

RESEARCH REPORTS

INTEGRATING COMMUNITY PARAMEDICINE TOPICS INTO DEGREE-LEVEL PARAMEDIC EDUCATION PROGRAMS: A STRATEGIC-PRAGMATIC APPROACH

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ABSTRACT

Introduction: Community paramedicine programs address the needs of diverse and often underserved communities and individuals with varied social and chronic disease needs. Community paramedics have adopted knowledge, skills, and behaviours characteristic of primary healthcare professionals. Paramedics often lack access to higher education that enables autonomous practice alongside other health professionals. This study aimed to develop an educational framework supporting the integration of community paramedicine topics into degree-level education programs that would equip them to meet contemporary and future expectations.

Methods: The emerging roles and professional capabilities expected of community paramedics as clinicians and practitioners guided this research. The curriculum framework was designed through an examination of existing curricula, the community paramedicine literature, and questionnaire responses from two panels of expert paramedicine professionals drawn from countries where community paramedicine is established or emerging. Purposively recruited panelists comprised practicing community paramedics, students and educators, professional leaders, and subject matter experts.

Findings: The first panel largely supported those topics that comprise the Paramedic Health Solutions curriculum Version 4.0. They recommended more inclusive language that recognises social and cultural disadvantages, highlights person-centered care, additional topics, and increases the load and depth of study. In phase two of the project, the panel supported the integration of community paramedicine topics into paramedic degrees. After input from a second expert panel, an International Community Paramedic Education Framework was finalised to guide educators.

Discussion: The educational framework is focused on the knowledge, skills, and behaviours relevant to community paramedicine that can be integrated into paramedicine degrees. Its implementation will equip graduates with the capabilities to practice as clinicians or practitioners in primary care settings and across the acute and low-acuity domains of practice in collaboration with other health and social service professionals.

INTRODUCTION

Across much of the developed and developing world, paramedic entry-to-practice education has moved into the higher education

sector (Brooks, Cooke, Spencer, & Archer, 2016; Brooks, Grantham, Spencer, & Archer, 2018; Catterall, Bromwich, Phillips, & Eaton, 2016; College of Paramedics, 2024; Dabrowski et al., 2017; Hosseini, Forouzandehfar, Dadgarmoghadam, & Malekzadeh, 2017; Majchrowska et al., 2021; Sobuwa & Christopher, 2019; Vincent-Lambert, Bezuidenhout, & van Vuuren, 2014). This development has been associated with the modernization of paramedic models of care and the professionalization of paramedicine (Makrides, Ross, Gosling, Acker, & O'Meara, 2022). Paramedics in those systems, dubbed professionally autonomous paramedic systems (Figure 1), are often described as practitioners who sit alongside other registered or licensed healthcare professionals (Office of the National Rural Health Commissioner, 2023; Paramedic Board of Australia, 2021).

In contrast, paramedics practicing in directive paramedic systems (Figure 1) that lack many of the signature characteristics of modernization and professionalization, such as clinical Bachelor's degrees, self-governance, and nationally-recognised health professional registration, are generally seen as clinicians who are qualified to engage in clinical practice under the direct or indirect supervision of health practitioners (Figure 1) (American College of Emergency Physicians, 2015). Support for change is evident amongst paramedicine leaders and advocates in several countries.

All roads must lead to a professionally autonomous EMS system in the U.S. This is not just a grand aspiration, it is a necessary precursor to the development of an EMS system that provides the most effective and efficient care to the citizens of the U.S. A professionally autonomous system is also necessary to support a workforce dedicated to the provision of paramedicine clinical care (Maguire et al., 2024).

Proposals to develop paramedicine roles and capabilities have been under discussion in Canada despite the regulatory and educational challenges "... that must be bridged to enable a secure transition to autonomous and independent practice," according to Dr. Mike Austin, who goes on to say that:

