depression; baby boomer; and generation X — were followed through each subsequent census. The difference between each cohort's approach to work was compared by examining characteristics such as hours worked and age of retirement.

The researchers also contrasted the characteristics of the rural health professionals with those working in the major capital cities.

The study highlighted the problem of the increasing numbers of retiring health professionals, particularly in rural areas.

Relevance to rural and remote health

Rural health professionals have distinct work patterns and many have moved from another area to take up rural practice. Generational changes in the number of working hours or the timing of retirement could have a profound effect on the rural health workforce. Their decisions about the hours they work and when they retire will accentuate rural workforce shortages.

The research

Demographic analysis reveals many important trends. The health care workforce has aged since 1986. Then, roughly two of every five (or 42%) of Australian GPs were 40 years or older. By 2001, the proportion was more like three in every five (58%). More notably, in 1986, nurses aged over 40 years represented 30% of the nursing workforce. By 2001, this percentage had doubled. These figures reflect the ageing of the large baby boomer generation of health professionals.

As the workforce ages, retirement patterns become very important for predicting the future workforce structure. Attrition rates were examined as an indication of retirement age. The data show that a large proportion of GPs continue to work beyond the traditional retirement age of 65 years. However, nurses retire at a younger age with 86% ceasing employment by the time they reach 65–69 years of age.

The number of hours that health professionals make themselves available for work also has an impact on the capacity of health services as a whole to meet demand. Over the study period, GPs reduced their working hours, with generation X GPs working fewer hours than baby boomers did at the same age.

Distinguishing between urban and rural clinicians also shows some useful trends. Rural GPs and nurses are significantly older than their urban counterparts, a situation that has changed over the past 20 years. Also, while urban GPs continued to work past the age of 65 years, rural clinicians retire or move to practise in the capital cities. In addition, rural baby boomer GPs have tended to make up for the shortage of GPs in rural areas by working longer hours than their city counterparts. Generation X GPs are not demonstrating this pattern of work and this will compound the impacts of ageing and retirement of the rural GP workforce.

Lessons learned

This research confirms that increasing numbers of retiring health professionals will place pressure on Australia's health system.

In rural areas, GPs in particular are retiring at a faster rate than city doctors. Strategies to attract and retain younger professionals in rural areas and to make the most use of the relatively smaller workforce will be critical to ensure adequate health care is available in the future.

Comparing the hours worked and retirement habits of different professions, as well as generations, helps to draw attention to particular workforce planning and policy issues. Currently, most nurses are from the baby boomer generation. Over the study period, it was observed that nurses generally retire early. If this trend continues, all but a few nurses will have retired within the next 15 years.

Strategies such as incentives to encourage ongoing employment among older clinicians, possibly at reduced hours, are critical if the Australian health workforce is to be sufficient to meet future demands.

Wider relevance

This research and following related research received widespread media coverage, contributing significantly to workforce policy development. Austrade used the research to provide evidence of a shortage of medical staff in Australia when deciding whether to approve projects that would export medical skills overseas.

At the local level, Professor Schofield was asked to analyse the impact of ageing on retirement of doctors and nurses and demand for health services for the North Coast Area Health Service (NCAHS) Workforce Development Plan 2005 to 2015. The NCAHS used this to develop innovative guidelines to assist older nurses to continue to work (for example, helping them to reduce their working hours, if preferred, without negatively impacting on their superannuation).

A further benefit was the opportunity for local NCAHS clinicians and policy makers from a wide range of disciplines to engage in published workforce research with Professor Schofield (two doctors, three physiotherapists, one nurse, one pharmacist, one psychologist, one dietician, one stoma therapy nurse, one speech pathologist, workforce planning unit [NCAHS]).

Like other Australians, doctors and nurses are getting older. Because fertility rates have been declining, the number of young people is not growing as fast as the number of older people. This ageing is particularly acute in the nursing profession, where 60% of nurses were older than 40 years in 2001. Compounding the national trend are unique rural demographic pressures. Rural nurses are more likely to be part of the baby boomer generation than urban nurses, which means more are approaching retirement age. Although older rural doctors often work past retirement age, they cut back on their hours and younger rural doctors are not making up the difference. They work shorter hours than older doctors did in the beginning of their career.

