Paramedic Association of Canada
Association des Paramédics du Canada

# The Canadian Paramedicine Education Guidance Document

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Paramedic Association of Canada
Association des Paramédics du Canada

## Version History

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## Acknowledgements

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# Foreword

## The President of the Paramedic Association of Canada

Paramedicine is a discipline of change. In the 50 years since modern ambulance services began to appear across North America, paramedics' practice has evolved from rapid transportation of the sick and injured to the provision of patient care in varied settings that involve multiple treatment, transport, patient referral, and disposition options. Local ambulance services have become complex emergency medical systems – some provincial in size – that are increasingly embedded in a more integrated overall health system. Paramedics are increasingly taking on new challenges, providing care as part of interprofessional teams in industry, health care settings, and the community.

Practice at the patient level is continually adapting to meet an expanding range of patient care and operational needs, the imperatives of evidence-informed practice, increasingly sophisticated and enabling technologies, and the growing experience, expertise, and acumen of paramedic practitioners. The education of paramedics has similarly grown from skills-based training, often post-employment and on the job, to comprehensive educational programs that include initial education and certification, advanced and specialty training, continuing education, and professional development.

In the midst of all this, paramedics look for leadership on a national scale. No longer is it acceptable to have our direction dictated by other professions. The Paramedic Association of Canada commissioned the writing of this document to provide guidance for a profession that is coming of age. Some of what is recommended here will be difficult to accomplish. However, we owe it to the next generation to set them up for success in an increasingly complex world. What is recommended here is not just for today but also for the era that is to come. It is time not simply to occupy the ground that defines our profession but to claim it as our own.

Entry-to-practice education no longer suffices to ensure competence over the length of an individual career. The diversity of practice settings and the corresponding requirements for education are staggering. Paramedics require more and better education. They also require better access to quality education. The profession is ready for these changes. This document will help enable them.

It has been an honour to serve as president in these exciting times.

Sincerely,

Chris Hood, President

Paramedic Association of Canada

## Document Overview: An Executive Summary

The *Canadian Paramedicine Education Guidance* document focuses on paramedic education. Each chapter in the document examines the nature of paramedic education from a specific point of view. In this respect, each chapter is written to stand on its own. All of the chapters are directly concerned with curriculum. The intent of the document is to examine particular ways of developing and implementing an effective curriculum that will meet the challenges of the coming decades. Programs can meet future requirements in different ways, and so depending on particular circumstances, certain chapters in this document might seem more relevant than others. Since the document pertains to a broad spectrum of stakeholders, the different chapters will evoke a variety of interactions with readers. This is intentional. It is hoped that each reader will find resonance with some part of the document. To further this end, the document contains guiding questions to cause the reader to pause, think, and reflect on both the nature of the curriculum and the profession of paramedicine.

**Terms and Definitions**. This section provides a brief description of key terms used throughout the document. Please note that many of these terms have a variety of definitions, each calling upon different sources, which are often dependent on the context in which they are used. This section provides working definitions that describe how the authors used these terms in the context of Canadian paramedic education.

**Chapter 1** introduces the Paramedic Association of Canada's Vision 2025 as a developing paradigm for the advancement of the profession. It advocates degree entry to practice by 2025 as a necessary requirement for the profession to meet the varied and multiple needs of an increasingly stressed health care system. The chapter outlines the assumptions and premises upon which this document is based and suggests that the time is ripe for the kinds of change that are necessary to advance the profession. It also outlines uses of this document for various stakeholders involved in the profession of paramedicine.

**Chapter 2** looks at guiding principles for paramedic education. It provides an overview of the *Canadian Paramedic Profile,* which defines and describes the profession of paramedicine in Canada, and conceptualizes it in the Bowles diagram (see Figure 1, below). The chapter speaks to the way pedagogy relates to the *Canadian Paramedic Profile*, and advocates for particular approaches to education by providing concrete examples.

**Chapter 3** examines the idea of signature pedagogy and demonstrates its importance as a concept within the profession of paramedicine. The chapter introduces simulation as a form of situated learning. Perhaps most importantly, it provides several guiding questions aimed at curriculum developers and program managers to facilitate advanced curriculum content. These questions begin the process of broadening the conceptualization of curriculum and altering the conception of paramedicine as a technical discipline to that of a self-regulating, independent, health care profession.

**Chapter 4** provides guidance on structuring a paramedicine curriculum. It introduces four models of traditional curriculum development based on Schiro's (2013) classification. These models are essentially ideologies because each has a different conceptualization of teaching, learning, and knowledge. The chapter demonstrates that each model has practical uses within the context of paramedicine, and no single model suffices. Recommendations are made on how to use each model and for what purposes. A clear understanding of this chapter is necessary to ensure that program developers, curriculum specialists, and course instructors understand that common educational terms have inherent assumptions that can be conflicting given particular ideological perspectives.

**Chapter 5** lists requirements for paramedicine programs intending to meet the Paramedic Association of Canada's Vision 2025 for paramedic education in Canada. The chapter is useful for accreditation processes and for internal summative evaluation. It specifies requirements for key structural components, including faculty complement, development, and qualification. It also outlines the requirements for important policies and procedures. The chapter lists human and physical resource expectations and specific curriculum requirements with emphasis on the four cross-cutting themes arising out of the *Canadian Paramedic Profile*. These are compassion, safety, communication, and adaptability.

**Chapter 6** discusses program content. The approach differs from that of the 2001 and 2011 *National Occupational Competency Profiles for Paramedics in Canada*. Here the focus is on both enabling and constraining paramedic programs, not on dictating specific competencies with the aim of transforming them into behavioural objectives. Seven goals are outlined in the chapter:

- Programs must ensure that applicants have sufficient secondary school preparation to support success in paramedic education programs.
- Programs must ensure graduates are capable of meeting Canada's Essential Skills Profile for Paramedics.
- Programs must provide a broad-based academic foundation in common with other Canadian health care professions.
- Core content must support a comprehensively prepared paramedic.
- Programs must share a health sciences background in common with other Canadian health care professions.
- Programs must be based on the Paramedic Association of Canada's national *Canadian Paramedic Framework* and Vision 2025.
- The overall goal of programs must be to prepare graduates to be self-regulating health care professionals with the professional capacity and autonomy required for employment as paramedics.

**Chapter 7** advocates for curriculum that intentionally includes a wide diversity of perspectives. While elements of these perspectives are often contained in the form of a hidden curriculum

within the formal curriculum, they are often unrecognized by the curriculum developers, program managers, instructors, and students. Traditionally, paramedic curricula have been oblivious to the biases such perspectives contain. This is no longer acceptable. Documents such as the Truth and Reconciliation Commission of Canada's (2015) *Calls to Action* demonstrate the need to value "alternative" perspectives, understanding, and knowledge. This chapter contains numerous guiding questions to facilitate rich curriculum content and development.

**Chapter 8** concludes the document with a brief history of Canadian paramedicine, outlining some recent and exciting developments in self-regulation. It reiterates the need for advancement in the profession and advocates for the inclusion of the profession of paramedicine as a vital component of the health-social continuum.

A reference list is included to provide information for further reading at the end of the document.

# Terms and Definitions

This document brings together a variety of literatures and subject areas, including paramedicine, health care, and education. The authors call on a variety of concepts and terms that often have varied meanings when used in different contexts. The intent here is to provide working definitions – to describe how these terms are meant to be understood and used within this work.

The terms are grouped thematically rather than alphabetically to better understand their relationships with each other.

## Governance and Professional Terms

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| *Canadian Paramedic Profile* | The *Canadian Paramedic Profile* defines and describes the profession of paramedicine in Canada. It currently consists of three core and two guidance documents: *Canadian Paramedic Roles*; *Canadian Paramedic Standards of Practice*; *Canadian Paramedic Code of Ethics*; *Canadian Paramedicine Education Guidance Document*; and *Canadian Paramedicine Assessment Guidance Document* (under development). |
| Occupational profile | An occupational profile identifies and describes the key tasks (competencies), functions, capabilities, or roles expected of a practitioner. The *Canadian Paramedic Roles* document, which forms part of the *Canadian Paramedic Profile,* outlines the roles that paramedics in Canada assume, along with the key and enabling capabilities they require to provide safe, proficient, and compassionate patient care. |
| Practice standards | Practice standards outline the expectations and standards of performance for the profession. |
| Code of ethics | A code of ethics describes the values, principles, and standards of ethical conduct for the profession. |
| Educational guidance | An educational guidance document outlines key concepts and practices for developing and implementing an effective curriculum. |
| Assessment guidance | An assessment guidance document that outlines key concepts and practices for developing and implementing assessment and evaluation practices, both for the individual practitioner and for overall educational programs. |
| Accreditation | An ongoing, external (third party or peer) assessment of a program based on established standards representing best practice within a profession. |

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| *National Occupational Competency Profile for Paramedics in Canada* | Former occupational profile for paramedics in Canada, released by the Paramedic Association of Canada (2001, 2011). Now superseded by the *Canadian Paramedic Profile.* |
| National Occupational Classification | Classification system maintained by the Government of Canada that provides a standard taxonomy, framework, and description of occupations and professions in Canada. |

## Licensure and Certification Terms

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| Regulation | The legal authority to practice paramedicine in Canada is typically established through legislation at the provincial or territorial level. This legislation often outlines and specifies practice for different practitioner levels or within specific practice settings through a series of regulations. |
| Scope of practice | Outlines what practitioners may do and under what conditions. In Canada, scopes of practice are typically developed and maintained by provincial or territorial regulatory bodies. |
| Certification | Recognizes attainment of formal education at a specific level of practice. |
| Licensure | Regulatory bodies (e.g., licensing board, College of Paramedics, etc.) grant the licenses that allow paramedics to practice at their scope of practice within a particular jurisdiction. Achieving licensure may require some combination of education, demonstration of knowledge and competent practice (e.g., formal licensing examinations), or workplace experience. |
| Registration | Registration with a professional regulatory body indicates that a practitioner has attained the required education and certification, and has demonstrated the minimum knowledge, competence, and ethical behaviour required for professional practice and/or licensure in that jurisdiction. |
| Autonomous practice | Professional practice characterized by independent, self-determined decision-making. Paramedics have historically practiced under some form of direct or indirect medical direction. |
| Self-regulation | Several jurisdictions in Canada have granted paramedic regulatory colleges the privilege and mandate to regulate paramedicine and ensure that practitioners remain accountable to their patients and the public. |
| Certification level | The *National Occupational Competency Profile for Paramedics in Canada* (2001, 2011) established four levels of practice or certification in Canada: Emergency Medical Responders, Primary Care Paramedics, Advanced Care Paramedics, and Critical Care Paramedics. Actual scopes of practice and licensure levels are |

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| | established at the provincial and territorial levels and may vary between jurisdictions. |
| Specialization/specialty | Paramedics may function in a variety of specialty contexts such as mass gatherings; bicycle squads; tactical response (with law enforcement); HAZMAT; chemical, biological, radiological, nuclear, and explosive (CBRNE) teams; high-acuity interfacility transport teams; etc. In these settings, paramedics must adapt their foundational practice with customized or specialized knowledge and skills. Some specializations may require or be enabled by formal certification and/or licensure; other specialty roles may be established and trained through the employer. |
| Supervision | From a regulatory perspective, supervision enables practice education by allowing interns/students to practice in the field under the direction and license of a preceptor. The role of the supervising preceptor is to ensure safe, quality patient care that is within the legal and professional standards of practice. |

## Educational, Learning and Expertise Terms

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| Pedagogy | The theory or principles of teaching and learning, and the methods and practices based on those theories. |
| Andragogy | Andragogy is a term referring to pedagogy built around the principles of adult education as described by Malcom Knowles (1990). In this document, andragogy is seen as one type of pedagogical theory. Pedagogy is used as an umbrella concept referring to learning theory generally, which includes concepts from andragogy. |
| Practice education | Education grounded in the context of professional practice. In a paramedic context, practice education activities include, but are not limited to, case studies, simulations and their derivatives (e.g., skill stations, drills, objective structured clinical encounters, simulations, high-fidelity simulations, etc.), large-scale exercises (e.g., mass casualty scenarios), hospital or other clinical rotations, and field placements (e.g., practicums, preceptorship, mentorship, etc.). Practice education approaches in paramedicine often call on concepts such as reflective practice (see, for example, Schön, 1983), situated learning (see, for example, Brown, Collins, & Duguid, 1989), and communities of practice (Lave & Wenger, 1991). |
| Novice-to-expert | A pedagogical concept in which learners progress through a series of stages from rules-based performance, through adaptation based on needs-in-the-moment, to fluid and expert practice based on extensive experience and deep understanding |

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| | of a profession. This progression draws on phenomenological concepts of expertise (see, for example, Benner, Sutphen, Leonard, & Day, 2010; Dreyfus, 2001). This concept is seen in multiple aspects of paramedic education, including the progression of learning environments (e.g., academic to simulation to clinical to practicum; *National Occupational Competency Profile for Paramedics in Canada*, 2011) and progressive skill development activities (e.g., from mastery in skill station to application in objective structured clinical encounters and simulation to integration with practice in a field practicum). |
| Mastery | Learning a skill or procedure through guided practice, repetition, and internalization. Mastery, from a cognitivist perspective, is demonstrated through achievement of technical competence (as defined below). |
| Competence or technical competence | Consistent, independent (uncoached), timely, accurate, and appropriate performance based on a clearly articulated set of standards (often expressed as observable behaviours). |
| Proficiency | Experienced, highly skilled, and knowledgeable performance and decision-making that takes into account both generally accepted principles and the specific needs and characteristics of a particular situation. |
| Expertise | Fluid performance based on extensive experience and deep understanding of a discipline. |
| Competency | Statement describing a discrete skill, knowledge, or judgment as a set of observable behaviours. |
| Capability | The ability to perform specific actions or achieve specific outcomes. |
| Role | A set of capabilities, norms, and expectations for a practitioner within a domain or area of practice (e.g., clinician, reflective practitioner, etc.). |

## Curriculum Development Terms

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| Curriculum development | The thoughtful and purposeful development of learning activities, courses, and programs, informed by past practice, current practice, emerging practice, evidence, and experience. Effective curriculum development blends domain practice (what is to be learned), educational practice (how teaching and learning occur), operational/administrative practice (constraints and affordances of the educational institution), social and cultural considerations, and characteristics of both learners and faculty. |

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| Instructional design/instructional systems design | A systematic process for developing curriculum. Traditional instructional systems design models include a series of stages, such as analysis, development of goals and outcomes or objectives, specification of evaluation and learning strategies, use of media and technology, implementation, program evaluation, and revision. Recent models view the process as iterative, circular, and/or blended, with decisions in each stage influencing and being influenced by decisions in other aspects of development. |
| DACUM/task analysis | Analytic process used to develop a detailed and often hierarchical description of knowledge, skills, and procedures. DACUM (Developing a Curriculum) is a process that blends task analysis with storyboarding to identify, organize, and sequence both the major duties or tasks in a profession and a learning pathway for acquiring the requisite skills, knowledge, and judgments (attitudes). |
| Learning goals | Broad statements that describe what a learner should be able to do as a result of a learning activity, course, or program. Typically broken down into more discrete learning objectives or outcomes (see below). |
| Learning objectives | Statements describing desired outcomes of a learning activity, lesson, course, or program that will be acquired as a result of instruction. Typically, learning objectives are stated as observable behaviours, often framed as skills, knowledge, or judgment (attitudes) based on taxonomies such as Bloom's (see, for example, Krathwohl, 2002). SMART objectives are specific, measurable, achievable, relevant, and time-bound. |
| Learning outcomes | Descriptions of the aims or desired outcomes of a learning activity, lesson, course, or program. Learning outcome statements tend to be more holistic and general than objectives, describing capabilities or aims of learning that are more inclusive of peripheral and informal learning. |
| Competency-based | Competency-based approaches measure achievement of learning goals or objectives through demonstration of specific skills, knowledge, or judgments (which are typically described as observable behaviours) performed to a defined standard. |
| Outcome-based | Outcome-based approaches assess achievement of learning (which may involve both prespecified and emergent learning outcomes) using a variety of objective and subjective tools and methods such as competency-based performance tracking (e.g., skills and procedures), portfolio assessments, reflective journals, and – in paramedic settings – case reports and verbal and written patient care reports. |

# Chapter 1: A Vision for Paramedicine in Canada

In recent years, there has been increasing consensus among paramedics that the time has come for the profession to take the next step. Street paramedics are demanding more and better access to profession-specific education. Employers are requiring paramedics to increase their ability to use new and innovative technologies and to work in alternative practice environments. Educators are looking for ways to improve entry-to-practice and professional development programs, so their students will be able to meet ever-increasing health care requirements. Governments are looking to incorporate paramedicine into fiscally responsible solutions to health care problems. Research possibilities in the field of paramedicine are encouraging many to seek to advance the knowledge of the profession. All want better educational pathways that can advance individual careers and the profession as a whole. The time is right for change.

## The Paramedic Association of Canada's Vision 2025

The Paramedic Association of Canada, in consultation with its stakeholders, has developed a vision for where the profession should be in 2025. The vision emerged as a consequence of an ongoing project to redevelop the 2011 *National Occupational Competency Profile for Paramedics in Canada* and relies on the work of its steering committee, consisting of over thirty people representative of every province and virtually every aspect of the profession of paramedicine.

The primary goal is to provide a national vision that can guide and inform the ongoing development of paramedic practice and education. This vision acknowledges the complexity and diversity of practice at the provincial level and provide a vision to foster and encourage increasingly common practice and educational outcomes at a national level.

Vision 2025 establishes and articulates a view of paramedic practice as an autonomous and self-regulating profession that supports the essential principles of the Canada Health Act and improves the efficiencies of existing provincial health care models. The vision honours the profession's roots and continuing role in public safety and emergency response, while recognizing the need to develop practitioners with foundational skills, knowledge, judgment, and the capabilities to practice in multiple practice settings as an integral part of the broader Canadian health care system.

Vision 2025 recognizes that paramedic practice continues to grow in scope and complexity. While the central practice setting for paramedics in the coming decades will remain land-based ambulance response, the profession must have an operational, regulatory, and educational foundation to support emerging roles such as specialty teams, industrial paramedicine, rural and remote practice, and community paramedicine.

## Paramedic Association of Canada Process Supporting Vision 2025

The Paramedic Association of Canada's Vision 2025 both fulfills and supports the *Canadian Paramedic Profile*, which consists of three core documents—*Canadian Paramedic Roles*, the *Canadian Paramedic Standards of Practice,* and the *Canadian Paramedic Code of Ethics*—as well as two guidance documents—*Canadian Paramedicine Education Guidance* and *Canadian Paramedicine Assessment Guidance*. These documents seek to define the profession at a national level and inform practice at provincial levels. They support operational aspects of practice through national examinations, licensure and registration processes, continuing professional education, professional conduct, and quality assurance management.

The *Canadian Paramedic Profile* is premised on the understanding that paramedics must establish a professional identity that puts personal interests aside in deference to the public good. It replaces the 2011 *National Occupational Competency Profile for Paramedics in Canada* as the foundational document for paramedic practice in the country. As such, it supports the core function of ambulance-based response as well as current and emerging specialties and practice settings. The *Canadian Paramedic Profile* retains a strong commitment to establishing foundational patient care skills and knowledge. However, the seven overlapping paramedic roles contained in the *Canadian Paramedic Roles* document and their specified capabilities emphasize the holistic nature of both paramedic practice in the field and the practitioners themselves. It is no longer enough to be skilled and knowledgeable clinicians. Current and future paramedic practice requires graduates who are reflective practitioners, effective team members, and willing educators who value and embody professional attributes. For many educators, this may require a substantial reconception of how to design and deliver paramedic education.

The *Canadian Paramedic Standards of Practice* influences scope of practice from a national perspective by informing what it means to be a professional in practice and by specifying the nature of clinical and technical proficiency. The document is most relevant for registered practitioners practicing the profession. Because this document considers scope of practice from a national perspective, it can be of use internationally as a window into Canadian paramedic practice.

The *Code of Ethics* speaks directly to the nature of practice both as it occurs today and as it should occur in the future. It supplies an ethical model by which a registered professional should seek to govern behaviour. In some aspects, this nationally oriented document mirrors provincial documents in terms of its guidance for ethical practice.

The *Canadian Paramedicine Education Framework* is the umbrella within which the current document is contained, and supports Paramedic Association of Canada Vision 2025. While this framework includes other Paramedic Association of Canada skills and process documents, it is intended that the current document is the foundational document that provides guidance for paramedicine education through a focus on educational outcomes, pedagogical strategies,

curriculum development, and program evaluation. Much more will be said in upcoming chapters.

There are additional documents and processes that support paramedicine nationally. These include the *National Occupational Classification 2016: Paramedical Occupations: 3234* (Statistics Canada, 2016) and the 2014 *Canadian Paramedic Services Report: A Strategic Planning Report,* which was prepared jointly by the Paramedic Chiefs of Canada, the Canadian Department of Defence, the Paramedic Association of Canada, and the Canadian Standards Association. In addition to the Paramedic Association of Canada, there are other national organizations that support paramedicine. These include the Paramedic Chiefs of Canada and SPEC: The Society of Prehospital Educators in Canada. Both can readily be found on the internet. There are also informative national websites that support international labour mobility such as www.assesshealthcareers.ca.

## Goals of this Document

In a broad sense, this document outlines the *Paramedicine Education Framework* and demonstrates how the framework supports Vision 2025 within the larger context of Canadian paramedicine. More specifically, the document contains details and expectations of where the profession of paramedicine's educational systems should be in 2025, as well as guidance on how to get there. The authors intend that this guiding document help stakeholders to better understand the development and delivery process of curricula, pedagogy, and evaluation in ways that support the professional paramedic for entry to practice in 2025. It does not focus on after-entry-to-practice professional education, though many of the concepts contained within will be pertinent to that endeavour.