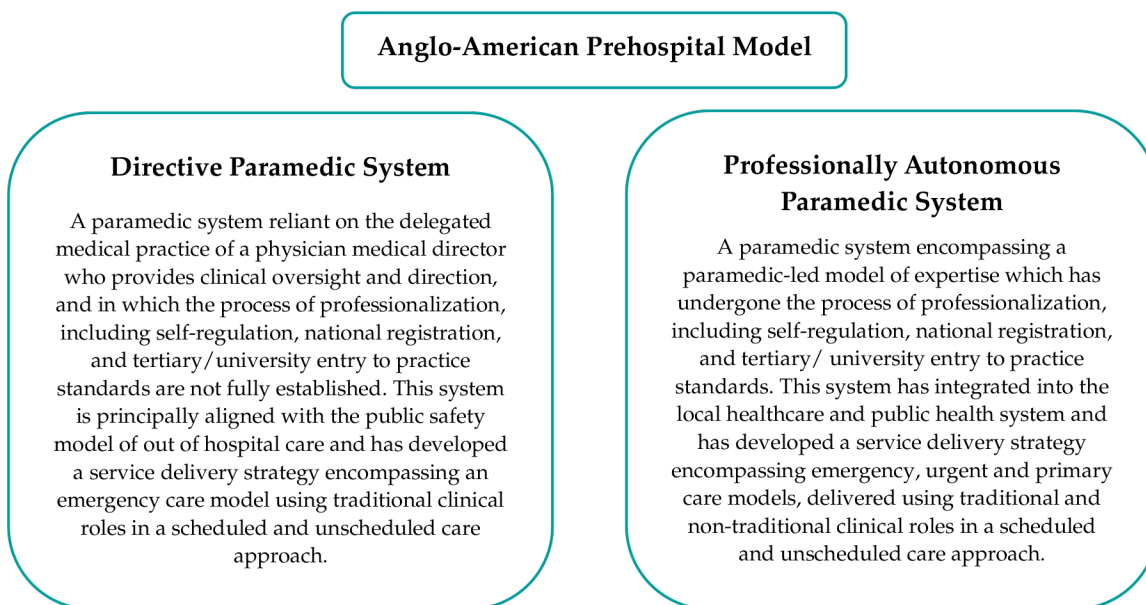


Figure 1: Definitions of Professionally Autonomous and Directive Paramedic Systems (Makrides, Ross, Gosling, & O'Meara, 2022)

... there is a growing movement in Canada advocating for the development of university Paramedicine Degree programs. These initiatives not only aim to provide advanced training but also aspire to cultivate paramedicine leaders capable of navigating and succeeding in this new, more advanced domain (Careless, 2024).

This study formed part of a larger project to harmonize the international community paramedicine (CP) curricula. The focus here is the development of a CP curriculum framework that encourages the integration of relevant topics into existing or future clinical degree-level programs that will equip paramedicine graduates to practice as community paramedics in either directive or professionally autonomous paramedic systems. This educational preparation will prepare graduates to further develop their capabilities across multiple practice settings and domains (College of Paramedics, 2024).

CP programs have emerged in both directive and professionally autonomous systems to address the needs of diverse and often underserved communities and individuals with a wide range of social and chronic disease needs (van Vuuren et al., 2021). In these CP models of care, the underlying philosophy and staffing configurations are determined by historical influences, existing health and social services, funding, and regulatory architecture. Irrespective of the paramedic system utilized, community paramedics have largely adopted knowledge, skills, and behaviours that are characteristic of primary healthcare professionals (Moritz, 2018).

A common characteristic of directive paramedic systems is that specialist or extended training of paramedics and primary care technicians (inclusive of emergency medical technicians) engaged in CP programs tends to rely on certificates or short courses to prepare them for practice (Caffrey, Barnes, & Olvera, 2018; Jensen, 2020). From a clinical governance standpoint, these community paramedics work under the supervision or direction of other registered or licensed health professionals, most notably physicians (National Association of State EMS Officials, 2021; Richmond, 2016). In the United States, the 2019 EMS Scope of Practice explicitly states that:

EMS personnel are not independent clinicians, but are expected to execute many treatment modalities based on their assessments and protocols in challenging situations (National Association of State EMS Officials, 2021).

This raises questions about the content and level of training that these primary care providers need to acquire and maintain the professional capabilities to undertake their CP roles. Little scholarly work has been completed to ascertain answers to these educational questions, with most CP courses built on the foundation of existing paramedicine training programs of varying structure and content (Spelten et al., 2024). Existing CP education programs generally offer additional topics that seek to address the needs of individual CP programs (Paramedic Health Solutions, 2021). The length and depth of these courses vary, with few accredited externally, while it is rare to see students offered college or higher education credits for their efforts to improve their knowledge, skills, and behaviours. However, some countries are better placed to ensure that paramedics are prepared for CP roles.

... where the education and training are university based, paramedics are in general well equipped for basic community paramedicine roles. We do need to con-

sider that this may not be the case in countries where there is limited Bachelor's degree level education available (Spelten et al., 2024).

The expected roles and capabilities of community paramedics at the clinician and practitioner levels guided this research. For this study, **Community Paramedic Clinicians** are entry level community paramedics who have the competencies and capabilities to practice as clinicians in a wide range of primary and urgent care settings. They bring their core paramedic knowledge, skills, and behaviours together with additional CP-related education and training to the health and social needs of individuals and communities. In contrast, **Community Paramedic Practitioners** have also acquired, and continue to demonstrate, an enhanced knowledge base, complex decision-making skills, competence, and judgment in community paramedic practice (O'Meara, Ahlers, & Wingrove, 2024).