This demographic analysis conducted at a University Department of Rural Health is a call to adopt workforce reforms to entice younger people into rural practice, retain older professionals, and change the way health care is delivered.

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17. Expanding the role of paramedics in northern Queensland

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Paramedics are trained health professionals residing in many rural and remote towns. They make up an important part of the health care system in their communities but are often underused.

Previous research undertaken by the Queensland Ambulance Service (QAS) indicated that, with additional training in primary health care, many rural and remote paramedics could make a valuable contribution to primary health care teams.

In response, James Cook University, in collaboration with the QAS and Queensland Health, developed a one-year Graduate Certificate in Rural and Remote Paramedic Practice (Grad Cert of RRPP), which was based on two existing courses: the Remote Isolated Practice Endorsed Nurse (RIPERN) and the Public Health Education for Clinicians (PHEC) curricula. Graduates would gain a qualification of Isolated Practice Area Paramedic (IPAP).

The goal was that the course would result in better access to health care for communities, and increased job satisfaction and improved retention for paramedics by enabling them to undertake primary health care tasks.

The public health component of the course focused on the development of skills and knowledge that the paramedics could use to examine their community's health needs and develop collaborative strategies to meet those needs. The emphasis was on chronic disease management, health promotion and the use of disease registers.

Sponsorship by QAS allowed up to 60 practising rural and remote paramedics to undertake the graduate certificate.

At the time an evaluation of the impact of the public health component of the course was conducted, there were 18 IPAP trained paramedics throughout Queensland, with a further 28 expected to complete the course the following year.

Relevance to rural and remote health

Given the health workforce shortage throughout Australia, maximum use needs to be made of people with health care skills. It has been identified that paramedics are underused in many rural and remote areas. Paramedics have highly developed prehospital skills and knowledge that could be extended to improve rural and remote community health.

The research

Paramedics were asked to complete online pre and post-course surveys at the beginning and end of the population health component of the course. The pre-course surveys consisted of a total of 21 questions designed to provide a description of the paramedics and their communities. The post-course surveys consisted of 32 questions, focusing on the course and how it met their needs and expectations; whether their knowledge and skills had increased; and whether attitudes and plans for the future had changed as a result of participating in the course.

Twenty students (83%) completed the pre-course survey and 16 students (89% of those who finished) completed the post-course survey. Most paramedics stated improving the health of their community as the main reason for undertaking the course. The secondary reason for half was their own professional development and to increase their scope of practice.

All paramedics felt that after the course they were more committed to undertaking population health activities in their work and were better prepared to do so. Most of the students (87%) rated the course as excellent or very good.

As a result of undertaking the course, 73% of students have already changed their practice. In addition, 75% agreed that doing the course would increase the likelihood of staying in rural and remote areas, and all agreed that doing the course resulted in increased job satisfaction.

Lessons learned

This evaluation confirmed the value of expanding paramedic roles to improve the attractiveness of rural and remote practice.

The results suggest that rural and remote paramedics have both the opportunity and desire to incorporate more health promotion and prevention into their practice, and that this course has provided them with the skills and knowledge to do so.

The course was a success and most students rated it as excellent or very good.

All students said that they would recommend the course to others; however, they identified two improvements they would like made to future courses. First, completion of the population health component of the graduate certificate to be carried out before the RIPERN component, as the enhanced understanding of the community, health management, health assessments and health promotion would have been beneficial. And second, increase the number of remote area placements and rotations to communities.

Increasing skills is not the only requirement for extending scope of practice of health professionals. There is also a need for focused and continued effort to support these changes, both politically and clinically. Without this, various barriers can arise that make effective use of the new role problematic.

Political changes within the QAS have negatively impacted on long-term support for the expanded paramedic roles. At a local level, a significant investment is needed to manage the change process required if the IPAP certified paramedics are to be allowed and supported to undertake their expanded role.

