

Paramedicine in Australia and New Zealand: A comparative overview

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Abstract

Paramedic services in Australia and New Zealand (Australasia) share many characteristics, with both offering versions of the Anglo-American system of emergency medical response. Their industry and professional bodies are transnational and as a result have similar industry standards and professional expectations. The major difference between the two countries is their sources of funding, with Australian paramedic services generally receiving more government funding than those in New Zealand. Both countries provide a range of services that use a mix of volunteer and professional staff and employ state-of-the-art communications and medical technology to provide high-level clinical services. In common with other higher income countries, they face the challenge of rising usage associated with ageing populations. Both countries are adapting to this through broadening their response models, from a focus on emergency medical response to the provision of a mobile health service that will see the emergence of more practitioners paramedic roles. These emerging models challenge the core missions of paramedic services, as well as the professional identity of paramedics. Despite these trends towards higher level and well-integrated paramedic services in Australia and New Zealand, communities and many other health professionals have limited knowledge or understanding of how paramedic services are organised, the characteristics of paramedics and allied staff and limited appreciation of their potential to make greater contributions to the health and well-being of communities. This article provides an introduction to how paramedics, as members

of multidisciplinary teams, are well placed to contribute to improvements in health outcomes.

KEY WORDS: ambulance, comparative health policy, health service models, models of rural service delivery, pre-hospital care.

Introduction

Australia and New Zealand have common ties through shared histories, a common language and similar cultural norms. In terms of basic health services, both countries provide health services as a basic right for their populations.¹ They share a history of European colonisation and continuing concerns about the poor health status of their Indigenous populations.²

Some of these common reference points are evident in how the two countries organise and regulate the provision of paramedic services. Both countries have adopted the widely known Anglo-American system of emergency medical response, where agencies employ paramedics and other first responders to attend medical emergencies. This is in contrast to the Franco-German model that deploys physicians on ambulances.³ Australasian Paramedic services operates at basic life support (BLS), intermediate life support (ILS) and advanced life support (ALS) levels. Paramedics in both countries are encouraged and increasingly expected to be autonomous health practitioners. They are important components of each country's universal health system.

Paramedic services and paramedics

There are 10 emergency paramedic agencies operating across Australasia, two in New Zealand, two in the Australian territories and the remainder in the six Australian states.⁴ Each of these paramedic services has slightly different structures, funding sources and regulatory regimes. The differences between some of the Australian state and territory agencies are more

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What this paper adds

- *Paramedic services in Australia and New Zealand employ state-of-the-art communications and medical technology to provide high-level clinical services using a mix of volunteer and professional staff.*
- *Communities and many health professionals have limited knowledge or understanding of how paramedic services are organised and limited appreciation of their potential to make greater contributions to the health and well-being of communities.*

pronounced than between the two countries. In a formal sense, the emergency paramedic agencies in both countries are affiliated with each other through membership of the Australian and New Zealand Council of Ambulance Authorities (CAA), although Ambulance New Zealand is a similar organisation with a broader membership base.⁵ While there are no specific accreditation requirements in Australia for paramedic services, New Zealand has two prescribed Paramedical Services Standards that providers are certified against.⁶ Some Australian agencies have received generic quality accreditation.

Despite the dominance of the 10 major agencies in Australasia, well over 100 other Australasian organisations employ permanent paramedics in a wide range of settings.⁷ These include the defence forces, universities, non-emergency transport companies, events companies and both small and large companies working in the resources sector. Many of these untraditional paramedics operate in rural and remote locations where health infrastructure can be limited or inaccessible. While exact employment figures and professional profiles of these staff are unknown, claims have been made that 4500 'paramedics' might be employed outside of the government-supported emergency paramedic agencies.⁷ It is estimated that 30 000 staff are engaged within the mainstream agencies, with a substantial portion of these as volunteers.

Paramedic workforce

Technically, the paramedic workforce is restricted to those health professionals who will be eligible to be registered when the respective national paramedic registration schemes are implemented in Australia and New Zealand.⁸ This broad group includes paramedics practising at various clinical practice levels determined by employers through the application of clinical practice guidelines and clinical governance frameworks.