METHODS

The CP harmonization curriculum project acknowledged at its onset that curricula need to be socially and culturally sensitive to the needs of communities. In addition, the project considered the advantages of appropriate, affordable, and accessible education programs that would strengthen and sustain CP programs. As a core value, the curriculum framework was developed on the premise that paramedicine is predominantly an evolving autonomous health discipline, rather than a public safety occupation (Williams, Beovich, & Olausson, 2021).

The curriculum framework was designed through an examination of existing curricula, the CP literature, and questionnaire responses from two expert panels drawn from six countries where CP is established or emerging. These purposively recruited panelists comprised: practicing community paramedics, students, and educators; professional leaders; and subject matter experts who were recruited through an approved process of informed consent. [Monash University Human Research Ethics Committee, Project ID: 36288] The open-text responses were thematically analysed to identify the shared social and cultural needs of CP curricula at an international level.

Study data were collected and managed using REDCap electronic data capture tools hosted at Monash University (Harris et al., 2019; Harris et al., 2009). REDCap (Research Electronic Data Capture) is a secure, web-based software platform designed to support data capture for research studies, providing 1) an intuitive interface for validated data capture; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for data integration and interoperability with external sources.

In the first round of consultation, Panel 1 members were invited to complete an online questionnaire that asked them to assess and comment on the relevance of the existing modules of the Paramedic Health Solutions (Version 4.0) CP curriculum (Paramedic Health Solutions, 2021). Further to this, panelists were invited to provide suggestions for improvement. The Paramedic Health Solutions (PHS) curriculum was designed to provide a benchmark that could be utilised globally to help develop paramedicine programs that recognise the emergence of CP as either an integral part of core paramedicine practice or as a specialty program that operates on a stand-alone basis (North Central EMS Institute, 2012; Paramedic Health Solutions, 2021).

In a second round of consultation, a modified curriculum framework and revised topics were returned to Panel 1 members for assessment and further comment. They were asked to complete a multiple-choice questionnaire (5-point Likert scale) and provide open-text responses related to four proposed educational levels (micro-credentials, Associate's degree, Bachelor's degree, and Master's degree) to ascertain their opinion of the suggested curriculum framework and the modified content. Following this stage, a further draft curriculum framework was developed to incorporate this expert feedback.

The penultimate draft was then sent to a smaller second group of purposively recruited expert informants to validate the curriculum at four levels (Certificate, Associate's degree, Bachelor's degree, and Master's degree). Where appropriate, the panelists' collective suggestions were incorporated into the curriculum and published in the *International Community Paramedic Curriculum: A Guide for Educators* (O'Meara et al., 2024).

FINDINGS

The SQUIRE-EDU extension of the SQUIRE guidelines was used to report the overall findings of the community paramedicine curriculum harmonization project. This paper uses the same approach when reporting on the integration of CP-related topics into degree-level education programs. This process increased the completeness, transparency, and replicability of this effort to improve the education of community paramedics (Ogri-nc, Armstrong, Dolansky, Singh, & Davies, 2019).

Our findings, analysis, and discussion examine the rationale for CP being included in degree-level paramedicine programs and identifies topics relevant to those practicing CP at an introductory level. The Master's-level curriculum for specialist or advanced community paramedic practice was omitted from this paper on the basis that it is largely outside the reach of those practicing in directive paramedic systems that lack the professionalization markers that characterize the autonomous paramedic practice of advanced paramedic practitioners (Eaton et al., 2022). Likewise, the Certificate-level curriculum is not directly considered here as the curriculum framework broadly retains the content and duration of the previous community paramedic curriculum and is more suited to the technician-level provider.

The findings are presented across the three stages of the project. They include summaries of the expert feedback on the Paramedic Health Solutions Curriculum (Version 4.0) and the draft curriculum framework. The developmental work between the three questionnaires concentrated on articulating program values and expectations within an educational framework compatible with existing and evolving paramedicine higher education programs.

ASSESSING THE PARAMEDIC HEALTH SOLUTIONS (PHS) COMMUNITY PARAMEDICINE CURRICULUM

In the first round of consultation, 65 experts from five countries were invited to participate. Thirty-four from Australia, Finland, the United States (U.S.), and Canada completed an online questionnaire that asked them to assess and comment on the relevance of the PHS CP curriculum. These panelists – 14 from Australia, 14 from the U.S., one from Finland, and five from Canada - described themselves as: subject matter experts (16), paramedic agency or professional body leaders (4), accreditation or certification agency

members (2), practicing community paramedics (4), or prospective community paramedics or students (8).

