

Redesigning paramedic models of care to meet rural and remote community needs

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Background

The Council of Ambulance Authorities (CAA) is the peak body representing the principal statutory providers of ambulance services in Australia, New Zealand and Papua New Guinea.

The CAA is developing a body of knowledge through research, exchange of information, monitoring and reporting. Australasian ambulance services are focusing on achieving best practice pre-hospital and out of hospital care through both evidence based research and expert consensus in order to provide communities and patients with better health outcomes. Expanding roles and the clinical, educational, and business requirements surrounding this development is an area of common interest across ambulance services to provide communities with better access to a wider range of health care options.

Aims

This research was conducted to inform CAA member ambulance services in monitoring the development of expanding paramedic roles and to assist services in the development of their own models.

The documented outcomes of these initiatives can also assist services in gaining government funding to implement these roles for the first time, in a greater number of locations or to formalise practices that are already occurring. The research will also be shared with international organisations linked with the CAA, such as the International Round table on Community Paramedicine and the Emergency Medical Services Chiefs of Canada.

Methods

In 2007 the CAA developed a survey instrument to investigate expanded role developments in Australian and New Zealand ambulance services (n: 9). Ambulance services were surveyed on developments across their jurisdiction, however this paper will focus on initiatives developing in rural and remote locations.

The survey instrument included open ended questions on formal and informal models developing in the service, the reasons for the development of expanded roles, aims of individual models, clinical and educational requirements of practice, outcomes of the model and where improvements could be made. Ambulance services were resurveyed using the same instrument in 2008 to update progress on these developments.

A literature review was also conducted investigating Australian and International expanded roles for paramedics and other health professionals and the outcomes of these models.

Findings

As demonstrated in Table 1, seven out of the nine member ambulance services surveyed identified either a formal or informal expanded paramedic role occurring within a rural and remote location. The formality of these roles varies considerably amongst jurisdictions from specific role development driven by the ambulance service and supported by a specific education program to informal practice driven primarily by a communities needs, with no formal education program.

The survey identified three broad themes to the roles developed in rural and remote areas. These developments primarily fit into one of these broad categories with some models based on two of these areas, these include:

- Primary Health Care Model—Integrated health services in partnership with other health professionals, extended access to primary health services and to promote disease and injury prevention whilst continuing to provide pre-hospital emergency care.
- Substitution Model—In hospital emergency departments as either a substitution for General Practitioners or Nurses.
- Community Coordination Model—In coordinator roles primarily aimed at supporting ambulance volunteers whilst providing the community with additional health services as required.

Primary Health Care Model

A Primary Health Care Model has been developed in Queensland and New South Wales. These are two of the most formal models driven by the ambulance service in each respective state with specific education programs and curriculum developed to support them.

These models were developed for a number of reasons. Queensland Ambulance Service (QAS) conducted a survey amongst rural and remote paramedics which identified that many were already engaged in unofficial expanded activities, guided by a medical officer or health care provider. The survey demonstrated the following:

- Rural and remote workforce shortages is challenging in most health roles, with paramedics being one of the most under-utilised professions in the rural and remote health area.
- Alternate models of service delivery in rural and remote and isolated communities are required to address workforce shortages.
- An opportunity exists to develop educational pathways for paramedics to integrate and acquire skills and knowledge relevant to the context of practice for their communities.
- Paramedics were ideally placed to provide support services to medical, nursing and allied health professionals.
- Health profiles depicting higher than average incidents of chronic disease, accident and injury in rural and remote areas.

QAS then conducted a literature review on international expanded scope programs in order to recommend an appropriate model for Queensland.¹

