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ORIGINAL RESEARCH

# Competency Framework for Podiatric Medicine Training in Canada: An Adapted Delphi Study

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**Purpose:** Podiatrists are generally defined as professionals with high-level skills in the prevention and management of local foot conditions that are not systemic diseases. Across countries, different academic trainings are implemented due to the specific context and practice of podiatric medicine. It is thus essential to support country-specific podiatry education for the development of highly skilled podiatrists. Therefore, we report the development of a podiatric medicine competency framework to support training in Canada.

**Participants and Methods:** A Delphi process was conducted by 12 stakeholders (including 8 podiatry experts) from the University of Québec at Trois-Rivières which is the only university offering the degree of Doctor of Podiatric Medicine (DPM) in Canada. The developed framework is (1) based on the seven key roles of the Canadian medical education directives of specialists (CanMEDs) and, (2) closely aligned with the requirement of the College of Podiatrists of Québec which sets the standards of entry to practice in Québec.

**Results:** The developed framework represents the state of the development process and the consensus of the podiatry experts. It reflects the expected profile of the institution's DPM graduates based on seven key roles (podiatry expert, communicator, collaborator, health advocate, leader and manager, scholar, and professional). This developed framework is an arborescence of complex skills defined in tangible indicators that characterize each expected part of a core competency. Twenty-four core competencies have been determined and divided into 84 enabling competencies and 288 observable indicators.

**Conclusion:** This competency framework has been designed to support high-quality education and to develop podiatry. Next steps include: (1) validation of this framework by external experts, (2) development of rigorous evaluation methods and, (3) concrete actions for its implementation and assessment. This framework would help to define the scope of practice and capabilities of podiatric medicine, both in Canada and internationally.

**Keywords:** podiatry, competency-based education, professional competence skills, clinical competence, attitude, Delphi technique

## Introduction

Over the past two decades, competency-based medical education has emerged as an approach to educating health care professionals.[1–3] Some benefits of this approach have been reported(eg, focus on achievements and outcomes, multidimensional assessment including formative and summative approaches and feedback, flexible trajectory supported throughout the curriculum, increased stakeholder accountability with a shared set of expectations).[4–6] Provided and supported within the educational institution, the ultimate goal of a competency-based program has defined minimum threshold of competencies for the future health care professional to maximize quality and safe health care.[7] Moreover, the competency development remains a continuous process and this grounded approach strengthens the ability of professionals to take control of their lifelong learning.[3] Thus, several professions have adopted this approach, including podiatric medicine.[8–12]

Although a competency-based approach has emerged in podiatric medicine, this profession varies considerably across countries and, as a result, academic training differs.[13–16] Podiatrists are generally defined as professionals with high-level

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skills in the prevention and management of local foot conditions that are not systemic diseases.[17] Supporting country-specific podiatry education is essential to develop high-quality health professionals and their contextual practice. Currently in Canada, a four-year training program (total of 10 academic sessions) leading to the Doctorate in Podiatric Medicine degree (DPM) is offered at the Université du Québec à Trois-Rivières (UQTR) since 2004. This undergraduate DPM is the only degree program in the country and in French-speaking countries. This program was a priori modeled on American podiatric medicine programs to meet the standards of the Council of podiatric medical education but was never accredited by that organization. The first two years of the program are devoted to training in basic general medical knowledge. The last two years consist of podiatry-specific training (eg, dermatology, vascular, neurology, orthopedics, imaging, pharmacology, etc.) including clinical teaching through rotations of different specialties covered by podiatric medicine practice in various clinical settings.[18,19] No surgical residency programs or fellowships are required to practice podiatry in Quebec compared to DPM in United States, but can be a concrete way to building capacity to extend the practice in-hospital.[20] Once graduated from UQTR and registered to the Québec College of Podiatrists, podiatrists work mostly in private practice in the province.[21,22] Defined by Québec's legislator and operating under the Professional Code, the Podiatry act and numerous regulations including a Code of ethics, podiatrists in Québec treat and diagnose diseases of the foot and ankle witch are not systemic conditions.[21–23] The podiatry practice is therefore closer to that of the United Kingdom and Australia, where the majority of practice is in the community.[19] There is a desire to develop the profession within the public health system.[24]

After the creation of the UQTR podiatric medicine program in 2004 and its subsequent evaluation in 2014, evaluation's stakeholders requested that a competency-based approach to education should be integrated. As a pioneer in teaching podiatry in Canada, the aim is to present the experience of developing this framework along with the work done to date to support next steps in the redesign process of the podiatric medicine program and its implementation.

# Methods

## Frameworks and Definition

The Canadian Medical Education Directives for Specialists (CanMEDS) Physician Competence framework has been determined to be the most appropriate for our purpose.[25] There is no universally accepted framework for competency-based educational curriculum and this one is already used for other health profession in Canada.[26] This comprehensive framework includes seven domains (medical expert, communicator, collaborator, health advocate, leader, scholar and professional), each characterized by several attributes. There are also variations across professions, including the role of the leader sometimes referring also to practice manager.[9] Our choice was also supported by the Quebec Regulator's requirement to align with the Québec College of Podiatrist's entry-to-practice competencies. Our institution curriculum must match the required entry-to-practice competencies in order to maintain DPMs recognized by the College. Indeed, the Québec College of Podiatrists has also developed a framework based on an adaptation of the CanMEDS to define their entry-to-practice competencies that licensed podiatrists are expected to possess in adequacy with ethical obligations. The Québec College of Podiatrists obtained the rights to use the CanMEDS competency framework for educational purposes.[27]

A core competency is referred to as the academic, professional and cross-cutting competencies targeted in the training program. Competencies are defined as complex knowledge of how to act, based on the mobilization and effective combination of internal and external resources belonging to specific professional situations.[28]

Competency therefore refers to knowledges, attitudes and skills.[55] The enactment of competencies in different healthcare setting is also the result of three factors: (1) competencies must have been developed in academic context, (2) the willingness of competencies deployment must be present and confers motivation for quality care and (3) the deployment of competencies must be supported by the context in which services are provided. Context empowers health professionals to provide competent practice and fully deploys all set of professional competencies.[29] Taking into considerations how competencies are deployed, there was a need to define an educational framework (Boucher & Ste-Marie (2013)) in which different levels of competence development is expected along the curriculum which constitutes path competencies development and also refers to indicator as being expected level of competence.[30–32]

## Research Design and Data Collection

This is a descriptive study of the chronology and stages of the competency-based approach in podiatric medicine being developed at UQTR. A real-time adapted Delphi technique as a part of the development process is presented (Figure 1) and is based on the guide on Conducting and REporting DElphi Studies (CREDES).[33]

The adapted real-time Delphi technique was chosen given the small size of our group and the limited resource allocation. This technique allowed real-time discussion, iterations and consensus and facilitated the execution of specific tasks between meetings. The Delphi technique is considered as an effective way to measure and achieve consensus by structuring group communication that required anonymity and self-reflection.[34,35] It is widely used in similar studies and has been successfully used to develop competency-based frameworks in other health profession.[26]

Group meetings (ie, steps 1 and 2 including pre-, the Delphi and post-Delphi meetings) were audio recorded. Main points of discussion were incorporated into working documents by some of the group members (CL, FG or OH). Updated documentation was shared with the entire group using *Google Docs* (Google, California, United States). Thus, only one round of questionnaires was conducted. There were seven questionnaires corresponding to each role. Developed in 2016 and in 2017 (pre-Delphi) (Figure 1), they used information gathered from frameworks, literature, and expert's solicitations at UQTR.[9,25] For each core competency developed (including indicators), the expert panel had to indicate their agreement on a Likert scale from 1 (strongly disagree) to 7 (strongly agree) relating to the logical relevance, the clarity, and their position stand related to other items. Panelists could add comments for further discussion. This was the only component of the process that was anonymous, but the whole process was conducted to allow time for self-reflection between group discussions. All scores below 5 were discussed by the group. There were several subsequent rounds of discussion related to each questionnaire (Step 2) and there were anonymous votes during meetings. Discrepancies were discussed in the group until a consensus was reached for each element (core competency, enabling competency and indicators) of the framework. At the end of these steps, the consensus threshold was set to 100% between experts as there is no standard.[36,37] Discussion was moderated by the methodological experts for steps 1 and 2 (FG, CL and MB) and then, the program director (OH) for the steps 3. He (OH) also assumed leadership for the rest of the process (steps 4 to 6).