They overwhelmingly felt that the existing 10 modules of the PHS curriculum are either essential or relevant to CP. (Table 1) There was some uncertainty expressed about the Personal Safety & Wellness and Pandemic Response topics. In both cases, the negative views of the topics were held across both directive and professionally autonomous systems, with four informants having negative views of both topics. The reasons for their reservations were articulated in their open-text responses.

Paramedic Health Solutions Modules	Essential	Relevant	Unsure	Not Relevant
1. Introduction to Community Paramedicine	26	8	0	0
2. Systems of Care	22	11	1	0
3. Social Determinants of Health	28	6	0	0
4. Community Paramedicine Operations	25	8	1	0
5. Community Paramedic Interventions	24	10	0	0
6. Cultural Competence	21	12	1	0
7. Personal Safety & Wellness	15	11	7	1
8. Chronic Disease Management	28	6	0	0
9. Mental Health	23	10	1	0
10. Pandemic Response	10	17	4	3

Table 1. Relevance of existing modules to community paramedicine.

Eighteen expert panelists made general comments across the ten modules, with all but two of the nine individuals with negative ratings taking the opportunity to comment. The themes (Table 2) that emerged from the open-text comments indicated support for the curriculum intent, even though some considered the PHS curriculum U.S.-centric. Several pointed out that the curriculum had not drawn on the experiences of community paramedicine in the United Kingdom (U.K.), where paramedics are working in a wide range of primary care settings such as medical practices and urgent care centres (College of Paramedics, 2023; Health Education England, 2019).

Panelist comments (Table 2) focused on identifying gaps in the PHS curriculum (Question 2), such as palliative care and cultural safety, the minimal time allocated to learning, and a lack of sensitivity to person-centered care. Some hinted that these shortcomings had been or could be addressed through more robust entry-to-practice education for paramedics through the transfer of paramedic education to higher education institutions that offer degree-level education. This view is consistent with the latest version of the U.K. paramedic curriculum framework (College of Paramedics, 2024) and established Bachelor of Paramedicine programs in Australia.

Twenty-three of the panelists suggested improvements to the curriculum (Question 3) and provided their rationale for additional topics and module. In some cases, the suggestions were concise, while in others they offered extensive commentaries.

Emergent Themes	Representative Feedback (by Country)
Support for PHS Topics	These [topics] represent a very strong foundation. They also incorporate key areas to support a functional community paramedic in most systems. (U.S. panelist)
	These modules are important and reflect the differences in working as a paramedic or a community paramedic, which I think, is also important when we think about what role these CPs are going to fill. (Finnish panelist)
	I think cultural competence and personal wellbeing are adequately covered in other areas of practice, such as undergraduate education and in ongoing professional development. The CP role within the PHS is already covered in Systems of Care. Pandemic response is going to be so varied and dependent on so many region-specific factors, I don't think it should be covered by a single module that is meant to apply to many. The CP role in a pandemic will be dictated by multiple, region specific factors and policies. (U.S. panelist)
Internationalisation of Curriculum	I wonder if this [curriculum] needs revisiting based on the most recent international evidence around how we as a global community are defining CP ... (Canadian panelist)
	The module content again seems to exclude UK models, and whilst Canada has had great success in proactive models of community paramedicine, the UK has great reactive models, and I believe in an international curriculum, this needs to be inclusive. (Australian panelist)
Curriculum Gaps and Language	Suggest a move towards structural determinants of health, such as acknowledging the effects of colonialism on indigenous people (Canadian panelist)
	At first glance, the modules seem to be lacking in geriatric-specific content. Although I may have missed it, more information on falls, frailty - maybe the 5Ms would be helpful (Mind, Mobility, Medications, Multimorbidity, and Matters Most). Some aspects of palliative or end-of-life care provision may be helpful. (Canadian panelist)
	The whole document needs a revisiting around philosophy, language, approach, which is not patient-centric, focused on co-designed care plans, or creating culturally safer care for racialized or other marginalized populations (which is the sandbox where CP states they are playing). (Canadian panelist)
	... current scoping/discussion around cultural competency - this section needs extensive revisiting again as far as language, what cultural competency is, and lens on which cultural competency is painted "as a skill set that is needed to be developed so that CP interventions are more effective, and the difference between compliance and non-compliance" ... (Canadian panelist)
	... there are places where patients are referred to as a product of their disease (i.e., psychiatric patient), rather than talking about the kind of care or support the patient may need - i.e., patients with psychiatric support needs or psychiatric diagnoses (patient first). I also note problematic language throughout like "compliance and non-compliance" when referring to patients. (Canadian panelist)
Higher Education and Credit Load	Some content areas are quite large, for example, interventions and chronic disease management, and may require more than the allocated didactic hours to achieve the learning outcomes. (Australian panelist)
	... hours of learning are way too short. This is based on a U.S. "certificate" study. You cannot dumb down this advanced level of care and need to introduce it to a clinician level, not a technician level or it will fail ... (Australian panelist)

Table 2. Emergent themes from question 2 (first round of consultation).