What this study adds:

- *Both Australia and New Zealand are broadening their response models from a focus on emergency medical response to provision of well-integrated mobile health services.*
- *Emerging paramedic practitioner models challenge the core missions of paramedic services as well as the professional identity of paramedics*

Unlike the situation in the USA,⁹ paramedics and those in related roles in Australia and those practising outside of St John Ambulance and Wellington Free Ambulance in New Zealand do not have nationally agreed scopes of practice. St John and Wellington Free jointly produce biennial Clinical Practice Guidelines for their paramedics to follow.⁶

In addition to qualified paramedics, paramedic services employ a range of other staff who assess, treat or transport patients who request emergency health services. The most significant groups of these providers are volunteer ambulance officers and community first responders. They generally operate under the umbrella of the major emergency paramedic services that provide the vehicle, equipment, training and clinical governance.¹⁰ The majority of these are located in rural and remote areas where it is uneconomic to employ paramedics, although volunteers and paramedics work together in some smaller rural communities.¹¹ While most health care institutions, such as hospitals and community health centres, engage volunteers to provide specific services, the emergency paramedic agencies stand apart by training and authorising volunteers to provide front-line clinical care.

All paramedics in Australasia are eligible to join two professional colleges – Paramedics Australasia (PA) or the Australian and New Zealand College of Paramedicine. Currently, CAA and PA jointly accredit university-level educational programs for entry-level paramedics. The Ambulance Service of New South Wales (NSW) continues to provide in-house vocational diploma-level qualifications. The profession has no direct role in the accreditation of these NSW courses. Additional qualifications are available through either the agencies themselves or other educational providers, such as universities. The agencies maintain control over volunteer training and authorisation of paramedic and volunteer clinical practice within their respective organisations.

Both countries are moving towards national registration of paramedics. Registration aims to ensure protection of the public, improve employment mobility

between the two countries and other countries that have similar regulatory arrangements. The Paramedicine Board of Australia is established and the registration system will be operational towards the end of 2018.¹² In New Zealand, move towards registration of paramedics under the *Health Practitioners Act 2003* continues following consultation with stakeholders and the wider health sector in 2017. The Health Minister in the previous government supported paramedic regulation through registration with a stand-alone Paramedic Board working with the Nursing Council.¹³ With a change in government in New Zealand in late 2017, there has been no further progress, but it is widely believed that registration will occur in 2019 or 2020. National registration will not include volunteers in Australasia unless they meet the same qualification threshold stipulated in each country's respective legislation. Volunteers will continue to operate under the supervision and governance of their managing agency.

Most paramedic services and their respective government have strongly supported the establishment of national registration schemes.¹⁴ Unsurprisingly, the professional colleges and unions have been strong advocates for this step towards professionalisation. In the case of NSW, permanent exemptions have been included in the national registration legislation to maintain their capacity to continue vocational training and have a separate investigatory and disciplinary process.¹⁵ The views of paramedics and other providers working in the private sector are less certain as the potential implications for employment and their practice frameworks are still emerging.

Paramedic service structures and governance

The service delivery models vary between and within agencies, especially among those that provide services to diverse populations in metropolitan and rural areas. The characteristics they share include the following: a single emergency call number and technologically advanced communications centres, the capacity to be strongly integrated with their respective health systems through trauma centres, advanced medical technology and clinical practice guidelines combined with generally robust clinical governance systems.^{16–18} Their governance and funding models can be described as either government-managed models with comparatively high funding from government or contractual models, such as St John Ambulance providing paramedic services.^{19,20}

The main provider of paramedic services in New Zealand is St John Ambulance, which provides emergency health coverage throughout the majority of the

country.²¹ Wellington Free Ambulance serves the greater Wellington and Wairarapa region in the lower North Island.²² Both services are highly reliant on volunteers,^{21,22} as are a number of Australian paramedic services, most notably St John Western Australia, Ambulance Tasmania, South Australian Ambulance Services and, to a lesser extent, Ambulance Victoria. In the case of St John Western Australia, the majority of the workforce are volunteers.¹⁹

Apart from Western Australia and the Northern Territory, government agencies provide paramedic services throughout Australia, with the regulatory oversight and the bulk of funding coming from either health departments or emergency services departments.¹⁹ The New Zealand paramedic service-funding model is different from that of the Australian model with partial funding of 40% from the Accident Compensation Corporation (ACC) and 42% from the Ministry of Health. The 18% shortfall in funding is made up through partial charges to users (excluding ACC accident-related work), sponsorship and donations or bequests.^{6,20}

Unlike some other comparable countries, fire services and hospitals do not provide emergency paramedic services, although some fire service personnel do provide first respondent services in Australasia. In contrast, in the USA, an estimated 50% of paramedic agencies are operated under the umbrella of fire services, described as Fire/Emergency Medical Services providers.²³ More broadly, a number of organisations supply air ambulance services in Australasia, most notably the Royal Flying Doctor Service in Australia.