## Practical Purposes for this Document

The following stakeholders will find this document useful in a variety of ways.

### Curriculum & Program Designers

- Designing and developing paramedicine programs and curriculum
- Establishing minimum requirements for program content and outcomes
- Setting expectations, understanding different phases of development and support needed to help transition to practice
- Interpreting the *Canadian Paramedic Profile, Standards of Practice,* and *Code of Ethics* and providing for their inclusion into curriculum
- Understanding curriculum goals, theories, and perspectives

### Program Managers

- Establishing minimum requirements for practice education (practicum placements, student-instructor ratios) in relation to program philosophy, design, sequencing, and coherency
- Determining required program resources
- Determining required instructional qualifications

### Educators

- Providing guidance for alignment of program philosophy within the delivery of a program
- Providing minimum requirements for practice education (practicum placements) in relation to program philosophy, design, sequencing, and coherency, including setting instructor/preceptor/mentor qualifications
- Providing guidance for educators/preceptors on student and graduate learning phases and expectations

### Students

- Understanding program requirement expectations
- Understanding minimum program outcomes
- Understanding pertinent professional documents
- Understanding potential career pathways
- Understanding provincial and national educational perspectives

### Graduates

- Gaining guidance on the standards for entry to practice
- Finding information on milestones for career progression

### Employers

- Providing guidelines on graduate entry-to-practice capabilities
- Establishing minimum requirements for provision of practicum placements (practice education standards)
- Providing guidelines for stakeholder relationships between education programs and practicum placement providers
- Setting expectations, understanding different phases, and providing support needed to help graduates transition to practice
- Providing standards for graduates

### Accreditation Evaluators

- Guiding and setting expectations for third-party accreditation and program approval criteria, content, and process; understanding available options concerning the structure and processes for programs
- Developing regulation and policy that will inform a regulator, self-governing college, or accreditor
- Providing the basis for minimal program requirements, which will inform accreditation and program approval components
- Providing guidance for stakeholders to inform implementation determinations
- Guiding evaluation criteria for formative and summative evaluation of programs

## Assumptions for this Document

This document was written with several key assumptions in mind.

A strategic vision is required to move the profession forward**.** The guidance provided in this document is intended to encourage a strategic direction that supports the roles documented in the *Canadian Paramedic Profile* and advocates for the required development of a professional paramedic whose practice follows from evidence-informed clinical judgment, knowledge-driven practice, and professional expertise.

Education is integral to practice. Increased education (and not just training) is required for paramedic practice to fulfill societal needs and expectations as the profession moves forward with more holistic models of health care and delivery in the 21st century. Achievement of baccalaureate entry-to-practice paramedic education is required in order to meet both current and future paramedic practice needs.

Alignment with existing and proposed practice is required. This alignment must coincide with the *Canadian Paramedic Profile, Standards of Practice, Code of Ethics* and evidence-based educational practice.

The document must focus on curriculum. The intention of this guide is to ensure that curriculum is intentional in its appreciation for knowledge and practice and achieves the development of paramedics able to practice in an authentic, self-monitoring, and self-critical way.

The document should be used by accreditation agencies. Given the focus on curriculum, this document should be a primary document used by accreditation agencies for any paramedicine program in Canada.

In-text references should be kept to a minimum. The authors intend for this document to be a scholarly work but realize that excessive references may detract from the content for most readers. Consequently, we include in-text reference only where we feel we must.

## Towards the Future

Health care in Canada is regulated within each province and territory. Paramedicine, as an important component of health care, is no different. As with other aspects of health care, different operational models exist. For paramedicine, these include provincial services, public and private ambulance operators, and an amalgamation of land-, air-, and water-based response. Regulatory models range from licensure by a provincial government to registration with self-regulating professional colleges. Over the last four decades, the myriad of certification, licensure, and registration levels in Canada have consolidated to reflect the four levels of care identified in the 2011 *National Occupational Competency Profile for Paramedics in Canada*. These are the Emergency Medical Responder, the Primary Care Paramedic, the Advanced Care Paramedic, and the Critical Care Paramedic. Although specific scopes of practice remain somewhat different across the country, they are slowly becoming standardized due to the national focus on labour mobility mandated by Canada's Agreement on Internal Trade.

Additionally, there seems to be a recent trend of reducing the four divisions to simply Paramedic and Emergency Medical Responder, with the understanding that some provinces do not have an Emergency Medical Responder level. The consolidation of the four levels is driven not just by practical responses to federal agreements but also as a response to public demand for more and better access to health care. This document reflects the trend in the sense that it concentrates on the paramedic level as a single level of care. While the Primary Care Paramedic, the Advanced Care Paramedic, and the Critical Care Paramedic levels are singularly referred to as paramedics within this document, they can still be distinguished provincially because their main distinguishing factor is content knowledge and not professionalism or operational mandate.

As paramedics learn to be clinicians who work as autonomous professionals, their education must increasingly focus on the development and transformation of the individual into a professional that embodies specified capabilities. The *Canadian Paramedic Profile* was built around a central premise of identifying the essential roles that paramedics assume, and the capabilities they require to take on these roles, regardless of practice setting, certification level, or operational context. Thus, paramedic education must foster the development of professional identity and professional understanding, as well as the acquisition of profession-specific skills and knowledge.

# Chapter 2: Guiding Principles for Paramedicine Education

## A New Direction for Paramedic Education

The 2016 *Canadian Paramedic Profile* and Vision 2025 call for a review of current approaches to paramedicine education. While the *Canadian Paramedic Profile* retains a strong emphasis on the role of the clinician, it forefronts the development of professional and personal attributes of paramedic practice that are required for paramedics to assume greater operational roles within the broader health care system. It embraces a concept of clinical and professional expertise, in which practitioners engage in an ongoing process of personal and professional development.

The *Canadian Paramedic Profile* follows a growing number of health professions (e.g., physicians, physiotherapists) in moving to define and describe practice in terms of the roles that practitioners assume and the capabilities required to assume those roles. This is a substantial change from the competency-based model that was foundational to the 2001/2011 *National Occupational Competency Profile for Paramedics in Canada*, where paramedic practice was analyzed in terms of its tasks, procedures, and underlying skills and knowledge, similar to a DACUM process (see www.dacum.org).

Competency-based approaches rest on behaviourist and cognitivist assumptions, which require educational programs to focus considerable resources on processes that verify and document learning. Such an approach can prioritize evaluation above learning. A key behaviourist assumption is that learning only matters when the learning can be demonstrated in a measurable way. Consequently, there is a tendency for curriculum designers to produce extensive hierarchical lists of requisite skills and knowledge used primarily for the purpose of evaluation and only secondarily for the purposes of learning.

A key cognitivist assumption is that learning is premised on the hierarchical organization of knowledge that is processed linearly in the brain of the individual. This assumption tends to support hierarchical lists of knowledge and reinforces the behavioural emphasis on learning as something that requires measurement. However, abundant evidence arising out of the adult education literature over the last 25 years demonstrates that learning is often messy, unordered, spontaneous, and complex (Davis & Sumara 2006; Fenwick 2003; Pinar, Reynolds, Slattery, & Taubman, 1995; Slattery, 2006). Evaluators must find ways to value learning that cannot be easily measured.

In competency-based approaches, competence is generally seen as the sum of cognitive “bits and pieces” and, once acquired through formal education, is treated as a relatively stable component of a professional practitioner. Again, this assumption is problematic because it fails to consider the myriad ways that an individual can learn without being able to formally demonstrate such learning (e.g., tacit learning or reflection), and it fails explain the kinds of

learning that can emerge out of complex social learning environments (e.g., communities of practice or situated cognition).

The strength of the model found in the *National Occupational Competency Profile for Paramedics in Canada* is its immediate transferability from competencies to learning objectives and assessment criteria, so it does have a place in both learning and curriculum. However, the implicit assumption that all learning outcomes are (or should be) observable and measurable, and that acquisition of individual skills and knowledge equates to competent practice, can no longer be considered valid.

In contrast, the *Canadian Paramedic Profile* takes a more phenomenological perspective to identify the essential roles that practitioners assume and the capabilities they require to take on those roles. In other words, it considers how individuals interpret the professional world they are a part of and what their roles and responsibilities within that world mean both to themselves and others. It identifies roles that paramedics assume and the capabilities that they require to fulfill these roles. Professional identity and underlying complexity are thus revealed as being more important than simplistic measurable behaviours.

The roles outlined in the *Canadian Paramedic Profile* emerged from a mixed methods study that included analysis of a broad range of literature (academic, professional, and grey) describing paramedic practice and semi-structured interviews with key stakeholders in Canadian paramedicine (Tavares, Bowles, & Donelon, 2016). Analysis led to the emergence of six roles – descriptions of what effective paramedics must be (for example, a clinician, a team member, an educator, a health and social advocate, a professional, and a reflective practitioner.) and the key capabilities they must be able to do within those roles. Both the capabilities and the roles are seen as holistic descriptions of attributes that overlap and contribute to each other. A seventh and encompassing role – that of the paramedic practitioner – integrates these six roles within the broad context of paramedic practice. Expertise is seen as the overall integration, adaptation, and application of a paramedic's capabilities to meet the specific needs of the moment, and competence as one of the way points in the development of expertise.

Inherent in the roles is the concept that there are multiple ways of knowing. For example, a clinician requires foundational knowledge of the principles of pathophysiology, as well as efficient performance of core skills and procedures, and must be able to "apply knowledge of biological, psychological, and social sciences in clinical practice." Effective team members know how to interact with and adapt to their patients, partners, and other health care providers and how to create effective relational spaces that foster communication and collaborative activity. Reflective practitioners must develop the ability to observe and assess and continually improve their own practice. They develop and embody professional values and attributes such as respect and integrity. And as paramedic practitioners, they integrate and adapt these different ways of knowing within the context of their practice. Each of these ways of knowing implies the

use of different pedagogical approaches or strategies because learning will emerge in different ways, and some of these ways will not be measurable.

Currently, paramedic education includes individual teaching and learning activities, skill stations for mastering procedures, lessons and modules, courses, and programs that focus on initial training and education, ongoing maintenance of competence, enrichment and upgrading, and professional development. Learners vary across a range of psychosocial characteristics. This diversity is mirrored in those who take on roles as paramedic educators, further complicated by differing teaching perspectives, preparation as educators, and experience. Again, no single pedagogical approach is best across the range of outcomes, contexts, learners, and instructors who are engaged in paramedic education.

The *Canadian Paramedic Profile* implies that a competency-based approach to paramedic education by itself is insufficient. A paramedicine education framework must therefore take into account educational philosophies, theories, and practices that acknowledge learning as a multidimensional facet of lived experience that can emerge from complex psychological and social processes. The curriculum that facilitates such learning must itself be multidimensional and embody many different perspectives and approaches to curriculum development.

## Conceptualizing the Canadian Paramedicine Education Framework

Figure 1 helps to conceptualize the Canadian Paramedicine Education Framework.

In a general sense, the diagram is a conceptual aid that reveals a number of intersecting parts in non-linear relationships. The *Canadian Paramedicine Education Guidance Document* is a dynamic interaction between Vision 2025, the *Canadian Paramedic Profile*, topical subject areas, quality assurance and evaluation, research, and curriculum elements in terms of both theory and practice. There are two types of content to consider in designing paramedic education – core content, which is organized by subject or topic areas, and thematic content, which may be distributed across the curriculum. Organization by topic or subject area is a traditional method for the organization of curriculum content and presents content that should be in every paramedic curriculum. Note, however, that different programs use a variety of curricular structures, and course and module names may vary. The purpose of Figure 1 is not to advocate for particular names or methods.

*The Bowles Diagram*

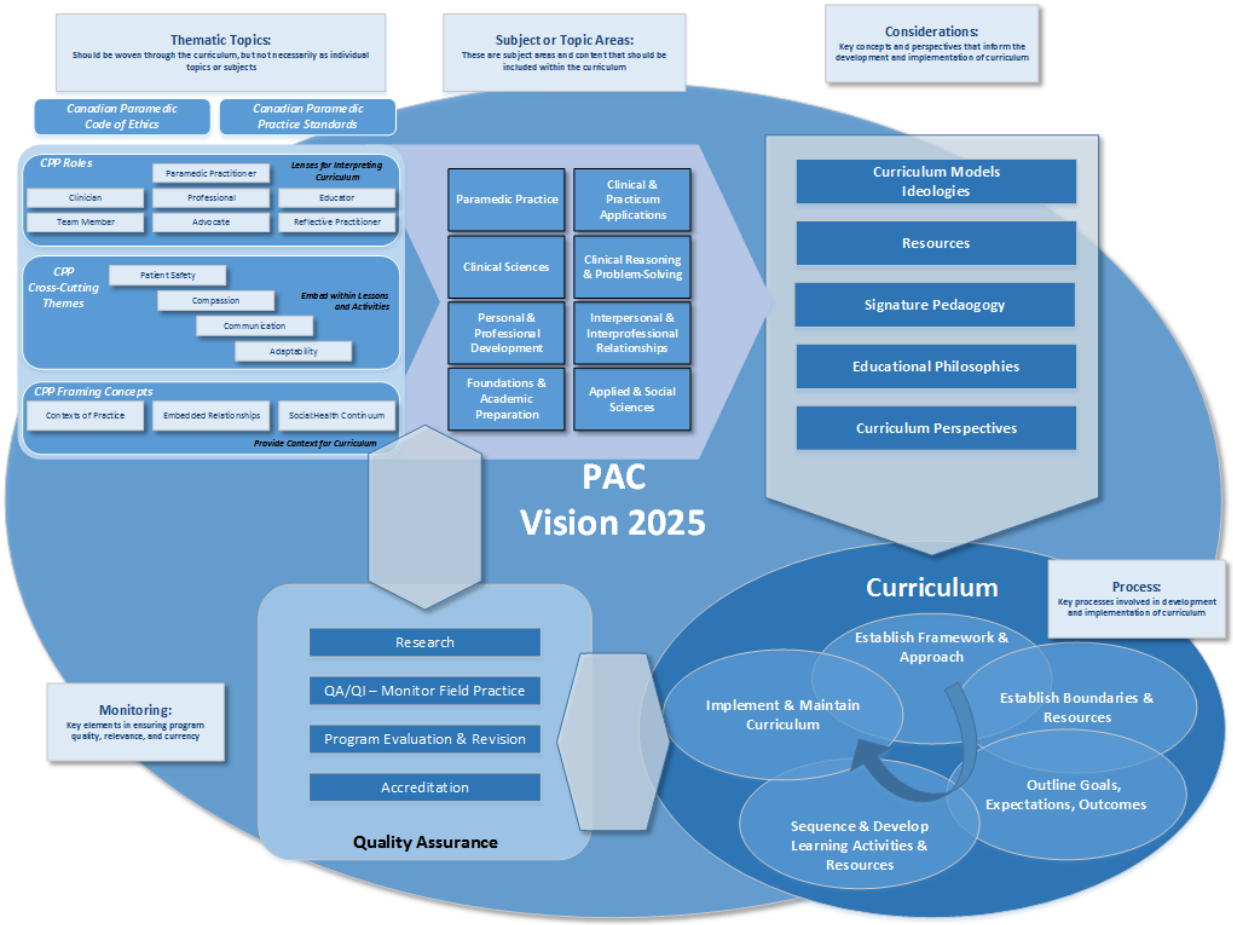


Figure 1. The Bowles diagram.

Thematic topics represent concepts or content that are woven throughout professional education and provide context, structure, and perspective to the core content in a curriculum. The thematic topics arise in part from the *Canadian Paramedic Profile*. The roles described in this document may be considered as lenses through which curriculum developers view subject areas. These areas may also form the basis for holistic assessment and evaluation models. The cross-cutting themes are important concepts that should be embedded in all aspects of the curriculum. The framing concepts provide a critical contextual background that is important for situating and understanding paramedicine's unique practice settings.

## Recommendations for Development from Pedagogical Perspectives

In the following sections, we introduce several core pedagogical perspectives. Our belief is that these perspectives come into play at different levels of the curriculum to meet various types of learning objectives and outcomes. Each one has a place in professional education. Thus, it is

possible to hold an ecological or complexity-based approach to the overall design of a multi-year paramedic program while employing cognitivist strategies to establish foundational knowledge of anatomy, physiology, and pathophysiology; or to blend behaviourist skill stations with more social constructivist approaches in immersive simulations that guide learners from the development of core skills to their adaptation and use in larger patient encounters or calls. This is not as difficult an undertaking as it might first seem.

### Behaviourist Recommendations

As previously suggested, a behaviourist perspective views learning as a relatively permanent change in behaviour. Behaviourist approaches are associated with mastery learning activities (e.g., drill practice, memorization activities, etc.) and are most effective for laying down a foundation of relatively stable skills and knowledge. This view of learning is particularly useful for building patterned responses to known situations (e.g., knowing the indications and contraindications for use of medications and common procedures, or mastering the steps in skills and procedures such as airway management and drug administration). Learning is seen as a consistent and appropriate response to a specific stimulus and is used in mastery learning strategies such as "Demonstrate, Describe, Do" and many coaching and feedback models.

***We advocate the use of behaviourist strategies for mastery of relatively stable skills and foundational knowledge.***

### Cognitivist Recommendations

Cognitivist perspectives view learning as the development of increasingly rich and well-organized mental representations of the real world (Davis & Sumara, 2006). The goal is to establish knowledge structures similar to those of expert practitioners (Mylopoulos & Regehr, 2007). Cognitivist activities focus on structuring and relating information, often in a hierarchical fashion (through use of activities such as worksheets and advanced organizers), and employing multiple forms of media to engage learners. The use of algorithmic decision trees and focused feedback to identify and correct skill and knowledge gaps is a cognitivist strategy.

***We advocate the use of cognitivist strategies for laying down and relating large amounts of foundational knowledge (e.g., pharmacology, pathophysiology, operational policy, etc.) and for the development of analytic reasoning (e.g., clinical decision-making models).***

### Constructivist Recommendations

Constructivist (and now social constructivist) perspectives view learning as the negotiation or construction of knowledge. While behaviourist and cognitivist views see knowledge as stable and external – something that the learner acquires – constructivist approaches hold that people only know things in relationship to other things that they know (Mylopoulos & Regehr, 2007). Thus, while knowledge is structured and relational (as in a cognitivist approach), the relationships are not necessarily hierarchical or well ordered. Each learner filters or interprets a learning activity through the lens of her or his own experiences and what is already known. Constructivist activities tend to employ paradigm case studies and peer-based interaction and discussion with the goal of developing a common understanding.

***We advocate the use of constructivist approaches for supporting learning outcomes with more open-ended goals, such as exploring best practices and alternative ways of solving problems (e.g., clinical practice guidelines) or fostering critical thinking.***

### Complexivist Recommendations

The more recent complexivist (see, for example, Davis & Sumara, 2006) and ecological learning perspectives view learners, instructors, and content as part of a larger system in which the actions of each element influence or change all the other participants. Knowledge is seen as multi-leveled and dynamic, where information at one level changes and is influenced by other levels (e.g., there are provincial delegated medical acts, regional and operator guidelines, and "the way we do it in our area" – each of which influences actual practice in the moment). The use of problem-based learning and evidence-informed practice strategies ask learners to explore the literature, best practice, and their own experience to make suggestions or recommendations for change in practice. Thus, the learning activity not only results in changes to the learner but may lead to changes in local and regional operations over time.

***We advocate complexivist and ecological approaches as integrative frameworks, and learning activities (e.g., immersive high-fidelity simulation) that foster critical thinking, clinical judgment, and overall professional practice.***

### Perspective Overview

This discussion outlines a variety of pedagogical approaches that may be used in support of the more broad-based approach taken by the new *Canadian Paramedic Profile* and the 2025 Vision for baccalaureate entry to practice. Each of these perspectives lends itself to particular types of learning outcomes. None is appropriate as a blanket approach to curriculum development. While activities based on a particular perspective can be effectively used for specific types of

learning goals, learning is most efficient and effective when curriculum developers and instructors find the best blend of activities for learning needs.

In a subsequent chapter, we examine different models of curriculum development and relate those models to the learning strategies and their accompanying pedagogical perspectives discussed here. As shall be seen, curriculum development relies on theoretical assumptions that presuppose particular pedagogical perspectives. These assumptions affect teaching strategies and ultimately influence learning outcomes and evaluation frameworks.

Paramedic curriculum is best conceived of as a complex construct requiring a variety of pedagogical approaches. There are many ways of knowing and multiple levels of abstraction and application within a paramedic curriculum. Thus, effective curriculum employs a range of pedagogical approaches to support individual learning objectives, to link learning strategies within lessons, and to foster understanding over the course of an entire program – and, indeed, over the entire career of a practitioner.

## Chapter Summary

This chapter explained the process by which the *Canadian Paramedic Profile* was created and its implications for paramedic education. These implications are far-reaching and require a reconceptualization of traditional paramedic education.

Education for professional practice requires far more than the acquisition of foundational skills, knowledge, and judgments. Education for professional practice which is expressed as clinical competence or expertise, requires attention, as well, to broader aspects of the context such as interpersonal and interprofessional relationships, the impact or influence of the practice setting and the patient's social and cultural considerations in overall call management, and the paramedic's own personal and professional development over time.

# Chapter 3: Practice Education as Signature Pedagogy

The patient encounter is at the heart of paramedic practice, and practice education – case study, simulation, and clinical and field placements and their variations – is the heart of paramedic education. In this chapter we propose practice education as a signature pedagogy for paramedic education.