## Setting and Participants

The UQTR is a regional French-speaking public university of 14,000 students supported by the provincial government of Québec (Canada). A cohort of 25 students in podiatry is admitted each year and teaching is supported by a team of six full-time and three part-time professors, several lecturers and internship/externship supervisors. A university clinic (CPUQTR) is operated on campus to support learning. In 2021, there were 286 practicing podiatrists in the province

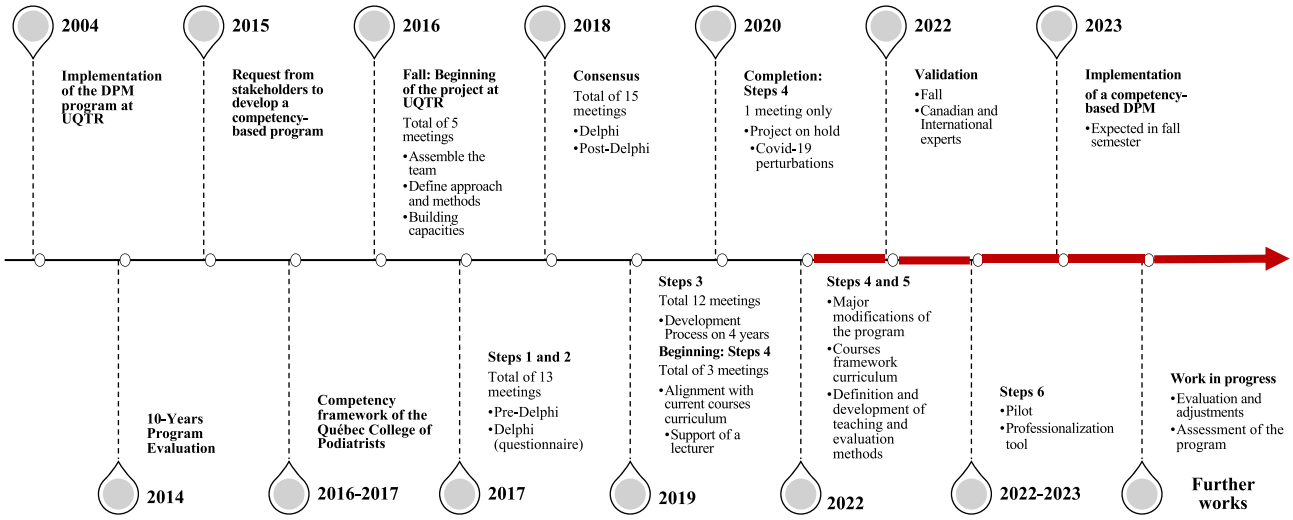


**Figure 1** Framework development timeline including the Delphi Rounds. Red arrow: Ongoing work.
**Abbreviations**: DPM, Doctorate in Podiatric Medicine; UQTR, University of Quebec at Trois-Rivieres.

of Québec.[38] The specific experts in podiatry were recruited within the institution. The only inclusion criterium was to be a professor at UQTR and all staff was included. An expert is defined as someone possessing the relevant knowledge and experience and considered as a peer with respected opinions by fellow workers in their field.[36] Their characteristics are presented in the Table 1. The panel of competency framework development also included a methodological expert in education and particularly for the Delphi method (FG), in pedagogy (CL) and for professional competency framework development (MB). The program director, who is a health care professional and researcher (OH), also participated in the panel. Methodological experts and program director acted as leaders and advisors to stimulate progress, support development, documents' preparation, and data collection. In addition, one lecturer has supported Step 4 and others are integrated into the current steps (Figure 1). The number of participants in the Delphi was justified by the objective to produce a framework mainly applicable to the institutional context, the development complexity and time investment requirement, the availability of financial resources and the limitation of French-speaking community.[36]

## Development Process and Timeline

The development work is carried out in a sequence of macro- and micro-planning which is not yet completed as we are in the fourth stage. The literature outlines steps in designing a competency-based program as follows:[5,10,39,40]

1. Identification of the competencies expected of graduates of the profession;
2. Identification of the competencies and their components;
3. Definition of the steps in the competency development process;
4. Choice of methods, experiences and pedagogical tools;
5. Designing of evaluation methods to measure progress of competency development; and
6. Elaboration of the evaluation of program outcomes.

**Table 1** Baseline Characteristics of Podiatric Experts

| **Baseline Characteristics (n=8)‡** | **The Overall Delphi process** |
|---|---|
| Gender, n (%) | |
| Men | 5 (63) |
| Women | 3 (37) |
| Ethnicity, n (%) | |
| White | 5 (67) |
| Others | 3 (37) |
| Level of education completed, n (%) | |
| DPM | 8 (100) |
| From Canada | 3 (37) |
| From United States of America | 5 (63) |
| Surgical Residency: 1 to 3 years | 3 (37) |
| MSc | 4 (50) |
| PhD | 1 (13) |
| MD | 1 (13) |
| Years of experience in podiatry practice, Mean year (Min-Max) | 18 (8–28) |
| Private Practice of Podiatry, n (%) | |
| Yes | 5 (63) |
| Practicing only within the institution | 2 (25) |
| No more practicing | 1 (13) |

**Notes**: ‡There were also four other individuals integrated in the process, but who did not make specific decisions related to the competency consensus and are therefore not included in the expert panel per se.
**Abbreviations**: DPM, Doctor in Podiatric Medicine; MSc, Master's in science; PhD, Doctor in Philosophy; MD, Medical Degree including a specialty residence; Min, Minimum; Max, Maximum.

To this end, Figure 1 illustrates the development stages and timeline of the competency-based training program at UQTR and the on-going work.

## Ethical Consideration

The willingness to participate was implicit when the experts agreed to join the process and, therefore, ethical approval was unnecessary since this voluntary activity was realized as part of their work at UQTR.

# Results

Considering that it was not a priori intended to publish the Delphi method, we cannot provide in-depth details on the framework development discussion and questionnaires (eg, deletions, additions, and modifications). However, the following results summarize the final expert consensus. This crucial step to publish our framework and process in a common and accessible language (English) is supporting the team to move to the next stage of the process namely external expert validation before implementation (Figure 1). The roles (Figure 2) are developed and supported by seven definitions and the corresponding post Delphi results are documented in Tables 2–8.

## Podiatric Expert

Podiatrist are empowered under the Podiatry Act to perform "any procedure" to treat local foot conditions that are not systemic diseases. As podiatric experts, they are aware of the limits of their knowledge and skills and determine the pathology affecting the health of the patient's feet. They plan and apply the appropriate diagnostic and therapeutic examinations and provide the necessary treatments according to recognized and proven standards of practice in accordance with current data related to podiatric medicine. The environment in which podiatrists perform their professional services must be safe. The role of podiatric expert is essential to the podiatrist's function and represents the central role overseeing the other six roles of the podiatric medicine competency framework namely the communicator, collaborator, leader, health advocate, scholar and professional (Table 2).

## Collaborator

Podiatrists are primary health professionals. They must collaborate effectively with other health professionals in an effective way to provide appropriated quality care satisfying the patient's needs. This may be accomplished by referring


**Figure 2** Diagram representing the 7 roles of our podiatric medicine competency framework.

**Table 2** Core and Enabling Competencies with Their Indicators for the Role of Podiatric Expert

| Podiatric Expert | | | |
|---|---|---|---|
| **Core Competencies** | **Enabling Competencies** | **Indicators of Competence at the End of the Doctorate** | |
| 1. Assessing the patient's symptoms and general history. | 1.1 Conducting a medical history. | 1.1.1 Conducting a medical history related to the reason for the visit. | 1.1.1.1 Inquires about the nature of the complaint.<br>1.1.1.2 Inquires about the location of the complaint.<br>1.1.1.3 Inquires about the duration of the complaint.<br>1.1.1.4 Inquires about the mode of occurrence of the complaint.<br>1.1.1.5 Inquires about the progression of the complaint.<br>1.1.1.6 Inquires about aggravating and alleviating factors.<br>1.1.1.7 Inquires about treatments received in relation to the complaint. |
| | | 1.1.2 Conducting a medical history related to general antecedents. | 1.1.2.1 Inquires about medical history.<br>1.1.2.2 Inquires about allergy history.<br>1.1.2.3 Inquires about family history.<br>1.1.2.4 Inquires about current medication and natural products.<br>1.1.2.5 Inquires about surgical and trauma history.<br>1.1.2.6 Inquires about social factors.<br>1.1.2.7 Inquires for information regarding a systems review.<br>1.1.2.8 Inquires about reports of additional tests, medical imaging, pathology and other medical consultations. |
| | 1.2 Identifying differential diagnoses based on the medical history. | 1.2.1 Identifying differential diagnoses based on the medical history. | 1.2.1.1 Analyzes the medical history.<br>1.2.1.2 Identifies relevant elements of the medical history.<br>1.2.1.3 Identifies differential diagnoses. |

| | | | |
|---|---|---|---|
| 2. Conducting a clinical assessment focused on the patient's needs. | 2.1 Identifying signs of pathology in the clinical examination. | 2.1.1 Evaluating systems using clinical examination. | 2.1.1.1 Performs vascular examination of the lower extremity.<br>2.1.1.2 Performs the neurological examination of the lower extremity.<br>2.1.1.3 Performs the dermatologic examination of the lower extremity.<br>2.1.1.4 Performs the musculoskeletal examination of the lower extremity.<br>2.1.1.5 Performs a biomechanical examination. |
| | 2.2 Identifying and performing additional clinical examinations based on the systems review. | 2.2.1 Identifying systems requiring further clinical examination. | 2.2.1.1 Detects abnormalities in the clinical examination requiring further investigation. |
| | | 2.2.2 Determining additional clinical examinations. | 2.2.2.1 Determines the complementary examination of the vascular system.<br>2.2.2.2 Determines the complementary examination of the neurological system.<br>2.2.2.3 Determines the complementary examination for the dermatological examination.<br>2.2.2.4 Determines the complementary examination for the musculoskeletal examination.<br>2.2.2.5 Determines the complementary examination with respect to the biomechanical examination. |

