

Development and Validation of a New Competency Framework for Athletic Therapy in Canada

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Context: Competency-based education (CBE) is entrenched in educating health professionals in Canada. CBE is a framework that identifies desired performance characteristics in training competent, entry-level health professionals.

Objective: To update, develop, and validate a new Canadian Athletic Therapists Association (CATA) framework for athletic therapy education.

Design: Framework development occurred in 4 phases and was developed through a multistage process that involved a scoping review (phase 1) and consensus methodology (ie, a blending of modified Ebel and modified Delphi consensus methods; phases 2–4).

Patients or Other Participants: Phase 2: a total of 7 experts (program directors) from each Canadian accredited institution. Phase 3: a total of 14 experts (1 program director and educational expert from each accredited institution). Phase 4: a total of 7 experts (program directors) and 246 certified members of the CATA.

Main Outcome Measure(s): Each phase consisted of a systematic process with 80% consensus agreement set a priori. In phase 1, a scoping review was conducted to identify common terminology that could be used to guide the framework development process and to identify competency frameworks used by other health professional organizations. Phase 2 consisted of adopting a common language that would serve to keep the expert group on the task at hand and avoid confusion. In phase 3, frameworks used by other health professional organizations were evaluated and used to determine the validity of the old CATA framework. In phase 4, the old CATA framework was updated and a new framework was developed and validated.

Results: In phase 1, the result of the scoping review yielded 368 papers, of which 5 were used to propose a common language for phase 2 and 9 highlighted competency frameworks used by other health professions for comparison in phase 3. In phase 3, the expert group voted unanimously to adopt and adapt the CanMEDS framework (ie, roles). In phase 4, the new CATA competency framework was validated, and most competencies achieved consensus. Competencies that did not achieve consensus in the first round of voting underwent face-to-face discussions via videoconferencing. After discussions, the remaining competencies were revised, and all newly worded competencies achieved consensus.

Conclusions: The resultant framework was validated, and most competencies achieved consensus. The new athletic therapy competency framework outlines the 165 competencies resulting from this methodical process and will hopefully facilitate interdisciplinary communication and practice.

Key Words: Athletic training, CanMEDS, competence, competency-based education, curriculum development, outcomes-based training

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KEY POINTS

- Developing a new competency-based education framework for athletic therapy education in Canada is likely to facilitate interprofessional collaboration, communication, and education.
- The adoption of a competency-based approach to health care education de-emphasizes time-based training and focuses on outcomes, abilities, and learner-centeredness.
- The new athletic therapy framework was adapted from the CanMEDS framework and includes the following roles: athletic therapy expert, communicator, collaborator, scholar, leader, health advocate, and professional.

HISTORY OF ACCREDITATION IN CANADA

The shift from learning objectives to competency-based education (CBE) has its origins in the 1970s.^{1,2} McGahie et al¹ first proposed this system for medical training in 1978. Since then there has been considerable momentum in implementing CBE for health professionals.^{3–5} CBE has now emerged as a priority topic for education planners across the health professions.⁶ The adoption of a competency-based approach to health care education de-emphasizes time-based training and focuses on outcomes, abilities, and learner-centeredness.⁶ CBE reflects the trend of defining what graduates should be able to do in practice rather than what they should know.⁷ CBE focuses on the end objectives of a training program regardless of time spent in education. By knowing the end product, the training program can be systematically structured to meet the end objectives.⁸

Many professional organizations worldwide have established consensus on competencies in the form of competency frameworks.⁸ Physicians are leading the shift towards competency-based medical education, so much that CBE is now entrenched in medical education across Canada, the United States, and the United Kingdom.⁹ CBE promotes better curricular governance, which in turn emphasizes relevant skills for medical training, leading to better health care.⁸ CBE has shown promising results in training entry-level health professionals capable of delivering “competent” quality patient-centered care.^{4,6,10} Specifically, CBE bridges the gap between theory of competencies and practical clinical work, which minimizes the disparity between expectations and realities of competence in newly graduated health care professionals, thus improving patient safety.¹¹

