

Augmenting the rural health workforce with physician assistants

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Introduction

Health workforce shortages are a global phenomenon and Australia is no exception. Deficiencies are particularly pronounced in general practice, dentistry, nursing and key allied health fields.^{1,2} Even with the Australian health workforce growing at close to double the rate of the population and despite an increase in medical schools and student numbers, the shortage continues to worsen due to factors such as reductions in work hours, increasing urbanisation and the ageing and feminisation of the workforce.² A 2005 prediction by the Australian Medical Workforce Advisory Committee estimated a shortage of between 800 and 1300 general practitioner graduates alone by 2013.² The ageing of the health workforce, increasing life expectancy and the mounting burden of chronic disease are major problems facing all developed nations. Compounding these issues in Australia are the difficulties of caring for significant rural, remote, and Indigenous populations. National and international trends suggest that the shortage and maldistribution of doctors in rural areas is very likely to worsen.^{2,3} As well, Australia has an increasing reliance on international medical graduates, which poses major moral questions among other dilemmas. Clearly there is a need for change in policy and service delivery models. Simply increasing the number of doctors will not necessarily improve recruitment or retention in general practice and geographically disadvantaged areas. According to Queensland Health there is considerable and ongoing difficulty in recruiting new doctors to rural and remote locations, resulting in a less than adequate rate of replacement for retiring doctors. Many health care advocates and organisations have suggested a variety of innovations to facilitate the needed transformation in the existing system. In 2007 The National Rural Health Alliance (NRHA) declared:

We need to redesign the workforce so that services we currently see as 'medical' or 'nursing' are provided by a broader range of professionals than just doctors and nurses. We will get around the unavoidable shortage of doctors and nurses (given the excessive and escalating level of demand) by redesigning and redistributing the way doctoring and nursing are provided.⁴

This paper will outline how the introduction of physician assistants (PA) into Australia, may be one strategy to strengthen the health care team and address medical workforce shortages, especially in rural and remote areas.

Physician assistants in the United States

What defines a physician assistant? The actual term is probably as succinct a definition as there can be: someone who assists the **physician**¹ (used in the broadest sense of the term, not the more specific medical specialist definition). The contemporary PA profession in the United States (US) arose from a pressing need to augment and redistribute the medical workforce in the mid-1960s. Dr Eugene Stead is credited with starting the first PA program at Duke University in 1965. The profession grew gradually, but

¹ The terms physician and doctor are used interchangeably in the USA to indicate medical practitioner. For the purpose of this paper physician is meant to be inclusive of Australian doctors and physician medical specialists.

in the early 1990s began to experience substantial expansion and popularity that continues today. The US Bureau of Labor Statistics has predicted a 49% growth in PA jobs in the 10 years between 2002 and 2012, which makes physician assistants the third-fastest growing professional group in the country.⁵ There are now more than 140 PA programs and approximately 70,000 PAs practicing throughout the country.⁶ The American Academy of Physician Assistants (AAPA) provides a concise definition that illustrates how the physician assistant can undertake duties previously only performed by doctors:

Physician assistants are clinicians who are licensed throughout the United States to practice medicine in association with physicians. They perform many of the tasks previously done solely by their physician partners, including examination, diagnosis, and carrying out investigations, as well as treatment and prescribing. All physician assistants must be associated with a physician and must practice in an interdependent role, described as "negotiated performance autonomy".⁶

This definition mandates that PAs practice under the authority of physician delegation in the role of service extension, not substitution. The vast majority of the 50 states allow supervising physicians to delegate any task within their own scope of practice, providing the PA has had the appropriate training and has demonstrated competency. Supervision does not necessarily require the physical presence of a physician at the place where services are rendered. It is essential, however, that the PA and a supervising physician are, or can be, in contact with each other electronically or via telephone.⁶

More than 200 studies to date have examined the quality and safety of patient care provided by PAs and have collectively demonstrated that they provide safe, high quality care, comparable to that of physicians while working within the framework of their delegated responsibilities.^{7,8} Between 1974 and 2000, at least 10 studies also concluded that physician assistants are well accepted by patients.^{9,10,11} A large study published in 2005 surveyed 150,000 patients and found there was no significant difference in patient acceptance of physicians, PAs or nurse practitioners (NPs).¹² Physician assistants are cost effective, in part because training expenditures and salaries are less than that of doctors. Existing studies have also concluded that PAs in the US are of significant economic benefit to practices that employ them.^{7,13,14,15} Admittedly, the financial value of PAs and acceptance by patients will need further analysis in the context of the Australian health care system. However, the PA model is experiencing global expansion and implementation with recent introduction in the United Kingdom (UK), Scotland, Canada, and South Africa, all countries that have similar health care schemes to Australia. Canada has utilised PAs in the military for 25 years and recently began adding them to the civilian workforce. Taiwan, the Netherlands and many developing countries, especially in Africa have also introduced or are in the process of adding PAs to their health care workforces.