(*Continued*)





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**Table 2** (Continued).

| Podiatric Expert | | | |
|---|---|---|---|
| **Core Competencies** | **Enabling Competencies** | **Indicators of Competence at the End of the Doctorate** | |
| | | 2.2.3 Performing additional clinical examinations. | 2.2.3.1 Performs complementary examination of the vascular system.<br>2.2.3.2 Performs the complementary examination of the neurological system.<br>2.2.3.3 Performs the complementary examination for the dermatological examination.<br>2.2.3.4 Performs the complementary examination for the musculoskeletal examination.<br>2.2.3.5 Performs the complementary examination with respect to the biomechanical examination. |
| | | 2.2.4 Performing medical imaging examinations according to standards. | 2.2.4.1 Identifies standards that apply to the use of medical imaging.<br>2.2.4.2 Validates medical imaging take with supervisor.<br>2.2.4.3 Performs a radiological examination in accordance with radiation safety standards.<br>2.2.4.4 Performs an ultrasound examination following practice standards.<br>2.2.4.5 Determines additional medical imaging tests required.<br>2.2.4.6 Determines what imaging is required based on the clinical case.<br>2.2.4.7 Performs the necessary images according to the clinical case. |
| 3. Determining the pathology affecting the patient's foot condition. | 3.1 Determining the podiatric diagnosis and its differentials. | 3.1.1 Analyzing the data of a problem to find the key elements and to establish a correspondence between these elements and physio-pathological processes of certain diseases. | 3.1.1.1 Provides interpretation of investigative findings.<br>3.1.1.2 Integrates data from investigations into the clinical data set.<br>3.1.1.3 Consolidates evidence from history, clinical examination, and supplementary investigations. |

| | | | |
|---|---|---|---|
| | | 3.1.2 Establishing the most probable podiatric diagnosis and its differentials. | 3.1.2.1 Establishes the most likely podiatric diagnosis.<br>3.1.2.2 Identifies the course of the condition based on previous visits.<br>3.1.2.3 Identifies differential diagnoses.<br>3.1.2.4 Justifies diagnosis and its differentials based on review of various systems. |
| 4. Identifying, planning, and carrying out diagnostic and therapeutic interventions appropriate to the patient's needs. | 4.1 Determining the intervention plan required according to the body of knowledge on the various fields of practice of podiatric medicine (medical imaging, pharmacology, dermatology, biomechanics, surgery). | 4.1.1 Establishing the diagnostic intervention plan. | 4.1.1.1 Outlines a diagnostic intervention plan.<br>4.1.1.2 Refers to the appropriate professional.<br>4.1.1.3 Prescribes appropriate additional tests.<br>4.1.1.4 Establishes linkages with health system resources.<br>4.1.1.5 Reviews the intervention plan with supervisors. |
| | | 4.1.2 Establishing the therapeutic intervention plan (pharmacological, dermatological, biomechanical, and surgical). | 4.1.2.1 Proposes therapeutic intervention outlines (pharmacological, dermatological, orthopedic/ biomechanical, and surgical).<br>4.1.2.2 Selects appropriate therapeutic interventions (pharmacological, dermatological, orthopedic/biomechanical, and surgical).<br>4.1.2.3 Specifies the risks and benefits of each intervention to the patient.<br>4.1.2.4 Justifies interventions (pharmacological, dermatological, orthopedic/biomechanical, and surgical) to the patient.<br>4.1.2.5 Performs selected therapeutic interventions (pharmacological, dermatological, orthopedic/biomechanical, and surgical).<br>4.1.2.6 Performs selected therapeutic interventions with the use of medical imaging as needed (pharmacological, dermatological, orthopedic/biomechanical, and surgical).<br>4.1.2.7 Readjusts intervention plan based on unforeseen circumstances. |


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**Table 3** Core and Enabling Competencies with Their Indicators for the Role of Collaborator

| Collaborator | | | |
|---|---|---|---|
| **Core Competencies** | **Enabling Competencies** | **Indicators at the End of the Doctorate** | |
| 1. Working efficiently with other podiatrists or health care professionals to foster collaboration and mutual understanding of the patient's needs. | 1.1 Ensuring a healthy working relationship between the podiatrist and the various health care providers in order to make a multidisciplinary team decision that meets the needs of the patient. | 1.1.1 Contributing to harmonious relationships between team members. | 1.1.1.1 Expresses his/her opinion within a team.<br>1.1.1.2 Highlights the strengths of interventions by other student team members in his/her cohort.<br>1.1.1.3 Highlights the strengths of the interventions of other student team members in his/her program and related programs. |
| | 1.2 The podiatrist must understand the role of each health care professional in order to participate in the sharing of responsibilities among different health care professionals to ensure proper follow-up with the patient requiring multiple types of care. | 1.2.1 Working in conjunction with other health care professionals. | 1.2.1.1 Establishes contact with various clinic stakeholders (including assistants, directors, clinicians, and other staff).<br>1.2.1.2 Establishes contact with another health care professional when necessary.<br>1.2.1.3 Discusses with another health care professional involved in their patient's care.<br>1.2.1.4 Discusses the rules and procedures for the operation of the multidisciplinary team. |
| | 1.3 The podiatrist listens to and considers the opinions of the various health care professionals working with the patient in order to reach a consensus and work effectively on the patient's treatment plan. | 1.3.1 Negotiating the sharing or overlapping of responsibilities with other health care professionals. | 1.3.1.1 Contributes to the definition of the mandate and common targets of the multidisciplinary team.<br>1.3.1.2 Interrogates the patient and his or her loved ones so that they express their expectations and needs to the members of the multidisciplinary team.<br>1.3.1.3 Integrates information from other health care professionals' assessments into his/her medical notes. |

| | | | |
|---|---|---|---|
| 2. Working with other health professionals to promote mutual understanding, manage differences and resolve conflicts. | 2.1 The work and the decisions must be established in respect between the podiatrist and his collaborators. | 2.1.1 Recognizing differences of opinion. | 2.1.1.1 Acknowledges differences of opinion and advice among clinicians. 2.1.1.2 Acknowledges differences of opinion and views with other clinicians. 2.1.1.3 Positions him or herself in relation to inter-clinician differences of opinion and advice. |
| | 2.2 The podiatrist and the health professionals with whom he or she collaborates need to establish strategies that can foster understanding between them, manage differences of opinion and manage conflict. | 2.2.1 Participating in consultation within the multidisciplinary team. | 2.2.1.1 Expresses opinions and arguments with colleagues.<br>2.2.1.2 Expresses opinions and arguments with the clinician.<br>2.2.1.3 Expresses opinions and arguments with other health care professionals. |
| | | 2.2.2 Reporting to peers, clinicians, and health care professionals the results of the patient assessment. | 2.2.2.1 Summarizes the results of the patient's podiatric assessment to the team.<br>2.2.2.2 Summarizes the results of the patient's podiatric assessment to the clinician.<br>2.2.2.3 Summarizes the results of the patient's podiatric assessment to other health care professionals. |
| | | 2.2.3 Considering the recommendations of the clinician, other team members and other health care professionals when interacting with a patient. | 2.2.3.1 Follows the recommendations of the clinician when interacting with a patient.<br>2.2.3.2 Supports the recommendations of other team members in interactions with a patient.<br>2.2.3.3 Supports the recommendations of other health care professionals in his or her interactions with a patient. |
| | | 2.2.4 Contributing to harmonious relationships within a team. | 2.2.4.1 Identifies sources of tension in a team.<br>2.2.4.2 Suggests ways to improve harmony within the team.<br>2.2.4.3 Suggests ways to improve harmony with other professionals. |

(*Continued*)


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**Table 3** (Continued).

