

From research capacity to research culture

Paramedicine

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Introduction

Paramedicine has reached an important point in its evolution. Across many jurisdictions, the profession now contributes across urgent and primary care, public health, community care, education, leadership, policy and research. This expansion brings an equally important responsibility: that decisions affecting paramedic practice should be informed by robust evidence rather than tradition, anecdote or extrapolation from other disciplines. Our next challenge is therefore not simply to produce more research, but to build a sustainable research culture that develops researchers, supports supervisors, retains expertise within the profession and translates evidence into practice.

The conversation about research capacity in paramedicine has matured. It is no longer sufficient to encourage clinicians to undertake research or celebrate individual doctoral graduates. Research capacity depends on the infrastructure, leadership, collaboration and career pathways that allow a profession to continuously generate knowledge, use this to inform practice and then feedback into the next generation. As Tavares and Brydges recently argued,¹ developments in paramedicine research, education, regulation and innovation are not merely technical advances; they contribute to defining the profession's knowledge, authority and place within the wider health system. Research capacity should therefore be understood as professional infrastructure, not merely an optional adjunct to clinical practice as it is so often considered.

Recent work examining research infrastructure in paramedicine internationally provides a clear illustration. Bowles et al., Ross et al., and Tavares et al. identified a fragmented infrastructure, limited research leadership, inequitable access to research opportunities and reliance on informal networks rather than coordinated systems.^{2–4} A common narrative emerges from these and other works, while the enthusiasm for research in paramedicine is abundant, enthusiasm alone cannot compensate for inadequate infrastructure nor sustain its trajectory. Building capacity requires a deliberate investment in people and the systems that support them to grow themselves and then others.

Few investments are more important than developing the people who will develop the next generation of researchers.

The importance of supervisors

Every successful researcher can identify supervisors who fundamentally shaped their career. Supervisors do considerably more than oversee thesis completion. They introduce students to academic culture, model ethical research practice, facilitate collaboration, develop scholarly independence and help emerging researchers navigate the setbacks and successes of research careers. Yet supervisory capacity has received comparatively little attention in paramedicine. The number of paramedics holding doctoral qualifications is increasing,⁵ while the pool of experienced doctoral supervisors remains relatively small. While interdisciplinary supervision is valuable and necessary, a profession also needs supervisors who understand its distinctive contexts, priorities and challenges. Put simply more often than not you cannot be what you cannot see, and inadequate higher degree research supervision is consistently identified as one of the major barriers to research access and quality in paramedicine.^{6,7}

Developing supervisory expertise should therefore be a strategic priority for the profession and employers. Universities, ambulance and paramedic services, and professional organisations should identify experienced researchers capable of supervising recent postdoctoral researchers and graduate students. They should also support novice supervisors through mentorship and communities of

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practice and recognise supervision within workload models. Collaboration should be central to this effort. Collaboration can enhance research quality by bringing together complementary expertise, perspectives and methodological strengths.⁸ Supervision is also succession planning. Today's doctoral students will become tomorrow's supervisors, editors, grant reviewers and research leaders. However, succession is not automatic a too often; doctoral graduates move from the structured support of a PhD into roles with little protected time, few opportunities to contribute to established programmes of research and no staged pathway into supervision.^{3,4} In a profession with a small pool of supervisors, they may then feel obliged or be organisationally expected to take on students before they have had the opportunity to consolidate their own research careers. For some, supervising a student's project becomes the principal means of sustaining their research activity, despite receiving limited support to develop as a supervisor. At the same time, established supervisors can accumulate more students than can be sustainably supported, stretching finite capacity and potentially diminishing the quality of supervision and their own scholarship. This creates a self-perpetuating cycle where emerging supervisors are underdeveloped, experienced supervisors are overextended, and doctoral graduates remain at risk of becoming disconnected from research.

Breaking this cycle requires deliberate progression from doctoral graduate to active researcher, co-supervisor and independent supervisor, supported by mentorship, collaborative research opportunities, protected time and genuine recognition within workload models.³ Developing researchers requires more than effective supervision; it requires an environment that sustains research engagement and career development from early exposure through to established research careers. A long-term commitment to this infrastructure can create a positive cycle in which stronger research programs secure competitive funding, that funding supports doctoral scholarships and paid postdoctoral positions, and the researchers developed through these opportunities become the next generation of supervisors and research leaders. Breaking the often-reported current cycle requires the profession and employers of researchers to value long-term capacity building over short-term outputs.