Wider relevance

The health workforce shortage is not unique to Queensland and maximum use needs to be made of people with health care skills throughout rural and remote Australia. These results suggest that rural and remote paramedics have the opportunity and desire to incorporate more health promotion and prevention into their practice and that this course provided them with the skills and knowledge to do so.

The curriculum is based on National Health Priority Areas, focusing particularly on lifestyle change to prevent and manage chronic disease. This means that all rural and remote health professionals can use a common framework to work together to enhance primary health care and chronic disease management as a multidisciplinary team.

While the ambulance services and individual paramedics from other states expressed considerable interest in the Grad Cert of RRPP, various legislative barriers prevent the national uptake of this course (particularly in terms of the expanded clinical skills). Ultimately, the feasibility of this will depend on the drugs/poisons legislation in individual states and the political will of the ambulance and health departments.

Paramedics live and work in many rural and remote towns. Skilled and committed, they perform an essential service to their communities. In Queensland, a coalition of the ambulance service, Queensland Health and James Cook University created a pathway for paramedics to provide other primary health care services as well. Almost 50 paramedics demonstrated enthusiasm for expanding their role by completing a one-year Graduate Certificate in Rural and Remote Paramedic Practice. The course gave the paramedics skills and confidence to undertake a larger health care role, informed by public health priorities. Unfortunately, there has not yet been sufficient will on the part of policy makers and clinicians to put this new health care practitioner to work.

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18. Nourishing Networks: Using information technology and mentoring to promote interdisciplinary education and training in rural areas

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Former US Secretary of Defence Donald Rumsfeld famously called them 'known unknowns'. Things that we know we do not know.

Identifying gaps in knowledge may be half the battle, but what is the most effective way to facilitate the education and interdisciplinary collaboration that rural and remote health professionals need?

The Nourishing Networks program was developed in response to a lack of access to eating disorder specialist education for rural clinicians in northern New South Wales.

The model had two main purposes: to increase health professionals' knowledge about eating disorders through flexible education, and build interdisciplinary networks of general practitioners (GPs), psychologists, dieticians, nurses, social workers and other health care professionals who could work together to help people with eating disorders.

The program included a 10-week self-directed learning package that was supported through group mentoring via video conferencing and a variety of workshops targeted towards learning needs of primary health care professionals.

Relevance to rural and remote health

Professional development and ongoing learning is essential for improving the skills of health care workers and outcomes for their patients. In rural and remote health care, the challenge is to engage a diverse group of people who all have limited time and are located across a large geographical area.

In the case of Nourishing Networks, researchers wanted to address gaps in knowledge and services relating specifically to eating disorders.

Anecdotal evidence and literature reports indicate that clinicians do not regularly screen for eating disorders or do not readily have skills to detect and intervene with these patients. Eating disorders are serious with high rates of mortality. The longer they go undetected, the harder they are to treat.

The Nourishing Networks primary health approach was taken to focus on increasing early identification and intervention in a rural setting. Additionally, it was anticipated better education and collaboration between clinicians would reduce the requirement for clients to travel to metropolitan areas for treatment.

The research

The program was evaluated against the learning objectives following each of the workshops and self directed modules. The mentoring and information technology (IT) aspects of the program were also assessed.

Seventy rural health professionals from eight disciplines enrolled in the self-directed program. Retention was high with 81% completing all the modules.

Participants' understanding was assessed before and after using a knowledge skills and attitude survey. The results were favourable with all items showing some improvement and half showing significant improvement. Participants rated different aspects of the program very highly, ranging from 79–97% satisfaction.

More importantly, the health professionals have put their new knowledge to work, with an increase in the number of formal networks and reports of increased referrals between professionals. Almost one-third of those surveyed said they had received more referrals and most were referring cases to other professionals.

The program resulted in rural clinicians increasing their knowledge and skills in the early identification and management of patients with eating disorders. Additionally, through the establishment of local linkages, the region's capacity to manage eating disorders was improved.

