

Developing a sustainable academic workforce in paramedicine

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Paramedics are an integral part of the Australian healthcare system and are increasingly requested to provide a growing array of services in support of improved community health. Currently there are over 6,000 undergraduate paramedic students. A pressing challenge is the development and sustainability of a dedicated group of university paramedic academics. Urgent action is needed to: develop reliable sources of research funding; create smooth pathways for paramedic clinicians into academia; and, develop effective coalitions between ambulance agencies, paramedic professional groups and universities to ensure a sufficient number of paramedic academics are available to meet the educational needs of the profession.

Paramedics are an integral part of the Australian healthcare system as both responders to medical emergencies and major public health incidents, such as natural disasters and those related to human activities (Maguire, Dean, Bissell, Walz & Bumbak, 2007). They respond to three million calls for emergency assistance every year (Australian Government Productivity Commission, 2016). Their roles and scopes of practice are changing in response to ageing populations, advances in technology, changes in community expectations and broader health system challenges. Paramedics are increasingly being expected to provide important services in primary health care and injury prevention in the community and health facilities (Bigham, Kennedy, Drennan, & Morrison, 2013).

Over the past decade the profession has moved its education requirements from a primarily post-employment in-house training program to a pre-employment university bachelor's degree (O'Brien, Moore, Dawson, & Hartley,

2013). By 2014, the 16 Australian universities offering programs of paramedicine had 6,372 undergraduate students, (Australian Government Productivity Commission, 2016) as well as a rapidly rising number of postgraduate students.

In addition, paramedic professionalism is maturing through a number of other concurrent activities including: the successful establishment of their own professional associations; the emergence of expanded and extended scopes of practice; and, in the near future, professional registration through the Australian Health Practitioner Regulation Agency (Acker, 2016). The practice of paramedicine has evolved from a standard of care focused on stabilisation and transport to the hospital to a standard of care that includes delivering a growing list of medications and interventions. The focus is moving toward treating more people in their homes and referring them to local resources (e.g. the local general practice

physician) for follow-up care (O'Meara, Tourle, Stirling, Walker, & Pedler, 2012). While these factors are important, a pressing challenge for the paramedic profession is the creation, translation into practice, and continual renewal of a unique body of knowledge through their own research efforts. Such activities are essential to ensure the quality of care provided to our communities.

Like other disciplines, paramedicine needs to demonstrate that its research contributes to the overall vision and productivity of universities (McDermid, Peters, Jackson, & Daly, 2012). Australia boasts a relatively high number of doctoral-level qualified paramedics – estimated at approximately 30 in 2016, with over 60 higher degree research candidates enrolled (Network of Australasian Paramedic Academics, 2016). However, the demand for paramedic academics continues to outstrip supply in those Australian universities currently offering entry-level paramedic programs. Accordingly, the shortage of adequately qualified and experienced paramedic academics poses a serious and foreseeable threat to the sustainability of academic programs, undermines the profession's academic credibility in universities, and leads to missed opportunities to improve paramedic services to the community through university-based paramedicine research (O'Meara, 2006).

In common with other health disciplines, paramedic academics are expected to demonstrate the capacity to teach professional practice topics and clinical skills, while also being active and productive research scholars (Smith & Boyd, 2012). Those already employed in universities are required to meet annual performance benchmarks in teaching quality, grant income and research productivity. Aspiring paramedic academics are increasingly required to hold doctoral-level qualifications and to have a research publication record. Paramedic academics seeking promotion to senior academic positions are typically required to have substantial research records, in terms of both grant income and peer-reviewed publications, and be nationally and internationally recognised for their research scholarship (Curtin University, 2016).

While it is well understood that the generation of new knowledge underpins evidence-based policy and paramedic practice (National Institute for Health Research, 2016), it is less well understood that the conduct of paramedic research is strongly linked to the recruitment and retention of a sustainable paramedic academic workforce. Despite this link being identified for the last decade (O'Meara, 2006), Australia lacks a coherent strategy to encourage and support current and future paramedic academics.

The major impediments to the development of the paramedic academic workforce are: access to data; research support from ambulance services; dedicated research funding; and, ongoing access to clinical care experience. Numerous anecdotal reports from paramedic academics highlight the ongoing difficulties of accessing ambulance service data and obtaining grant funding. As a result, paramedic academics have limited publication track records, restricted access to grant opportunities and little chance of academic promotion. Recruiting paramedic academics is also difficult because of low salaries and limited promotion opportunities. In addition, many paramedic academics have given up their clinical certifications because they are denied practical opportunities to work clinically. It is clear that the development and implementation of policies and practices to grow and sustain the paramedic academic workforce in Australia needs to come from a cohesive approach across universities, the profession, governments and ambulance services.

A number of crucial changes, at both strategic and operational levels, are needed to ensure a sustainable development of the paramedic academic workforce.

Firstly, strategies are needed to mentor and support aspiring paramedic academics. These strategies could include creating an environment in which practising paramedics are able to participate in research activities, spend time in universities through fellowships and joint appointments, and complete doctoral degree programs before fully transitioning to academic careers.

Secondly, the newly appointed and established paramedic academics need the opportunity to maintain their clinical currency through continuing professional practice in the same manner as is the case in other health disciplines (McDermid *et al.*, 2012). Joint appointments with ambulance services would help paramedic academics maintain clinical currency (Murray, Stanley, & Wright, 2014).

Thirdly, in order for paramedic academics to establish and maintain research profiles relevant to their profession they must have the opportunity to: influence and participate in ambulance service research governance processes; obtain research funding in partnership with ambulance services; and, help develop ambulance service research priorities (O'Meara, Maguire, Jennings, & Simpson, 2015; Siriwardena, Donohoe, Stephenson, & Phillips, 2010). An ideal action would be to establish joint appointments between universities and ambulance services.

At an operational level, ambulance services, professional associations and universities need to work together

on the development and writing of competitive grant applications that address national paramedicine research priorities. This will inevitably involve ambulance services and professional associations committing substantial funds to support partnership grant applications through funding programs such as the Australian Research Council Linkage Program and the National Health and Medical Research Council Partnerships Program. In the longer term, one possible outcome could be the funding and implementation of a national, hub and spoke collaborative research centre where established and future paramedic researchers and academics could work together in a well-supported research environment.

In order to ensure an effective paramedic academic workforce, universities, ambulance services and the profession need to work together to better prepare paramedics for academic careers before full-time academic appointments are made, then continue to support and nurture the paramedic academic workforce to ensure its survival and prosperity. This coalition needs to work together to lobby government, private industry and foundations for dedicated research funding.

Paramedic research capacity and outcomes underpin claims to professionalism, and these will ultimately determine whether paramedic programs continue in the nation's universities or return to the industry based training and apprenticeship models of old. Such a reversion would mean a less skilled and well-rounded workforce, a limit on the creation of new knowledge into the future, the loss of a generation of paramedic academics, and would be deleterious to the quality of care provided to the citizens of Australia.

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