Table 1 Matrix of rural and remote specific paramedic role developments

Ambulance Service	Role title	Role description	Clinical skills/description	Education requirements
Ambulance Service of New South Wales	Extended Care Paramedic (ECP)	<ul style="list-style-type: none"> • Treat patients on scene, provide self-management advice; and where available and appropriate, to refer to other health services. • ECPs have multiple referral options and thereby provide a greater choice for patients regarding the most appropriate access to health care service/s. • In addition to current emergency management capacity, ECPs have greater access to pharmaceuticals and interventions that better meet the needs of patients with subacute / non-acute needs. 	<ul style="list-style-type: none"> • Physical examination and history taking • Administration of IV medications • Phlebotomy • Arterial gas sampling • Urinalysis • Peak flow • C-spine assessment • Aseptic techniques • Wound care and suturing • Tissue adhesives • Local and regional anaesthesia • Gastric tube insertion, catheterisation (IDC/SPC) • Splinting and plastering • Dislocation assessment and management • Multiple system assessments including home, ADL, mobility, falls and cognitive. • Administer several ECP only medications including analgesics, antibiotics, antihistamines, topical medications and vaccinations. 	<ul style="list-style-type: none"> • A nine week highly integrated course conducted within a clinical (medical) school environment involving significant practical experience in acute, subacute, non-acute, primary care and community settings. • There are plans to articulate the ECP program with higher education sector (tertiary) sector qualifications as the program progresses (potentially) to a practitioner model of care.

Ambulance Service	Role title	Role description	Clinical skills/description	Education requirements
Ambulance Victoria	Paramedic Community Support Coordinator (PCSC)	<ul style="list-style-type: none"> • To support existing health services and to provide coordination, support and development of existing ambulance community officers • The PCSC will only respond to major emergencies. 	<ul style="list-style-type: none"> • The clinical skills of the ECP commensurate with a substantive position, either an ALS or a MICA Paramedic. • AV is exploring opportunities for expanded scope based on identified gaps and community needs within the specific localities. 	These roles are developed through a Rural Health and Induction Program and Specialist Community Development Training conducted by Monash University School of Rural Health.
Queensland Ambulance Service	Isolated Practice Area Paramedic (IPAP)	<ul style="list-style-type: none"> • Provide integrated health services in partnership with other health professionals and extend access to health services delivery in rural and remote communities • Continue to provide pre-hospital emergency care • Develop advanced clinical skills to scope the health needs of their community, in consultation with other health providers targeting key health issues including: <ul style="list-style-type: none"> – Aboriginal Health – Diabetes – Infectious Diseases – Mental Illness – Chronic and Complex Disease – Health Promoting Practice 	<ul style="list-style-type: none"> • Adult assessment (beyond the current level of skill which focuses on the acute management of injury and illness) • Paediatric assessment • Venepuncture • Insertion of naso/orogastric tube • Urethral catheterisation • Suture of a simple laceration/skin glue application, wound assessment • Oxylog 2000 emergency ventilator • Transcutaneous pacing • Increased range of supervised medications 	Graduate Certificate in Rural and Remote Practice—James Cook University and Queensland Health Applicants for the Isolated Practice Area Paramedic program require a minimum qualification of Advanced Care Paramedic (or equivalent).

Ambulance Service	Role title	Role description	Clinical skills/description	Education requirements
SA Ambulance Service	Rural Hospital Support Paramedic (informal model)	<ul style="list-style-type: none"> • Intensive Care Paramedics with medical support from the ambulance service are providing care to patients in local country hospitals when the General Practitioner is unavailable. • There is a formal agreement process between the ambulance service and the Department of Health on behalf of local hospitals which requires a memorandum of understanding and granting of admitting rights to the ambulance service medical officer to enable advice to have legal standing. 	<ul style="list-style-type: none"> • Standard intensive care paramedic skills in assessment and treatment • Technical skills in hospital management including plasters, sutures etc • Patient hospital management in direct consultation with medical support. • The key skills are assessment, communication and team work. 	Education requirements are currently ad hoc but a formal expansion of knowledge and skills needs to be undertaken if this is to become a regular event.
Tasmanian Ambulance Service	East Coast Paramedic (informal model)	<p>The role of this paramedic while maintaining a key function of responding to emergency cases is to:</p> <ul style="list-style-type: none"> • Trains, manage & recruit volunteers • Engages with community in providing first aid education • Assists hospital staff in triage and cannulation • Treats patients in the home & community • Trains hospital staff in emergency procedures 		<p>There has been no specific training provided to these paramedics and they often develop their own skills through self education.</p> <p>Training is difficult to arrange due to the remoteness of location.</p>