Lessons learned

The Nourishing Networks program showed that flexible learning opportunities are valued by rural health professionals and led to improved knowledge and interdisciplinary collaboration.

This project used a variety of techniques and information technology to present the education to professionals across a large geographical area. The videoconferencing technology caused the most difficulties, especially when many sites were involved. Technical difficulties influenced the quality of the interaction.

Like so many projects, Nourishing Networks had to be developed and delivered in a short time frame. This limited opportunities to modify the program as it progressed.

Another challenge was to engage with rural GPs. High participation by this group was anticipated because of the collaborative planning with local groups. However, competing professional development activities, as well as work commitments, limited their attendance. Other strategies may be needed to involve this group.

Wider relevance

While rural health professionals have broad generalist knowledge, there is an increasing need for specialist skills to treat conditions more effectively. Nourishing Networks is an important initiative, because it demonstrates that education programs can increase professional knowledge and foster greater collaborative care with other local primary care providers and with distant specialists.

The education model used by Nourishing Networks could be adapted to any topic or professional group. The model can be delivered across a wide area to a diverse group of people with varying degrees of availability for training.

The education package lends itself to different modes of application and may be delivered as completely self-directed with an alternate mode of mentoring such as online forums or via webcam. This flexible model is a means of providing valuable education to rural clinicians.

Future challenges involve sustaining learning and networking opportunities beyond one-year funding cycles.

Eating disorders can be treated more effectively if detected early. This project is an excellent example of the value of flexible professional development to up-skill rural clinicians and at the same time foster interprofessional networks. The Nourishing Networks program used multiple media, such as self-directed modules, videoconferenced workshops and professional mentoring. The flexibility was rewarded. More than 80% of participants completed the 10-week program. They exhibited better interprofessional practice by referring cases to other professionals as a result of the course. Nourishing Networks demonstrated that with planning, creativity and flexibility, distance is not an obstacle to learning.

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19. Rural Inter-Professional Program Emergency Retreat (RIPPER): A simulation-enhanced undergraduate rural interprofessional program at the University of Tasmania

Jessica Woodroffe (nee Whelan), Judy Spencer and Kim Rooney (editing and authorisation for this publication was submitted by Shandell Elmer)

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A good way to develop an appreciation for a colleague's skills and knowledge is to rely on them in an emergency.

The Rural Inter-Professional Program Emergency Retreat, or RIPPER program, teaches final-year medical, nursing and pharmacy students what team work is like in the bush and how important it is for them to collaborate with professionals from other disciplines.

RIPPER uses a combination of interprofessional learning and simulation of health care emergency situations to prepare the students to work effectively in rural settings.

The University Department of Rural Health (UDRH), Tasmania, has been running the program annually since 2006. The event is held on campus and at the North East Soldiers Memorial Hospital in Scottsdale.

RIPPER is presented as a series of high and low-fidelity interactive and interprofessional rural learning scenarios. The scenarios emphasise key aspects of emergency health care to all disciplines, the nature of emergency in a rural context, as well as encouraging a social view of health and illness.

Three realistic clinical scenarios involve a patient with an undiagnosed head injury and fractured femur, as a result of a farming accident, who needs to be stabilised and evacuated; a person with a cardiac event who is transported to the hospital by ambulance and then discharged; and finally a confused elderly person presenting with a family member to a community health facility. Local health professionals as well as academics from the Faculty of Health Sciences and project staff from the UDRH run the program.

Students are required to interact with a computer driven high realism mannequin (3G SIM MAN), other mannequins and scripted actors. They also have an opportunity to develop skills and knowledge through role play, discussion and reflection on emerging issues.

Relevance to rural and remote health

Interprofessional collaboration is an important part of successful rural health care practice. Working as a team can help to overcome some of the challenges of working in rural and remote areas that arise from geographical, professional and social isolation.

If students are going to work in rural areas, they need to be prepared to work in an interprofessional way and to do this they need to learn together.

Interprofessional education occurs when ‘two or more professions learn with, from and about each other to improve collaboration and the quality of care’. Learning in this way in a rural area, combined with role play scenarios specific to the local context, demonstrates to students how important it is to collaborate. It also helps them to practise clinical skills and develop interpersonal skills.