Although the provision of a palliative care approach, and ability to support patients with palliative care needs is needed for entry-level to practice paramedics in general, competency in this area is also needed by community paramedics who are seeing patients who would benefit from a palliative care approach in their case load, often with advancing chronic disease, co-morbidity, patient groups where there are attempts to deter ED usage, patients with complex care needs in community and high health system needs. This is a major hole. (Canadian panelist)

The suggestions for inclusion included a mix of topics that are typically part of entry-to-practice health professional education or are included in advanced clinical practice education programs at the graduate level. In common with the responses to Question 2, panelists identified the lack of patient-centered care language or acknowledgment of cultural sensitivity in the PHS curriculum.

In the Cultural Competence unit, there needs to be some inclusion for 'First Nations' in Section 6.1.7. The language of this unit needs to reflect currency of being 'Culturally Safe' in practise/practice. (Australian panelist)

Many of these suggested topics, such as palliative care, pharmacology, geriatrics, public health, law & ethics, research literacy, and professionalism/regulation are found in existing Bachelor of Paramedicine programs. There was concern about the limited focus on interprofessional practice. These suggested inclusions are consistent with the U.K. College of Paramedics recently released Curriculum Framework (College of Paramedics, 2024).

Interprofessional practice concepts - must be a minimum requirement, WHO outlines this, and the Delphi consensus on community paramedic definition found this to be a core tenet of defining the community paramedic role. (Australian panelist)

I was thinking the right word for the skills of cooperation with other social and health care providers ... wondering if could this be pointed out more strongly. (Finnish panelist)

I believe it is essential that CPs possess a fairly high level of research literacy, so that they can understand evidence-based medicine and best practices at a level that is not superficial. (U.S. panelist)

Other suggestions related to advanced education and regulatory issues, such as non-medical prescribing, that are beyond our scope here, however, they were addressed separately in the International Community Paramedic Curriculum Guide to Educators (O'Meara et al., 2024).

DRAFT COMMUNITY PARAMEDICINE CURRICULUM FRAMEWORK

Following analysis of this collective feedback, a comparison was made between the PHS CP curriculum and a selection of nationally regulated Bachelor of Paramedicine programs, the most recent U.K. Paramedic Curriculum Guide, (College of Paramedics, 2024) and consideration of future endorsements of advanced practice from regulatory bodies in the U.K., Ireland and Australia. This led to the pragmatic development of an educational framework that was more internationally consistent with higher education frameworks for paramedicine and other healthcare professions. Individual subject descriptions and academic expectations were adapted from the publicly available outlines of paramedic subjects that are already offered across established paramedicine degree programs.

These considerations were progressed on the basis that CP training in directive paramedic systems would have greater utility as an integrated component of the entry-to-practice of paramedic education at degree level. In addition to extending the depth and breadth of individual topics, this approach would afford graduates academic credit for their efforts to improve their knowledge, skills, and behaviours through education (Patterson, Probst, Leith, Corwin, & Powell, 2005). Informants drawn from professionally autonomous paramedic systems argued that a reliance on short courses to train community paramedics was an inherent weakness of the PHS curriculum.

The most significant additions to the PHS curriculum were the articulation of course objectives, the development of a structure consistent with higher education systems, and higher academic credits. In addition, statements of the expected program outcomes were provided in terms of professional capabilities. Individual subject descriptions were drafted with an emphasis on inclusive and culturally appropriate language.

A curriculum framework for Associate's (60 credit points) and Bachelor's degrees (90-120 credit points) was developed that integrates 7-12 in-depth CP subjects of 3 credit points each, alongside paramedic subjects that focus on medical and health emergencies. (Figure 2) We adopted the U.S. higher education credit system throughout the paper in the interests of consistency. There was no distinction made between three- and four-year bachelor degrees on the basis that degrees in North America generally include 30 credit points of general studies.

In consideration of technicians/clinicians transitioning into CP, it was initially proposed that the PHS curriculum be re-packaged as micro-credentials, however later consultation convinced us to recommend that these short courses be offered as Certificate qualifications with appropriate credits to provide a career pathway for technician-level community paramedics (O'Meara, Wingrove, & Ahlers, 2024).