Ambulance Service	Role title	Role description	Clinical skills/description	Education requirements
St John Western Australia	Community Paramedic	<ul style="list-style-type: none"> • Support in the local community to maximise the number of volunteer ambulance officers. • Responding to ambulance calls as necessary as a complement to the volunteer operations. • To provide an extended scope of practice to assist the community and Department of Health in areas where the provision of such services is not viable through the traditional health model. 	<p>The Responsibilities of the Community Paramedic would be location specific. Dependant upon health department resources in each location the scope of practice could be modified to fill gaps that may be present in particular locations including:</p> <ul style="list-style-type: none"> • Assisting local medical facilities in fulfilling community demand for services as required by the Health department on a location by location basis. • Assisting hospital staff at particular times or with specific skills in the absence of other appropriate medical staff. • Providing health “cover” in a location when other health resources, e.g. local doctors and nurses, are unavailable. 	Paramedic qualifications with a modified skill set appropriate to the needs of the specific community.
St John Northern Territory	No official title	<ul style="list-style-type: none"> • Ambulance officers in Alice Springs have been providing relief work in the Emergency Department, as an adjunct to nursing staff. • A contract was developed between Alice Springs hospital and St John NT to govern major aspects. 	Scope of duties to be undertaken while in the ED were developed with particular emphasis on limits or differences to usual ambulance duties, i.e., intubation, protocol driven drug initiation and reporting and documentation.	<p>The educational requirements to participate in this practice are paramedic qualifications.</p> <p>Paramedics are orientated to the ED using a similar program as nurses.</p>

In New South Wales, the program was developed in response to a number of challenges including; increasing ambulance demand, ageing population, rising prevalence of chronic diseases, reduced availability of timely access to GP's, especially for unscheduled care and after hours care and unpredictable delays at hospital Emergency Departments. The Ambulance Service of New South Wales (ASNSW) recognised that 25% of patients were not being transported by the service and that these patients could be safely assessed and managed or referred without needing to leave the comfort of their own home.

The education for both of these models differs in that QAS has developed the Graduate Certificate in Rural and Remote Paramedic Practice in collaboration with James Cook University and the North Queensland Workforce Unit (Queensland Health) whereas ASNSW has developed a nine week intensive course conducted within a medical school environment.

The additional clinical skills of the models are similar across the two services as identified in Table 1. Both of the models continue to provide pre-hospital emergency care in conjunction with the additional skills. The noticeable difference between the two models is that the QAS model is designed specifically for rural and remote communities and the skills of the paramedic is based upon a population health approach designed to meet the needs of a specific community where as the ASNSW model is designed to be used in both metropolitan and rural settings and focuses more on extended treatment and referral rather than health promotion and disease prevention.

In NSW Extended Care Practitioners (ECP's) have not as yet been officially evaluated but clinical governance has not identified any significant patient safety issues. QAS is in the process of evaluating their program.

Substitution Model

A Substitution Model is being used in some South Australian Country hospitals and in Alice Springs Emergency Department to provide leave coverage for some medical and nursing staff. These models have been developed in response to a General Practitioner shortage in country SA and a nurse shortage in Alice Springs.

These models were developed by the ambulance service in conjunction with hospitals and the health department in order to ensure these communities had appropriate levels of health care coverage in the community. In NT a contract was developed between the Alice Springs Emergency Department and St John NT. In SA there is a formal agreement between the ambulance service and the Department of Health which requires a memorandum of understanding and granting of admitting rights to the ambulance service medical officer to enable the paramedic advice to have legal standing.

The education requirements are ad hoc for the SA model, with Intensive Care Paramedic qualifications required to participate supported by existing clinical support mechanisms. In the NT, paramedics are orientated to the ED using a similar program as nurses. The Clinical skills in addition to standard paramedic skills are listed in Table 1. It has been noted that in SA, a formal education model will be required if this is to be an ongoing arrangement.

In SA the model has gained support from both the rural community and the Department of Health with safe appropriate treatment being delivered. The model in Alice Springs ED has demonstrated positive results with the initiative effective in reducing pressure on existing nurses in the ED while also providing a key learning experience for all involved.²

Community Coordination Model

A Community Coordination Model is occurring within three states. The ambulance services have developed two of the models and one has been informally provided in response to the community need. All three of these developments primarily focus on recruiting, retaining and supporting existing volunteers whilst providing support to existing health services where required.