| Collaborator | | | |
|---|---|---|---|
| **Core Competencies** | **Enabling Competencies** | **Indicators at the End of the Doctorate** | |
| | | 2.2.5 Maintaining a climate conducive to multidisciplinary work. | 2.2.5.1 Identifies own responsibility in a conflict.<br>2.2.5.2 Suggests ways to reduce tensions between team members.<br>2.2.5.3 Seeks assistance from a third party, if necessary, to resolve a problem with one of the members of the multidisciplinary team before the situation becomes conflictual. |
| | 2.3 The podiatrist must establish a relationship of trust with the other health care professionals with whom he or she works. | 2.3.1 Defining his/her role within the multidisciplinary team. | 2.3.1.1 Clarifies his/her role and responsibilities when interacting with other professionals. |
| 3. Transitioning and transferring patient care to another podiatrist or health care professional in a safe manner to ensure continuity of care. | 3.1 The podiatrist must be able to recognize when the patient requires care from another health care professional. | 3.1.1 Recognizing his/her own role and limitations. | 3.1.1.1 Respects the hierarchy of students.<br>3.1.1.2 Identifies the role and expertise of the clinician.<br>3.1.1.3 Refers to the appropriate clinician based on the patient's condition.<br>3.1.1.4 Identifies the roles, responsibilities, experience, and expertise of members of a multidisciplinary team. |
| | 3.2 The podiatrist must recognize essential patient care that is outside his/her scope of practice. | 3.2.1 Identifying the roles and limitations of other professionals to whom they refer the patient. | 3.2.1.1 Identifies the appropriate health care professional for the patient's situation. |
| | 3.3 The podiatrist uses a variety of communication methods to ensure proper continuity of care to another health care professional or to a new setting. | 3.3.1 Consulting with another health care professional when appropriate. | 3.3.1.1 3.3.1.1 Provides referrals to other resources for a problem that is outside of his/her jurisdiction.<br>3.3.1.2 Makes referrals to appropriate resources for a situation outside of his/her jurisdiction. |
| | | 3.3.2 Referring a request for consultation to another health care professional. | 3.3.2.1 Uses the appropriate mode of communication to forward a referral to another health care professional.<br>3.3.2.2 Specifies the reason for the consultation and provides the necessary information to the health care professional.<br>3.3.2.3 Seeks patient's agreement to refer to another health care professional. |

| | | | |
|---|---|---|---|
| | 3.4 The podiatrist follows up with the other health professional to promote collaboration and to monitor the patient's progress. | 3.4.1 Following up with the patient after his/her transfer to another health care professional. | 3.4.1.1 Obtains follow-up patient care information.<br>3.4.1.2 Communicates to the health care professional, at the appropriate time, relevant information about the patient's evolving medical situation. |
| 4. Ensuring satisfaction with the collaborative work between the patient and the podiatrist. | 4.1 The podiatrist ensures that a trusting relationship is established with the patient. | 4.1.1 Communicating his/her role and responsibilities. | 4.1.1.1 Clarifies his/her roles and responsibilities at the first encounter with the patient.<br>4.1.1.2 Reassures the patient who is apprehensive. |
| | 4.2 The podiatrist listens to the patient's needs. | 4.2.1 Inquiring about the patient's needs in the context of the professional relationship with the patient. | 4.2.1.1 Informs the patient that they may choose to consult another health care professional.<br>4.2.1.2 Expresses acceptance of the patient's choice to consult another health care professional.<br>4.2.1.3 Expresses acceptance of the patient's choice to consult another health care professional with reservations.<br>4.2.1.3 Collaborates with the patient, its family and caregiver in a manner consistent with his/her professional expertise (without complacency). |
| | 4.3 The podiatrist demonstrates professionalism during consultations with the patient. | 4.3.1 Maintaining professional relationships with the patient in the care setting. | 4.3.1.1 Maintains courteous patient contact during clinical activities.<br>4.3.1.2 Maintains personal hygiene and dress code consistent with clinical or practicum setting requirements to optimize collaboration with others. |
| | 4.4 The podiatrist clearly and concisely explains the patient's pathology and treatment plan. | | *See* "communicator" *competency details.* |
| | 4.5 The podiatrist includes the patient in the decision-making process of the treatment plan. | 4.5.1 Considering the patient as a partner in selecting the treatment plan. | 4.5.1.1 Develops a treatment plan in conjunction with the patient partner.<br>4.5.1.2 Ensures that the decision about the treatment plan is shared. |



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**Table 4** Core and Enabling Competencies with Their Indicators for the Role of Communicator

| Communicator | | | |
|---|---|---|---|
| **Core Competencies** | **Enabling Competencies** | **Indicators at the End of the Doctorate** | |
| 1. Establishing a trusting professional relationship with the patient, family and caregivers. | 1.1Communication and appropriately informing the patient of the nature of the treatments required to care for a foot condition and establishes a professional therapeutic relationship with the patient, family and caregivers. | 1.1.1 Preparing the interview. | 1.1.1.1 Prepares physical locations and props.<br>1.1.1.2 Summarizes relevant elements of the medical record.<br>1.1.1.3 Identifies issues that he/she wants to address in consideration of the patient's condition. |
| | | 1.1.2 Initiating the interview. | 1.1.2.1 Introduces himself/herself and states level of training.<br>1.1.2.2 Verifies patient identity.<br>1.1.2.3 Leads the patient or family member/ caregiver to identify the reason(s) for the visit.<br>1.1.2.4 Announces the course of the interview and what will happen next. |
| | | 1.1.3 Conducting the podiatric interview using accepted techniques. | 1.1.3.1 Gathers information as the interview progresses.<br>1.1.3.2 Validates understanding of the problem(s) with the patient.<br>1.1.3.3 Uses language that is adapted to the interviewer. |
| | | 1.1.4 Completing the interview. | 1.1.4.1 Verbally announces the end of the interview.<br>1.1.4.2 Briefly summarizes the interview to the patient or family member.<br>1.1.4.3 Explains to the patient or family the limits of his/her role.<br>1.1.4.4 Asks the patient if he/she has addressed his/her major concerns. |

| | | | |
|---|---|---|---|
| | 1.2 Involve the patient and family in developing a plan that reflects their needs: maintain respectful communication with the patient and their caregivers, help the patient and family use information technology to support care; help the patient make informed choices regarding their foot health. | 1.2.1 Ensuring an efficient flow of information between him/her and his/her interlocutor(s). | 1.2.1.1 Adjusts communication content to context.<br>1.2.1.2 Selects the appropriate medium for the communication situation.<br>1.2.1.3 Guides the patient in selecting relevant information related to his/her condition when using information technology.<br>1.2.1.4 Uses active listening techniques.<br>1.2.1.5 Identifies the presence of barriers or impediments to communication and acts accordingly.<br>1.2.1.6 Advises the interviewer of the need to terminate the interview prematurely when the limits of the intended setting are reached.<br>1.2.1.7 Determines if the intervention of a third person is necessary. |
| | | 1.2.2 Encouraging the development of a sense of trust in the interlocutor. | 1.2.2.1 Maintains contact with the interlocutor while making notes in the patient's chart.<br>1.2.2.2 Maintains the relationship while setting limits on inappropriate patient requests and reports them to supervisor. |
| | | 1.2.3 Supporting the expression of emotions and respond to them according to the context. | 1.2.3.1 Identifies both positive and negative emotions expressed by the patient and discusses them with the supervisor.<br>1.2.3.2 Identifies his/her emotional/physical state and its possible impact on the relationship with the patient.<br>1.2.3.3 Demonstrates empathy to the patient when relevant.<br>1.2.3.4 Reflects perceived emotion to the patient when appropriate. |

(*Continued*)





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**Table 4** (Continued).

| Communicator | | | |
|---|---|---|---|
| **Core Competencies** | **Enabling Competencies** | **Indicators at the End of the Doctorate** | |
| | 1.3 Providing all necessary explanations to understand the costs associated with the indicated treatment plan. | 1.3.1 Providing all necessary explanations to understand the costs associated with the indicated treatment plan. | 1.3.1.1 Informs the patient of the costs of care.<br>1.3.1.2 Explains the distinctions between public and private care.<br>1.3.1.3 Uses appropriate strategy to seek patient consent for costs of care. |
| 2. Gathering and synthesizing information relevant to the medical history by documenting the information and maintaining a record for each patient to ensure clinical decision-making. | 2.1 Using patient-centered interview techniques to determine a treatment plan. | 2.1.1 Using patient-centered interview techniques to determine a treatment plan. | 2.1.1.1 Gathers information in a structured manner to explore problems from a biomedical perspective specific to podiatric medicine.<br>2.1.1.2 Adapts language level to the patient. |
| | 2.2 Structuring the clinical session and handling the flow of information. | 2.2.1 Structuring the clinical session and handling the flow of information. | 2.2.1.1 Modulates the interview according to the patient's condition and reactions.<br>2.2.1.2 Re-synthesizes all the information obtained according to the modulation of the interview. |
| | 2.3 Obtaining and summarizing all relevant information from sources other than the patient, including family and caregivers, and the patient's treating physician, with the patient's consent. | 2.3.1 Obtaining any relevant information from sources other than the patient, including the patient's family and caregivers, and the patient's treating physician, with the patient's consent. | 2.3.1.1 Collects all relevant information from persons other than the patient, including family and friends, and the patient's physician, with the patient's or representative's consent. |
| | | 2.3.2 Synthesizing all the information obtained. | 2.3.2.1 Synthesizes all the information obtained. |
| 3. Informing the patient, family and caregivers about the podiatric care provided. | 3.1 Informing the patient of the treatments required to address the identified podiatric foot condition in a clear, concise, and complete manner. | 3.1.1 Properly informing the patient about the required treatments. | 3.1.1.1 Provides sufficient and relevant information to the patient regarding the care required.<br>3.1.1.2 Verifies patient understanding. |