In addition, there are a number of privately owned and operated non-emergency ambulance services providing services on a contractual basis for hospitals, paramedic services or event organisers. Increasingly, paramedics work in other sectors of the economy, with these numbers likely to increase following the implementation of national registration in both countries. Paramedics in Australasia from the private sector who are working remotely are likely to be operating within a scope of practice that is similar to those seen in the emergency paramedic services.²⁴ In addition to their emergency response role, these paramedics often provide primary health care to the local populations that have limited access to other health services. In the absence of national registration, these paramedics lack a regulatory framework to determine their authority to practise and their scope of practice.^{7,25}

Paramedic service delivery models

Paramedic models of service are often described as BLS, ILS or ALS; however, these descriptions are limited and often offer inconsistent scopes of practice

across different jurisdictions and cultures. An alternate approach is to construct metaphorical models based on their philosophical underpinnings.²⁶ Three of the paramedic models that have been described are the *volunteer*, *technological* and *practitioner* models.²⁷ All of these models are operating across the rural and remote regions of Australasia.

Volunteer models are widespread throughout the world and are particularly common in rural and remote areas where there are small population densities and limited resources. Volunteer ambulance groups were originally formed under the philosophy of informed self-determination and designed to meet the local needs of communities.^{27–29} In Australasia, these groups of volunteers have been incrementally absorbed into larger paramedic services and increasingly supplemented with first responder groups on the basis of their positive impact on cardiac arrest outcomes.^{30,31}

Technological models are dominant in metropolitan and regional areas, where sufficient resources are available to employ well-qualified and well-supported paramedics. These paramedics use advanced technology and clinical practice guidelines derived from research evidence to respond and treat acute patients based on the medical model of care.³² While this model is expensive to operate, it has resulted in significant reductions in mortality and morbidity rates for specific populations.³³

Practitioner models are emerging in Canada and the USA, with a strong emphasis on rural and remote locations or other under-served areas.^{34,35} In the UK, paramedics have recently been granted prescribing rights on a similar basis to those available to nurse practitioners.³⁶ These autonomous paramedic practitioners are more likely to be integrated with other health professionals and health services, as they are potentially involved throughout the cycle of care from prevention to recovery.³⁷ Some Australasian paramedics are undertaking practitioner roles under the guise of various nomenclature, most notably that of extended-care paramedics (ECPs) and community paramedics.^{27,38–40} As demand has increased on the New Zealand health care system, the Ministry of Health has directed St John Ambulance and Wellington Free to introduce models of care to reduce hospital admissions. The establishment of ECP in multiple locations has allowed patients to be assessed and treated in their own home, thus reducing hospital presentations.⁴¹

Issues and challenges

Rural and remote communities are in a unique position to employ and improve on the performance of a range of different paramedic service delivery models.

While there is little argument that the volunteer model will continue to form a crucial part of the emergency medical response system in remote areas, it is increasingly difficult to recruit and retain volunteers in areas where populations are both declining and ageing.^{10,31} Paradoxically, these populations are the ones that would have the most to gain from the more widespread implementation of paramedic practitioner models that complement volunteers, as well as supporting other medical and health services that battle to retain their viability in many rural and remote settings.³⁴

The successful evolution of paramedic services in Australasia is dependent on the following preconditions: (i) the continued development of flexible regulatory frameworks, such as professional registration; (ii) continuing the trend towards broader education and training that is transforming paramedics into health professionals; and greater willingness on the part of paramedic services and funders to endorse and promote models of service delivery that are broader than the traditional emergency response model with its emphasis on trauma and cardiac arrest incidents. The history of paramedic services as emergency service respondents with a core mission to respond to 'real' emergencies has hindered the realisation of improved inter professional practice as socially disadvantaged and low-acuity patients can be dismissed as 'non-ambulance' patients.⁴²

Despite these trends towards higher level and well-integrated paramedic services in Australasia, communities and many other health professionals have limited knowledge or understanding of how paramedic services are organised, the characteristics of paramedics and allied staff and limited appreciation of their potential to make greater contributions to the health and well-being of communities. As an emerging health profession, paramedicine needs to better embrace its role in the health sector and its potential to improve the health and well-being of specific populations.

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