As with most health professions, paramedicine is practice-based, where curriculum is required to ensure the development of paramedics ready for practice upon graduation. The successful curriculum is an artful construction designed to ensure readiness for practice, which includes ability to practice and to act on behalf of the patient both unsupervised and autonomously. Within the curriculum, clinical/practicum placements are intended to provide an opportunity for students to understand the paramedic role and work of the profession, to integrate theory and skill learned in the classroom, and to put action in practice. Professional practice is unique and complex, needing both art and science to manage and provide (Schön, 1983, 1987). Exposure (becoming socialized) to practice through simulation or clinical and field placement is considered significant to the eventual quality of the paramedic and subsequent care provided to the patient.

The idea that professional knowledge relates to professional action comes from Eraut (1994), who described how clinical reasoning, knowledge, and judgment are encompassed in the action that is required; this is a pragmatic approach of "being able to do" — to apply judgment and reasoning to the particular situation at hand. Abstract or propositional knowledge in this case is left behind. Freidson's (1971) work indicated that "those whose work requires practical application to concrete cases . . . cannot suspend action in the absence of evidence [and furthermore they] cannot rely on probabilities or general concepts or principles: [they] must rely on [their] own senses" (p. 38). The clinical/practicum placement is a unique opportunity where situated learning, technical competency, and identity underpinned by a framework of social learning theory can be developed in readiness for practice. Developing trained educators with clinical practice expertise is an intentional design aspect of paramedicine education programs.

## Practice

Paramedic practice is an active process, and paramedic education must prepare paramedics to *do* things. As noted above, expertise embeds what a paramedic knows and can do within real-world situations. And so, paramedic education must have "doing" as its central activity. However, "doing" involves more than skilled and knowledgeable response and more than application of judgment or attitudinal factors. It involves multiple ways of knowing that must all contribute to "performing a call." A paramedic must be able to (1) understand and apply foundational anatomy, physiology, and medical terminology to assessment and decision-making; (2) relate the signs and symptoms of common pathological processes and conditions to

the presentation of actual patients in the moment; (3) skillfully perform both commonly and rarely used skills and procedures in constantly changing environments and situations; (4) adapt communication and interpersonal skills to gain trust of patients and gather critical histories; (5) function within different types of teams – sometimes as the leader; and (6) employ a variety of situational, diagnostic, and interpersonal decision-making processes with the goal of developing, implementing, and adapting activities to meet both immediate and longer-term goals. Furthermore, the paramedic must seek and monitor input on their own performance, then make changes to improve their performance over time.

Developing these multiple ways of knowing requires a pragmatic and situational approach to practice education.

### Signature Pedagogy

A signature pedagogy is an approach to teaching and learning that is common to paramedic education programs but different from those of other professions. Pedagogy is a value statement that carries the message of the profession. It defines the profession both in intentional and unintentional ways. Signature pedagogical approaches are entrenched across programs and within individual courses. They are the overarching educational aspects that are intended to help the learner develop habits of mind (or mental models) that ensure each prospective paramedic starts to think and act like other paramedics. For the purposes of this guide, the three dimensions of signature pedagogy are related (Shulman, 2005):

1. surface structure includes the operational acts of teaching and learning, what the learning looks like, and, what usually goes on in the classroom;
2. deep structure includes an assumption-based approach to imparting knowledge and know-how, how the content and skills are presented and reduced to teaching aspects, and what actually happens in moment of teaching; and
3. implicit structure includes the hidden curriculum and ethical and moral aspects, attitudes, values, and what is considered professional behaviour.

Signature pedagogy is seen in paramedicine when considering the aspects above. Educators and preceptors are supposed to impart the knowing required for practice. It is important to attend to signature pedagogical approaches, as paramedics must be familiar with practice readiness. The link to signature pedagogy is closely dependent on an understanding of both the profession/discipline needs and practice needs.

Pedagogies are enacted in places and spaces, which must be grounded in particular times. Clandinin and Connelly (2000) suggest the professional knowledge landscape is an important aspect needing consideration when framing program development, as it is related to time, place, and space. Response to the issues of curriculum design and pedagogy (which enables learning and understanding in a complex and rapidly changing world) will have profound effects on the preparedness of tomorrow's health professionals and their impact on society (Menin,

2010). Teaching and learning in paramedic education is a social practice that occurs when learners interact with others in order to come to know (Letts, 2010). Generally, pedagogy is the enactment of the curriculum, where the learner interacts with others or with self in the learning moment or sequence of learning moments (Higgs, 2010). How paramedics relate their learning moments within intersubjective spaces must be attended to through design and content considerations.

Pedagogical approaches should focus not only on linking the theoretical and practical but also on developing capacity for living authentically (Eraut, 1994) within self-monitoring and self-critiquing ways (Flavell, 1976; Higgs, 2010). Professional knowledge involves several types of knowledge applied in integrated ways; it is context dependent and relates to the ability of the paramedic to adapt theory and technical skills while engaging professional ethos and understanding of identity in practice actions (Eraut, 1994). Curriculum should enable the development of an "understanding memory" by focusing on students' processing levels, learning narratives, collaborative learning, team learning, and evaluation. Developing an understanding memory requires developing reflective and reflexive capacity and attending to the adult learner as a whole person, that is to say, one who is infused with emotions that influence learning (Jarvis, 2006; Morton-Cooper & Palmer, 2000). Other forms of knowing, such as relational, emotional, cognitive, and tacit, can also shape identity and practice and therefore can also be in the foreground. While behaviours (defined as competencies) are more easily observed and measured, technical and professional practice must be foregrounded in the program.

The surface structure includes low-fidelity simulation (and its derivatives, such as case study, skill station, and objective structured clinical encounters) as well as didactic, clinical, and field placements.

Deep structure is based on several assumptions about teaching and learning, which in turn call upon a number of educational theories or approaches. The learning that occurs in high-fidelity and immersive simulation may situate the learning in ways that form deep structure. These include the following:

- *reflection-on-practice and reflection-in-practice* within a coaching or mentoring model of feedback and evaluation as the central teaching and learning process;
- *situating learning activities within authentic contexts and settings* (see, for example, situated learning approaches as described by Brown, Collins, & Duguid, 1989);
- *progression of learning*, from context-independent skills, procedures, and decisions in cases to their application in drills and objective structured clinical encounters to adaptation in increasingly rich simulation environments to transition to field practice in clinical, preceptorship, and practicum experiences (Benner, Sutphen, Leonard, & Day, 2010; Dreyfus, 2001); and

- a *community of practice* where increasingly authentic roles and identities are gradually assumed (see, for example, Lave & Wenger, 1991; Wenger, 1998).

Implicit structure is both implied and hegemonic. It is so accepted as the norm that it goes forth without challenge. It is found in modeling and enacting of social behavior, ways of thinking, the stories that are told, values and attitudes, and the moral and ethical aspects of professional paramedic practice by faculty, instructors, coaches, clinicians, and preceptors.

### Guiding Questions

*What are key aspects of the signature pedagogy of the paramedic discipline?*

*How does the curriculum support and develop these approaches?*

*How well does the signature pedagogy align with other programs and the Canadian Paramedic Profile?*

*What changes would improve the linkages between the program and the profession of paramedicine through the graduates?*

*How does the curriculum attend to the Canadian Paramedic Profile, Code of Ethics, and Standards of Practice?*

*What are the aspects and mechanisms of accountability that education programs can provide to stakeholders to ensure minimum expectations are met?*

*What are metrics for ensuring the development of clinical and professional judgment in the learner?*

*How is the context that requires specific cognitive understanding, social and emotional understanding, and technical ability supported or addressed in the curriculum?*

*Can the curriculum support or link to the narrative of practice to direct reflexiveness and reflection?*

*How are stories of practice utilized in the curriculum? Is post-call review incorporated into the curriculum?*

## Situated Learning

A key element of practice education involves the use of simulations. Simulations and their derivatives take a variety of forms and call upon a number of educational philosophies and approaches. Skill stations employ mastery learning strategies, based on behaviourist and cognitivist perspectives, to establish foundational skills, knowledge, and decision-making. Case-based and problem-based learning activities focus on application and clinical reasoning from

constructivist perspectives. Objectively structured clinical examinations and “full call” simulations draw on cognitivist strategies, selected and sequenced to integrate prior learning and foster acceptable approaches to known cases. Immersive simulations and larger-scale exercises (e.g., multi-agency mass casualty incident scenarios) allow learners to engage in authentic and realistic interactions with multiple participants and adapt to unique and complex situations. These activities employ social constructivist and complexivist perspectives to develop shared understandings and articulate best practices. Patient encounters in the hospital or clinical setting allow development of interpersonal, interprofessional, communication, and clinical outcomes in a controlled environment. Field placement can be designed to provide awareness (e.g., orientation shifts), integrate prior learning, and foster and support the transition to field practice.

All learning is the formation of experience. Learning obtained in simulation is thus real experience gained by the student. Effective simulation is not like a choreographed dance; it is messy and involves waiting for unexpected learning opportunities to appear and an openness to emerging possibilities for new understandings. Simulations can provide the same type of quality experiences that happen on clinical practicums.

Note that past experience is a form of learning as well, both as a reflection on the past and as a projection into the future, all of which must be brought together within the needs of the particular situation. Thus, practice education involves the integration of the learner’s skills-knowledge-judgment experience and the situation at hand. Practice education should include all of the following: skill stations, case studies, drills, simulations, immersive exercises, hospital rotations, and field- or practicum-based learning. Someday, perhaps in the not too distant future, the national (and international) shortage of clinical placements that all health care programs experience may be resolved by technological advances in simulation technology accompanied by innovative and corresponding theoretical understandings of immersive simulation. When that day comes, the need for clinical placements will be reduced and a critical educational bottleneck will disappear.

### Guiding Questions

*What forms of simulation and practice learning activities will be employed in the program?*

*How will learners develop individual skills and procedures, integrate knowledge and decision-making, and adapt to the variability of patient presentation and practice context?*

*How will simulation activities change to meet increasingly sophisticated or complex learning objectives across the curriculum?*

*In what ways will simulation support processes of socialization and development of professional identity?*

*How do simulation activities change when used for new learning, integration of learning, formative evaluation, and summative evaluation?*

# Chapter 4: Structuring a Paramedicine Curriculum

John Steinbeck should have been speaking about curriculum when he said, “The best laid plans of mice and men often go astray.” While the design and development of a paramedicine curriculum must be an intentional process, it must also be a fluid process, capable of adapting to emerging possibilities for learning. As science and technology change at ever-increasing rates, curriculum too must be able to keep up and reflect the changes becoming manifest in the profession.

Curriculum should be informed by past practice, current practice, emerging practice, evidence, and experience. It is both the plan to achieve educational goals and the process by which the plan is carried out. The goal should be the development of an exceptional program of studies resulting in graduates who are ready for entry to practice and well positioned for future growth in their careers and their profession.

Provision must be made for when the plan goes astray; thus, flexibility must be inherent in the design. Redundancy too is a requirement. There must be a way to circle back, to add in things, to supplement material, to alter instruction as the need arises. Consultation should be ongoing as requirements for training and education are ever changing in the 21st-century workforce.

Both the common foundations and diversity of practice settings in paramedicine are reflected in the varied design, development, and delivery of paramedic education across Canada. A number of factors influence the design of curriculum:

- provincial legislative requirements and constituent regulations and policies that govern the activities of an educational institution and its development of curriculum;
- accreditation and other quality assurance requirements;
- the available expertise of those who work on curriculum;
- the resources that an institution is able to devote to the development and redevelopment of curriculum;
- the presence or absence of a self-governing regulatory body;
- the educational history of the profession and its associated professional imaginary (which is to say how the profession typically views entry-to-practice education);
- funding for development, policy, and priority setting by education ministries; and
- provincial and national associations for the profession and their commitment to common standards of practices and occupational competency profiles.

Change may be driven by the following:

- pressing social needs (e.g., the fentanyl crisis),
- advancing practice in the field (e.g., community care paramedicine),

- technological innovation (e.g., point-of-care testing),
- stakeholder needs (e.g., changes mandated by employers and service operators),
- accreditation or other quality management requirements,
- internal quality management and program review mechanisms, and
- evolving educational practice.

Curriculum development, then, is a process that must balance the drivers for change with an educational institution's capacity to develop, redevelop, and implement curriculum. Innovation is offset by legal, institutional, operational, and economic constraints.

There are multiple models of curriculum development, and most programs will incorporate aspects from all of them. Again, what is key here is the sense of intentionality. Doing things with purpose allows for a more critical evaluation of outcomes. Therefore, while a common methodology for curriculum development is ad hoc development by experienced instructors, such a process wastes both time and expertise.

Better approaches target curriculum design to directed educational goals and maximize resources, including individual expertise, with good planning and implementation. Collaborative approaches, task-based design, and the use of instructional designers and curriculum developers to employ a palette of options and opportunities tend to better meet group and individual instructional outcomes.

Well-designed courses and programs blend a variety of instructional methods and rely on theoretical models to guide the vast variety of educational, philosophical, and human factor considerations necessary to optimize curriculum for its pedagogical purposes. Such programs provide education that is cost-effective, socially relevant, and individually satisfying. In the profession of paramedicine, there is the benefit of competency attainment and professional development certification.

Many instructional design models provide a generalized approach to the development of effective training, suggesting either that the outcome of instruction is directly observable and scientifically measured or, alternatively, that it is mostly hidden and tacit. Reality in paramedicine is always a combination of both.

These approaches tend to focus on different aspects of the overall development of curriculum and employ a variety of philosophic perspectives. What they all share is an assumption that teaching and learning are linked processes and that fostering effective learning is an intentional activity.

This is not to say that all learning is intentional, or that all educational goals should be intimately preplanned. Effective design models and learning environments should include open-ended and opportunistic activities that can "seize the moment" and capture the learning as it emerges out of the situation at hand. Our point is that the design of effective learning

environments requires attention and intention, particularly when developing curriculum of the scope required to meet the Paramedic Association of Canada's Vision 2025.

## Macro Considerations: Curriculum Models, Themes, Approaches

Schiro (2013) lists four deologies of curriculum that arise from "an analysis of the actions and beliefs of American educators . . . during the 20th century" (p. 10). While his focus is on the US public school system, much of what he says has relevance to adult education and paramedic education in particular. Schiro uses the word *ideology* because "it is necessary to distinguish between the curriculum domain, the instructional domain, the epistemological domain, the learning theory domain, the psychoanalytic domain, the developmental domain and so on" (p. 10).

Each ideology contains significant differences with respect to educational philosophy and pedagogy. These differences are worthy of note and require consideration for curriculum development.

### Model 1: Scholar Academic Ideology

As of this writing, paramedicine is not considered by most to be an academic discipline. We believe it should become one. Typically, an academic discipline has at least three characteristics: It has a specific area of study; it is associated with a collection of facts and scholarly works; and, finally, it has an academic community of individuals that produce knowledge. Paramedicine is a specific area of study, and it does somewhat have a collection of facts and scholarly works. What it does not yet have is a robust community of individual paramedics that are able to produce knowledge. This is a problem that curriculum can fix.

Each academic discipline determines its way of knowing and consequently develops a signature pedagogy for teaching and learning unique to itself. Those of us who teach paramedicine already know our signature pedagogy even if we are not familiar with the term. For example, paramedics are taught through scenarios in ways that do not occur in any other profession. Their clinical training primarily occurs in an ambulance, and the competency profile for the profession has historically regarded the ambulance as a superior learning setting compared to a hospital or clinic. Signature pedagogy was talked about in Chapter 3 of this document, but what is important here is the idea that each discipline can only be judged by its own established categories of knowing.

Curriculum must be grounded in the profession of paramedicine if paramedicine is to be an academic discipline. The origins of the curriculum lie in expert sources of knowledge that arise from individuals educated in the profession. Furthermore, primary concerns with the curriculum must originate within the pre-existing discipline of knowledge. This means curriculum must represent the discipline in ways that conform with the discipline. It therefore must be approved by the discipline and be in primary accord with the discipline. This idea

strikes at the heart of physicians acting in medical director roles for paramedics, because if paramedicine is to become an academic discipline, paramedics must be responsible for and in charge of their own audit and professional processes.

In this curriculum model, improvement to curriculum will occur via the textbook, the peer-reviewed journal, and the academic conference. Teaching methods will include didactic discourse, supervised practice, and Socratic discussion. Teaching will often occur by asking questions or leading discussions with expert master's-level instructors. Evaluation will be both formative and summative. Formative evaluation will require an increase in the number of required essays and papers where critical synthesis and evaluation are required. Case study analysis will also play an important role. Summative evaluation in this model will pertain to the role of provincial entry-to-practice examination.

Note that the teaching focus is not on skill acquisition or development. With respect to paramedicine, skill acquisition can still occur in traditional ways. What would change would be an emphasis on the paramedic as the expert, both as teacher and student. Critical thinking and clinical thinking exercises would become more emphasized and more important. Protocols would become algorithms in the sense that they would be viewed as memory aids to clinical decision-making rather than written orders prescribed by a central authority.

Unfortunately, every model of curriculum brings with it certain disadvantages. In this model, the curriculum developer focuses entirely on the discipline, and this is problematic due to the increasing emphasis on interprofessional medical educational initiatives. For example, a recent public inquiry in Alberta has required some joint education between paramedics and midwives (Lamoureux, 2015).

In addition, curriculum content is only considered valid if it reflects what is deemed proper by the discipline itself. This can lead to professional isolationism. Paramedicine simply does not yet have the academic horsepower to take over the many roles that physicians play in the system. It lacks the resources, the instructional capability, and the academic career path to follow this model in its entirety.

There is also the political aspect of this model. More than some will view this model as a pie-in-the-sky type of wishful thinking. An academic career track is a daunting goal. Simply put, the profession may not be professional enough for this model to take hold now.

Despite these concerns, this model has much to offer.

**We advocate that educational institutions choose to think of paramedicine as an academic discipline and not simply as vocational training. This is a philosophical requirement which if met will put paramedicine on the road to achieving the degree entry to practice goal.**

### Model 2: Social Efficiency Ideology

This ideology was first premised on Tyler's (1949) four landmark questions. Because it is hard to conceive of competence-based education without thinking of Tyler, his questions are reiterated here:

1. Which educational purposes should the school seek to attain? These purposes should be stated in behavioural terms and have a scientific base.
2. What educational experiences can be provided that are likely to attain these purposes? Learning takes place both through the active behaviour of a student and the experiences a student has with the environment.
3. How can these educational experiences be effectively organized? Effective organization means the most efficient use of time, money, and human resources. A series of experiences in proper order must be enabled.
4. How can we determine whether these purposes are being attained? Evaluation of learning is limited to overt behaviour. Evaluation should be numerous, definite, and particular.

In this model, learning occurs through a programmed curriculum where step by step a program transforms learners from incompetent to competent. In this progression, behavioural objectives form incremental steps. Current paramedicine instructors will immediately recognize this curriculum model as the predominant model in the profession.

Programs require terminal objectives that are in essence the educational purposes of the curriculum. These are behavioural in nature. Consequently, objectives must be self-contained and written in a standardized form (e.g., "The student will. . . ."). They must also reflect a cognitive, affective, or psychomotor activity. Terminal objectives are determined by an actual study of people doing work in a particular field.

In this ideology, behavioural psychology and scientific methodology provide significant influence. Knowledge, in this understanding, is a capability for action that can be taught to learners. Furthermore, even though there is a difference between subjective and objective reality, objective reality matters more.

Learning is an active process that is demonstrated as a change in behaviour. The teacher's job is to ensure that the learner demonstrates the terminal objectives. This requires extensive feedback to the learner. Typically, the teacher does not determine the educational ends to which the student is directed. In addition, teachers are typically excluded from curriculum design to ensure they do not adversely affect the quality of the curriculum.

In this model, evaluation is very important. There must be accountability to the client (which is the person or institution who commissioned the writing of the curriculum), to the ideals of science and society, and to providing feedback to the learner. The evaluation of student performance is compared to a standard. This standard is usually written in stone.

However, the observation of behaviour does not have to correlate with learning. Reflection has been shown to be immensely important in learning and this model in and of itself postulates no purpose for reflection. Similarly, it makes no allowance for social learning that can occur within communities of practice even if such communities are initially composed of a single classroom.

**In all likelihood, there is no better model for ensuring that complex psychomotor skills are properly taught and evaluated. Consequently, we strongly advocate that this model be used for skill training, especially psychomotor skill training. There certainly is also a place for this model with respect to scenario practice of the type that builds clinical decision-making and practice.**

**A situation that paramedicine curriculum needs to rectify is the "hunter-gatherer" mentality of the past, where accumulating check marks for achieved competencies somehow counts more than actual learning and is verified as such through accreditation processes. Learning needs to count more than evaluation.**

Professionals need to demonstrate their skill competence in settings that are contextually relevant to their practice setting. Skills bereft of context will not suffice in high-pressure situations. Not every piece of learning requires external audit and evaluation. Aside from being impossible, it detracts from learning.

### Model 3: Learner-Centered Ideology

This curriculum model has at its core the concept of the ideal school. In this conception, school is reoriented around the learner, and learning is oriented according to the needs and interests of the learner.

Constructivism is the main learning theory in this model. Given that reflection is common to all constructivist theories of learning, it plays a key role. People engage with their environment using existing cognitive structures. Learning is the process that transforms existing cognitive structures into something new. In this frame of reference, knowledge is a major part of learning rather than a separate entity. It is a personal creation of individuals and may be known to them

alone. It involves a progression from the concrete to the abstract. Learners have different learning styles that are important to how they learn.