| | | | |
|---|---|---|---|
| | 3.2 Disclosing to the patient as soon as possible any complications, incidents or accidents that occur with tact and accuracy. | 3.2.1 Disclosing to the patient any complications, incidents or accidents that occurred. | 3.2.1.1 Informs the patient as soon as possible of any complication, incident or accident that has occurred.<br>3.2.1.2 Informs the patient of any adjustments to be made in response to the complication, incident or accident.<br>3.2.1.3 Verifies that the information given to the patient following the complication is understood by the patient. |
| | 3.3 Documenting information accurately and completely and make it available to the patient when requested. | 3.3.1 Documenting the information. | 3.3.1.1 Summarizes the relevant elements of a stable and recurrent (eg, nail clipping every three months) or evolving situation.<br>3.3.1.2 Records relevant information in the patient's chart for a stable and recurring or evolving situation.<br>3.3.1.3 Organizes information in the chart according to the setting.<br>3.3.1.4 Writes chart notes using appropriate medical language. |
| | | 3.3.2 Making information available to the patient when requested. | 3.3.2.1 Responds to patient questions and requests for information.<br>3.3.2.2 Adheres to the standards for patient access requests (within 10 days). |
| | 3.4Communicating effectively, whether on paper or through technology. | 3.4.1 Communicating effectively with the patient, family, or other caregivers, whether in paper or technological format. | 3.4.1.1 Follows the rules of language in all written communication.<br>3.4.1.2 Structures written expression using precise vocabulary that is adapted to the context.<br>3.4.1.3 Adheres to the rules of language in all oral communication.<br>3.4.1.4 Structures oral expression using precise vocabulary and adapted to the clinical context. |

(*Continued*)



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**Table 4** (Continued).

| Communicator | | | |
|---|---|---|---|
| **Core Competencies** | **Enabling Competencies** | **Indicators at the End of the Doctorate** | |
| | 3.5 Conveying information to the patient in a safe manner. | 3.5.1 Conveying information to the patient in a safe manner. | 3.5.1.1 Follows the rules of safe communication in all circumstances. |
| | 3.6 Respecting professional secrecy by protecting patient information. | 3.6.1 Respecting professional secrecy by protecting patient information. | 3.6.1.1 Respects the rules of professional secrecy in all his/her communications. |
| 4. Communicating in writing | 4.1 Maintaining patient records in podiatric medicine. | 4.1.1 Maintaining records in accordance with the regulations governing the offices and effects of members of the College of podiatrists of the province of Québec. | 4.1.1.1 Writes the history of the current illness (subjective information).<br>4.1.1.2 Writes the results of observations (objective examinations) and additional findings brought by the patient.<br>4.1.1.3 Writes a clinical impression and its differentials.<br>4.1.1.4 Writes the intervention plan (course of action). |
| | | 4.1.2 Writing in standard, context-sensitive language. | 4.1.2.1 Follows the rules of language in all written communication.<br>4.1.2.2 Structures written expression using precise vocabulary and adapted to the context (eg, reference letter. Here we are talking about the patient/other professional file). |
| | 4.2 Write prescriptions. | 4.2.1 Writing prescriptions in accordance with the standards and regulations relating to the form and content of oral or written prescriptions made by a podiatrist. | 4.2.1.1 Writes a prescription appropriate to the patient's care in the orthopedics field.<br>4.2.1.2 Writes a pharmacological prescription appropriate to the patient's care.<br>4.2.1.3 Writes a prescription appropriate for patient care in the field of medical imaging.<br>4.2.1.4 Writes an order for additional tests appropriate to the patient's care. |

**Table 5** Core and Enabling Competencies with Their Indicators for the Role of Health Advocate

| Health Advocate | | | |
|---|---|---|---|
| **Core Competencies** | **Enabling Competencies** | **Indicators at the End of the Doctorate** | |
| 1. Promoting foot health and engage in the prevention of local foot conditions. | 1.1 Teaching the patient, family, and caregivers about healthy foot habits. | 1.1.1 Asking the patient and his or her family about his or her foot health behaviors and habits. | 1.1.1.1 Asks about health-related behaviours and habits. |
| | | 1.1.2 Advising patients and their families on health behaviours and habits. | 1.1.2.1 Provides advice on maintaining or changing health-related behaviours and habits.<br>1.1.2.2 Educates the patient on the risks and prevention of specific diseases.<br>1.1.2.3 Develops a behaviour change plan with the patient and family.<br>1.1.2.3 Follows up on the behaviour change plan. |
| | | 1.1.3 1 Integrating the concepts of targeted health promotion and disease prevention. | 1.1.3.1 Integrates elements of disease prevention into interventions appropriate to the patient.<br>1.1.3.2 Integrates principles of health promotion appropriate to the patient's condition. |
| | 1.2 Integrating the principles of foot disease prevention, promotion, and maintenance of foot health into interactions with each patient. | 1.2.1 Screening the patient for potential foot health problems. | 1.2.1.1 Questions the presence of risk factors for foot health.<br>1.2.1.2 Identifies risk and/or co-morbidity factors. |
| | | 1.2.2 Informing the patient on the principles of prevention and promotion of foot health. | 1.2.2.1 Provides advice on the principles of prevention and promotion of foot health. |
| 2. Promoting access to podiatric care and advocate for improved care. | 2.1 Promoting access to podiatric care within the community and populations served. | 2.1.1 Engaging in foot health promotion activities with communities. | 2.1.1.1 Proposes foot health promotion activities to communities.<br>2.1.1.2 Participates in foot health promotion activities with communities. |
| | 2.2 Improving the clinical practice of podiatry by applying a continuous quality improvement process to disease prevention and foot health promotion and maintenance activities. | 2.2.1 Analyzing podiatric practice related to disease prevention and foot health promotion activities. | 2.2.1.1 Identifies issues related to disease prevention and foot health promotion activities.<br>2.2.1.2 Proposes actions to integrate disease prevention and foot health promotion activities. |
| | 2.3 Participating in a foot health improvement initiative in a community or population it serves. | 2.3.1 Participating in a community or population-based foot health improvement initiative. | 2.3.1.1 Learns about health promotion initiatives in educational settings.<br>2.3.1.2 Participates in a health promotion initiative that exists in educational settings. |

**Table 6** Core and Enabling Competencies with Their Indicators for the Role of Leader and Manager

| Leader and Manager | | | |
|---|---|---|---|
| **Core Competencies** | **Enabling Competencies** | **Indicators at the End of the Doctorate** | |
| 1. Promoting quality and innovation in the delivery of podiatric care. | 1.1 The podiatrist must stay updated on the latest medical advances in order to offer the best possible treatment to his patient. | 1.1.1 Proposing organizational innovations. | 1.1.1.1 Identifies possible innovations.<br>1.1.1.2 Proposes innovations to meet the needs of the community. |
| | 1.2 The podiatrist must be innovative in his field. | 1.2.1 Contributing to the improvement of health care delivery in his/her field. | 1.2.1.1 Identifies obstacles to quality of care or patient safety in his/her field.<br>1.2.1.2 Identifies possible improvements in care delivery in his/her field.<br>1.2.1.3 Proposes solutions for improvements in his/her field. |
| | 1.3 The podiatrist collaborates with other health care professionals to provide the most appropriate treatment plan for the patient's needs. | 1.3.1 Establishing structures for collaboration with other health care professionals. | 1.3.1.1 Establishes structures for collaboration with other health care professionals. |
| | 1.4 The podiatrist uses technology to promote effective care. | 1.4.1 Using technology to optimize the effectiveness of care. | 1.4.1.1 Uses the technology systems in place in the various podiatric practice sites.<br>1.4.1.2 Identifies the advantages and disadvantages of various technologies used in podiatric practice settings. |
| | 1.5 The podiatrist continually seeks to improve his/her knowledge and quality of care by participating in continuing education activities. | 1.5.1 Leading a career consistent with his/her professional goals. | 1.5.1.1 Identifies areas of professional interest.<br>1.5.1.2 Identifies experiences that are potentially conducive to achieving professional goals.<br>1.5.1.3 Selects training environments that are conducive to the achievement of his/her career goals. |