Athletic therapy education in Canada has undergone significant transformation to align with trends for enhanced patient care in health professions education. In 1999, the Canadian Athletic Therapists Association (CATA), which serves as the certifying and governing body for certified athletic therapists practicing in Canada, introduced program accreditation for institutions delivering educational programs in athletic therapy.¹² As part of this accreditation process, a competency

framework followed the format and structure from the Board of Certification. Although this introduced competency-based training into athletic therapy education programs across Canada, this initial reform did not operate as a true CBE model because the competencies were still phrased as behavioral objectives. Much like the National Athletic Trainers’ Association’s previous system, an old apprenticeship-based system was retained as an external requirement in addition to completion of educational requirements to be eligible for the professional certification process. Moreover, graduates of accredited programs were required to complete 1200 practical internship hours before attempting the national certification examination. In 2007, the competency framework was updated with the primary change being a title change from behavioral objectives to competencies with few other substantive changes; however, this revision still followed the Board of Certification competency format. A CATA Education task force was formed in 2014 and made recommendations for future developments for athletic therapy education in Canada. The task force found a disconnect in delivering CBE curricula in that programs still focused on the application of knowledge rather than its acquisition.^{12,13} To have beneficial effects on teaching, learning, and health care, CBE must be embraced, delivered, and assessed.⁸ Two primary recommendations came out of the task force that are relevant to this study: (1) all accredited programs implement a formal and comprehensive CBE model by the year 2020; and (2) the removal of the 1200 hours as an external requirement for certification eligibility.¹³ Therefore, the purpose of this study was to develop and validate a competency framework for athletic therapy education in Canada, which includes a comprehensive CBE that would allow elimination of the requirement for 1200 clinical hours. The outcome of this process aligned the athletic therapy competency framework with national and international CBE standards.

METHODS

Study Design

We struck the steering committee that also included a group educational experts to guide the competency framework development process. This steering committee was involved in all 4 phases of this study and exclusively in the first 3 phases:

- Phase 1: Scoping review (2 months)
- Phase 2: Proposing a common language (2 months)
- Phase 3: Evaluating existing competency frameworks (2 months)
- Phase 4: Athletic therapy competencies validation (18 months)

The phases were iterative and built on each other successively. The final athletic therapy competency framework was generated in the final phase (phase 4). Phases 2 to 4 used a

consensus process that was a blend of 2 consensus methods: a modified Ebel procedure and a modified Delphi approach.¹⁴ Each phase consisted of a systematic process with 80% consensus agreement set a priori. The consensus groups were different for various phases and are described in greater detail in the following paragraphs. Within each phase, draft documents were circulated, followed by an oral presentation of material (through videoconference technology), a blinded vote, and subsequent virtual face-to-face discussion to debate items that did not achieve 80% consensus agreement. Comments and feedback during the face-to-face discussion was facilitated by the primary author (M.L.). Items were discussed until at least 80% consensus was reached. All phases of this research were approved by the Mount Royal University Human Research Ethics Board.

Phase 1: Scoping Review

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology was adapted for the scoping review.¹⁵ In contrast to a systematic review, which tends to include a narrow range of study designs, the scoping review was selected to address this broad topic and allow for various study designs. The goal of the scoping review was 2-fold: to identify common terminology that could be used to guide the CATA competency framework development process (phase 2) and to identify competency frameworks and competencies used by other health professional organizations (phase 3). MEDLINE and CINAHL were searched to identify relevant studies. Searches covered the time period from database inception to December 2018. The search strategy combined text terms and medical subject headings (MeSH) using the terms “*competency-based education AND (framework or language)*” in any field. Abstracts were analyzed to identify studies that met inclusion criteria for full-text review. In cases where it was not possible to determine whether inclusion criteria were met, full-text manuscripts were also retrieved. The reference lists of manuscripts that met inclusion criteria were manually searched to identify additional studies. Gray literature and Google were also searched using the same terms.

Manuscripts were limited to studies that described CBE frameworks in the context of health professions with similar scopes of practice to athletic therapists such as athletic trainers, physiotherapists/physical therapists, chiropractors, and occupational therapists. Medical education frameworks were also included because of the leading role of medical education in developing and implementing CBE.⁹ The search was restricted to English-language literature. Additional inclusion and exclusion criteria specific to phases 2 and 3 are subsequently defined.

Phase 2: Proposing a Common Language

The steering committee identified the importance of adopting a common language in the competency-framework development process. This common language served to keep the expert group on the task at hand and avoid confusing competencies with behavioral objectives and task statements that were developed in the 2007 revision process. Manuscripts from the scoping review were used to provide a starting point for development of a common language. Manuscripts were included if they presented universal terminology, a glossary,

Table 1. Descriptive Data of the Expert Educator Group

Phase	Number of Experts
2	7
3	14
4	7 experts 436 certified members

or accepted definitions currently being used in the CBE domain. Specifically, this included terminology that had reached consensus and had been adopted by other health professions pursuing CBE to ensure that the “community proceeded on the same page.”¹⁶ Two members of the steering committee (M.L., J.O.) screened all manuscripts by a full-text review. Data extraction included author(s), year, title, study design, and relevant terminology. Subsequently, this information was compiled into a working document and presented to an educational-expert group. The educational-expert group consisted of program directors from 7 accredited programs in Canada. All educational experts (hereafter, experts) had been teaching in accredited programs for at least 10 years and as long as 39 years. Descriptive data for these experts are listed in Table 1. Experts were asked to rate each definition on a 2-point scale (*agree* or *disagree*). Consensus was reached when 80% of experts agreed.