Teaching involves careful observation and diagnosis of individual learner needs and interests. The educational setting consists of a carefully constructed environment for people to learn in. Teaching is intervening between learners and their environments to help them learn. It is important to note in this ideology that teaching objectives are always secondary to learner interests. “Curriculum is not thought of as subject-matter-set-out-to-be-learned but rather as environments or units in which people can make meaning” (Schiro, 2013, p. 126).

Evaluation is necessary only in so far as to guide learning development. It is not looked upon favourably when it informs someone other than the student. Most assessment relies on portfolio assessment and direct observation as opposed to psychometrically derived standardized tests. Student evaluation of personal performance is preferred. There is little interest in summative curriculum assessment. This is different from the behaviourist approach, which relies on the external evaluation of student behaviour. Therefore, while in a behaviourist approach a paramedicine student would need to demonstrate endotracheal intubation as a set of discrete steps, in the constructivist approach the student would develop a personal approach to the skill.

Clearly, students would benefit from both behaviourist and constructivist approaches. However, it is important to point out that even with endotracheal intubation; the behaviourist approach is not clearly superior. Evidence-informed practice and clinical judgment require context that is not present when skills are evaluated according to a series of steps. Similarly, there are interpersonal and interprofessional aspects to skills that defy measurable checklists.

Alas, the ideal school does not exist. In most types of professional education, the requirements of the public trump the requirements of the individual. Nevertheless, nursing schools have demonstrated the worth of this model, and paramedicine schools would be well advised to follow their lead. The principle that students are responsible for their own education has long been overlooked in paramedicine. Responsibility for personal education is itself an important step toward professionalism.

**We certainly advocate that any chosen curriculum model utilize reflective journals, provide for active experimentation and abstract conceptualization, and consider the usefulness of concepts like mastery learning. In a broader sense, we advocate for learner-centered and constructivist approaches to developing personal practice over the course of a career.**

Constructivist theories of education are well documented in the adult education literature. Work arising from scholars like Malcolm Knowles and David Kolb have been canon for adult education especially in vocational institutions, which have been the traditional source for education in the field of paramedicine.

### Model 4: Social Reconstruction Ideology

The social reconstruction ideology starts with the view that society is unhealthy and will fail unless corrective action is taken. Education through the medium of curriculum is believed to be a way to address the ills of society. In this view, the particularities of culture determine knowledge and truth. Education is a social process that leads to the formation of new and better societies.

A primary instructional method is the use of social interaction. This can happen through peer-to-peer discussions, with teachers as facilitators. In this method, teachers try to get students to expose their inner feelings.

Another method of teaching is placing students in an environment where they experience a social crisis. In this case, the teacher is a colleague who can be trusted and confided in. More broadly, teachers and colleagues implicitly and explicitly address related issues in their ongoing conversations and feedback. Teachers embody their own beliefs and practices about their culture of practice and society. Learners, therefore, are encultured into these cultures or communities of practice.

In this model, language plays a crucial role in social reconstruction. Consider, for example, the use of gender-based pronouns in written work. Educators have a responsibility to go beyond simply reflecting the views of society and to critically appraise society. Again, learning occurs

primarily through the perspective of social constructivism. However, in this case, learning is also considered a social act that occurs within a given context.

The teacher is a colleague to the student. Both student and teacher bring relevant knowledge and insight to the table. This means that in paramedicine both have to start from a higher point. Instructor qualifications need to rise. Entry-to-practice requirements need to rise. Optimally, both teach and learn from each other. Teachers must be capable of reflection on themselves and society. This likely requires teachers with graduate-level degrees. Instructional qualification cannot exclusively be based upon registration criteria for the profession. In this perspective, the attitude of the teacher is central to the educational experience. Teachers must have an awareness of injustice and a determination to correct it.

Knowledge is a value-laden social construction that is both subjective and objective. In this model, the subjective realm dominates. Curriculum developers create knowledge that is derived from their personal analysis of the world. Consequently, curriculum developers need to be expert developers. Ad hoc development from expert instructors does not suffice. Evaluation is primarily subjective. Curriculum evaluation makes sense only in a specific social context.

**We advocate that the required qualifications for instructors be high. Instructional knowledge should exceed the domain of paramedicine and be more broadly informed. A master's degree is preferred. Entrance requirements for paramedicine programs should be on par with nursing programs. Entry to practice should require a baccalaureate degree. Important social concepts like Indigenous truth and reconciliation should be incorporated into curriculum in significant ways. We more generally advocate that the hidden curriculum become an explicit part of the new profile. A robust curriculum should explicitly consider how to surface and foster these aspects of the profession.**

## Chapter Summary

No single ideology of curriculum development suffices to meet the varied needs of the profession of paramedicine. Each has a role and a place, bringing with it unique sets of assumptions and biases. Curriculum planners need to determine which ideology is best suited to which particular aspect of their program and implement accordingly.

When the word *ideology* is used to categorize different models of curriculum development, there should be a presumption that the basic curricular concepts will have fundamentally different meanings across the different models. This is entirely correct. After all, ideologies are ideological, which is to say they have different historical approaches to the same problems.

Learning and teaching are understood in different ways in all four ideologies. In the social efficiency ideology, learning must be measurable and measured as a consequence of a particular behaviour. This is an almost entirely opposite view of how learning is understood in the learner-centered ideology, where learning is understood only by the learner. Teachers in the scholar academic ideology must be experts in the field of study and are tasked with the authority to pass on their knowledge. In the social reconstruction ideology, it is more important that teachers have broad social knowledge with a critical appraisal of how the profession can fit into the larger social structure in a way that would make the world better.

Comparing and contrasting the assumptions inherent in the four ideologies is better accomplished in a direct reading of Schiro (2013) than it is here. Alas, to further complicate matters, this is just one of many categorizations. For others, see Posner (1992), Pinar (2004), Pinar and Irwin's (2012) collection of Ted Aoki's scholarly work, or Flinders and Thorton (2013).

So how, it might be asked, is the curriculum developer supposed to cope with multiple conceptions of learning, teaching, evaluation, knowledge, and so on? The answer is to deliberately use multiple definitions and incorporate each into specific portions of the curriculum. Consider teachers as an example. A program needs teachers who are experts in the domain of knowledge but also broadly educated and sufficiently astute to challenge established professional paradigms in order to enable social change. This may require more than one type of teacher in the classroom.

From the demonstration of a competency such as endotracheal intubation to what students write down in their reflective journals, what constitutes learning and evaluation may be viewed differently. There is a place in curriculum for a student to behaviourally demonstrate competence. However, ethics, morality, empathy, reflection, and professionalism, to name only a few, are not competencies. They should not be taught as if they are competencies, and they should not be evaluated in the same manner as competencies. How students view the world or even their profession is not a competency.

Historically, the entire profession of paramedicine, at least in Canada, has been driven to treat every piece of knowledge as something that can be behaviourally measured by an accreditation

process. The outcome of this, in many ways, has not been favourable. One of the purposes of this document is to redirect the ways in which programs view learning, teaching, and a myriad of other concepts, so that the outcomes are more favourable not just to the programs but to the students and the profession.

# Chapter 5: Education Program Requirements

## Overview

This chapter provides information on requirements for all paramedicine education programs in relation to governance, academic leadership, human resources, physical resources, education policy, and practice education standards. Further, this chapter outlines the requirements for intersecting research within education, both teaching and learning, at the entry-to-practice stage.

## Education Program Structure

A paramedicine education program must be located in the appropriate faculty to ensure stability and linkages to interprofessional practice. The program must reside within a greater institutional community that directly supports the program. Current paramedic practice trends show paramedics interacting frequently with allied health care providers in the community such as nurses, midwives, physicians, and others. Therefore, paramedic education requires teaching and learning opportunities within multidisciplinary contexts. Ensuring development of competences such as teamwork, advocacy, communication, and so on requires access to a multi-professional faculty. This must be supplemented with a conscious decision to integrate these aspects into the curriculum.

An educational institution must be able to identify the organizational structure and lines of reporting and decision-making processes across departments and faculties. This includes demonstrating how the institution facilitates the development and delivery of the program, contractual agreements and partnerships, compliance with legislation, and faculty recruitment. The program must be housed within a legally entitled institution with a current mandate to provide this education and maintain a secure position within the institution's business plan. Further, the operational, capital, and maintenance of the program must be reflected in annual and cyclical budgetary and funding processes. Information on the effective administration and coordination of program curriculum development, teaching and learning, and quality assurance and improvement must be available to the public.

## Specific Paramedicine Program Structure Requirements

The program's organizational structure must support a system of quality assurance that links the theoretical and clinical aspects of the program to patient safety through the practice setting. This includes a system of professional clinical quality assurance that ensures direct linkages between the clinical placement educator and the program faculty. The requirements for clinical placement include sustainable and real-time quality review of the provincial clinical placement capacity in relation to the program's defined outcomes. This includes appropriate preceptor supervision, qualification, and real-time evaluation by the program. The organizational structure must enable the faculty to review all student clinical placements in

relation to the clinical preceptor qualifications and placement site capacity. An effective program enables clinical placement and classroom educators to have appropriate professional and educational qualifications as well as experience in quality assurance, program management, and curriculum development and delivery.

### Faculty Qualifications and Expectations

Key faculty are permanent full-time employees who can demonstrate expert-level thinking with respect to the profession of paramedicine. These individuals will have contributed to provincial or national projects and exhibited excellence in their careers. Each program must have at least one dedicated key faculty position. These positions must be held by qualified, experienced paramedics who hold a master's-level degree, doctorate-level degree, or both from a respected university. This must be supplemented with experience in the field of education (preferably adult education). The tasks of curriculum development, instructional design, implementation, and evaluation must sit with key faculty. All key faculty require education, experience, or both in the integration and progression of practice education within the overall paramedic program.

Full-time instructional faculty should have as a minimum of a bachelor's degree, five or more years of experience as a paramedic, and a certification in adult education or extensive prior educational experience. In cases where full-time instructional faculty work on curriculum development, they should report directly to one or more key faculty.

Subject matter experts may be utilized for the development of curriculum and instructional design so long as they report to key faculty. Subject matter experts who are not paramedics may be utilized as instructional staff for non-paramedic courses so long as they have a bachelor's degree in a discipline appropriate to the course of study or professional education and experience in the subject area.

Part-time, wage, lab simulation and evaluation, or sessional instructors and other health faculty may be utilized for skills labs on an as-needed basis so long as they are qualified through education or experience to teach what is expected. These instructors should have a certification in adult education or be committed to obtaining such a certification within a reasonable period of time. This certification could be undertaken as part of a professional development package.

Clinical preceptors help in the development of a student's professional identity and facilitate experiential learning; as such, they should be selected based on their knowledge level and teaching or mentoring skill set. In addition, since experiential learning is a large component of paramedic education, selection of appropriately trained clinical educators is crucial to assist in student learning and the development of autonomous practice. Schools must be able to pick their preceptors, or at a minimum have a preceptor selected from a pool of school-approved preceptors, and they must provide training and education for their preceptors. The clinical placement faculty qualifications require a regulated paramedic or appropriate regulated health care provider who is capable of facilitating teaching and learning while ensuring patient safety

and practice excellence. All faculty involved in the placement and teaching of students in clinical practice education must meet the jurisdiction's requirements specific to clinical placement faculty certification and remain in good standing as a practitioner. Clinical faculty require robust clinical experience and the capability to create safe learning spaces, to evaluate achievement of objectives in the placement setting, and to model professional conduct and fitness to practice.

Clinical placement coordinators require a minimum of a bachelor's degree and registration as a paramedic with requisite education in research, leadership, or conflict resolution, as well as jurisdictional clinical placement certification while maintaining good standing as a regulated practitioner. Further, clinical placement coordinators must have experience in provision of care in the clinical practice settings in which the program places students.

Required faculty qualifications also include the ability to develop and maintain a robust quality evaluation program, stakeholder consultation, personnel management, responsiveness to industry changes and needs, as well as a focus on research and development (Higgs, 2010).

### Faculty Development

The strength of a robust and responsive program is in ensuring that all program faculty have access to current best practice professional education. This should occur by design on a regular basis, where faculty have access to information from relevant governing bodies and educational institutions to add to their own professional knowledge, skills, and attitudes. A faculty development centre that looks to use feedback from faculty and students for faculty development should feed into institutional quality assurance processes.

## Policies and Procedures and Pathways

The educational program and institution must have clear policies and procedures that apply to students, faculty, admission requirements, appeals, student progression, system- and program-level quality assurance programs, and student records. Policy and procedures must be developed and reviewed according to best practices in education and maintain the ongoing progression and success of the student.

### Students

Prerequisites and admission requirements must be clearly outlined and align with jurisdictional and employer requirements. A student program orientation policy must be provided to each student. Students must have access to policy and process maps that define the behavioural and professional expectations, education progression and accountabilities, performance, and process for discipline, appeals, and withdrawal from program. Patient safety, learning, and fitness-to-practice policies must be provided to the student.

### Faculty

All faculty (key, clinical, preceptor) must receive an orientation to the program. Professional and educational expectations of all faculty must be provided within the institutional policy framework.

### Clinical Placements

Programs should carefully consider program policy and procedures for clinical placements and how student progression is monitored. Clinical placement outcomes and expectations must be represented in policy and procedures for each component of the program.

Policy must be established that provides clear articulation of clinical placement agreements, safety of students within the clinical placements, and real-time quality evaluation of placements. Procedures must be established for ongoing review and revision of program outcomes in relation to practice needs. Policy and procedures for approval and monitoring of all clinical placements prospectively in real-time and retrospectively must be established.

### Diversity and Inclusiveness

Policy that enables diversity and inclusiveness across all teaching, learning, and evaluation aspects of the program must be in place.

### Supervision

Policy that ensures appropriate supervision and teacher-student ratios are maintained and monitored must be in place.

### Other

Policy must be established that ensures program intake size corresponds to provincial workforce needs and capacity and aligns with current provincial policy initiatives.

Program policy and procedures must articulate what post-graduate education pathways include. Specifically, the program must include the following:

- range of post-graduate education pathways available upon successful completion of the program that enables entry to specialist or higher education in paramedicine,
- pathways available for progression into other health professional programs,
- any other academic pathways available, and
- program exit points and alternate pathways.

## Program Resources

The educational institution must identify the resources necessary for a student to successfully complete the educational program. Resources include qualified faculty, appropriate instructor-student ratios, adequate training equipment, student support, external support in the form of practicum sites, preceptor expertise, instructional learning materials, and a safe place to learn. Faculty must be sufficient in number and access to ensure all students are adequately prepared for learning and evaluation.

Program resources enable students to have access to learning materials, research literature, and formative and summative evaluation opportunities on a readily available basis. Further, the program learning resources must be appropriate to the curriculum and available to all students. Academic supports must be available to students throughout the program. It is worthy of note here that Gijselaers and Schmidt (1995) advocate based on their research that "increasing instruction time is only effective to the extent that students spend an increased amount of time on self-study" (p. 183).

## Student Support

Successful student support should be provided through effective communication and demonstrated processes related to responsibility and access as well as the provision of the following.

*Feedback Enhancement:* Course and program accountability/responsibility should be communicated early to students and known to staff. There should be clear methods of access for students and faculty to communicate issues, complaints, or appeals to the management team, which will inform the quality assurance framework.

*Support for Missed Time:* Students who have missed program time due to illness or other legitimate reasons should be supported by a policy that ensures compliance with attendance while ensuring each student can obtain any missed materials and attain the necessary learning outcomes. It should provide for repeated attempts to gain and demonstrate clinical competency. In addition, students who have long-term disruptions of their learning (planned or unplanned) should be supported by counselling, specialist teaching, or learning support services. There should be a provision to consider financial and medical support for students in need.

*Supportive Learning Services:* Students with documented or identified learning needs should have easy access to institutional learning supports, which must include special accommodations.

*Peer and Mentor Support:* A paramedic educator or mentor framework should be in place to support students through all phases of the program, particularly the clinical/placement phases.

*Health and Safety Support:* Support for physical and mental health should be available for students, and institutions must maintain a robust incident tracking method for safe and effective injury and illness prevention and mitigation.

### Instructor-Student Ratios

There is no definition and no empirically validated data for an appropriate instructor-student ratio. It is discipline specific and varies depending on whether an institution is focused on teaching or research. In health care professions' education, there is typically a reduction in instructor-student ratios in lab and clinical settings over traditional lecture or online activities. Suggestions in health care professions are for a 1:6 to 1:8 instructor-student ratio for practical/lab work and simulated patient settings.

Many considerations play into instructor-student ratios. These can vary greatly within individual program components. The context of program delivery, physical environment limitations, type of instruction (e.g., seminar, lab, lecture, clinical supervision, etc.) and other activities all introduce variables for consideration. These other activities could include faculty involvement in other programs, research and development requirements, distance or hybrid learning, as well as institutional policies, economics, and requirements for program assessment. In addition, the overall number of students and frequency of program or course delivery may affect faculty numbers. A healthy redundancy in the system to allow for faculty leaves or sickness as well as professional development should be incorporated into scheduling and human resource allocation.

## Physical Resources

Physical resources are divided into general program or institutional physical resources and student-specific resources. All must be available and appropriate for the delivery of the program.

### Program or Institutional Resources

- information technology, which may include dedicated email, intranet, and internet access accompanied by supportive personnel and facilities;
- learning management systems, virtual learning environments, and other specialist programs, especially for distance and mixed delivery programs, with presentation equipment suitable to the delivery mode;
- library facilities for staff and students with access to reference works and electronic databases for research and curriculum purposes, as well as library staff to facilitate their use;
- lecture theatres, tutorial/accommodation rooms, specialist labs, skills labs, studio space, and recreational facilities;

- resources for clinical training (e.g., hospitals, ambulance services, long-term care facilities, dental offices, medical clinics, and other patient sites) to provide adequate exposure to patient populations for fitness-to-practice assessment, professional socialization, and development of competency in core paramedic roles;
- orientation materials for preceptors including specific descriptions of roles, responsibilities, and resources for the preceptor, student, and instructor; and
- paramedic-specific equipment reflecting current practice.

There should be appropriate policies and procedures as well as orientation around program-specific physical resources for both staff and students. Sufficient time for this orientation should be included in curriculum design.

### Student-Specific Resources

- texts and journals;
- student handbooks and module guides;
- equipment related to practical/simulation/clinical settings; and
- technology requirements (e.g., computers, tablets, etc.).

## Curriculum-Specific Requirements

The program must address specific outcomes that a student must attain to successfully complete a program of study. Curriculum must include teaching, learning, and assessment methods that are consistent with the philosophy, conceptual framework, and designated program outcomes and are applied by all personnel. The curriculum must articulate (in a curriculum of study provided by the institution) how students will become a paramedic as outlined in the *Canadian Paramedicine Education Guidance Document*.

In addition, the curriculum development and revision process must be responsive to trends in paramedicine health and wellness, changes in legal and ethical positions, diversity and Indigenous health, professionalism, and emerging paramedicine evidence and research methodologies. Programs must be able to facilitate curriculum change in a timely manner. Further, curriculum must be designed to enable students to develop the necessary health and character that allows them to practice safely and with ongoing competence over the span of an entire career. The learning, teaching, and supervision that is represented in the curriculum must be intended to develop effective and competent practice, leading eventually to expertise through ongoing learning and ongoing professional development.

### Canadian Paramedic Profile: Cross-Cutting Themes

The four cross-cutting themes that paramedicine education must incorporate across the curriculum are compassion, safety, communication, and adaptability. Compassion is part of

patient-centered care and is influenced directly by the behaviour and motivation of the paramedic. Curriculum must ensure paramedics embody the primacy of patient interest and advocacy in their patient care.

Patient safety is a key practice focus in paramedicine. Curriculum must require the student to consider all actions pertinent to safety during the patient encounter and adapt future patient care accordingly to facilitate the safety of patients, bystanders, and care providers. Infection prevention and control foundations and principles must be a key part of the curriculum. The paramedic must develop the ability to ensure a culture of safety in practice and be able to support and grow principles of just culture.

Communication is critical to the paramedic role. Effective verbal and non-verbal communication is considered of prime import in order to facilitate safe patient care and advance interpersonal and interprofessional relationships. Further, the paramedic curriculum must allow for effective communication strategies and techniques that can be considered therapeutic interventions. Medico-legal communications must be attended to within the curriculum where paramedics are enabled to safely document, exchange, and share information.

Adaptability is critical to the practice of paramedicine. Curriculum must ensure the development of a paramedic able to evaluate and adapt to dynamic patient encounters and the demands of evolving patients and changing environments.

Program curriculum must ensure that it fulfills regulatory requirements of practice, which includes national and provincial regulatory and legal structures and frameworks under which practice occurs. Curriculum must ensure the implications of national and provincial regulatory and legal requirements on personal and professional practice are understood. As well, the inclusion of health and social policy as related to professional paramedic practice is required.

Integration of the theory and the clinical is a key component of the curriculum, and placements must be integral to the program and appropriately sequenced to ensure patient safety and student learning. Program content and delivery should ensure that the needs of employers are fulfilled in a variety of practice settings.  These requirements apply to all roles.

Curriculum must identify the health care system at the provincial, national, and international levels, including employer types, structures, and requirements. The roles and obligations within the employment structure must be articulated. Practice settings such as emergency response versus non-emergency response settings need to be attended to in the curriculum. Deployment and transport systems as well as points of entry to the system must be included. Primary, tertiary, and community settings of practice in relation to paramedicine and the social systems that underpin these aspects are to be included. Further, specialized practice settings and communities need to be addressed in the curriculum.