A Paramedic Community Support Coordinator (PCSC) was trialled in remote South Eastern Victoria in response to a diminishing level of general health infrastructure and services in the community that provided an opportunity to expand the practice of paramedics.³ The role was developed to support existing health services and to provide coordination, support and development of existing volunteer ambulance officers whilst only responding to major emergencies.

The PCSC was developed through a Rural Health and Induction Program and Specialist Community Development Training conducted by Monash University School of Rural Health. This is a flexible program that has the potential to expand to other geographical areas in rural and remote Australia. Evaluation of the model found that the PCSC improved confidence in local communities, and applied scarce resources in an efficient manner.

In WA, three Community Paramedic roles have been introduced primarily to support the volunteer ambulance model and to fill gaps in the broader health care services. The primary purpose of the Community Paramedic is to provide support in the local community to maximise the number of volunteer ambulance officers whilst responding to ambulance calls as necessary as a complement to the volunteer operations. In the longer term these paramedics will also provide a wider range of services to the community and Department of Health in areas where the provision of such services is not viable through the traditional health model.

In WA, the Community Paramedic is currently not providing additional health services outside of the general paramedic scope, and education programs will be developed as required. The model is currently in the trial and development stage and is yet to be formally evaluated.

An Australian research project identified an East Coast Paramedic situated in an isolated coastal area of Tasmania providing a range of additional services to the community.³ The role includes; training, managing and recruiting volunteers, engaging with community in providing first aid education, assisting hospital staff in triage and cannulation, treating patients in the home and the community, and training hospital staff in emergency procedures.

In Tasmania there has been no specific training provided to the paramedics undertaking these roles and training is difficult to arrange due to the remoteness of the location. As the East Coast Paramedic is an informal practice, no formal evaluation has been undertaken.

Lessons learned

The development and trials of new paramedic models of care has identified a number of positives as well as areas that could be improved. Although it should be noted that as these models of care are in the stage of development there has been little formal evaluation at this time.

It has been identified that consultation with stakeholders is the key to a programs success and has been reinforced through the development of these programs. It has also been identified that it is important to select the right applicant for these roles as they are quite different to the typical paramedic role. Specific personality and managerial traits can assist particularly in undertaking community based roles.³

It is important to acknowledge that there has been some concerns expressed by other health professionals about the scope of practice and perceived infringements into traditional roles which could be overcome by a comprehensive communication strategy. On the whole, however, results have demonstrated effective patient care as well as assisted in developing relationships with the local community, local hospitals and local health care providers. The development of these interprofessional relationships is vital to the sustainability of health care in rural and remote locations.

Discussion

Rural communities face growing difficulty in accessing health care and a shortage of health care professionals and resources in these locations is resulting in the need for existing health professionals to further develop their skills to address the health care needs of the community.

The paramedic is a well placed health professional to take a key role in contributing to health outcomes of Australians in rural and remote areas where they often have some extra capacity due to a medium to low workload and can in turn contribute positively to the sustainability and social capital of these communities.

The paramedics' role is now expanding both formally and informally to provide primary health care, improve emergency response capabilities and strengthen community health care collaborations in rural and remote communities.⁴ In Australian rural and remote communities paramedics have often provided a wider range of services than the traditional metropolitan paramedic, however over the last few years these roles are becoming formalised and services are closely analysing how paramedics can be best utilised in these locations. Redesigned health care roles are also developing internationally and are becoming widely accepted by both health care providers and consumers.¹

Australian research has identified that ambulance services need to develop a partnership arrangement with communities and other health care professionals to clearly identify new roles in order to gain community support.³ Ambulance services acknowledge the development of other expanded roles such as the nurse practitioner or the physician assistant and the important contribution of a multidisciplinary health care approach.

Recommendations

1. It is recommended that State, Territory and Commonwealth governments and health care providers consider the valuable contribution that ambulance services can contribute to rural and remote communities by providing an option for a wider range of primary health care and health prevention services as part of an integrated health care approach.
2. Governments should consider funding the development of expanded role initiatives that link ambulance and other health care services to provide integrated health care options for rural and remote communities.

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Presenter

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