The PA role was originally developed with the goal of training non-physician clinicians to supplement generalist physicians in rural and underserved urban areas.²³ In 1974 the total number of PAs was relatively small (<3500), but 69% worked in primary care (family medicine, internal medicine, general paediatrics) and 22% in rural settings.²³ The percentage of PAs practicing in designated rural locations and primary care declined in the 1980s and 90s. By 2004 there had been resurgence in both designations with approximately 20% practicing in rural communities and 41% in primary care.²⁴ Physician assistants continue to be a valuable component of the rural health care workforce. It is important to note that NPs have also had a significant impact on the delivery of health services to rural populations. For example, 23 per cent of all PAs and NPs work in rural areas, compared with only 13 per cent of physicians.²³

Physician assistant education in the US

In 1942 Dr Eugene Stead, then the Dean of Emory University Medical School was invited by the US government to develop an accelerated medical education program to supply doctors for the war effort.

Stead created a successful three-year program and this experience with condensed medical education would later be a cornerstone of the PA concept.¹⁶ A key factor driving the popularity of the PA profession in the US is the educational model. Physician assistant education is competency based and executed in the medical model with an average curricular duration of an intensive, uninterrupted 27 months. All PA programs offer baseline comprehensive generalist education that serves as a solid foundation to support further training in diverse clinical areas.¹⁷ The difference between the education of PAs and medical students is not so much the core content, but the duration of the programs. While the curriculum may vary somewhat between educational institutions, the average PA program runs for 116 weeks, compared to the typical 155 for medical schools. By the end of the first year didactic component, most PA programs will include 70% of the didactic material a medical school would have covered.¹⁸ Clinical components are also similar because of standards set by the Accreditation and Review Commission on Education for the Physician Assistant (ARC-PA). The standards require PA students be exposed to eight distinct clinical areas; family medicine (general practice), geriatrics, paediatrics, emergency medicine, gynaecology/women's health, internal medicine, mental health and general surgery, totalling approximately 12 months or 2,000 hours of direct patient contact.^{17,18,19} Stringent program accreditation standards, a national certification examination required for licensure--the Physician Assistant National Certification Examination (PANCE), recertification every two years and subsequent board examination every six years all serve to assure clinical proficiency. Unlike medical education, fundamental PA education does not include postgraduate training. The traditional and accepted model is to have PAs undergo tailored vocational training on the job that eventually leads to negotiated clinical performance autonomy.

The PA profession has broad support from the medical community nationwide. For instance, representatives from the American Medical Association, Association of American Medical Colleges, American College of Surgeons, American Academy of Family Physicians and other medical organisations are board members of the National Commission on Certification of Physician Assistants (NCCPA) and the ARC-PA.⁶

The physician assistant concept in Australia

A March 2008 research paper on PAs by the Australian Department of Parliamentary Services Librarians concluded "there is potential to adapt this model to suit the Australian health system so that quality of care and safety in the delivery of services is not compromised".² On the basis of published literature and first hand observation, academic and government health care strategists and leaders have asserted that ideal practice settings for PAs in Australia include: rural and remote, Indigenous, the military and besieged urban acute care institutions. What makes the PA model so attractive in all these settings is the delegated, flexible, and potentially extensive scope of practice and negotiated performance autonomy tailored to fit the needs of the practice. The state health departments of Queensland and South Australia are currently exploring the concept further, each with 12-month pilot programs employing US PAs in a variety of clinical settings in Adelaide, Brisbane, Mt Isa and Cooktown. In Queensland evaluation will be undertaken by an independent consultancy to explore whether PA roles are suitable in terms of productivity, quality of care, patient satisfaction and cost effectiveness. Also crucial is to determine PAs' ability to work as part of a multidisciplinary team, and whether they are a comfortable social and cultural fit within the Queensland health workforce.