## Educational Technology

Technology is ubiquitous within paramedicine; its influence on tools and systems is significant, and it affects most things within a paramedic's daily practice. The application of technology can improve educational practice; however, to significantly enhance and develop effective educational frameworks may require a modification in perception. The notion that educational technology is merely a set of tools is no longer valid. As a field, educational technology is situated in communications, psychology, sociology, augmented and artificial intelligence, computer science, as well as philosophical paradigms ranging from behaviouristic learning to constructivist and complexivist models.

Given the range of educational technologies available (e.g., learning management systems, varied care databases, presentation formats, enhance-able artificial intelligence testing engines, etc.) developers must focus on integrated processes – those involving people, procedures, ideas, and technological devices.

Given the current educational technology toolkit and the available opportunities to create sophisticated, interoperable, customizable, and differentiated learning environments, developers must reflect on a variety of learner developmental and achievement levels, applicable learning outcomes, information access, and the availability of motivationally sound interactive learning environments. In creating learning and performance experiences that engage learner interest and foster confidence, technology can build on an individual's natural desire to learn.

## Chapter Summary

An educational institution must specify comprehensive, systematic processes for program development, evaluation, and revision resulting in continuous quality improvement. This requires the development of program policy and procedures that situate the program within the broader mandate of the educational institution. An ongoing review and program improvement model should include multiple stakeholders and reflect directly the needs of both the student and the patient.

# Chapter 6: Curriculum Content

Most paramedic education programs have common core content, particularly around patient care and paramedic practice, covering topics such as anatomy, physiology, pathophysiology, patient assessment, clinical decision-making, treatment, and transport. The 2011 *National Occupational Competency Profile for Paramedics in Canada* served as a guideline for specifying required program content. However, increasing expectations and emerging practice contexts require paramedic education to move beyond specified content designed around what practitioners "need to know" to a more broad-based education that shares common academic and health/clinical sciences foundations with other health care disciplines. This chapter provides curriculum developers with guidelines and suggestions on sources of content for a robust paramedic education program that meets the intent of the *Canadian Paramedic Profile* and Vision 2025.

## Core and Thematic Content

As noted in Chapter 2, programs contain two types of content: thematic and core.

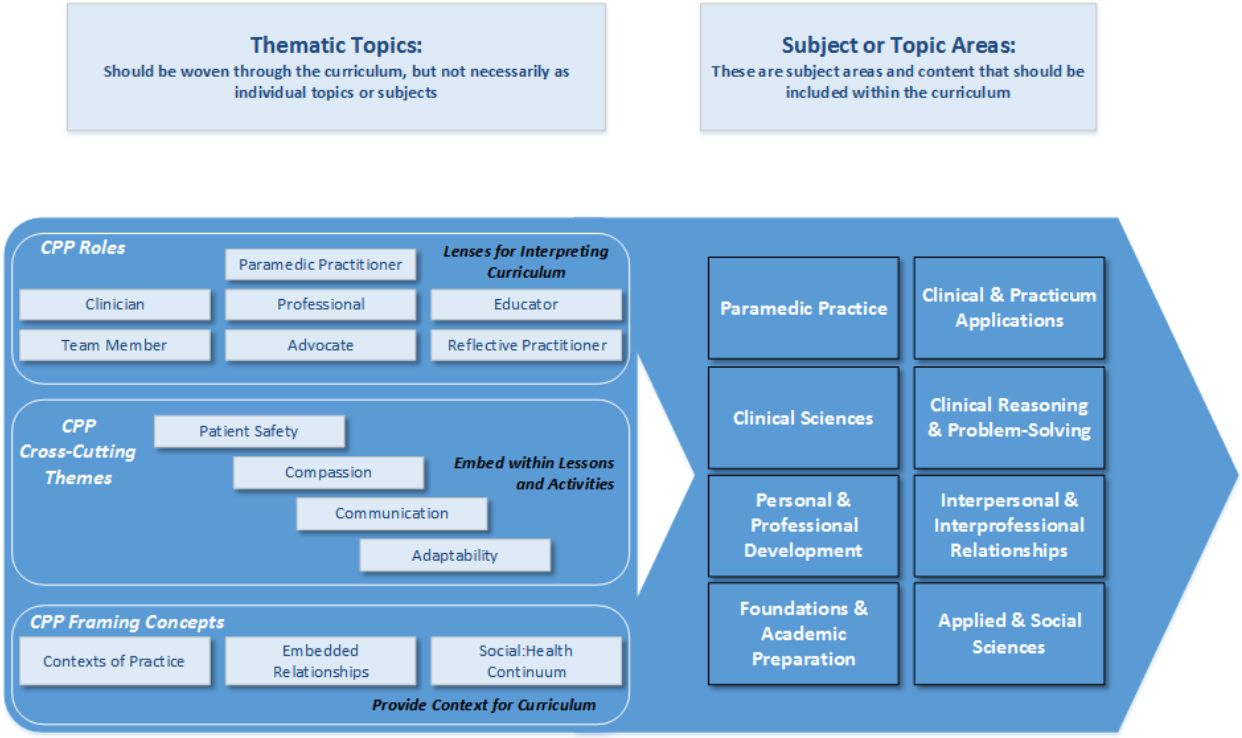


Figure 2. Paramedic Content.
*Note.* CPP = *Canadian Paramedic Profile.*

Core content may be thought of as the underlying skills, knowledge, and judgment or attitudes included in a program, which are typically expressed as learning objectives (or outcomes) and arranged into courses, modules (or topics), lessons, and activities. Thematic content is the concepts and themes that weave through and provide an integrative context or frame for learning. The subject or topic areas in the diagram above represent common subject areas that are included in Canadian paramedic programs.

The actual content of these subjects and courses are determined by an analysis of program requirements and content sources. Typically, curriculum developers identify the outcomes and requirements of a program from a variety of sources (e.g., occupational profiles, scope of practice documents). These may include national expectations, local or provincial regulatory and operational documents, supplemental documents describing specific aspects of practice (e.g., advanced cardiovascular life support outcomes or patient safety competencies), and existing educational documents (e.g., previous curricula, textbooks, resources).

These sources of content are analyzed and sorted or sifted into the program's curricular structure in terms of subjects or courses and the progression or sequencing of learning, then reframed as learning objectives.

The following sections of this chapter identify broad curricular goals for paramedic education, then potential sources of content that programs may use to develop course content. Developers who worked with the *National Occupational Competency Profile for Paramedics in Canada* will notice two characteristics of this chapter:

- First, guidance is provided as to potential topics and sources of content; this is in contrast to the specification of detailed competencies in the *National Occupational Competency Profile*. Programs are expected to analyze and develop their own specific learning outcomes and objectives that draw upon these resources to meet the goals of Vision 2025. There is no necessary one-to-one correlation between the enabling capabilities listed in the *Canadian Paramedic Profile* and a program's learning objectives.
- Second, as paramedicine becomes increasingly situated within a broader health care framework, paramedic education programs must incorporate academic, health sciences, and other non-paramedic components, either directly or through pre- or co-requisite academic programming. The goal of these components is to provide a solid foundation, breadth, and depth to support current and emerging paramedic practice. In this document, content requirements are specified as subjects, courses, modules, or topics (along with examples and links to external resources), not as competencies, capabilities, or outcomes. Programs will have latitude to tailor academic foundation, health/clinical sciences, and integrative courses within their own educational regulatory environment and chosen focus.

The example documents and courses that are listed below are provided as guidance based on current and in-development curricula and supporting documents and initiatives. Programs are

encouraged to incorporate the most up-to-date and relevant material that is appropriate to their curriculum.

## Curriculum Content Guidelines

The following guidelines are based on a series of assumptions:

- The overall goal of programs will be to prepare graduate paramedics to be self-regulating health care professionals with a health sciences background in common with other Canadian health care professions.
- Programs must be based on the Paramedic Association of Canada's national *Canadian Paramedic Profile* and Vision 2025.
- Programs must share a health sciences background in common with other Canadian health care professions.
- Core content must support a comprehensively prepared paramedic by fostering the capability to do the following:
    - practice in current and emerging practices settings or contexts, including emergency medical services (EMS; traditional ground and air-based emergency prehospital care), community paramedic, in-facility (e.g., Emergency Department), and industrial settings
    - provide emergency, urgent, non-urgent, ongoing, preventative, and primary health care (as per local and national scopes of practice)
    - support traditional and alternative patient dispositions, including treatment and transport, treatment and release, treatment and refer, treatment in place
- While programs may (and should) focus on local/provincial traditional EMS operational settings and requirements, they must be aimed at preparing graduates for national certification examinations or labour mobility processes as well as local/provincial registration exams.
- Programs must provide a broad-based academic foundation in common with other Canadian health care professions.
- Programs must ensure graduates are capable of meeting Canada's Essential Skills Profile for Paramedics.
- Programs must ensure that applicants have sufficient secondary school preparation to support success in paramedic education programs.

This section provides key concepts, guidelines, and examples of sources of content for paramedic education programs. Note that this is not meant as an exhaustive or prescriptive list of capabilities, competencies, or learning objectives. Rather, the intent is as follows:

- identify key sources of information from which curriculum developers must develop content,
- recommend sources that curriculum developers may use, and

- provide guidelines and rationale for additional sources of information that curriculum developers may choose to include.

There are three levels of elements required to develop a robust paramedic education program that meets the expectations of Vision 2025 and the *Canadian Paramedic Profile*. Some elements *must* be included; other elements, or their equivalents, *should* be included; and, finally, some elements are strongly recommended and *may* be included by programs.

The following tables suggest obtaining content from specific documents or resources (e.g., the *Canadian Paramedic Profile*). Potential courses or modules in each of these areas may range from introductory (typically first or second year) to advanced (third or fourth year) content.

The term *course* may refer to professional and applied courses that range from several hours to several days of focused direct student contact (e.g., a basic cardiac life support refresher, the advanced trauma life support course, or a multi-day emergency vehicle operation course). Expectations and terminology for academic courses vary between provinces; however, academic courses typically include 39 to 42 hours of student contact. The following sections do not include minimum classroom, clinical, or practicum contact hours or time. Programs are expected to conduct and document an analysis to determine the actual contact time necessary to meet their stated goals and outcomes.

Finally, the following tables are organized in reverse order of the goals and principles stated above. While this provides a simple to complex ordering, it is not intended to suggest the actual order or academic levelling of courses or content of each section or the content within each section. This is particularly apparent for the academic foundation, health sciences, and core paramedic sections.

***Goal 1:***

***Programs must ensure that applicants have sufficient secondary school preparation to support success in paramedic education programs.***

**Principles or Rationale**

Entry-to-practice programs should include demonstration of attainment of key prerequisite learning requirements. The following are general secondary school prerequisites that support success in paramedic programs. Programs may identify the following as prerequisite courses that must be taken, or they may include the overall learning outcomes of these courses.

**Programs must include the following prerequisites (or equivalent):**

| Requirement | Comments/Notes | Source or Supporting Information |
|---|---|---|
| Grade 12 or secondary school graduation (or equivalent), or mature student (25 years or older). | Successful completion or graduation from secondary school (or equivalent) provides a minimum academic foundation for entry to paramedic education. | Refer to local/provincial requirements for secondary school graduate or its equivalent. |

**Programs should include the following prerequisites (or equivalent):**

| Requirement | Comments/Notes | Source or Supporting Information |
|---|---|---|
| English, French, or Composition at a grade 12 or equivalent level. | Required to demonstrate foundational skills in reading, writing, and critical thought that are necessary to undertake paramedic education. | Refer to local/provincial requirements. |
| Biology at a grade 12 or equivalent level. | A foundation of biological and life sciences at the secondary school level is necessary to support an understanding of paramedic practices, health sciences studies, and evidence-informed practices. | Refer to local/provincial requirements. |

**Programs may include the following prerequisites (or equivalent):**

| Requirement | Comments/Notes | Source or Supporting Information |
|---|---|---|
| Applied mathematics at a grade 12 or equivalent level. | Applied mathematics at a grade 12 level or academic mathematics at a grade 11 level provide foundational skills in numeracy and reasoning necessary for further study in basic and health sciences and to support paramedic practice in the field. | Refer to local/provincial requirements. |
| Physics at grade 11 or equivalent level.<br>Chemistry at grade 11 or equivalent level. | Programs may require additional basic sciences to provide a more robust foundation for further basic and health sciences studies and/or to support the development of critical reasoning. | Refer to local/provincial requirements. |

***Goal 2:***

***Programs must ensure graduates are capable of meeting Canada's Essential Skills Profile for Paramedics.***

**Principles or Rationale**

The Government of Canada maintains a database of key occupations and their requisite skills and knowledge, known as the Essential Skills Profile. The Essential Skills for Paramedicine is a list of skills and abilities that paramedics are expected to be able to perform. The criteria in this document are at the level of learning objectives. Programs are encouraged to analyze and incorporate these criteria into the appropriate courses and evaluation components.

**Programs must include the following:**

| Requirement | Comments/Notes | Source or Supporting Information |
|---|---|---|
| The Essential Skills for Paramedicine are foundational skills that must be distributed and embedded across the entire program, not covered as a separate topic. | This document "contains a list of example tasks that illustrate how each of the essential skills is generally performed by the majority of workers in an occupation" (Government of Canada, n.d.). Skills include reading, document use, writing, numeracy, oral communication, thinking, digital technology, and additional areas specific to a discipline. | Essential Skills Profile for Paramedics (National Occupational Classification 3234) |

***Goal 3:***

***Programs must provide a broad-based academic foundation in common with other Canadian health care professions.***

**Principles or Rationale**

Professional programs rest on a foundation of basic arts and sciences. This academic foundation must support the development and use of applied skills and knowledge, provide a foundation for future growth in paramedic practice, help establish critical (and clinical) thinking and reasoning, and allow graduates to pursue advanced studies in support of clinical, leadership, education, and research roles within paramedicine. The intent of this section is to ensure that paramedics have a foundational academic preparation in common with other Canadian health care disciplines.

Programs must support the development of knowledge and critical understanding in students' field of study (paramedicine as a health care discipline) that builds upon their secondary education and includes the key assumptions, methodologies, and applications of the discipline or field of practice.

**Programs must include the following:**

| **Requirement** | **Comments/Notes** | Source or Supporting Information |
|---|---|---|
| Post-secondary academic language arts including reading and writing (course level). | This requirement may be met by academic preparation courses, traditional introductory English or French courses, or more applied courses that focus on health care and paramedic contexts. | Refer to institution-specific standards and post-secondary provincial guidelines. |
| Introductory or Applied Mathematics (module or course level). | A general understanding of mathematics is foundational to basic and applied sciences as well as evidence-informed practice. Programs must incorporate sufficient concepts and practice of mathematics to support medical mathematics literacy in practice. | Refer to institution-specific standards and post-secondary provincial guidelines. |
| Introductory Statistics (module or course level). | An understanding of statistics supports both interpretation of evidence-informed practice (being a consumer of research literature) and the development of health-related research skills. Programs may incorporate tailored modules to meet minimum expectations or include full introductory academic courses based on the goal and focus of the program. | Refer to institution-specific standards and post-secondary provincial guidelines. |

| | | |
|---|---|---|
| Introductory Biology (module or course level). | Foundational to health and biological sciences. | Refer to institution-specific standards and post-secondary provincial guidelines. |
| Introductory Chemistry (module or course level). | Foundational to health and biological sciences. | Refer to institution-specific standards and post-secondary provincial guidelines. |
| Introductory Psychology emphasizing critical thinking (module or course level). | Foundational to social and human behaviour sciences. | Refer to institution-specific standards and post-secondary provincial guidelines. |
| Introductory Sociology (module or course level). | Foundational to social and human behaviour sciences. | Refer to institution-specific standards and post-secondary provincial guidelines. |
| Introductory Research Skills (module or course level). | Foundational to development of evidence-based practice and more advanced research skills in future education. Programs may incorporate tailored modules to meet minimum expectations or include full introductory academic courses based on the goal and focus of the program. | Refer to institution-specific standards and post-secondary provincial guidelines. |
| **Programs may include the following**: | | |
| **Requirement** | **Comments/Notes** | **Source or Supporting Information** |
| General education electives. | Programs are encouraged to include general education credits to support breadth and depth. Suggestions from existing paramedic programs include chemistry, nutrition, kinesiology, physics, business, philosophy, and education. | The University of Toronto Specialist (Joint) Program in Paramedicine (Science) includes four elective courses in the first year (SPP UT, n.d.).<br><br>The University of Prince Edward Island includes five elective courses from business, biology, chemistry, foods and nutrition, kinesiology, philosophy, physics, or psychology (BSP UPEI, n.d.) |

***Goal 4:***

***Programs must be based on the Paramedic Association of Canada's national Canadian Paramedic Profile and Vision 2025.***

**Principles or Rationale**

The Paramedic Association of Canada's *Canadian Paramedic Profile* outlines the roles, capabilities, ethical expectations, and practice standards required for practice in Canada. Programs are expected to analyze these documents and incorporate their content throughout and across the paramedicine curriculum. Note that these documents are not, in themselves, designed as curriculum or assessment frameworks. While headings and categories in these documents may become courses, topics, or categories in assessment scales and rubrics, programs must do more than cover the content in these documents. Rather, the expectation is that these are summative capabilities and expectations that must be developed across the entire curriculum.

**Programs must include the following:**

| Requirement | Comments/Notes | Source or Supporting Information |
|---|---|---|
| *Canadian Paramedic Profile: Paramedic Roles* | The document on paramedic roles defines and provides key and enabling capabilities describing the essential roles that paramedics assume in practice: clinician, professional, educator, advocate, team member, and reflective practitioner. These roles are further integrated within the overall role of the paramedic practitioner. Note that the capability statements in this document are not structured as learning objectives nor as assessable behaviours. Programs must perform an analysis to determine an appropriate set of learning objectives and assessment criteria based on these capabilities. | Note that programs must incorporate content from both the *Canadian Paramedic Profile* and relevant local/provincial competency or occupational profiles (see Goal 5).<br><br>Refer to the Paramedic Association of Canada for current documentation (www.paramedic.ca). |
| *Canadian Paramedic Profile: Code of Ethics* | As above. Note that programs must incorporate both the national Code of Ethics as outlined in this document and relevant local/provincial codes of ethics. | As above. |
| *Canadian Paramedic Profile: Scope of Practice* | As above. Note that programs must incorporate the national Practice Standards. | As above. |

***Goal 5:***

***Core content must support a comprehensively prepared paramedic by fostering the capability to do the following:***

- ***practice in current and emerging practices settings or contexts, including EMS (traditional ground and air-based emergency prehospital care), community paramedic, in-facility (e.g., Emergency Department), and industrial settings***
- ***provide emergency, urgent, non-urgent, ongoing, preventative, and primary health care (per local and national scopes of practice)***
- ***support traditional and alternative patient dispositions, including treatment and transport, treatment and release, treatment and refer, treatment in place***

**Principles or Rationale**

All paramedic education programs must prepare graduates for general paramedic practice, regardless of practice-level certification, context of practice, or employment setting. Thus, programs must prepare graduates for the full range of professional practice, not just for specific employment settings (e.g., ambulance-based emergency medical response) in a particular jurisdiction or province. While programs should ensure that graduates are ready for licensure within their local/provincial ambulance setting, they must also include preparation for existing examinations or labour mobility processes. Thus, programs are expected to prepare graduates for practice in current and emerging practice settings and scopes of practice.