| | | | |
|---|---|---|---|
| 2. Contributing to the proper functioning of the system. | 2.1 The podiatrist is a role model for his or her peers by applying professional standards of practice in his or her practice. | 2.1.1 Displaying exemplary professional behaviour. | 2.1.1.1 Learns about the unique characteristics and operating procedures of each training environment.<br>2.1.1.2 Adjusts interventions to the specific characteristics and operating modes of each training environment.<br>2.1.1.3 Initiates interventions based on the specific characteristics and mode of operation of each training environment. |
| | 2.2 The podiatrist must demonstrate an openness to encourage change in health care in order to improve services and outcomes. | 2.2.1 Initiating innovations to improve the quality of care. | 2.2.1.1 Suggests improvements or solutions to a problematic organizational situation. |
| | 2.3 The podiatrist guides patients in making decisions about recommended care. | | See "podiatric expert" *competency details*. |
| 3. Managing the development and planning of one's career, human and financial resources in the exercise of one's professional activities. | 3.1 The podiatrist must establish his priorities in order to manage his personal and professional obligations. | 3.1.1 Organizing his/her time according to his/her professional and personal obligations. | 3.1.1.1 Plans his/her studies and student life activities to meet his/her deadlines.<br>3.1.1.2 Plans how to divide time between personal life and work responsibilities. 3.1.1.3 Plans how to divide time between personal life and training responsibilities. |
| | 3.2 The podiatrist surrounds himself with qualified professionals in different fields to help him manage his planning. | 3.2.1 Identifying qualified professionals in various fields to help manage and administer its resources wisely. | 3.2.1.1 Identifies available resources to assist in personnel management.<br>3.2.1.1 Identifies available resources to assist in the administration of a clinic. |
| | 3.3 The podiatrist implements management processes to improve professional practice. | 3.3.1 Applying the basic principles of administration, finance and personnel management. | 3.3.1.1 Identifies the laws, regulations, and standards to which they must abide in the administrative management of their practice.<br>3.3.1.2 Develops a budget and business plan. |



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**Table 7** Core and Enabling Competencies with Their Indicators for the Role of Professional

| Professional | | | |
|---|---|---|---|
| **Core Competencies** | **Enabling Competencies** | **Indicators at the End of the Doctorate** | |
| 1. Demonstrating a commitment to the patient through the application of best practices and adherence to ethical and deontological standards. | 1.1 The podiatrist acts according to the ethical rules of the profession. | 1.1.1 Respecting the integrity of the patient: autonomy, beliefs, shared decision, right to the truth, confidentiality. | 1.1.1.1 Identifies rules of confidentiality and privacy.<br>1.1.1.2 Applies the rules of confidentiality and privacy in all circumstances.<br>1.1.1.3 Gives relevant and substantiated information to the patient about his/her health status.<br>1.1.1.4 Validates his/her clinical decision with the patient, taking into account his/her life plan.<br>1.1.1.5 Obtains appropriate consent for planned health care procedures.<br>1.1.1.6 Notifies persons in authority of situations where the right to the truth may be prejudicial to the patient. |
| | | 1.1.2 Demonstrating professional qualities essential to health care professionals (honesty, commitment, compassion, respect, selflessness, etc.). | 1.1.2.1 Honestly states his/her level of competence and the effectiveness of his/her services and those offered by his/her profession.<br>1.1.2.2 Notifies the patient of the fees associated with the treatment plan.<br>1.1.2.3 Adheres to fee request standards.<br>1.1.2.4 Identifies unprofessional behaviour.<br>1.1.2.5 Implements ways to act altruistically, compassionately, and respectfully. |
| | | 1.1.3 Demonstrating availability and diligence to the patient. | 1.1.3.1 Sets up ways to meet the patient's needs quickly. |
| | 1.2 The podiatrist strives for excellence in all aspects of podiatric medicine. | 1.2.1 Ensuring competent practice of the profession. | 1.2.1.1 Implements the means to practice podiatry competently. |

| | | | |
|---|---|---|---|
| | 1.3 The podiatrist recognizes ethical problems and conflicts of interest and knows how to prevent them and avoid their occurrence. | 1.3.1 Leading a discussion for ethical decision-making. | 1.3.1.1 Identifies a situation where there is an ethical dilemma.<br>1.3.1.2 Presents a structured argument regarding various ethical issues encountered in podiatry.<br>1.3.1.3 Explains the ethical issues present in clinical situations.<br>1.3.1.4 Develops a strategy for addressing these ethical issues.<br>1.3.1.5 Implements a strategy to resolve an ethical dilemma. |
| | | 1.3.2 Ensuring that the patient receives care even when their personal beliefs conflict with their personal beliefs. | 1.3.2.1 Identifies situations that raise a conflict with personal beliefs.<br>1.3.2.2 Discusses situations where respect for diversity is an issue, including the effects of age, gender, religion, sexual orientation, ethnicity, cultural beliefs, etc. |
| | | 1.3.3 Respecting the rules concerning conflicts of interest. | 1.3.3.1 Identifies potential conflict of interest situations.<br>1.3.3.2 Reports a conflict of interest when appropriate.<br>1.3.3.3 Implements measures to avoid conflicts of interest. |
| | 1.4 The podiatrist acts for the benefit of the patient by taking into account the collective needs. | 1.4.1 Considering the full range of predictable consequences that its advice, counsel, research and work may have on the public. | 1.4.1.1 Identifies situations where the needs of the patient are in competition with the needs of the public. |

(*Continued*)


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**Table 7** (Continued).

| Professional | | | |
|---|---|---|---|
| **Core Competencies** | **Enabling Competencies** | **Indicators at the End of the Doctorate** | |
| 2. Demonstrating a commitment to society by recognizing and meeting its expectations for podiatric care. | 2.1 The podiatrist participates in initiatives related to patient safety and quality improvement. | 2.1.1 Ensuring the well-being and safety of patients. | 2.1.1.1 Identifies barriers to patient physical comfort.<br>2.1.1.2 Remediates the barriers to patients' physical comfort.<br>2.1.1.3 Identifies barriers to patients' psychological comfort.<br>2.1.1.4 Remediates the barriers to patients' psychological comfort.<br>2.1.1.5 Identifies practice rules to protect patients.<br>2.1.1.6 Applies practice rules to protect patients.<br>2.1.1.7 Identifies behaviours of others that may affect patient safety.<br>2.1.1.8 Uses appropriate means to ensure patient comfort and safety in the face of unprofessional or unusual behaviours of others.<br>2.1.1.9 Identifies situations that place patients at risk and require notification of appropriate authorities.<br>2.1.1.10 Identifies actions required by regulation upon the occurrence of an adverse event or near miss, including reporting. |

| | | | |
|---|---|---|---|
| 3. Demonstrating a commitment to the profession through adherence to the standards, laws and regulations governing the practice of podiatric medicine and participation in the self-regulation of the profession. | 3.1 The podiatrist complies with the code of ethics, standards of practice and laws governing the practice of podiatric medicine. | 3.1.1 Showing respect for people in the workplace. | 3.1.1.1 Maintains appropriate distance in interpersonal relationships.<br>3.1.1.2 Avoids harassing, intimidating, or discriminatory behaviour or attitudes towards anyone in the professional environment.<br>3.1.1.3 Maintains appropriate professional distance when dealing with patients.<br>3.1.1.4 Involves family and friends in the process while respecting patient self-determination and privacy.<br>3.1.1.5 Respects the role and opinion of colleagues and other professionals in all clinical interventions. |
| | 3.2 The podiatrist recognizes and responds to unprofessional and unethical behaviours of his/her practice, peers and other health care professionals. | 3.2.1 Demonstrating vigilance with respect to compliance with the code of ethics, standards and regulations of its practice. | 3.2.1.1 Identifies requirements of professional organizations (eg, health issues that pose a risk to patients).<br>3.2.1.2 Meets these requirements.<br>3.2.1.3 Identifies situations that may result in professional misconduct.<br>3.2.1.4 Corrects situations that may result in professional misconduct.<br>3.2.1.5 Denounces behaviours that are contrary to the code of ethics and standards of practice. |
| | 3.3 The podiatrist assists in peer review and standards development. | *Already covered above and in the Scholar role.* | 3.3.1.1 Recognizes the needs of other professionals (students) in their professional ethics.<br>3.3.1.2 Suggests ways to assist them. |

(*Continued*)


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**Table 7** (Continued).