Australia is not the first country to pilot US physician assistants. During a similar pilot in the West Midlands UK, a group of supervising general practitioners was so convinced of the value of PAs they approached educators at the University of Birmingham Medical School to explore the possibility of training similar professionals.²⁰ As a result the Universities of Birmingham and Wolverhampton initiated a collaborative PA program two years ago. A final report on the evaluation of the two-year NHS Scotland PA pilot was

released in January 2009. Scotland has decided to move forward with the development of a PA profession and/or to expand existing professional groups into similar generalist mid-level providers.²¹

The University of Queensland (UQ) and James Cook University (JCU) medical schools are actively developing PA programs in hopes of supplying PAs to the Australian health workforce following the pilots. Both universities are planning degree curriculums and UQ is launching their first intake in July 2009. Similar to the US education model, candidates will be recruited from those with a first degree in a biological science or health field and from the ranks of experienced and properly prepared health care workers. Becoming a PA would serve as a much needed career path and means of advancement for skilled medical technicians. Professionals such as ambulance officers, military medics, Indigenous health workers and various allied health personnel looking for a change in direction or the ability to extend their contribution in the clinical arena would benefit. Many of these workers would otherwise be lost to the system. In keeping with its mandate to provide health professionals for rural, remote and Indigenous Queensland, JCU will emphasise recruitment of applicants from rural, remote and tropical communities. Selecting candidates from cohorts of mature non-medical health professionals who are already well established in rural or remote communities is just one strategy to increase the health workforce in underserved areas. James Cook University plans a February 2011 start. Medical educators involved in the process have every confidence that they can produce highly skilled PA professionals of equal quality to that of the US.

Potential benefits of having physician assistants in rural health care

According to Dr. Dennis Pashen, President of the Australian College of Rural and Remote Medicine (ACRRM), more than 50% of the roughly 4,000 rural doctors in Australia are over 50 years of age.²² It is estimated that the vast majority of them will retire in the next 10 to 15 years. In South Australia the Rural Workforce Agency predicted in 2005 that 26% of their rural and remote general practitioners (GPs) would retire over the ensuing five years.²⁵ The ageing of GPs along with a decline in younger entrants into general practice overall and rural and remote medicine in particular, is a potent combination that is straining the already burdened rural health care system. Complicating the situation further, emerging young doctors do not want lifestyles or workloads of the previous generations.²⁶ They are not willing to work like the GPs of the past who have been saddled with long hours, excessive patient loads, perpetual afterhours call duty, and minimal time off. Interviews conducted with medical students, registrars and young GPs in Australia and Canada demonstrate they are seeking flexibility, lifestyle choice and team based care.^{26, 27}

The intent of US physician assistant educators has always been to supply physicians with a means to extend their services. Other advantages logically followed and helped to solidify the successful model of the physician/PA team. Proponents of the physician assistant concept in Australia think that PAs may be of considerable benefit to the existing cadre of rural GPs as well as the future cohort. Seasoned and fledgling GPs would likely experience some of the same historical advantages as their US counterparts with the introduction of highly trained PAs in to the rural and remote workforce. Physician assistants bring their often considerable previous health care experience and expertise with them to a medical practice. Potentially, doctor's workloads would stabilise and practice productivity and revenue would improve. Rural doctors working with PAs, would eventually have a ready resource to share call and a means of supplementing the services of locum tenens doctors with a seasoned clinician that knew the patients and the local system. As in the US, only after sufficient experience and professional development would PAs be able to practice with remote supervision. Once that level of skill and responsibility is attained PAs could man satellite clinics, make house calls and undertake remote community outreach. Physician assistants enhance the ability of supervising doctors to spend more time with complicated patients, a benefit noted

in the US as well as the Scotland and UK pilots and data from the new Canadian profession. An efficient doctor/PA team also has the capacity to afford the doctor more time for clinical teaching of medical students. Professional isolation would also be mitigated for doctors that had PA collaborators. The addition of PAs to the rural health care workforce could potentially serve to delay the retirement of overburdened established doctors as well as increase the odds that relatively new, younger doctors would be attracted to rural general practice and retained there.