Programs must support a graduate's capacity to develop the following:

- An understanding of the range of fields within the discipline or field of practice and of how the discipline may intersect with fields in related disciplines
- the ability to gather, review, evaluate, and interpret information, including new information relevant to the discipline, and to compare the merits of alternate hypotheses or creative options relevant to one or more of the major fields in a discipline while taking historically relevant factors into account
- the capacity to engage in independent research or practice in a supervised context;
- critical/clinical thinking and analytical skills inside and outside the discipline;
- the ability to communicate information, arguments, and analyses accurately and reliably, orally and in writing, to a range of audiences including specialists and non-specialists, using structured and coherent arguments, informed by key concepts and techniques of the discipline where appropriate
- the ability to use a range of established techniques to
    - initiate and undertake critical evaluation of arguments, assumptions, abstract concepts, and information;

- propose solutions;
- frame appropriate questions for the purpose of solving a problem; and
- solve a problem or create a new work

- an understanding of methods of enquiry or creative activity, or both, in their primary area of study that enables the student to
  - evaluate the appropriateness of different approaches to solving problems using well-established ideas and techniques,
  - devise and sustain arguments or solve problems using these methods, and
  - describe and comment upon particular aspects of current research or equivalent advanced scholarship in the discipline and how these are relevant to the evolution of the discipline

**Programs must include the following:**

| Requirement | Comments/Notes | Source or Supporting Information |
|---|---|---|
| *Canadian Paramedic Profile* | See Goal 4, above. | Paramedic Association of Canada |
| Canadian national certification preparation | Programs must prepare graduates for Canadian national certification exams or labour mobility processes. | Refer to the Paramedic Association of Canada and Canadian Organization of Paramedic Regulators websites for current documentation. |
| Local/provincial certification, licensure, or registration | Programs must include content that prepares graduates for local/provincial certification or licensure exams. | Refer to local/provincial regulatory and certification/licensure requirements, including scopes of practice, practice standards, clinical/treatment guidelines and protocols, and evaluation guidelines. |
| Diversity and inclusion; Truth and Reconciliation Commission of Canada guidelines | Programs must include content that promotes inclusiveness and prepares graduates for cultural diversity within Canadian society. | *Honouring the truth, reconciling for the future: Summary of the final report of the Truth and Reconciliation Commission of Canada*. |

**Programs should include the following:**

| Requirement | Comments/Notes | Source or Supporting Information |
|---|---|---|
| Local/provincial operational practice | Programs should tailor content and equipment to conform with local/provincial operational practice. Programs must still provide additional content and experiences sufficient to meet the other requirements of this section. | Refer to local/provincial operational policy, procedure, clinical/treatment guidelines, and protocols. |

**Programs may include the following:**

| Requirement | Comments/Notes | Source or Supporting Information |
|---|---|---|

| | | |
|---|---|---|
| Supplemental documents and/or courses to support paramedic programs | The spirit and intent of the *Canadian Paramedic Profile* and the current document is to provide guidance rather than prescription as to the selection of program content. Thus, the choice of breadth and depth of traditional paramedic content must be based on national and local/provincial certification and licensure requirements. However, the following documents may be useful in identifying lists of content that may be included in programs. Note that this is not an exhaustive list; it is provided as guidance for identification of types of documents that may be useful. | The 2011 *National Occupational Competency Profile for Paramedics in Canada* and/or subsequent skills documents based on this profile. This document provides extensive lists of injuries and conditions, assessment and therapeutic procedures, and competencies related to non-patient care that may be useful for programs.<br><br>Published paramedic textbooks, such as are found in existing paramedic programs across Canada and the United States.<br><br>Specialized course materials, such as *Advanced Cardiac Life Support, Advanced Trauma Life Support, Pediatric Advanced Life Support, International Trauma Life Support, Prehospital Trauma Life Support,* etc. |
| Supplemental guidelines and profiles to support paramedic practice | A number of stakeholders have worked with paramedic organizations to address specific issues and provide guidelines to enrich or support paramedic practice. Programs are encouraged to explore and incorporate this material, if appropriate. | Paramedic Chiefs of Canada: *The Future of EMS in Canada: Defining the New Road Ahead* and the *Canadian EMS Research Agenda* (see guidelines for education and training).<br><br>Canadian Patient Safety Institute: *Patient Safety in Emergency Medical Services: Advancing and Aligning the Culture of Patient Safety in EMS.*<br><br>Canadian Interprofessional Health Collaborative, College of Health Disciplines, University of British Columbia: *A National Interprofessional Competency Framework.* |

***Goal 5 (Continued):***
***SPECIAL NOTE: Variable Contexts of Practice***

Programs must prepare graduates for current and emerging contexts of practice, in particular (at the time of this edition), community paramedicine, in-facility roles, and industrial paramedicine. While there are numerous operational programs in each of these practice contexts, there is not yet a common definition or description of practice that can be applied across Canada. At this time, the range in scopes of practice makes it impossible to specify mandatory learning outcomes for these areas. There are, however, a number of local, provincial, national, and international resources for programs to reference. A minimum requirement for programs is to include content, learning activities, simulation, and practice education opportunities that provide awareness and experience in each of these practice settings.

**Programs must include the following:**

| Requirement | Comments/Notes | Source or Supporting Information |
|---|---|---|
| Traditional EMS contexts | Programs must include components that provide education and experience in traditional ground- and air-based emergency prehospital care EMS systems including practical experience obtained in these practice settings. | Refer to other sections in this guide as well as local/provincial profiles, evaluation requirements, operational requirements, and/or regulatory documents (if applicable). |
| Community paramedicine contexts | At a minimum, programs must include components that provide a basic understanding of the role of community paramedics. In addition, programs must meet any local/provincial operational and regulatory requirements for community paramedicine, if applicable. | Refer to other sections in this guide as well as local/provincial profiles, evaluation requirements, operational requirements, and/or regulatory documents (if applicable).<br><br>Examples of general documents that may be useful include the following:<br><br>Board for Critical Care Transport Paramedic Certification: *Certified Community Paramedic Content Outline*<br><br>Standards Council of Canada: *Community Paramedicine: Framework for Program Development* |

| | | |
|---|---|---|
| In-facility (hospital or other health facility) paramedicine contexts | Similarly, scopes of practice and practice requirements for in-hospital and in-facility practice are specific to individual programs and employers. Programs must meet local/provincial operational and regulatory requirements, if applicable. | Refer to other sections in this guide as well as to local/provincial operational programs. |
| Industrial paramedicine contexts | Different Canadian jurisdictions have specific regulations, certification, and/or licensure covering industrial paramedic practice. Programs must meet local/provincial operational and regulatory requirements for industrial paramedicine, if applicable. | Refer to other sections in this guide as well as to local/provincial operational programs. |

***Goal 5 (Continued):***
***SPECIAL NOTE: Specialty Programs***

Programs may include specialty program content at their discretion with the goal of enriching and better preparing graduates for a wide range of paramedic contexts of practice.

**Programs must include the following:**

| Requirement | Comments/Notes | Source or Supporting Information |
|---|---|---|
| Specialty programs | Programs must include some content related to specialty programs as outlined in the *Canadian Paramedic Profile*, national certification documents, and relevant local/provincial scopes of practice and regulatory documents.<br><br>There are a number of specialty programs that may be included in core paramedic education programs. This may include special skills or operational requirements (e.g., vehicle extrication, sidehill/steep slope, confined spaces), specialized training for multi-agency responses (e.g., HAZMAT, CBRNE, Tactical), or special units within an operational context (e.g., bicycle response units, mass gathering/event teams). | Paramedic Association of Canada:<br>*CBRNE Competency Profile,*<br>*Tactical EMS Competency Profile* |

***Goal 6:***

***Programs must share a health sciences background in common with other Canadian health care professions.***

**Principles or Rationale**

As the role and reach of paramedicine continues to expand and paramedics assume new and more complex functions within the health care system, it is no longer enough to build an educational foundation built on "need to know" competencies. As health care professionals, paramedics must develop an advanced understanding of health and systems sciences. The intent is to provide graduates with breadth and depth of study in common with other health care professions to support entry to practice as well as preparation for future growth and studies. In developing paramedic graduates as health care professionals, courses should foster the following:

- the ability to review, present, and critically evaluate qualitative and quantitative information to
  - develop lines of argument
  - make sound judgments in accordance with the major theories, concepts, and methods of the subject(s) of study
  - apply underlying concepts, principles, and techniques of analysis, both within and outside the discipline
  - where appropriate, use this knowledge in the creative process
- the ability to make critical use of scholarly reviews and primary sources

**Programs must include the following undergraduate-level courses:**

| Requirement | Comments/Notes | Source or Supporting Information |
|---|---|---|
| Anatomy and physiology | Introductory human anatomy and physiology is foundational to further health care studies. | Refer to institution-specific standards and post-secondary provincial guidelines. |
| Pharmacology | Introductory or second-year-level course that establishes a broad-based understanding of theory and practice in pharmacology. | Refer to institution-specific standards and post-secondary provincial guidelines. |
| Pathophysiology | General pathophysiology courses, similar to those in nursing and other health care disciplines. | Refer to institution-specific standards and post-secondary provincial guidelines. |
| Research in health care contexts and/or education | May include modules or courses such as research in health care contexts, critical appraisal of health care literature, or evidence-informed practice. | Refer to institution-specific standards and post-secondary provincial guidelines. |

**Programs may include the following undergraduate-level courses:**

| Requirement | Comments/Notes | Source or Supporting Information |
|---|---|---|

| | | |
|---|---|---|
| Applied pathophysiology | Additional depth in pathophysiology that focuses on current and anticipated paramedic scopes of practice. | Refer to institution-specific standards and post-secondary provincial guidelines. |

***Goal 7:***

***The overall goal of programs will be to prepare graduates to be self-regulating health care professionals with the professional capacity and autonomy required for employment as paramedics. This education must support community involvement (both professionally and broadly) and further study within paramedicine and related fields (e.g., clinical practice, education, management, leadership).***

**Principles or Rationale**

Programs are encouraged to provide learning experiences or courses that integrate graduates' overall educational experience and foster the personal, professional, and interprofessional capacities needed to serve their profession and their communities. Content in this area should support the following:

- the exercise of initiative, personal responsibility, professionalism, and accountability in both personal and group contexts
- working effectively with others
- professional, personal, and academic integrity
- community and professional service
- different areas of program focus or emphasis (e.g., majors) to support professional roles as clinicians, educators, managers, researchers, etc.

In addition, programs are encouraged to develop general education electives and/or life experience to support critical thinking, clinical reasoning, a holistic approach to professional practice, and the assumption of multiple roles within the profession. These courses, either in themselves or as part of the overall program, should foster the following:

- the capacity to engage in independent research or practice in a supervised context
- critical thinking and analytical skills inside and outside the discipline
- the ability to apply learning from areas outside the discipline
- an understanding of methods of ethical enquiry and creative activity in the student's primary area of study that enables the student to
    - evaluate the appropriateness of different approaches to solving problems using well-established ideas and techniques
    - devise and sustain arguments or solve problems using these methods
    - describe and comment upon particular aspects of current research or equivalent advanced scholarship in the discipline and how these are relevant to the evolution of the discipline
- an understanding of the limits to the student's own knowledge and ability, and an appreciation of the uncertainty, ambiguity, and limits of knowledge and how this might influence analyses and interpretations

| Programs should include the following: | | |
|---|---|---|
| **Requirement** | **Comments/Notes** | **Source or Supporting Information** |
| Capstone or summative project | Programs should include a program-completion project in which students integrate and synthesize their studies and experience to explore a topic or conduct research related to paramedic practice. The intent is to demonstrate depth and breadth of understanding, critical thinking, and a holistic understanding of paramedicine as a health care profession. | The Justice Institute of British Columbia's Diploma in Health Sciences (Paramedicine) includes a capstone course (JIBC, n.d.)<br><br>The University of Prince Edward Island's Bachelor of Science Paramedicine includes an elective Honours Research Thesis (BSP UPEI, n.d.) |
| **Programs may include the following:** | | |
| **Requirement** | **Comments/Notes** | **Source or Supporting Information** |
| Directed studies, such as specialty study, research, and/or study tours | Programs may incorporate non-traditional elective experiences or courses designed to develop breadth, depth, and professional or community engagement. | The University of Toronto's Specialist (Joint) Program in Paramedicine (Science) includes a course in Directed Research in Paramedicine as well as upper-level elective credits. |
| Upper-level (3th or 4th year) additional or elective courses in clinical and health sciences or advanced topics in paramedicine | Programs with a clinical focus may incorporate advanced study in subjects including human biology, physiology, pathophysiology, immunology, or advanced topics in paramedicine. | The University of Prince Edward Island Bachelor of Science in Paramedicine includes courses in Disaster Medicine and Crisis Response, Medical Microbiology, Basic and Clinical Immunology; Health Promotion, Planning and Evaluation, as well as elective credits (BSP UPEI, n.d.)<br><br>The University of Toronto Specialist (Joint) Program in Paramedicine (Science) includes a number of advanced health sciences courses in 3rd and 4th years. (SPP UT, n.d.). |
| Upper-level (3rd or 4th year) additional or elective courses in social sciences, leadership, education, or research methods | Programs may incorporate advanced study to support specialization for students who wish to prepare for additional roles in leadership, education, and/or research, which may include courses in social sciences, leadership, education, health care systems, history and issues in paramedicine, or advanced topics in paramedicine. | The University of Prince Edward Island includes courses in Critical Appraisal of Health Care Literature in the Acute Care Environment as well as Current Issues in Paramedicine (BSP UPEI, n.d.) |

## Chapter Summary

This chapter clearly demonstrates the change in focus from competencies and behavioural objectives to practitioner capabilities. The 2011 *National Occupational Competency Profile for Paramedics in Canada* listed all of the competencies and sub-competencies required for paramedic programs. It also listed the performance environments where the competencies were to be evaluated. This document contains neither. The reader is advised to refer to the *National Occupational Competency Profile* for advice on which competencies may be pertinent within a paramedic program. The purpose of this chapter was to specify goals for educational programs that are broad and far-reaching.

Paramedic programs should accept students who have sufficient secondary school preparation to ensure successful completion of the program. Academic upgrading may need to be provided when applicants fail to meet basic criteria. Too many programs in the country have traditionally accepted students who cannot write to an acceptable high school standard or who cannot perform simple arithmetic. This does not set up students for success.

Prospective students must meet the standards outlined in the Essential Skills Profile for Paramedics.

Paramedic programs must provide students with a broad-based academic foundation that will provide supplemental career paths and foster transference to other related health professions.

Programs should be based on the *Canadian Paramedic Profile* and Vision 25, thereby enhancing labour mobility initiatives and advancing practice across the country.

Programs must support a comprehensively educated and trained paramedic capable of working in a variety of practice settings. Programs should include some specialty content.

Graduates must possess a health sciences background in common with other Canadian health care professions. They should be prepared to be self-regulated professionals with clinical and critical decision-making abilities. Programs must support post-graduate study.

The overall goal of programs will be to prepare graduates to be self-regulating health care professionals with the professional capacity and autonomy required for employment as paramedics. This education must support community involvement (both professionally and broadly) and further study within paramedicine and related fields (e.g., clinical practice, education, management and/or leadership).

# Chapter 7: Perspectives in Curriculum

Understanding the nature of curriculum has become a dominant theme in the academic literature. Several perspectives have been developed by curriculum theorists that are independent of the curriculum content. These perspectives demonstrate different ways of viewing curriculum as it pertains to education and reveal important elements of required knowledge.

The point of this chapter is to understand how these perspectives can aid in the development of paramedic curriculum. The degree to which each perspective adds to content is a decision that each program developer must make. Different aspects of curriculum will be emphasized by different educational institutions. What is important is to ensure that the decisions to include or exclude particular aspects of curriculum are made knowingly and with intention.

What follows is a very short summary of the more common perspectives populating the academic field of curriculum study. In some form or fashion, **all paramedic programs must find ways of incorporating these perspectives**. What is most important is the practical application of a theoretical perspective. Key questions have been included in each section in an attempt to facilitate an understanding of how each perspective bears direct relevance and importance to paramedic curricula. The questions are intended to be a guide to the considerations that each program developer must make.

## The Political Perspective

Curriculum is never politically neutral. Political correctness is taught. All educational institutions function in political systems that determine funding and influence outcomes. More generally, there is a sense that all education should result in a citizenry geared to becoming “functioning” members of society.

Much curriculum tends to reify the dominant structures in society. It tends to silence or marginalize ideas contrary to the norm. Often program developers are not even aware that their programs teach and test various kinds of things because this was not an intentional part of their curriculum design process. Jackson (1968) called this the hidden curriculum.

Knowledge is often not obtained through formalized learning objectives, and it can occur in subtle and unintended ways. Polanyi (1958) referred to knowledge that is difficult to codify or pass on as tacit knowledge. This type of knowledge is often hidden because it is difficult to identify its process of formation.

Curriculum also tends to reproduce existing social and economic inequities. Karl Marx proposed that economic status is directly relevant to people in a number of ways. It is true also for curriculum. Economic status influences both typical curriculum and hidden curriculum and importantly, access to curriculum.

The political system both large and small directly affects the relationship that individuals have with their social institutions (e.g., the school) and ultimately their education. Agency is the capability of or opportunity for an individual to assert influence on the system, or in this case on his or her own education. Social institutions (as viewed theoretically through the idea of structuralism) work in opposition to agency and constrain or prevent individual action. There is always a balance between agency and social structure. Each program developer must weigh the balance.

The politics of curriculum is directly reflected in things like admission policy, instructor-student ratios, instructor qualifications, funding models, program resources, program length, and so on. More to the point, it is easy to see how the dominant view of particular social structures can invade curriculum in hidden ways if the instructors teaching the program do not understand the social factors at play.

*Questions Emphasizing the Political Perspective*

*Does the curriculum reify some of the grand societal metanarratives including democracy, capitalism, socialism, neoliberalism, modernity, emancipation, humanism, and so on? Is this done overtly and with reason, or is it unknowingly done or not done? Do the instructional staff understand these concepts?*

*What pieces of curriculum are deprived of resources because those resources are needed elsewhere?*

*How does the curriculum build upon the tacit knowledge derived from cultural resources that a student already possesses?*

*Does the notion of class (e.g., middle class vs. lower class) play into access to your educational institution? Does the tuition difference between a public and private educational institution play into this?*

*How do you teach students to understand their own advocacy positions without reifying or reducing them to those positions?*

## Cultural and Racial Perspectives of Curriculum

Cultural identity is historically predicated on the exclusion of some “other.” Therefore, any curriculum within a culture will tend to favour the dominant group privileged in the culture. Traditionally, racial understandings have strongly influenced the notion of the dominant group. Segregation of Black and White students in the public school system is but one example. However, there are subtler implications for curriculum than outright racism.

Multiculturalism is the idea that multiple cultural traditions should be promoted within a single country. However, this often hides the fact that there is a tendency to treat cultures other than the dominant one as exotic and monolithic (e.g., the “noble redskin”). Cultures also tend to be represented as food and festival events, as if a culture can be learned in the length of time it takes to witness a dance or eat a particular food. More worrisome is the idea that racism then becomes regarded as a series of isolated individual events and not as an overarching societal concern. Any work that is done is often about building bridges from one group to another rather than focusing on fundamental change to the nature of the racial or cultural relationship.

More broadly, European culture has rewritten history in ways that demean and diminish the culture of indigenous peoples. It has become so hegemonic that the interpretation of aboriginal culture typically only happens through its lens. Post colonialism provides a way to look at this phenomenon. It is the idea that European colonialism has produced within its colonies effects relevant to the present day.

Emancipatory pedagogy in some ways has come to perpetuate the hegemonic view. It is the idea that curriculum should empower individuals and societies to improve their social and economic position. The problem is that it too is subject to European notions of what this means. For example, the common idea that “America is the land of opportunity” or that people can “live the American dream” is more about buying a home in suburbia with a two- or three-car garage than it is about economic or social equality.

An idea becoming more popular that tries to transcend cultural and racial inequality is the idea of citizenship. This is no longer about swearing allegiance to a particular nation-state. Rather it is the idea that there is an essential social contract between citizens and the society in which they live. There is an implied obligation to generally act in a manner consistent with the public good. Of course, how “good” is defined remains a source of debate.

Race and culture are embedded in curriculum. The questions below require a consideration of this perspective specifically within the context of paramedicine.

*Questions Emphasizing Cultural and Racial Perspectives*

*What is the difference between the concept of the nation and the concept of the state, and how might this distinction inform an understanding of First Nations in Canada?*

*How is the report of the Truth and Reconciliation Commission of Canada being incorporated into curriculum? How is it relevant to frontline paramedics? Is your answer simply a "politically correct" one, or is there more to the document than that?*

*Why does the make-up of the paramedic work force remain so culturally and racially homogeneous? What is your curriculum doing to introduce cultural and racial diversity into the workforce?*

*A lot of time and effort is allotted in curriculum to deal with the recognition and management of cardiac events. Malnutrition, psychological issues, and cultural sensitivity education receive much less time even though they clearly have a great impact on society as a whole. Does your curriculum address the idea that arises that one primary purpose of paramedics is to essentially save the lives of rich people and that the disadvantaged do not qualify for the same intensity of care?*

*What in your curriculum attempts to educate people to be more contributing members to society?*

## Gender-Related Perspectives

It is increasingly recognized that gender is a social construction. Transgender issues are now regularly making the Canadian news. To understand the relationship between gender and curriculum is to understand the unequal ways that people are treated due to their gender and sexuality. Subjecting curriculum to feminist analysis or applying queer theory to an understanding of educational discourses reveals that social structures are heavily influenced by the dominant gender paradigm. In other words, curriculum always tends to focus on one view of gender and more specifically on one gender. It is consequently male centered. Paramedic curricula is no exception.

Sexual stereotypes abound in curriculum. Feminist analyses of curriculum in the 1970s have demonstrated that grade school girls tended to be portrayed in curriculum materials as passive, manipulative, delicate, dependent, cautious, lacking initiative, and lacking imagination. Boys were imagined as the opposite. The dichotomy between the two genders finds ways to persist

to the present day (Pinar et al., 1995). The fact that the dichotomy is a demonstrably false one, and that it still often goes unrecognized as such, reveals that much work remains to be done.

Feminist discourse is multifaceted and complex, and no brief introduction can do it justice. Nevertheless, it is important to realize that much about what we know with respect to social interaction either originally arises out of feminist research or has been substantially impacted by feminist research—for example, Janet Miller's (1982) work on "creating space and finding voice." Collaborative communities can be fragmented; how do relationships exist within these communities? How are some voices heard, and others are not? What does it mean to create a space for discussion? Communities of practice, now a buzzword for innovation, cooperation, and advancement, rely for their success on concepts pioneered by feminists.

Queer theory exposes the contradictions inherent in traditional understandings of the relationships between sex, gender, and prevailing social norms. It challenges conventional understandings of how sexual orientation and perception (e.g., homophobia) really play out in the world. Sex and gender are categorized in particular ways based on assumptions that they are immutable and sacrosanct. Variations are predominantly seen as deviant. Queer theory challenges these assumptions.

In the public school system, transgender issues are now being publicly raised, most commonly around issues of access to particular facilities such as washrooms but also with respect to bullying and "solutions to the problem." Transgender identity is still largely framed in a negative context.

Within health professions, we are only seeing the tip of the iceberg. A great deal of what occurs currently in health care presumes the predominant view of both gender and sex. This is especially true for health care practitioners. Employees face institutional expectations admittedly different but categorically perhaps not far removed from similar expectations made of female teachers in early 20th-century schools—for example, expectations related to behaviour, in the way of mannerisms and dress both at and away from work.

Gender-related issues are numerous and varied. They are typically polarizing and not subject to easy or universal resolution. Yet these issues already exist in curriculum, though for the most part, they are buried deep within unrecognized assumptions. It is hoped the following questions will cultivate a better awareness of these ideas so that curriculum developers can more carefully consider the ramifications that these ideas bring to bear on the paramedic profession.