Seven CP-related subjects in the framework would contribute 21 of 60 credit points toward an Associate's Degree in Paramedicine (Community Paramedic Clinician). The balance of the Associate's Degree would consist of topics that address acute care and general studies. In the case of a Bachelor of Paramedicine (or equivalent), twelve CP-related subjects would be expected to contribute 36 of 90 credit points. The balance of the

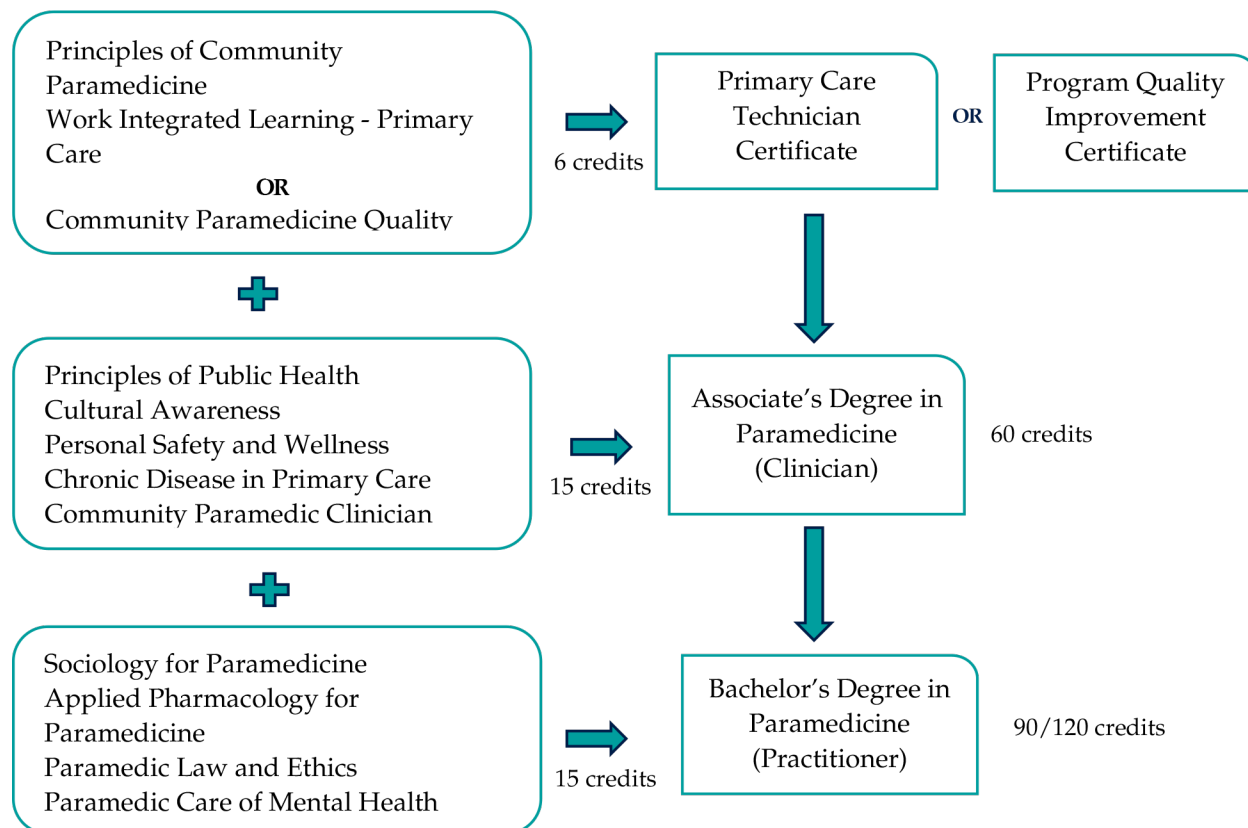


Figure 2. Certificate and Undergraduate Educational Framework

Bachelor's Degree will be made up of topics that address acute care and general studies as required to satisfy local regulatory expectations.

INTEGRATION INTO PARAMEDICINE ASSOCIATE'S AND BACHELOR'S DEGREES

The recommended Associate's and Bachelor's degree programs share subjects, academic expectations, and pedagogies. At both program levels, students would have the opportunity to acquire relevant clinical skills and study the principles of public health, disease across the lifespan, health disparities, and chronic disease processes as they relate to community needs across diverse populations. They would share the same strategies and methods for teaching, learning, and assessment as determined by individual higher education providers in conjunction with the requirements of appropriate professional associations and regulatory bodies.

We suggest that student learning is achieved through a reflective and critical approach to the application of knowledge and skills in paramedic science and practice. A variety of assessment styles may be employed to test the spectrum of knowledge, performance, practical application of skills, and the personal and professional awareness required. Ongoing formative assessment allows for feedback on performance throughout the course, while summative assessment ensures that the student meets academic and professional requirements. Assessment of competence and the subsequent award are determined in partnership between academic and clinical supervisors. An integral aspect of all courses is clinical practice through work-integrated learning placements that meet the requirements of professional associations and regulators.