| Professional | | | |
|---|---|---|---|
| **Core Competencies** | **Enabling Competencies** | **Indicators at the End of the Doctorate** | |
| 4. Demonstrating a commitment to the health and well-being of podiatrists to support the delivery of optimal podiatric care to patients. | 4.1 The podiatrist manages and balance his or her well-being and professional performance. | 4.1.1 Establishing a healthy balance between patient care, community needs, practice demands, and personal and family life activities. | 4.1.1.1 Identifies real or potential risk situations that may cause an imbalance in his/her life.<br>4.1.1.2 Identifies possible solutions to real or potential risk situations that may cause an imbalance in his/her life.<br>4.1.1.3 Seeks assistance to make appropriate adjustments to situations where lifestyle, personal or family problems interfere with his/her training, practice and quality of care. |
| | | 4.1.2 Coping with stressful situations and emotions in his/her personal and professional life. | 4.1.2.1 Takes time out to reflect on what they are experiencing.<br>4.1.2.2 Names emotions that arise in response to the suffering or death of others.<br>4.1.2.3 Names emotions that arise in the face of actual or potential difficulty or failure.<br>4.1.2.4 Identifies ways to protect against burnout.<br>4.1.2.5 Uses ways to protect against burnout. |
| | 4.2 The podiatrist manages his or her personal and professional requirements for the proper maintenance of the profession throughout his or her professional career. | 4.2.1 Identifying their own difficulties experienced by peers and proposing them support. | 4.2.1.1 Identifies situations where lifestyle, personal or family problems interfere with their practice and quality of care.<br>4.2.1.2 Seeks assistance to make appropriate adjustments to situations where lifestyle, personal or family problems interfere with practice and quality of care. |
| | 4.3 The podiatrist is able to recognize the difficulties of his or her peers and provides support. | 4.3.1 Identifying the difficulties experienced by peers and proposing them support. | 4.3.1.1 Identifies real or potential risk situations experienced by peers.<br>4.3.1.2 Identifies possible solutions. |

**Table 8** Core and Enabling Competencies with Their Indicators for the Role of Scholar

| Scholar | | | |
|---|---|---|---|
| **Core Competencies** | **Enabling Competencies** | **Indicators at the End of the Doctorate** | |
| 1. Engaging in continuous improvement of professional activities through a process of continuing education. | 1.1 The podiatrist maintains his/her knowledge, skills and abilities up to date. | 1.1.1 Analyzing his/her professional practice in order to improve his/her skills. | 1.1.1.1 Identifies his/her acquired and to-be-acquired knowledge and skills.<br>1.1.1.2 Plans training activities based on knowledge and skills acquired and to be acquired.<br>1.1.1.3 Carries out training plan and adjusts it as needed.<br>1.1.1.4 Prepares his/her report. |
| | 1.2 The podiatrist analyzes, evaluates, and sets a personal learning and development plan to improve the quality of podiatric care. | 1.2.1 Determining his/her training needs. | 1.2.1.1 Identifies specific work situations (events that are significant in both their positive and negative effects).<br>1.2.1.2 Analyzes specific professional situations by identifying the discipline-specific elements involved.<br>1.2.1.3 Mobilizes knowledge and resources to identify future courses of action.<br>1.2.1.4 Determines continuing education needs.<br>1.2.1.5 Shares identified needs with his/her peers. |
| | | 1.2.2 Taking part in learning activities based on his/her needs and characteristics as a learner. | 1.2.2.1 Identifies learning activities available to him/her.<br>1.2.2.2 Selects learning activities to meet training needs.<br>1.2.2.3 Explains his/her approach to his/her trainers and obtains their feedback. |
| | | 1.2.3 Evaluating the impact of his/her learning on his/her practice. | *Completed in the summary.* |
| | | 1.2.4 Adjusting his/her professional development strategy as needed. | *Completed in the summary.* |

(*Continued*)


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**Table 8** (Continued).

| Scholar | | | |
|---|---|---|---|
| **Core Competencies** | **Enabling Competencies** | **Indicators at the End of the Doctorate** | |
| | 1.3 The podiatrist contributes to the development of his or her profession by collaborating in research and by sharing his or her knowledge and experience with members of the profession and students. | 1.3.1 Participating in research projects/programs/initiatives using the scientific method. | 1.3.1.1 Questions the scientific basis of practice in podiatric medicine. 1.3.1.2 Identifies a problem requiring the advancement of knowledge.<br>1.3.1.3 Participates in research projects or initiatives using the scientific method.<br>1.3.1.4 Proposes research projects or initiatives using a scientific approach. |
| 2. Teaching peers and other health professionals and the public. | 2.1 The podiatrist contributes to the dissemination and creation of knowledge and practices applicable to foot health as a role model. | 2.1.1 Assisting others in determining their learning needs. | 2.1.1.1 Helps others determine their learning needs for skill development. |
| | 2.2 The podiatrist promotes a safe learning environment with his or her peers, associates, and students. | 2.2.1 Guiding others in the selection and use of relevant learning resources. | 2.2.1.1 Suggests relevant learning resources or tools. |
| | 2.3 The podiatrist knows how to organize, plan and execute a teaching activity with his/her students. | 2.3.1 Providing teaching services. | 2.3.1.1 Organizes and leads a peer teaching activity.<br>2.3.1.2 Respects copyright, records references accurately, gives credit where credit is due.<br>2.3.1.3 Provides training as appropriate to the situation. |
| | 2.4 The podiatrist is able to evaluate and provide feedback with justifications for their students to improve learning processes. | 2.4.1 Evaluating learning and, if necessary, make corrections to his teaching. | 2.4.1.1 Provides feedback when teaching. |

| | | | |
|---|---|---|---|
| 3. Researching, evaluating, and applying evidence in his/her field using a scientific approach. | 3.1 The podiatrist uses sound judgment in assessing uncertainty and gaps in clinical knowledge and is able to formulate focused questions to address them. | 3.1.1 Conducting appropriate documentary research. | 3.1.1.1 Applies database query protocol to conduct a literature search.<br>3.1.1.2 Develops a comprehensive literature review. |
| | | 3.1.2 Critically appraising articles, research reports and practice guides. | 3.1.2.1 Critiques a scientific article in a structured manner and according to scientifically accepted criteria.<br>3.1.2.2 Identifies research designs in critiqued articles.<br>3.1.2.3 Identifies research bias in critiqued scientific articles. |
| | 3.2 The podiatrist uses pre-assessed studies and resources. | 3.2.1 Using peer-reviewed scientific articles, research reports, practice guides. | 3.2.1.1 Searches databases for peer-reviewed scientific articles, research reports, practice guidelines.<br>3.2.1.2 Consults peer-reviewed scientific articles, research reports, practice guidelines. |
| | 3.3 The podiatrist uses clinical judgment, insight and knowledge to determine the integrity, reliability and applicability of data in the medical literature. | 3.3.1 Critically analyzing research data and analysing results. | 3.3.1.1 Evaluates and critiques research methods in the scientific literature.<br>3.3.1.2 Evaluates and critiques biases in studies. |
| | 3.4 The podiatrist knows how to integrate evidence into the decision-making process in the practice of podiatric medicine. | 3.4.1 Supporting his/her decisions based on medical research findings. | 3.4.1.1 Identifies links between research findings and practice.<br>3.4.1.2 Consults scientific evidence to support clinical decisions.<br>3.4.1.3 Integrates scientific results and evidence to support clinical decisions. |

(*Continued*)





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**Table 8** (Continued).

| Scholar | | | |
|---|---|---|---|
| **Core Competencies** | **Enabling Competencies** | **Indicators at the End of the Doctorate** | |
| 4. Contributing to the dissemination and creation of podiatric knowledge and practices applicable to podiatric medicine. | 4.1 The podiatrist integrates the scientific principles of research and knowledge transfer of research findings into health care. | 4.1.1 Applying the scientific approach in a research process. | 4.1.1.1 Systematically integrates the scientific approach into a research process. |
| | 4.2 The podiatrist respects the ethical principles of research by assessing the associated risks and obtaining informed consent from the patient. | 4.2.1 Respecting the ethics of research. | 4.2.1.1 Identifies ethical standards in research.<br>4.2.1.2 Applies ethical standards in research. |
| | 4.3 The podiatrist collaborates and contributes to the advancement of research in podiatric medicine. | | *For the fully trained podiatrists.* |
| | 4.4 The podiatrist takes a critical approach to research in the field. | 4.4.1 Critically analyzing research data and interpretation of results. | 4.4.1.1 Identifies the steps in a critical analysis of research findings.<br>4.4.1.2 Identifies possible research biases in a scientific publication.<br>4.4.1.3 Critiques scientific articles. |
| | 4.5 *The podiatrist communicates the results of the research.* | 4.5.1 Communicating research results to peers, collaborators, and patients. | 4.5.1.1 Communicates research findings in writing.<br>4.5.1.2 Communicates research findings orally.<br>4.5.1.3 Informs patients of research findings appropriate to their situation. |

the patient to another health care professional or ensuring direct and continuous communication with another professional to ensure appropriate continuity of health care. Podiatrists must be aware of the limitation to their level of competence or the efficacy of their services. If the patient's interest and needs require it, podiatrist must refer the patient to another health professional with the patient's authorization. Collaborative decision-making among service providers require above all a full understanding of their individual roles, the optimization of patient care and the allocation of responsibilities. In addition to collaborating with their peers, podiatrists must also collaborate with their patient by including the patient's perspective into the decision-making process of the treatment plan. Podiatrists must also respect a patient's choice to consult another podiatrist or another health professional. Podiatrist must also respect the patient's choice in having their care executed by another professional (Table 3).