Creating the environment

The profession has rightly celebrated the increasing number of paramedics completing master's and doctoral degrees. These achievements are important milestones in professionalisation. But celebrating graduates without considering what happens next risks creating individual success stories rather than sustainable research capacity. Research careers require a pipeline. Research interest should begin during undergraduate education, where students develop critical appraisal skills and gain authentic exposure to research.

Opportunities to participate in projects, contribute to publications and present at conferences can change career aspirations by helping students see research not as something conducted by others, but as an integral component of professional practice.^{9,10}

The transition to postgraduate research should be equally intentional with scholarships, clinician-researcher pathways, protected research time and collaborative research groups which can help retain talented individuals within the profession. We must be clear though: these pathways must extend beyond doctoral completion. Without postdoctoral opportunities, early-career fellowships and meaningful academic or clinician-scientist positions, paramedicine risks losing precisely those people in whom it has invested most heavily in back to clinical practice or other areas, stifling the pipeline of growing researchers and opportunity for exponential growth. This is where collaboration becomes particularly important as research capacity cannot be built by individual universities, ambulance services or researchers working in isolation. Partnerships across institutions, jurisdictions and disciplines create opportunities for visiting fellowships and professorships, shared supervision, larger studies, methodological expertise, data access and international research networks, which in today's highly competitive research funding environment is the expectation not a nice to have. A mature research profession should not simply produce more researchers; it should connect them. It must also create opportunities for those researchers to contribute their expertise within the profession and the wider health system.

Using the expertise we create

The greatest challenge for us as a profession may therefore be not producing researchers but using their expertise effectively after they have been trained. Paramedics often complete doctoral degrees only to return to roles offering little opportunity to use their research expertise, or worse, leave the profession to pursue opportunities that use their expertise. Their methodological skills, grant-writing experience, implementation knowledge and scholarly leadership remain underused because organisational structures have not evolved alongside educational achievement. This represents a substantial loss, and research-trained paramedics should not be viewed simply as clinicians or educators with additional qualifications. They are organisational assets capable of strengthening quality improvement, education, implementation, clinical guideline development, workforce planning, service evaluation, policy, data governance, innovation and importantly training others around them in the valuable skills they have.¹¹

Meaningful research careers therefore require diverse pathways that integrate clinical and education credibility with scholarly leadership. Clinical academic appointments, embedded research units with industry, research

fellowships and conjoint university-health service positions can retain expertise within the profession while keeping research connected to clinical priorities.¹² This is not about removing experienced clinicians from practice; it is, rather, about recognising that contemporary paramedicine requires multiple legitimate career pathways, including research, education, leadership and policy alongside clinical practice. However, expanding these pathways must be matched by an equally strong commitment to the quality and rigour of the work they produce.

Quality matters

Therefore, increasing the profession's capacity to research must not mean lowering expectations. More research is not necessarily better research. Findings and conclusions are only as credible as the methods that generate them, and inadequate research can ultimately cause harm when weak evidence is translated into practice.⁶ Capacity building and quality improvement are therefore inseparable. Emerging researchers need access not only to research opportunities but also to appropriate methodological training, experienced supervision, constructive peer review and meaningful collaboration. Journals have a role in this ecosystem, but responsibility begins much earlier with research design, supervision and organisational support. This is particularly important as paramedicine becomes increasingly visible within the broader health research community. We should not seek legitimacy simply by producing more publications; we should instead seek it through research that is conceptually coherent, methodologically rigorous, transparent, collaborative and relevant to the problems facing people receiving care, paramedics, and health systems with a clear translation to impact for the research being conducted.¹³

Translation matters as much as production

Generating evidence is only the first step towards improving care. Evidence that remains confined to journal pages, conference presentations or university repositories cannot influence practice. Research capacity must therefore include implementation capability. Researchers should engage clinicians, educators, managers, regulators and policymakers throughout the research process rather than after publication. Organisations, in turn, need mechanisms through which emerging evidence can inform education, clinical practice and policy, quality improvement and strategic planning. This is also where the broader integrity of the research enterprise matters. As we recently argued, paramedicine has a responsibility to protect independent, transparent and inclusive science, particularly where research addresses inequity or gives voice to marginalised communities.¹⁴ A

sustainable research culture therefore is not just productive, but it values evidence, methodological rigour, transparency and intellectual independence.

The role of *Paramedicine*

Scientific journals occupy a unique position within this cultural ecosystem. They are not simply repositories for completed research. They can contribute to research capacity by providing rigorous and constructive peer review,¹⁵ developing reviewers and editors, supporting emerging researchers, promoting transparent scientific practices and creating space for methodological and conceptual debate. This reflects the trajectory of *Paramedicine* itself. The journal has previously articulated its commitment to raising expectations for research quality and to challenging the assumption that paramedicine should accept lower methodological standards because of its relative youth as a research discipline.⁶ It has also emphasised the importance of collaboration and engagement with wider academic conversations. More recently, the journal has explicitly situated paramedicine research within broader questions of professionalisation, identity, authority and system change. These conversations are connected as a profession cannot build research capacity without quality, quality without collaboration or research without understanding the broader professional context in which it operates and intends to impact on.