An Associate's Degree in Paramedicine (Community Paramedic Clinician) would be designed for those planning to practice as entry-level community paramedic clinicians in directive paramedic systems. On the other hand, a community paramedicine-related bachelor's degree would enable paramedics to practice as community paramedic practitioners (not as advanced paramedic practitioners). These graduates would develop the capacity to:

- critically analyse and synthesise research in the field of community paramedicine;
- develop appropriate responses to issues in health and well-being;
- evaluate current and future issues in community paramedicine;
- adapt their skills, knowledge, and community paramedic practice to new evidence;
- work independently and collaboratively in interprofessional teams;
- contribute to scholarship in community paramedicine;
- communicate an in-depth understanding of the roles of community paramedics; and
- apply professional judgment, highly-developed skills, and depth of community paramedicine knowledge in a broad range of contexts.

These differences account for proportionate changes in expected academic load, with Associate's students expected to undertake 630 hours of didactic study and supervised clinical activities, plus 105 hours of work-integrated learning in primary healthcare and aged care settings. Bachelor's students would undertake 1,080 hours of didactic study and supervised clinical activities, with 180 hours of work-integrated learning activities in primary care and aged care settings.

Graduates of these degree-level programs would be eligible for healthcare professional registration/certification with their respective national regulatory bodies. In some cases, this might involve the sitting of a separate licensing board examination in CP. Graduates with an Associate's Degree in Paramedicine (Community Paramedic Clinician) would have the knowledge, skills, and behaviours that enable graduates to practice as community paramedic clinicians in collaboration with other healthcare and social service professionals. They would be qualified to contribute to a CP program by implementing predesigned prevention programs that address health disparities intended to improve the health of diverse populations. Credits may be granted toward a Bachelor's degree qualification.

Graduates with Bachelor's degrees that incorporate community paramedicine would have the knowledge, skills, and behaviours that enable them to practice autonomously as community paramedic practitioners alongside other healthcare and social service professionals. Graduates would be qualified to contribute to CP programs through prevention programs that address health disparities intended to improve the health of diverse populations. Completion of the Bachelor's degree may qualify graduates for admission to postgraduate education programs.

REVIEW OF A DRAFT CURRICULUM FRAMEWORK

A revised community paramedic curriculum framework was presented to Panel 1, who completed a multiple-choice questionnaire in which they expressed strong support for integrated paramedic degree programs. In addition, they were invited to further expand their views about the integration proposal. Panel members from the U.S. and Canada made significant contributions to answering this question, even though most had limited exposure to clinically-oriented Bachelor of Paramedicine programs. The emergent themes related to degree-level curriculum were expressed as: (1) a step forward; (2) refinements indicated; (3) and, interprofessional practice.

1. A STEP FORWARD

Panelists lauded the opportunity to integrate CP and primary health topics into general paramedic education. Those from the U.S. saw Associate's degrees as a step toward Bachelor's degrees.

This is an opportunity to create a workable crosswalk between North American 4-year programs and the EU 3-year programs. Just like making the "paramedic" universal, for the concept to be fluid around the world, we need to compare apples to apples. (U.S. panelist)

... we need a degree program beyond the AAS Degree in the United States. We must establish an educational standard (minimum standard). I suppose the start is that all paramedic programs must be a 2-year degree program. The certification only must be eliminated. From this point, we move towards a BS program in Paramedicine. Within this degree program, we could place some of the education regarding Community Paramedicine. (U.S. panelist)

2. *REFINEMENTS INDICATED*

Australian panelists had few doubts about the value of integrating CP and primary health curricula into Bachelor's degrees. Australian and Canadian panelists stressed the need to refine and modernize the descriptions of subjects related to mental health, palliative care, and Indigenous studies, as well as a stronger emphasis on person-centered care. Others had specific suggestions for topics that could be included in paramedic educational programs.

Whilst the move to a higher level qualification is a positive one. I believe there are some aspects of community paramedicine that have not been considered in the curriculum outlined. These being clinical leadership and critical decision-making processes. Although these may be covered in standard paramedic/EMT courses, there is a different aspect to it when working in community paramedicine and integrating with multiple stakeholders. (Australian panelist)

... we need to get away from this top down language when we are promoting patient-centered care and get away from the idea that we are driving this ship - we are to be co-navigating the ship with the patient/family/caregiver/community with a shared focus on their own defined goals (goal oriented care) - this needs to be "engage with" "collaborate" "engage in" "supporting" etc. ... (Canadian panelist)

3. *INTERPROFESSIONAL PRACTICE*

Panelists identified some areas for improvement, including the need for interprofessional practice topics and an associated move beyond paramedic scopes of practice to how paramedics can work with others. Further comments related to specific subjects that have not formed part of traditional paramedicine courses in the past.