Improving work environments for all rural GPs is a key component of recruitment and retention strategies being put forth by governments and rural workforce agencies, but is especially key to attracting and retaining International Medical Graduates (IMGs). Australia, like most other developed nations, has become increasingly reliant on IMGs to address workforce shortages. Almost 40% of all rural GPs are IMGs and in Queensland that figure is closer to 50%.²⁷ Over time a shift in the demographics of IMGs from mostly developed, English speaking countries to places like the Indian subcontinent and Africa have posed new challenges in orientation to language and culture thereby further threatening retention. So serious are the issues of social, cultural and professional isolation that Rural Health Workforce Australia has proposed that the Federal government establish a national work readiness program for all IMG GPs prior to practice in rural and remote Australia.²⁷ If the PA profession was to become viable and endorsed in Australia there may be a novel way to further extend support to this essential group of GPs. With proper legal framework in place, judicious placement of thoroughly experienced rural PAs with IMGs who are no longer being supervised themselves may be a way to offer them all the usual benefits of having a PA along with a cultural consultant and partner. Physician assistants could also be placed with non-independent IMGs and supervised remotely by the same doctor responsible for the IMG.

Utilising the process of community capacity building already common to Australian rural health could facilitate the introduction of PAs to underserved rural and remote communities. Again, precedence exists in a US model of mid-level provider originally known as MEDEX (from the French *médecin extension*, or physician's extender).²⁸ The program was developed at the University of Washington in 1969 by one of the originators of the PA profession, Dr Richard Smith, to further his dream of "multiplying my hands" and continues to supply over 80 PAs a year to the workforce.²⁸ The MEDEX/PA model was unique because of its philosophy of involving rural physicians and their communities as major stakeholders, along with the state's medical association and government in the process of education and deployment of graduates.²⁸ From his previous leadership experience in Peace Corps and the US Public Health Service, Dr Smith knew that in order for his idea to succeed rural communities and local physicians had to be empowered to have their needs recognised and assessed before introducing a solution to the workforce deficit.^{16, 28} If a PA profession is to be developed in Australia and used as a tool to improve access to health care for those living in rural and especially Indigenous communities, involvement of the community in the process will be essential.

Physician assistants as part of the National Primary Healthcare Strategy

As stated in the introduction, a host of entities including federal and state government officials, health care strategists, public health advocates and medical and allied health organisations are calling for changes in the way primary health care is supplied, delivered and remunerated. Existing problems with the system in urban areas are accentuated in rural areas. Many, including the Federal Minister of Health, Nicola Roxon, and the NRHA are calling for the incorporation of integrated multi-disciplinary teams to deliver some services that have historically been the exclusive domain of GPs.^{4, 29} Proponents of the physician assistant concept want to see PAs become a key component of the teams along with other capable allied health professionals. Practice nurses and NPs could and should have a vital role in team-based primary care. Nurse practitioners have been in existence for more than ten years here, but generally lack proper

recognition, support and utilisation. Nurse practitioners are educated differently than PAs and have distinct advanced nursing roles. They are especially adept at managing patients across the spectrum of community and institutional care, focusing on the patient and family with chronic disease, then assisting them to deal with this condition within the environment in which they live.³⁰ Physician assistants and nurse practitioners have a long history of collaboration on multi-disciplinary health care teams in the US and together serve as a key component to rural health care manpower.

Conclusion

With their history of clinical competence, emphasis on primary care and wide acceptance among doctors and patients, physician assistants should be viewed as a valuable asset. Designed as uniquely adaptable, the PA concept is actively moving from the US to other parts of the world because PAs **can** help to meet the world's current health workforce deficiencies. Much remains to be done before the implementation of PAs into Australian health care, not the least of which is to make absolutely certain that their training and utilisation in no way compromises the education of the new wave of medical students, displaces doctors from the workforce or usurps their authority. The flexible, locally negotiated PA scope of practice and collaborative relationship with the health care team make PAs ideal candidates to serve in areas of critical need. The introduction of physician assistants may be one strategy for addressing the medical workforce shortage in Australia.

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Presenters

Allan Forde is an American Physician Assistant (PA) educator who was hired by James Cook University as a Senior Lecturer in May of 2008 as part of a team to help develop, launch, and maintain a PA program within the School of Medicine. He serves as a liaison between the developing program and integral organisations in Queensland and nationally. Allan came to JCU from the faculty of the University of Utah PA Program where he had been for the past nine years. He is also a registered nurse and a veteran of both the US Army and Navy.

Teresa O'Connor is a senior lecturer with the School of Medicine and Dentistry at James Cook University in Townsville. Prior to this she coordinated the Rural and Remote Road Safety Study, a large program of research into rural road crashes. She has particular interest in rural health workforce issues having worked in rural areas for many years. Since the early part of this decade she has been interested in the expansion of the health workforce with a particular focus on physician assistant type practitioners and the role they could have in addressing health workforce shortages in rural and remote areas.