At *Paramedicine*, our role therefore extends beyond publishing manuscripts. We aim to support researchers throughout their scholarly journey while maintaining the standards expected of an international scientific journal. That means developmental peer review where appropriate, supporting emerging reviewers and editors, encouraging methodological excellence, publishing research that addresses important questions and promoting scholarship that informs clinical care, education, leadership and policy. It also means being willing to say no. As editors, we have a responsibility to uphold scientific rigour and academic integrity. Constructive support does not mean accepting research that is fundamentally unsound. Sometimes supporting researchers means providing clear feedback about what needs to improve before their work is ready for publication. Ultimately, these responsibilities are part of a larger goal of building a research culture in which quality, integrity and scholarly development are valued across the profession.

Looking forward

Professional maturity is reflected not simply by the existence of research, but by the existence of a sustainable research culture. Such cultures continuously produce researchers, support supervisors, create meaningful careers, retain expertise, embed evidence within decision-making and protect the integrity of scholarship. Paramedicine has

made substantial progress. We have more doctoral graduates, more active research groups, stronger international collaborations, increasingly sophisticated methodologies and several journals dedicated to advancing the profession. The next stage requires us to shift our attention from individual success to system success. We must develop supervisors alongside students, and we must build career pathways rather than isolated qualifications. We must connect researchers rather than allow them to work in silos, and we must ensure organisations recognise and use research expertise. We should demand quality while providing the support necessary to achieve it. And we must ensure there is a translation to impact for the research done, translating into better care for people and their communities.

Research culture is ultimately about people and the environments they are surrounded by. It is about making curiosity possible, valuing scholarship, collaborating routinely and using evidence to influence. As paramedicine continues to define and redefine its place within healthcare, building this culture is not simply an investment in research, but an investment in the development of the profession itself. Paramedicine has long described itself as an emerging profession, but that language has outlived its usefulness. It is an established profession forging its own path in collaboration with others, and research is a central pillar in how we will own what comes next.

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References

1. Tavares W and Brydges M. Thinking beyond and through innovation and reform in paramedicine. *Paramedicine* 2026; 23: 249–252.
2. Bowles KA, Batt AM, O'Toole M, et al. Identifying the essential elements to inform the development of a research agenda for paramedicine in Ireland: a Delphi study. *Health Res Policy Sys* 2024; 22: 100.
3. Ross L, Reynolds L, Reeves H, et al. Barriers and enablers to paramedicine research in Australasia – A cross-sectional survey. *Paramedicine* 2023; 20: 107–116.
4. Tavares W, Chawanda N and Batt A. Exploring paramedicine's research infrastructure in Ontario, Canada. *Paramedicine* 2025. DOI: 10.1177/27536386251355325.
5. Whitley G. The international paramedic PhD registry: an overview of paramedic doctorates. *Br Paramed J* 2025; 10: 63–68.
6. Simpson P. How good is good enough...and why wasn't my paper published? *Paramedicine* 2024; 21: 1–4.
7. O'Meara P. Searching for paramedic academics: vital for our future, but nowhere to be seen!. *Australasian J Paramed* 2006; 4: 1–3.
8. Simpson P. Leveraging collaboration to enhance quality in paramedicine research. *Paramedicine* 2024; 21: 144–146.
9. O'Meara P. Student research: the future of paramedicine. *Australasian J Paramed* 2014; 11: 11–13.
10. Batt AM, Steary D, Mason P, et al. The students are our future: growing the next generation of paramedic researchers in Canada. *Canadian Paramed* 2019; 42: 12–15.
11. Bolster JL and Batt AM. Building bridges and moving upstream: paramedics as policy architects. *Paramedicine* 2025; 22: 192–201.
12. Cameron C and Batt AM. *Career framework for paramedics*. Paramedic Association of Canada, 2024.
13. Greenhalgh T, Raftery J, Hanney S, et al. Research impact: a narrative review. *BMC Med* 2016; 14: 78.
14. Simpson P, Eastwood K, Batt A, et al. When facts become optional: confronting the rise of anti-science culture. *Paramedicine* 2025; 22: 259–260.
15. Simpson P and Tavares W. Peer review in paramedicine: owning imperfections and striving to optimise. *Paramedicine* 2023; 20: 128–131.