It would be of significant benefit to leverage some of the work in IPE and embed expectation/competencies/objectives related to actual interprofessional competencies ... (Canadian panelist)

All of these look great - would be good to see the inclusion of education and competencies for interprofessional practice and communication as a part of each module (Australian panelist)

A second panel of expert informants from the U.S., Canada, and the U.K. verified the proposal's validity and desirability. While the number of responses was disappointing, the overall insight offered was valuable and helped finalise the Guide to Educators. Their feedback supported the penultimate version of the guide, which had been refined and edited to incorporate the suggestions from Panel 1. Their comments related to the integration of CP into degree-level programs included technical questions about the variations in how degrees are structured internationally, pointed out the need for greater sensitivity in the language used concerning disadvantaged populations, as well as suggesting that existing degree programs could incorporate some of the curriculum recommendations. Where practicable, edits were made to the Guide that aided clarity and sensitivity. Their feedback was broadly consistent with those from Panel 1 and relevant excerpts are provided below.

Palliative care is both a philosophy and approach to care - consider the subject as "Palliative Approach to Care for Paramedicine" - good to see this section includes grief support. Include advance care planning as precursor to goals of care. Inter-professional practice is key to delivering a palliative approach to care. Good to see medical assistance in dying be addressed (jurisdictional dependent) - paramedic preparedness for role here. 'End-of-life' is colonial language - many cultures, including Indigenous cultures, do not believe human death is an ending, but rather a continued journey. (Canadian panelist)

The Syllabus for the Associate Degree in Paramedicine (Community Paramedic Clinician) appears very comprehensive. I find the Bachelor's Degree in Paramedicine Community Paramedic Practitioner very exciting as a concept. It would be great to see this develop in the UK as an alternative to the Standard BSc Paramedic Science route we have and could be a real viable alternative for individuals as a direct entry route for those who do not wish to join a traditional NHS Ambulance Service. (U.K. panelist)

DISCUSSION

Community Paramedicine is a model of care that has existed for over two decades and is more than ready to be integrated into mainstream paramedic education programs alongside other healthcare professionals. Community paramedics are required to navigate the complex needs of individual users and population groups through parts of the healthcare and social service systems that are unaccustomed to working alongside paramedics. Likewise, paramedics now confront the specter of changing roles that require knowledge, skills, and behaviours that increasingly overlap with those of primary healthcare professionals.

Our CP curriculum framework (O'Meara et al., 2024), which was developed through this research, was designed to precede and inform the process of integrating CP-related topics into degree programs while at the same time supporting the modernization of paramedic systems and the professionalization of the discipline. We concentrated on identifying and describing the knowledge, skills, and behaviours relevant to CP that can be integrated into paramedicine degrees to equip graduates with the capabilities to practice as interprofessional clinicians or practitioners in primary care settings.

In many countries, students, individual users, and communities are already benefiting from improved paramedic education that includes CP-related topics that support contemporary and emerging practice. Others recognize that they face barriers and obstacles to enhanced paramedicine education. In the U.S. context, Maguire and colleagues recently argued that the road to the provision of optimal paramedic care to communities goes through the university and that there is a critical need for paramedicine clinicians to meet academic requirements consistent with their roles as health professionals (Maguire et al., 2024). According to these authors, resistance to the implementation of academic prerequisites for paramedics "... reflects a narrow perspective that overlooks the intricate network of essential elements required to ensure that the profession can best accomplish its mission to deliver optimal care its communities" (Maguire et al., 2024).

Ultimately, decisions about the future of CP education will be made by communities and service users who determine their local needs and priorities. It is therefore incumbent on

the advocates for improved CP education to provide the evidence for change, as well as guidance on how the vision can be successfully implemented (Spelten et al., 2024). This imperative applies whether they are arguing for foundational training for technicians at a Certificate level or for educational pathways that enable the widespread availability of paramedics with the education and capabilities required to undertake roles as paramedic practitioners or advanced paramedic practitioners.

Whether on the ground at the community interface or at a policy level, community paramedics and others will need well-thought-out implementation strategies that increase their chances of sustainable success. Combined with broader policy changes related to funding and governance, our findings can help paramedic systems, regulators, and professional organizations considering the wider adoption of Degree-level education for entry-to-practice paramedics providing care to diverse and underserved populations a way to navigate the future.

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