*Questions Based on Gender Perspectives*

*How is gender bias built into the tools that paramedics use? How is it built into protocols or how protocols are built? How are these biases incorporated into the skills manuals that exist within a paramedic curriculum?*

*Is there a balance of women and men within the instructor cadre? What are the implications if there is not such a balance? Are the instructors aware of the nuances of feminist or queer theory?*

*Why do women typically exhibit "atypical" signs and symptoms when they are having a myocardial infarction? Why do men have typical symptoms? Is there a physiological answer to this question that ignores a gender perspective?*

*Some consider paramedicine to be professionally subordinate to other professions, such as medicine or nursing. How might a paramedic curriculum incorporate feminist theory to advocate for professional equality?*

*What impact, if any, should queer theory have on a professional code of ethics? Do the ethical statements on professionalism reify and reinforce the dominant paradigms of sex and gender? How should curriculum deal with professional dress and demeanour?*

## Lived Experience (Phenomenological) Perspectives

The essence of the phenomenological perspective is that what someone knows and thinks flows directly from who that person is. Experience happens first, and it is thought and written about afterwards. This view rejects the idea that reality is logical and that empiricism (as in the scientific method) can account for the way the world is experienced by a human being. Each person lives in the world and has a "lifeworld" that is central to all that person does.

Ordinarily people are not even aware of the intricate details of their lifeworld because they are immersed in it. They cannot see the forest for the trees. It takes some type of shock to get individuals to notice certain things in their lifeworld. This results in an attunement to the world. Curriculum must form a connection to a student's world and similarly provide the shock to shake the student out of equilibrium with life. An instructor has to know students in ways that allow an understanding of how they see themselves in the world.

Each professional world has a set of beliefs that constitute its reality. Paramedicine, for example, is authorized as a profession by a series of beliefs that give it credibility. Paramedicine needs to be more evidence-based. Paramedics are dedicated professionals. Access to an ambulance is a fundamental right. These types of beliefs are not universal truths. Rather, they are an imagination of what medicine is in this culture at this time. The beliefs themselves are socially constructed, which is to say that different cultures will determine what socially acceptable beliefs should be. Consequently, there is a professional social imaginary for each profession that can be different in different places and at different times. Paramedicine is no different.

The trick is to connect the lifeworld of the individual into the professional social imaginary of paramedicine. To say this in another way, the lifeworld becomes the professional social imaginary. The professional code of ethics is not followed; it is lived. The standards of practice become innate in practice. They are not applied as an afterthought. In this way, they can be thought about after they happen.

Communities of practice are phenomenological when they allow experience to simply arise. In a community of practice, experience is lived because it plays out naturally in unanticipated ways through an interaction with others. How this works will be different for everyone. Yet communities of practice generate meaning making, not because they are intended to do so (even though they are) but because they enable an environment where new meanings can be generated.

Similarly, training simulations are at their most effective when viewed as real experience and not as simulated experience. A simulation is a simulation for the patient, not for the practitioner. This is not an academic point. The paradigm case for myocardial infarction, which is to say the case of how a student views and understands myocardial infarction, may have been a simulation in a paramedic school lab.

Tone is also important. All good instructors and actors understand how the inflection of voice can drive home a point. The tone of teaching is about meeting people where they are. Teaching is not evaluation. It is about finding the experience connection and helping students or peers to develop the understandings they need to become professionals. Tone of voice carries a wealth of information that can be both positive or negative. In the age of digital media, tone is also transmitted by the written word. Individuals create meanings based on their perception of what is being said, be it verbal or written.

Finally, it is important to touch upon narrative and especially professional narrative. This relates back to the professional social imaginaries previously discussed, but it also juxtaposes work and play. Stories carry a connotation that sets people at ease. However, they can also contain a warning, and once loose on the world, stories cannot be retrieved. We need to be careful about the stories we tell, because we are the stories that we tell about each other and about ourselves. For new students, who harken to every word spoken, instructors can be like gods,

instilling values never to be abandoned. Unfortunately, as experience has shown, this is not always for the good.

*Questions Based on Lived Experience*

*Does the curriculum of your program reify the social imaginary or construct it? How does curriculum connect the lifeworld of a student with the social imaginary that is paramedicine?*

*How does curriculum anticipate a collision between one student's lifeworld with another?*

*What does it mean to students or instructors in your program when you say that curriculum is a living document? How does the living document intersect with the lifeworld of the student or the instructor in ways that allow learning to emerge?*

*How does curriculum enable instructors to tell stories? What stories are they encouraged to tell and which ones are they encouraged to abandon?*

*Various pedagogical methodologies exist from lectures to laboratory practice to simulation to on-ambulance calls. In the 2011* National Occupational Competency Profile for Paramedics in Canada *document there was a pedagogical hierarchy of academic, simulation, clinical, and ambulance. How does a curriculum perspective of lived experience alter the way that teaching and evaluation are understood in your educational program? What does it say about their hierarchy?*

## Autobiographical Considerations and Perspectives

An autobiographical perspective directly challenges any curriculum that focuses on behaviourism and behavioural objectives since it forefronts valuation over learning. This perspective then is contrary to traditional curriculum development in paramedicine.

It has much in common with the lived experience perspectives and gender-related perspectives already discussed. For example, it stresses the importance of voice in ways similar to a feminist perspective or a lived experience perspective. However, this perspective really does stress the individual person and the ways in which identity develops in a person.

For example, it is well known that role models play an important part in education. However, how do people become role models, and do they acknowledge that they are role models? Some say, "Do as I say, not as I do" while others "dress for the job they want not the one they have."

One thing that role models are able to do is to work from inner sources of insight and imagination. As we know, when things are difficult, some people are the worst they can be and others are the best they can be. Role models have this piece figured out.

Ethically, role models live the role. Codes of ethics are not add-ons to behaviour. Instead, professional behaviour is the outcome of the person. Teaching a code of ethics as if it is a behavioural objective to be evaluated makes it a parrot phrase. The key is to find ways to have individuals incorporate a professional ethical system into their identity as opposed to fulfilling a behavioural objective that says, “Define ethics.”

An autobiographical analysis on oneself might well be a prerequisite requirement of being a paramedic. Presumably, at a minimum this involves a deep introspective analysis of one’s psychological readiness. How will you react at the scene of a car crash involving fatalities, or when a mom puts a dying baby in your arms? Can you handle it or learn to handle it? Alternatively, will it lead to a mental health or posttraumatic stress injury?

An autobiographical perspective acknowledges the importance of reflection in learning. However, in this connotation, reflection is not just “thinking about” something. It is a deep-seated analysis that questions existing assumptions and changes them. It is the “eureka” moment, the “aha” moment. It is revelation. This means real reflection does not happen often, and it must be learned. Reflective journals are a common ingredient of curriculum, but they are more about lived experience than they are about reflection. There is a place for them in the documentation of lived experience, but from the autobiographical perspective, in most cases reflective journals are not really reflective at all. Such journals reify existing thought; they do not produce a “eureka” moment.

Imagination is a key aspect of autobiographical thought—not in the sense of fantasy, nor in the sense of a social imaginary but in the sense of broadening the vision of one’s identity. Some paramedics understand that they want to be the paramedic they imagine themselves to be. This circles back to the role model. Imagine yourself to be something (e.g., a skilled paramedic), then be it. Don’t try and be it; be it!

*Questions Based on an Autobiographical Perspective*

*In your curriculum, what is a role model supposed to model?*

*How does curriculum allow a student or instructor to identify with a code of ethics?*

*How do you teach students (when things are really bad) to be the best they can be not the worst they can be? Is this a basic requirement for being a paramedic? Is it even possible to teach this?*

*How does your curriculum prepare students for the psychological trauma that lies ahead? Is there a provision to help some find a different career path?*

*How does your curriculum teach reflection?*

*What is the role for simulation in broadening the imagination? How can curriculum facilitate this?*

## Aestheticism as a Perspective

It has been said many times that paramedicine is both an art and a science. If this is true, then the aesthetic perspective most deals with paramedicine as an art form. It is an art form not just as some type of mystical ability to get the job done (it is this too) but also as an aspect of beauty, as a manifestation of popular culture, and as some form of collective creation.

There are movies made about paramedics, plays created, songs written, pictures taken, poems recited, and caricatures painted. These things all tell a story about the profession, the patients, the professionals, and sometimes non-professionals that make up paramedicine. Some of these things are really well done; others are not. How do we learn to do these things? Not typically from paramedic curricula. The question then becomes why? Why, if paramedicine is about art, do we not teach the art of paramedicine?

Popular culture is a powerful dynamic in every profession. It is the means by which the professional social imaginary is altered because popular culture can subtly convince us to rethink what the profession is, often without an awareness that this is even happening. Art can be the strongest political text. It can inspire a generation, or it can indoctrinate an entire population.

Teaching is an art form. Preceptors and Instructors must therefore be artists to some degree. Eisner (1985) identifies four ways in which teaching is an art form. First, there is the sense that teachers are sufficiently accomplished in the craft and know what they are talking about; it is

simply a wonder to be taught. Second, teachers can adjust the process of teaching by adapting and changing tone of voice, timing, or sequence to get a result that plays to the audience in a most beautiful way. Third, teachers who are on their game can spontaneously call upon some routine or repertoire, a bag of tricks, a quote from literature, or an example from experience to drive home the lesson. Finally, great teachers can welcome an unlooked for, unanticipated outcome of a lesson and make it *the* lesson.

*Questions Based on an Aesthetical perspective*

*How does your curriculum empower your instructors to use art as a method of teaching?*

*How does a magazine like* Canadian Paramedicine *contribute to the popular culture of paramedicine? How does this fit in curriculum? Does it fit in curriculum?*

*Does your educational institution advocate some form of excellence in teaching program for your instructional staff? What part does aestheticism play in this?*

## Postmodern Perspectives

*Postmodernism* is a term used to describe a host of recent social movements. There is, for example, postmodernism in art, in architecture, and in historical analysis. What is of concern here is postmodernism in education and specifically curriculum. Essentially, postmodernism challenges some of the basic assumptions of modernity. Perhaps the most important idea of modernity is the idea of the metanarrative—an absolute truth on a big scale. Democracy and capitalism are two examples. Postmodernism would say that there are no metanarratives. The idea of democracy exists, of course, but nobody really knows what it means, and its definition and understandings of it change with time, place, culture, and so on.

In some ways the entire health care system (where physicians are considered the health experts) has become a metanarrative. However, in the last few decades the physician as the expert has been challenged, and this can be seen in the rise of allied health professions, such as midwives, acupuncturists, chiropractors, and so on. Paramedicine is a type of postmodern challenge to traditional medicine but also does not escape from the baggage of modernity. Paramedics are often viewed as heroes, which is also a metanarrative. Paramedics are seen as providing equal care to all, the noble ideal of another metanarrative.

Deconstruction is the idea that everything we know is based upon assumptions of what constitutes the real. For example, it does not work to ask what is the good, or the true, or the beautiful, or the just; rather it is important to investigate what kinds of narratives and stories have created each of these as essential and universal truths. In postmodernism, there is no universal truth.

Another postmodern concept worthy of consideration is poststructuralism. In short, this is the idea that the structures we create to describe something misrepresent the world. Poststructuralism opposes the idea that a series of behavioural objectives or a series of task sets could define a paramedic. Poststructuralism would say any series of categories to describe paramedics would be based on assumptions that can and do change depending on circumstance or upon the individual making the classification system.

Postmodern thought can have a dramatic influence on epistemology (the study of knowledge). Some people understand knowledge as being immutable. Once you know something, you know it. However, this is not the view of science. What constitutes knowledge can change. Knowledge is theory driven. You know what you know based upon assumptions you have about what you know.

*Questions Based on a Postmodern Perspective*

*Is the necessity for evidence-informed medicine a universal truth? What assumptions are built into evidence-informed or evidenced-based medicine? Does evidence-informed medicine ever work contrary to clinical judgment in the provision of care?*

*Does your program teach students to follow clinical protocols? What is the limit of a protocol? Can you have a protocol for everything? When might following a protocol be detrimental to the patient? What does requiring paramedics to follow a protocol teach them about their own clinical judgment?*

*What is meant by the term* evidence*? Does evidence have the same meaning in medicine as it does in education? Where does paramedicine fit?*

*How do you know what you know? How does uncertainty with knowledge relate to confidence in treatment?*

*How does your curriculum demonstrate that pass/fail criteria do not equate to truth?*

*How does your curriculum portray the instructor-student dichotomy? Is such a dichotomy always valid?*

## Ontological and Theological Perspectives

Ontology is how you understand your existence in the world. Why do you exist? What is your purpose in life? Everyone comes to terms with these questions, and the answers help to make up a person's worldview. Heidegger (1962) said that we are "thrown into the world," and we

carry baggage into the world with us. The baggage we bring includes our gender, body type, geography of birth, family social structure. In the beginning these are things we cannot change, and consequently we must learn to deal with them as we move through life. Ontological concerns overtly ignored by curriculum manifest in the hidden curriculum.

Most recently, medically assisted death has become a frontline social issue. It is now a legal responsibility in Canada for the medical system to provide assistance in death. This issue has become polarized due to different views of death and dying. In Alberta in 2016, Catholic hospitals opted out of any procedures related to assisting patients to take their own life. It seems likely that in the not too distant future paramedics will be enabled to assist patients in taking their own life. This will place a dilemma on those who find it contrary to their ontological system of belief.

It is perhaps not well recognized that professional codes of ethics have profound ontological implications. For example, paramedics are taught to put their own safety first, to check for hazards, and to avoid dangerous situations. This is built into liberal ethical models that put the rights and freedoms of the individual first. However, in a pandemic system or in a fire (Fort McMurray, 2016) or in a flood (Calgary, 2013; Ottawa, 2017), emergency systems expect their members to forgo their individual rights and their claim to safety in order to fulfill the needs of the community. This is an entirely different system of ethics. In this case, the model is a communitarian model. An ethical model is not something that can be switched in a moment, yet that is what is expected of emergency service personnel. This exists as a profound challenge to curriculum, yet it largely goes unrecognized.

Ritual is common in paramedicine. It is most clearly seen in memorials and ceremonies. Paramedics owe part of their history to the military, and it shares with the military some common ideas around both memorials and ceremonies. The Canadian Paramedic Memorial Foundation is committed to the creation of a national monument for paramedics killed in the line of duty. The idea that there should be a monument to fallen paramedics says something about the identity of a profession that is different from other health professions.

Ceremonies also take on a distinctive paramedic flavor. Uniforms are still a part of ceremony. Ritual still happens at our ceremonies. We have the Canadian flag there. We sing the national anthem. We make vows of allegiance and promise. However, how is all of this taught?

*Questions Based on an Ontological and Theological Perspective*

*In your program, is there a dress code? Are your students or instructors required to wear uniforms? Why?*

*Paramedics are increasingly involved in end-of-life care. How does your program prepare paramedics for this?*

*What does your curriculum teach about a practitioner opting out of legally authorized medical procedures?*

*Does your program require students to be vaccinated? If so, how do you deal with those who feel it is an infringement on their human rights?*

*How does your program attempt to instill both a liberal ethical model and a communitarian ethical model into your students? What ethical model do your instructors primarily believe?*

## Institutional Considerations

Every educational institution will have unique challenges and perspectives that will affect curriculum. Institutions will operate within funding models that affect their operations. Policy will outline the process and timelines for curriculum change. In many ways, institutional constraints will take precedence over all other considerations. This makes it all the more important for institutions to enshrine in their curricula the perspectives already exemplified.

It should be understood that curriculum planning is important, but sadly, many institutions do not appropriately plan. Planning is not just making course summaries and listing behavioural objectives. It must involve all aspects of the educational process. Certainly, the plan must coincide with the educational mission of the particular educational institution. A key part of the plan is the process of implementation.

There are at least three major approaches to curriculum implementation (Pinar et al., 1995). The fidelity approach to implementation is a three-part process. Typically, the curriculum is developed by experts who are not the program instructors. There can be considerable debate over what constitutes an expert. The instructors then implement the curriculum innovations developed. Finally, the curriculum is evaluated to determine if the planned objectives have been met. This approach tends to be linear, and checklists are frequently used for all parts of the approach.

A second major approach is mutual adaptation. In this case, adjustments to curriculum are made both by outside experts and those who use and adapt the curriculum within the program. This gives greater responsibility to individual instructors and correspondingly requires a higher degree of qualification among the instructors with respect to curriculum development.

A third approach, less frequently used, is curriculum enactment. In this approach, the curriculum materials and instructional strategies created in the other two approaches are viewed as tools to construct experience. Other tools can be added as required, and so there is some real-time flexibility in the way the curriculum is both interpreted and enacted.

Whatever the approach chosen, a method of evaluation will need to be applied to confirm success. What constitutes success? This question is not easily answered. Certainly, the outcomes of the program must correspond to some preordained parameters, such as graduate employability statistics. Alternatively, it could be measured in reference to the requirements of an external accreditation entity.

In many ways, success will be more subtly measured. This could include student satisfaction with the program, student involvement in curriculum, former students becoming instructors or becoming involved on the provincial or national stage, and so on. In any case, a careful consideration of how these aspects play out within an institution should be considered a necessity.

*Questions Based on an Institutional Perspective*

*How does your educational institution support an external accreditation process? Alternatively, why does your institution not support such a process?*

*What type of curriculum implementation process does your program use?*

*How are your instructors involved in the process of curriculum implementation and evaluation?*

*How well does the program facilitate access to higher levels of education?*

## Further Reading

An excellent textbook and one upon which this chapter is primarily based is *Understanding Curriculum* (Pinar et al., 1995). A more through explanation as to the perspectives stated here can be found in this text, which is still used in Canadian university curriculum courses.

# Chapter 8: On to New Beginnings

## History and Development of Paramedic Education

Paramedic education continues to evolve. In a general sense, paramedicine has two simultaneous origins. One arises directly from the battlefield, where in the late 1960s and early 1970s American military medics arriving home from war began to use their experience and skill with trauma on urban ambulances. The second involves the transition of life-saving cardiac procedures such as defibrillation and cardiopulmonary resuscitation from the hospital operating room (and later the hospital emergency room) to the street.

Early emergency medical technician and paramedic programs focused on skill development and decision-making under direct medical control or medical supervision. These early programs were often post-employment, in-house training programs that provided advanced first aid in practical contexts (Kilner, 2004). Advanced care programs focused on specific topics such as the management of cardiac arrest and myocardial infarction. Training was often developed and delivered by medical and nursing personnel with backgrounds in emergency medicine, although experienced ambulance personnel were soon included in program delivery (Kilner, 2004).

Through the 1970s and 1980s, ambulance services developed into emergency medical systems with basic and advanced life support capability. Training programs became increasingly rich, maintaining a focus on resuscitation while extending the breadth and depth of topics such as cardiovascular and respiratory emergencies and medical procedures (Vertesi, 1978). Many programs included significant clinical (in hospital) and field practicum time (Kilner, 2004). Training programs retained a strong focus on skill development and mastery-learning methods but adopted cognitivist strategies such as the use of algorithm-based procedures, simple-to-complex curriculum structures, and advanced organizers and media. Following the lead of medical education and other professional education models, many programs initiated a process of first establishing foundational clinical science knowledge with subsequent application of this knowledge to the development of skills and procedures. These were then utilized and evaluated in the clinical setting.

Paramedic curricula have continued to advance in both sophistication and depth of content as Figure 3 illustrates. The 2001 *National Occupational Competency Profile for Paramedics in Canada* provided a foundational set of expectations that programs across the country could use to develop curricula at the Emergency Medical Responder, Primary Care Paramedic, Advanced Care Paramedic, and Critical Care Paramedic levels. Advances in both technology and medical practice have increased the scope and complexity of paramedic practice in Canada, particularly at the Primary Care and Critical Care levels. The 1990s and early 2000s saw an increased focus on the paramedic as a clinician requiring strong patient assessment and clinical reasoning skills. This, in turn, required development of a stronger academic foundation, particularly in the clinical sciences such as anatomy, physiology, pathophysiology, and pharmacology. Paramedic

programs set in the post-secondary environment were developed as one-, two-, and three-year certificate and diploma programs, often with inclusion of foundational academic courses. Trends in adult education prompted an increasing use of constructivist and social constructivist approaches. Consequently, many programs employed enriched media and distance or distributed learning methods.

At the same time, however, practice has retained a focus on life-saving topics and technical competence. Currently there remains a strong focus on medical direction, where the medical directors are physicians who guide or direct paramedic practice through written protocols or guidelines. However, this is starting to change.

The recent development of new acts, regulations, and initiatives in provinces across the country coupled with new national projects has increased the complexity of the educational undertaking. The diagram below demonstrates the emerging complexity of education in 2017 and shows that program development cannot occur in isolation.