## Communicator

Podiatrists must seek to establish and maintain a professional relationship of mutual trust with their patients and their relatives since a disorder affects not only the patient, but also their relatives (eg, family, friends, caregivers). Podiatrists must be both professional and empathetical in their physical, mental, and emotional interaction with both patients and relatives. Podiatrists seek full knowledge of the state of health of their patient and their patient's needs even if their field of activities is directed to treating local foot conditions. Podiatrists must communicate effectively and in a structured way, so that the patient understands the nature of problems identified, the risks and the benefits associated with each of the proposed treatments, and thus can give explicit and informed consent. The treatment plan must be explained in a way that considers the patient's medical history, lifestyle, needs and socioeconomic situation. Podiatrists must inform their patient of the limit of their expertise, in cases where the patient must be referred to another medical specialty (Table 4).

## Health Advocate

Podiatrists contribute to the development of the provision of foot care to the general public and in clinical situations. Podiatrists know how to communicate, educate and share their knowledge and expertise with patients, their family and their caregivers. Podiatrists promote their profession by informing and educating other health professionals to promote effective interprofessional collaboration and also ensure patient follow-up. Podiatrists promote education and information about podiatric medicine (Table 5).

## Leader and Manager

Podiatrists ensure that the podiatric medical acts they perform comply with scientific and professional standards. Podiatrists ensure that their clinic or their place of practice is equipped in accordance with these standards and that the persons under their supervision know these standards and respect them at all times. They contribute to the evolution, development and practice of their profession by taking care to inform the other health professionals about their field of expertise. Podiatrists participate in making decisions in collaboration with other health professionals to contribute to the evolution of the provision of health care. Podiatrists also work to maintain a healthy work environment that is respectful to their personnel and their patients. Podiatrists take responsibility for time management, career management and professional practice management (Table 6).

## Professional

As professionals, podiatrists have the duty to promote foot health, among both individuals and the collectivity. Podiatrists must subject their practice to the standards of their profession and the Code of ethics of podiatrists and respect the Podiatry Act. As health professionals, podiatrists must apply every effort to meet society's expectations from the profession. They undertake to offer clinical competency, maintain that competency and practice in accordance with ethical standards. They also commit to demonstrate values such as integrity, honesty, altruism, respect for patients without judgment or discrimination, and to act transparently with respect to potential conflicts of interest (Table 7).

## Scholar

As scholars, podiatrists demonstrate constant commitment to the excellence of podiatric medicine so that they can provide quality care. They pursue this excellence through continuing education, research and teaching, all in accordance with a rigorous scientific approach. Podiatrists aim to improve their knowledge and competencies through available training. They share knowledge, compare methods and the results obtained with peers, and seek feedback to maintain quality of care and preserve patient safety. They collaborate in research and share knowledge, expertise and experience with the members of their profession and students. Podiatrists show their mastery of the practice of their profession by using an approved scientific approach, based on evidence. They evaluate and apply evidence as part of their practice (evidence-based practice). They can recognize the limits, uncertainties and gaps in their profession and formulate research questions that seek to improve it (Table 8).

# Discussion

This project outlines the process of competency-based education development which is used primarily to profile UQTR's graduates in podiatric medicine. The framework developed is an arborescence of enabled competencies, defined by tangible indicators that characterize each expected part of a core competency. Thus, the competency framework includes a total of 24 core competencies divided into seven roles (ie, podiatry expert, communicator, collaborator, health advocate, leader and manager, scholar, and professional), 84 enabling competencies, and 288 expected indicators. The indicators are a valuable tool for the next steps, as they will be used to plan courses and assessment items. We have gone beyond the list of competencies and enabling competencies; each element in our work is specified by observable indicators, which provide guideposts for the podiatry program. Our work is in accordance with the Québec College of Podiatrists' competency framework where professional knowledge and expertise and ethical integrity are mandatory. Thus, this may support the podiatrist-in-training to the podiatrist-in-practice transition as well as their continuing education program as seen in other profession.[41] To our knowledge, this is the first publication of such process in podiatric medicine curriculum, although there are specific competency approaches for certain areas of practice.[12,42,43]

This work was conducted to support the next steps in the development timeline, ie, validation of the framework with external experts in podiatric medicine before the implementation of competency-based education at UQTR. Acceptability and validation are essential steps of the process as it was published in other educational professional frameworks.[8,44–46] In addition, we are sharing our experience, albeit with some missing details and still as a work-in-progress, with the community to inspire other health programs interested in adopting a competency-based approach to their emerging profession. The results demonstrate the complexity of the competency required to become a podiatrist, supporting similar role, and core competency to the original CanMEDS.[25] Our work supports the definition of the roles of the Québec College of Podiatrists considering that there is very little variation between those defined by the UQTR experts and those of the College.[27] Clearly defining competencies and role definition is an important step in professionalization for healthcare professional education and research.[47] Competency-based education relies on active, situation-based group learning strategies to prepare future health professionals to be connected to patient and population needs, and this project is going in that direction.[47] Although this causal effect cannot be supported by the present results, the framework is a significant progress in assisting health care delivery to patients and their relatives to become safer, more efficient, and more effective.[7]

# Limitations

The publication of this data can overcome the limitation of our progress given the development of the primary framework in French, and that podiatrists are essentially a profession present in the English-speaking countries.[48] The lack of specific details related to the discussions may be a limitation of this study and the memory bias in the reporting data related to the process. However, it was not originally intended to be disseminated, but the team feels that this knowledge translation adds value to this area of interest and to the podiatry community at large. In addition, specific information about the iterations during the process does not influence the final reported results and further work.

It would have been appropriate to have more expert podiatrists recruited for the Delphi in order to reach at least 15 participants which would help obtain perspective saturation.[36] However, we were limited by the number of professors in podiatry at UQTR. This was a huge commitment for the volunteer work of a podiatrist in private practice which justify the choice to stay within the institution. The group was homogeneous with respect to expertise and could rely on the support of a methodological team that increased the number of participants to 12 during the discussions. Expert participation and commitment were not always constant due to work overload which led to variability in the process over a long period of time (eg, assiduous presence at the meetings and return of documentation). The method has some flaws. As this is an adapted method, Delphi standards could have been followed more closely, especially to increase the anonymity in the discussion and self-reflection. Indeed, real-time Delphi does not always give equal weight to each expert's opinion, anonymity of the experts is not always present and can lead to the domination of the consensus process by one or a few experts.[49] Covid-19 has also slowed down the pace of work considering the difficulties encountered in clinical settings and the additional workload associated with the pandemic. Finally, there are still a lack of validation of the CanMEDS construct to demonstrate that it is the best framework for competency-based approach in education, which limits the validity of our results.[50] However, many studies in health care support the use of the CanMEDS framework to structure competencies.[51–53]

## Implications

The consensus within the expert group and their integration to the whole process may contribute to uniform education of podiatric medicine at our institution as well as the implementation of the framework elsewhere. Hence, this may be beneficial to engage lecturers in further development and their integration in academic projects. Moreover, research produce more relevant knowledge when different stakeholders are involved, especially users. This was clearly demonstrated in patient-oriented research.[54] Therefore, we have integrated a podiatry student in this project (YA), and it changed our perspective when involving them in the process for the steps 5 and 6 (Figure 1). A harmonization in the podiatry education can have a pivotal role in the recognition of this profession. This framework can support the development of Canadian education in this area and lead to new curriculum development. This may also help define the scope of practice of podiatry in Canada, as student training will be based on a comprehensive curriculum that can be more easily understood by other health professions. Podiatrists are involved in many areas of health care (eg, dermatology, neurology, vascular, orthopedic, imagery, pediatric and geriatric population, traumatology, etc.) and collaboration is mandatory to achieve the best patient outcomes, since feet are part of a whole human being with complex needs. Highly trained professionals are needed to ensure safe and quality patient care.

# Conclusion

The competency framework developed at UQTR is intended to support high-quality education and the development of the profession of podiatry. It helps define the scope of practice and capabilities of podiatric medicine, both in Canada and internationally. Next steps include validation of this framework with a panel of external experts, development of rigorous evaluation methods, and concrete actions for its implementation and assessment.

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