This exciting practical learning experience is delivered in a rural setting. Research has shown that students who experience a positive rural placement are more likely to seek a rural post following graduation.

The research

Each year, around 30 students participate in the program. The impact of each RIPPER program is assessed by measuring students’ knowledge and attitudes to interprofessional collaboration before and after completing the program using a two-part survey.

Students’ understanding of interprofessional practice and expectations of the program is measured through open-ended questions and closed-ended attitude questions using a five-point Likert scale. Attitudes to shared learning and team work are captured by asking students whether they agree to statements such as ‘patients will ultimately benefit if health care students work together to solve patient problems’.

Student evaluations regularly show favourable results. After the 2008 program, there were positive shifts in all areas particularly in relation to benefits to patients, learning with other health care professionals and the importance of team work in the rural context.

For example, before taking part, 25% and 58% of students agreed or strongly agreed, respectively, that learning with other health care students increases their ability to understand clinical problems. By the time the retreat was completed, less than 10% merely agreed, and more than 80% strongly agreed.

Many students described the experience positively:

It gave me insight into how my interventions are used as a diagnostic tool by the doctor, but it also clarified my role as a nurse and gave me confidence in my abilities. (Nursing student)

Lessons learned

RIPPER provides students with authentic and exciting learning experiences that are relevant to rural practice.

Interprofessional education has proven to be a valuable educational strategy. However, undergraduate education within universities continues to take discipline specific approaches. To achieve the full potential of interprofessional education, interprofessional learning activities need to be incorporated as core components of the curriculum. Developing inter-school and faculty-wide methods for interprofessional education will help to achieve this.

Currently, the RIPPER program is funded by the UDRH. However, with the exception of the UDRH project team, the involvement of local health professionals and other academics in the program is voluntary. The program is ongoing and sustainable due to their commitment and passion. Resources and time provided ‘in-kind’ to run the program are crucial and external factors that deplete these resources can have a detrimental impact on the program. For example, the 2009 the program was postponed due to work pressures that resulted from an influenza epidemic. To mitigate this risk, the UDRH is looking to increase the number of health professionals and academics with an understanding of interprofessional education who can contribute to the program.

Wider relevance

The Australian Government health care reform processes highlight the need for interprofessional education and continue to draw attention to the particular needs of rural areas in relation to workforce recruitment and distribution. Activities such as RIPPER that focus on increased collaboration and communication to optimise patient care provide students with the opportunity to experience models of health care that ‘work’ in a rural area.

The RIPPER model is transferable and similar programs are held in other parts of the country. To create a program like RIPPER, some crucial elements are needed. These include but are not limited to a champion for the project who has credibility across the participating organisations and schools within the university; funding; a group of health professionals and academics committed to the principles of interprofessional education with sufficient capacity to volunteer; and resources to support the program.

The University of Tasmania's RIPPER program offers final-year students in nursing, medicine and pharmacy the opportunity to learn about their own profession, the roles of other health disciplines and rural practice in one exciting learning experience. Each year, 30 students are immersed in three realistic emergency scenarios. Using a computer-driven mannequin and actors from the community, students have an interdisciplinary clinical experience that would be unimaginable in a metropolitan campus.

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Workforce development projects: Related publications

Baby boomer doctors and nurses: Demographic change and transitions to retirement

- Schofield D (2007). Replacing the retiring baby boomer nursing cohort and the role of retirement income policy. *BMC Health Services Research* 7:87.
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Rural Inter-Professional Program Emergency Retreat (RIPPER): A simulation-enhanced undergraduate rural interprofessional program at the University of Tasmania

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- Whelan JJ, Spencer J, Dalton L (2009). *Building rural health care teams through interprofessional simulation-based education*. 10th National Rural Health Conference Proceedings, Cairns (pp. 1–10).
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Appendix 1: Background and project objectives

The Australian Rural Health Education Network (ARHEN) is the peak body and national coordinating and consultancy unit for the 11 University Departments of Rural Health (UDRH) in each state and the Northern Territory.