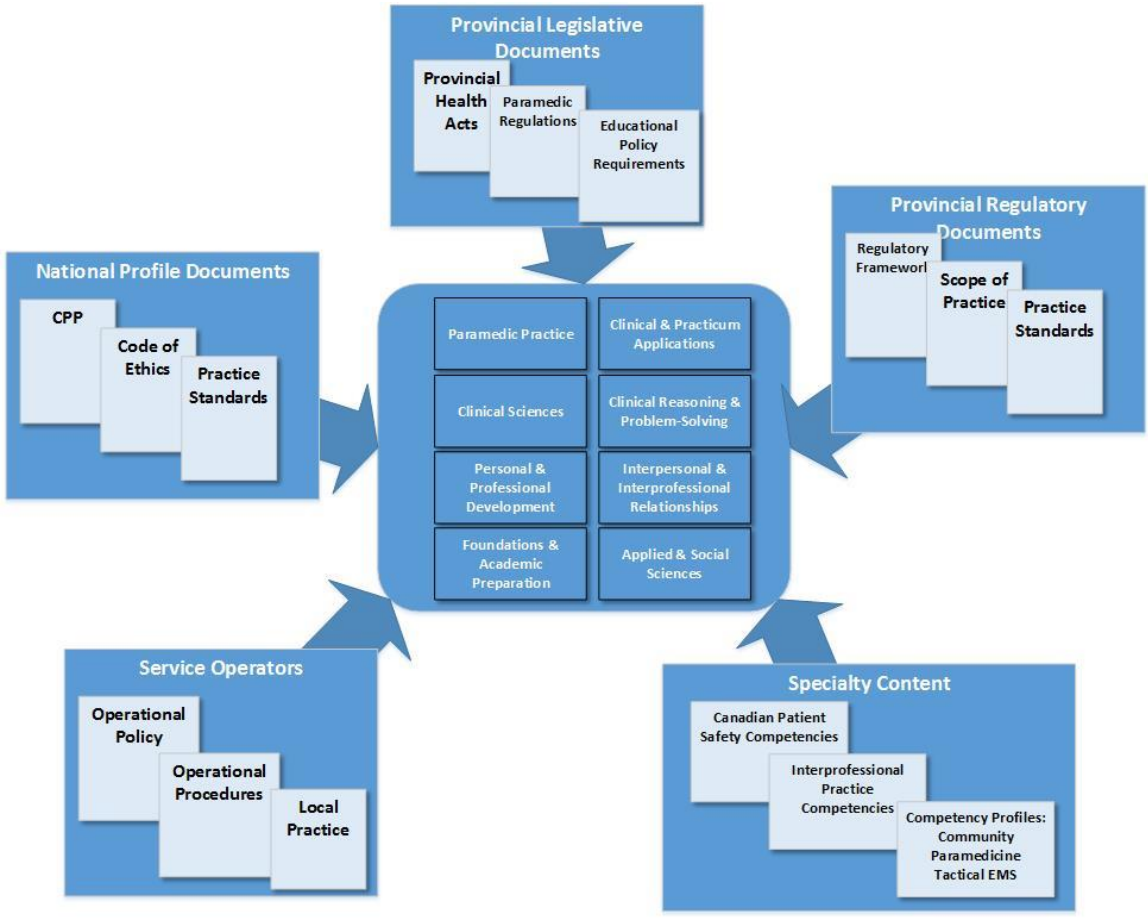


Figure 3. Factors influencing paramedic curriculum content.
*Note.* CPP = *Canadian Paramedic Profile*; EMS = emergency medical services.

## The Trend to Self-Regulation

In Canada, self-regulation within the field of health care started to gain traction in the 1980s. Paramedicine, traditionally viewed as an emergency service and not as health care, was left out of such discussions until relatively recently. Governments are now beginning to view paramedicine as a profession that can supply innovative solutions to age-old health care problems. Consequently, governments are providing paramedics with increasing responsibility and the appearance of professional self-regulating colleges are the result.

New Brunswick led the country with legislation that for the first time in Canada removed the requirement for physicians to oversee paramedic practice. This groundbreaking event happened through the proclamation of the Ambulance Act on April 15, 2008. It was eight long years before another province followed. Finally, on September 15, 2016, Alberta enacted the Paramedics Profession Regulation (within the Health Professions Act), enshrining paramedicine as a profession of independent practice.

While Saskatchewan has long had a regulatory college (the Saskatchewan College of Paramedics) and Nova Scotia just established a college on April 1, 2017, under the new Ambulance Act, both still have paramedic scopes of practice under the control of physicians and their provincial legislation still enshrines medical control through physicians. Manitoba is set to become the third province enabling fully independent paramedic practice. In June 2018, the Manitoba Minister of Health announced that the profession of paramedicine has been added to the list of self-regulating health professions governed under the Regulated Health Professions Act. After years of idleness, the entire profession across the country is on the move.

Similarly, a number of trends are converging to bring into focus the need for a fundamental reimagining of paramedic education. Emerging roles in industry, community paramedicine, and other non-traditional practice settings are highlighting the gaps in a paramedic's general health-related knowledge and skill base. The transition from an emergency service focus to recognition of paramedics as health care providers further emphasizes the need for a more broad-based education that includes a similar foundation to that of other health disciplines. As the discipline moves towards recognition as a health care profession, education must further expand to incorporate and foster professionalism, reflective practice, and a commitment to continuous personal and professional development.

## Evolving Dimensions of Care

Paramedicine has grown internally through the maturation of practice and practitioners at the street level, technological advances, and the implementation of evidence-informed practice. At the same time, paramedics have increasingly taken on new responsibilities in diverse practice settings in order to meet patient care needs within an evolving and stressed health care system (Bowles, Van Beek, & Anderson, 2017). This evolution of the profession has included increased

scopes of practice as well as new practice contexts such as industry, hospitals, health facilities, and community settings. The boundaries of paramedicine have grown substantially and now overlap with multiple other health and emergency service disciplines. Given that paramedics now provide care in a variety of practice locations as well as in a variety of care models, curriculum delivery must address these variable contexts of practice.

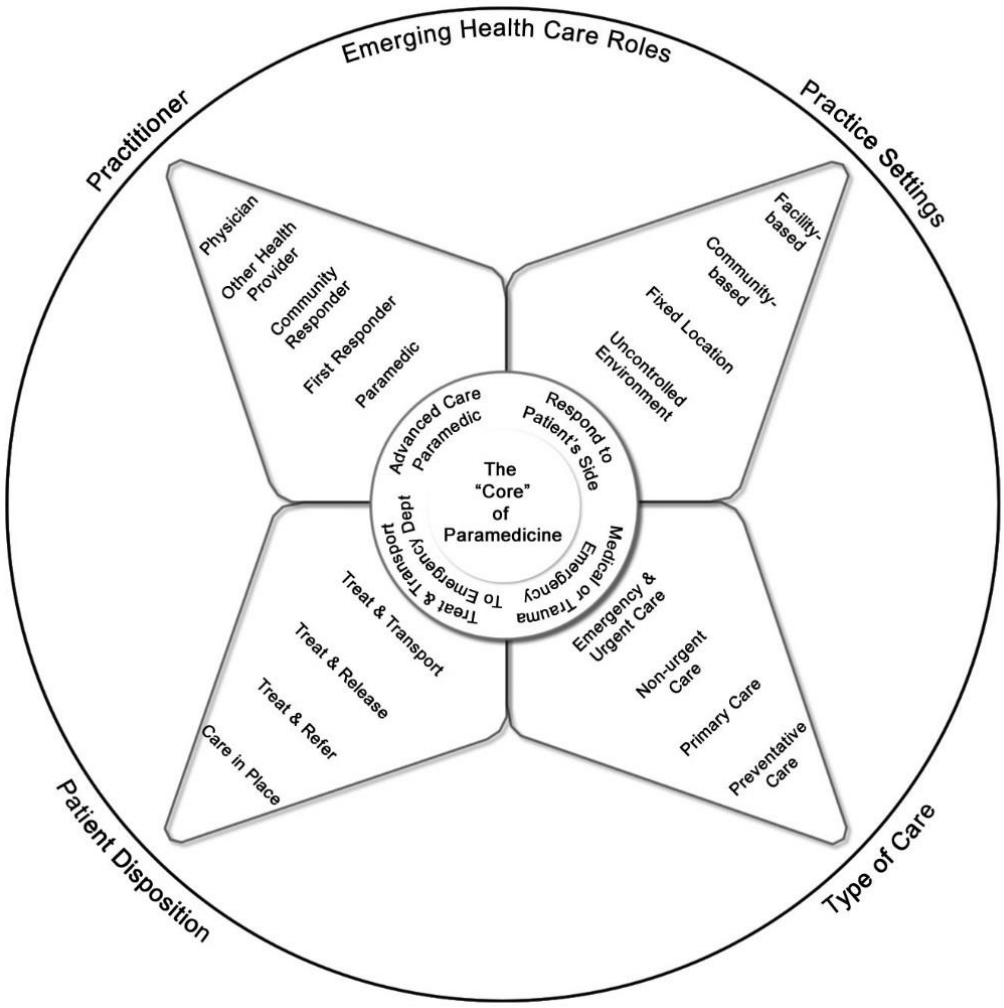


Figure 4. Domains of paramedic practice (adapted from Bowles et al., 2017).

The figure shows the core conception of paramedic practice is a response to the patient's side to assess, treat, and transport the patient to hospital. Characteristics of new and emerging operational functions and settings are arranged hierarchically, with more traditional aspects nearer the origin and newer roles that overlap with other health care disciplines farther from the origin. Note that different types of paramedic programs may emphasize different blends of these dimensions. "Traditional" paramedic programs that emphasize land- and air-based ambulance response focus on the characteristics closest to the origin: out-of-hospital response for urgent and emergency medical care and transport. Roles such as industrial paramedicine

and location-based care (e.g., mass gathering medicine, “storefront” posts) also include urgent and definitive care involving treat and release protocols. Community paramedicine programs vary in depth and breadth but may include providing primary health care and preventative care with options for treating in place and referring to other health providers. More research is required to understand the educational requirements for increasing scopes of practice, differing contexts of practice, and new forms of patient disposition decisions. It is worth noting that the more practice differs from traditional EMS response, the greater the change that will be required for programs to prepare students.

### Embedded Relationships

Paramedic practice is embedded in a number of relationships that optimize patient care. Paramedics are required to form strong linkages with a variety of stakeholders ranging from patients and families to other health care professionals and regions. Health care often begins with paramedics, who are often the entry point into primary care for patients. Paramedics must be able to function within their respective systems to optimize patient care. Paramedic encounters with patients involve mutually dependent health, social, and psychological factors. While these may vary from encounter to encounter, paramedics should be able to act on needs that go beyond the acute event and provide care that extends into the social and psychological continuum. The relationship between patient and paramedic remains the centre of paramedic education, but as the roles of paramedics expand, education programs must incorporate these broader relationships as well.

### The Health-Social Continuum

The concept of the health-social continuum has emerged as a discussion on the increased non-patient-care expectations demanded of practitioners. In many ways, paramedics are social workers as well as health care workers. The concept of the continuum is that the patient is always embedded in a series of social and cultural contexts. On some calls, the social aspects have little impact (e.g., a pedestrian struck with multiple traumatic injuries); on other calls, the injuries or medical condition is relatively minor, but there are major social dilemmas (e.g., domestic abuse or neglect). As paramedics move into broader response roles, these social aspects are an increasingly important part of practice.

Paramedics practice from a unique and privileged position, often encountering patients within their personal setting. Thus, paramedics have access to information about the patient’s immediate environment and social and cultural context that is not always available to other health care providers. These health and social factors are always present in any patient encounter, but their importance may differ from call to call. Often, the precipitating health problem is the key aspect of the patient encounter. However, in some cases, the patient’s health problem may be secondary to underlying social determinants of the patient’s health and well-being. Paramedics must consider, adapt to, and integrate this constantly changing and unpredictable mix of health and social needs into their interactions and care for the patient.

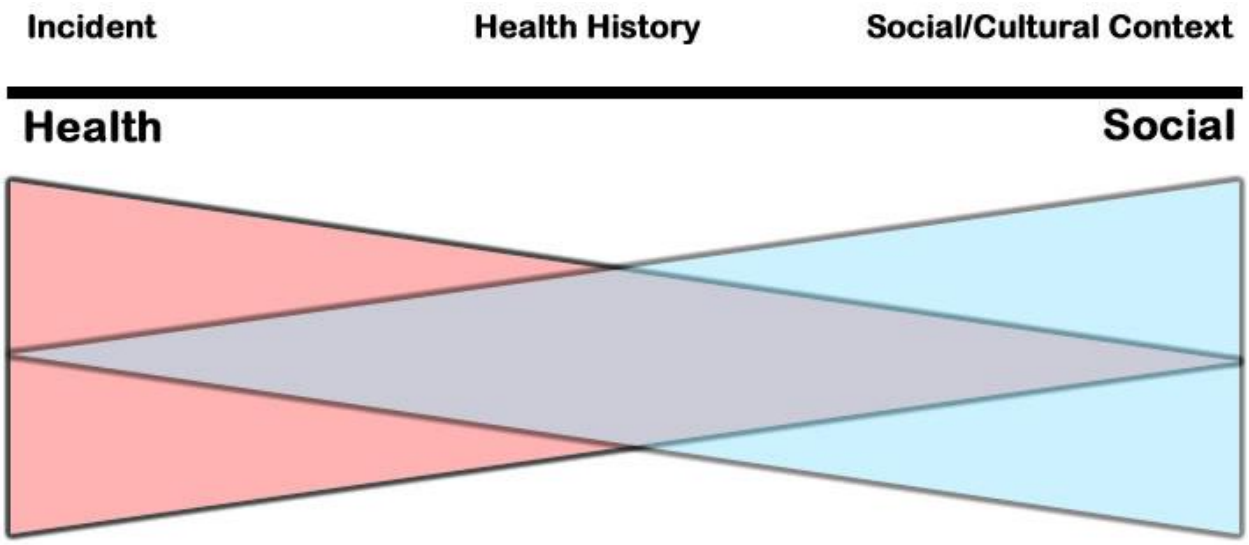


Figure 5. Health-social continuum.

The concept of the health-social continuum calls on paramedic educators to move well beyond a traditional focus on differential diagnosis and patient care. Embracing the continuum involves building richer learning environments and simulations that include more of the complexity of the real world, and linking and embedding these concepts across the curriculum.

## Conclusion

Some of the content in this document is meant to be prescriptive and authoritative so that it can be used by accreditation agencies. Other aspects are meant to facilitate thoughtful innovation that can broaden and deepen institutional curriculum. Concepts and discussions are provided as guidance and as starting points to encourage educators to be mindful and informed as they develop their curriculum. We encourage innovation and exploration of how to improve paramedic education, and just as strongly, we encourage evidence-informed and thoughtful use of current and best practices.

The goal of this document is not to prescriptively outline how paramedic education programs must develop their curriculum. Rather, the goal is to bring attention to aspects of teaching and learning in relationship to Vision 2025 that will allow paramedic educators to intentionally develop effective and exceptional paramedic education programs. This document supports that goal by providing guidance through a series of discussions and resources.

Because accreditation agencies will use this document, requirements have been listed. This has been done to provide clarity for what a summative review might require. The authors have examined the evidence and where possible we have relied on this to guide the requirements. However, all too often, the evidence has been insufficient, and so in a great many cases, we have relied upon our experience and expertise to determine reasonable requirements. Because

we have written these requirements, they can be changed in subsequent editions of this work. Such changes will be welcomed. The reader is encouraged to access the references listed below for additional information.

In way of final remarks, we the authors expect that the reader will strive to do the following:

- live the Paramedic Association of Canada Vision 2025 outlined in Chapter 1;
- incorporate the principles of paramedicine education into teaching practice as demonstrated in Chapter 2;
- understand the aspects of signature pedagogy as detailed in Chapter 3;
- intentionally structure curriculum considering the models provided in Chapter 4;
- ensure your program has the required resources listed in Chapter 5;
- teach and evaluate the content in Chapter 6;
- incorporate multiple educational perspectives into your curriculum as shown in Chapter 7; and
- finally, consider Chapter 8 and remember from where we have come and to where we are going.

## References

Benner, P., Sutphen, M., Leonard, V., & Day, L. (2010). *Educating nurses: A call for radical transformation.* San Francisco, CA: Jossey-Bass.

Bowles, R., Van Beek, C., & Anderson, G. S. (2017). Four dimensions of paramedic practice in Canada: Defining and describing the profession. *Australasian Journal of Paramedicine, 14*(30), 1–11.

Brown, J., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32–41.

Clandinin, D., & Connelly, F. (2000). *Narrative inquiry, experience and story in qualitative research*. San Francisco, CA: Jossey-Bass.

Davis, B., & Sumara, D. (2006). *Complexity and education: Inquiries into learning, teaching, and research*. Mahwah, NJ: Lawrence Erlbaum.

Dreyfus, H. L. (2001). *On the internet.* New York, NY: Routledge.

Eisner, E. (1985). *The art of educational evaluation: A personal view.* London, United Kingdom: Flamer.

Eraut, M. (1994). *Developing professional knowledge and competence.* New York, NY: Routledge.

Fenwick, T. (2003). *Learning through experience: Troubling orthodoxies and intersecting questions.* Malabar, FL: Kreiger.

Flavell, J. (1976). Meta-cognitive aspects of problem solving. In L. Resnick (Ed.), *The nature of intelligence* (pp. 231–236). Hillsdale, NJ: Erlbaum.

Flinders, D., & Thorton, S. (Eds.). (2013). *The curriculum studies reader.* New York, NY: Routledge.

Freidson, E. (1971). *Profession of medicine: A study of sociology of applied knowledge*. New York, NY: Dodd, Mead and Co.

Gijselaers, W. & Schmidt, H. (1995). Effects of quantity of instruction on time spent on learning and achievement. *Educational Research and Evaluation, 1*(2), 183-201.

Heidegger, M. (1962). *Being and time* (J. Maquarrie & E. Robinson, Trans.) New York, NY: Harper & Row.

Higgs, J. (2010). *Education for future practice.* Rotterdam, Netherlands: Sense.

Jackson, P. (1968). *Life in classrooms.* New York, NY: Holt Rinehart & Winston.

Jarvis, P. (2006). *Towards a comprehensive theory of learning*. New York, NY: Routledge.

Kilner, T. (2004). Desirable attributes of the ambulance technician, paramedic, and clinical supervisor: Findings from a Delphi study. *Emergency Medicine Journal*, *21,* 374-378.

Kolb, D. (1984). *Experiential learning.* Englewood Cliffs, NJ: Prentice Hall.

Knowles, M. (1990). *The adult learner: A neglected species* (4th$^{h}$ ed.). Houston, TX: Gulf.

Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory into Practice, 41*(4), 212–218.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge, MA: Cambridge University Press.

Lave, J., & Wenger, E. (1998). *Communities of practice: Learning, meaning, identity.* New York, NY: Cambridge University Press.

Lamoureux, H. (2015). *Report to the Minister of Justice and Solicitor General: Public fatality inquiry* (LS0338 [2014/05]). Retrieved from Government of Alberta Justice: https://www.justice.alberta.ca/programs_services/fatality/Documents/fatality-report-ripley.pdf

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge, MA: Cambridge University Press.

Letts, W. (2010). Exploring the pedagogical landscapes that are framing higher education. In J. Higgs, D. Fish, I. Goulter, & S. Loftus (Eds.), *Education for future practice* (pp. 123–133). Rotterdam, Netherlands: Sense.

Menin, S. (2010). Complexity in education: Self-organization, integration, and curriculum in the complex world of medical education. *Medical Education*, *44,* 20–30.

Miller, J. (1982). The sound of silence breaking: Feminist pedagogy and curriculum theory. *Journal of Curriculum Theorizing, 4*(1), 5–11.

Morton-Cooper, A., & Palmer, A. (2000). *Mentoring, preceptorship and clinical supervision: A guide to professional support roles in clinical practice* (2nd ed.). Oxford, United Kingdom: Blackwell.

Mylopoulos, M., & Regher, G. (2007). Cognitive metaphors of expertise and knowledge: Prospects and limitations for medical education. *Medical Education, 41,* 1159–1165.

Paramedic Chiefs of Canada, Canadian Department of Defence, Paramedic Association of Canada, and Canadian Standards Association. (2014). *Canadian Paramedic Services Report: A Strategic Planning Report.*

Pinar, W. (2004). *What is curriculum theory?* Mahwah, NJ: Erlbaum.

Pinar, W., & Irwin, R. (Eds.). (2012). *Curriculum in a new key: The collected works of Ted Aoki.* New York, NY: Routledge.

Pinar, W., Reynolds, W., Slattery, P., & Taubman, P. (1995). *Understanding curriculum.* New York, NY: Lang.

Polanyi, M. (1958). *Personal knowledge: Towards a post-critical philosophy*. Chicago, IL: University of Chicago Press.

Posner, G, (1992). *Analyzing the curriculum*. New York, NY: McGraw-Hill.

Schiro, M. (2013). *Curriculum theory: Conflicting visions and enduring concerns* (2nd ed.). Thousand Oaks, CA: Sage.

Schön, D. A. (1983). *The reflective practitioner.* New York, NY: Basic Books.

Schön, D. A. (1987). *Educating the reflective practitioner.* San Francisco, CA: Jossey-Bass.

Shulman, L. S. (2005). Signature pedagogies in the professions. *Daedalus, 134*(3), 52–59.

Slattery, P. (2006). *Curriculum development in the postmodern era* (2nd ed.). New York, NY: Routledge.

Statistics Canada. (2016). *National Occupational Classification 2016: Paramedical Occupations: 3234.*

Tavares, W., Bowles, R., & Donelon, B. (2016). Informing a Canadian paramedic profile: Framing concepts, roles and crosscutting themes. *BMC Health Services Research*, *16*(1), 477.

Truth and Reconciliation Commission of Canada. (2015). *Truth and Reconciliation Commission of Canada: Calls to action.* Retrieved from http://www.trc.ca/websites/trcinstitution /File/2015/Findings/Calls_to_Action_English2.pdf

Tyler, R. (1949). *Basic principles of curriculum and instruction.* Chicago, IL: University Chicago Press.

Vertesi, L. (1978). The paramedic ambulance: A Canadian experience. *Canadian Medical Association Journal*, *119*(1), 25.