Funded by the Australian Government Department of Health and Ageing, the UDRH Program is focused on expanding and enhancing the rural and remote health workforce through education and training, research, professional support and service development.

ARHEN members are academic units collectively representing the backbone of Australian rural and remote health research expertise and have national and international recognition. Each UDRH is a leader in multidisciplinary rural health education, rural health research and the development of innovative health models. They are the only rurally based academic facilities that are multidisciplinary, work at undergraduate and postgraduate levels, and also with the existing health workforce.

The UDRH, their locations and affiliated universities are as follows:

- Centre for Remote Health, a Joint Centre of Flinders University and Charles Darwin University, Alice Springs, Northern Territory
- Broken Hill University Department of Rural Health, University of Sydney, Broken Hill, New South Wales
- Combined Universities Centre for Rural Health, a consortium of all five Western Australian Universities, Geraldton, Western Australia
- Greater Green Triangle University Department of Rural Health, Flinders University and Deakin University, Warrnambool, Victoria
- Monash University Department of Rural and Indigenous Health, Monash University, Moe, Victoria
- Mount Isa Centre for Rural and Remote Health, James Cook University, Mt Isa, Queensland
- University Department of Rural Health, Northern New South Wales, University of Newcastle, Tamworth, New South Wales
- Northern Rivers University Department of Rural Health, Joint venture of University of Sydney and Southern Cross University, Lismore, New South Wales
- Spencer Gulf Rural Health School, Joint initiative of the University of Adelaide and the University of South Australia, Whyalla, South Australia

- University Department of Rural Health, School of Rural Health, University of Melbourne, Shepparton, Victoria
- University Department of Rural Health, University of Tasmania, Launceston, Tasmania.

Australia is currently experiencing a shortage of health care professionals. Many pilots and small-scale projects have been performed in rural and remote areas with the aim to find solutions to workforce shortages and barriers to patient access to services. The objective of this project was to publish a booklet of vignettes on a range of leading-edge rural and remote health workforce development and service delivery model projects.

The project aims were to:

- provide a central resource that can assist and encourage decision makers in all jurisdictions to make changes to the way services are delivered
- showcase the unique style of contribution that UDRH are capable of making to the rural health access debate
- encompass examples of delivery models that have the potential to be implemented immediately in many environments across Australia
- lift the profile of the research by the 11 UDRH.

Appendix 2: Project method and selection

The project was funded by the Australian Government Department of Health and Ageing and was managed by ARHEN. The reference group comprised Associate Professor Ann Larson, Professor John Wakerman, Professor James Dunbar, Professor David Lyle, Professor Lesley Barclay and Associate Professor Janelle Stirling (the representative from ARHEN's Indigenous Staff Network). Details of the reference group are at Appendix 3.

A literature search was carried out and a request made to the UDRHs for suitable projects. The selection criteria for the projects were developed by the reference group. Projects selected were those that:

- were carried out in the Australian rural and remote health sector
- involved health workforce development or health service delivery, including public health or health promotion
- had been undertaken or published since 2000
- had relevance and importance to improving health outcomes established
- had evidence of impact and lessons learned outlined
- identified barriers to implementation and options for overcoming them
- where possible, had the potential for wider, national application established.

Initially, 33 projects were considered by the reference group for selection and 19 of these were considered to meet the selection criteria. The projects were categorised into five groups: Clinical services, Indigenous health, Mental health, Service delivery and Workforce and interprofessional*. People with expertise in these categories of rural and remote health were invited to review some projects. Before review, project authors were asked to provide the details of their project in a framework to provide some uniformity across the projects.

Each project was sent to two reviewers with expertise in the specific area (the five sections listed above*) for their comment and opinion, including the relevance and importance of the project in improving health outcomes in rural and remote areas and the potential for a wider, national and international application. The reviewers were also invited to provide general comments.

Appendix 3: The people

The reference group

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Project management

Vicky Newman

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Janine Ramsay

Executive Officer, ARHEN

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