Phase 3: Evaluating Existing Competency Frameworks

In this phase of the research, expert consensus was sought to adopt a new competency framework that was identified in phase 1 of this project (the scoping review). Frameworks were excluded if they were developed for subspecialties within a profession (eg, internal medicine), if they were specific to clinical diagnoses (eg, diabetes, cancer), or if competencies were organized by domain (eg, patient care, medical knowledge, systems-based practice). Manuscripts discussing competency-based assessment/evaluation, program design, or framework implementation were also excluded. Interprofessional frameworks were also excluded. Two members of the steering committee (M.L. and J.O.) screened all remaining manuscripts by a full-text review that met the initial criteria identified in phase 1 while also meeting the exclusion criteria. Manuscripts were summarized and the following data was extracted: author(s), year, title, country of study, corresponding health profession, and competency framework. A working document was compiled from the data and presented to the expert group. In each expert was asked to recommend an educational expert from their home institution to participate in an additional round of voting. These other experts were required to hold an academic appointment and have at least 10 years of postsecondary teaching experience. Descriptive data for these experts are also listed in Table 1. After the presentation, the expert group discussed the strengths and weaknesses of each framework and whether any of the frameworks would meet the needs of CATA. Using Qualtrics survey software, a blind vote was conducted, and 14 experts (2 from each of the 7 accredited programs) voted using a 100-mm visual analog scale that was anchored with *not important* and *extremely important*. All 14 experts were instructed to vote on the importance of agreeing to adopt: (1) the selected framework; (2) role competency categories within the framework; and (3) definitions for each role.

Phase 4: Athletic Therapy Competencies Validation

The steering committee began this phase with the creation and refinement of the new competencies. Content and language from the existing competencies and task statements were updated for language, consistency, and appropriate verb allocation.¹⁷ A Bloom's taxonomy verb guideline was used to assist with progressive cognitive skill development ranging from simple acquisition of knowledge to complex thinking skills.¹⁸ Other taxonomies exist that focus on the relationships among learning outcomes, learning activities, and assessments.^{19,20} An important step in this process was to update the previous competencies using measurable verbs that best fit the previously identified domain while integrating them into the new competency roles. Another important variable in this process was to compare and ensure consistency around language use between the old CATA framework and the frameworks identified in phase 3 of this project. Once the steering committee was satisfied with the new draft, a 2-stage consultative approach was implemented using the CATA membership and the expert group.

In the first stage of consultation, the CATA membership was sent an initial draft of competencies broken down by competency role. This stage functioned as an initial screen of the competencies to ensure there was accurate representation of the competencies across the full breadth of employment settings of athletic therapists in Canada. The CATA membership was asked to use a 100-mm visual analog scale that was anchored with *extremely important* and *not important*. The other measure that was collected but was not used for content validation purposes was the frequency with which members used each competency. The steering committee used the data to screen the competencies and identify major gaps that could be addressed before being sent to the expert group for voting. Each role was sent out to the CATA membership for voting and spaced approximately 2 to 3 weeks apart.

In the second stage, results from the CATA membership for each role survey were reviewed by the steering committee. These results led to a few minor revisions before the competencies were sent to the expert group. The expert group was asked to rate 3 things: (1) the importance scale; (2) the frequency scale; and (3) a binary measure to keep or remove a specific competency. Competencies that achieved both 80% consensus to "keep" and a mean score of 80 (on a 0–100 scale) across experts for importance were automatically retained as consensus competencies. Competencies that did not achieve 80% consensus or where at least 2 expert group members voted to remove the competency were reevaluated.

RESULTS

Phase 1: Scoping Review

The search yielded 368 manuscripts, of which 14 manuscripts were selected for full-text review (Figure 1). To establish a common language, 4 manuscripts met inclusion criteria from database searching based on titles and abstracts, and one additional manuscript was identified from manually searching the reference list. To identify competency frameworks used by other health professional organizations, 6 manuscripts met inclusion criteria from database searching and were selected

for full-text review. After searching gray literature and Google, an additional 3 frameworks were included. A detailed summary of manuscripts included in the review can be found in Appendix A.

Phase 2: Proposing a Common Language

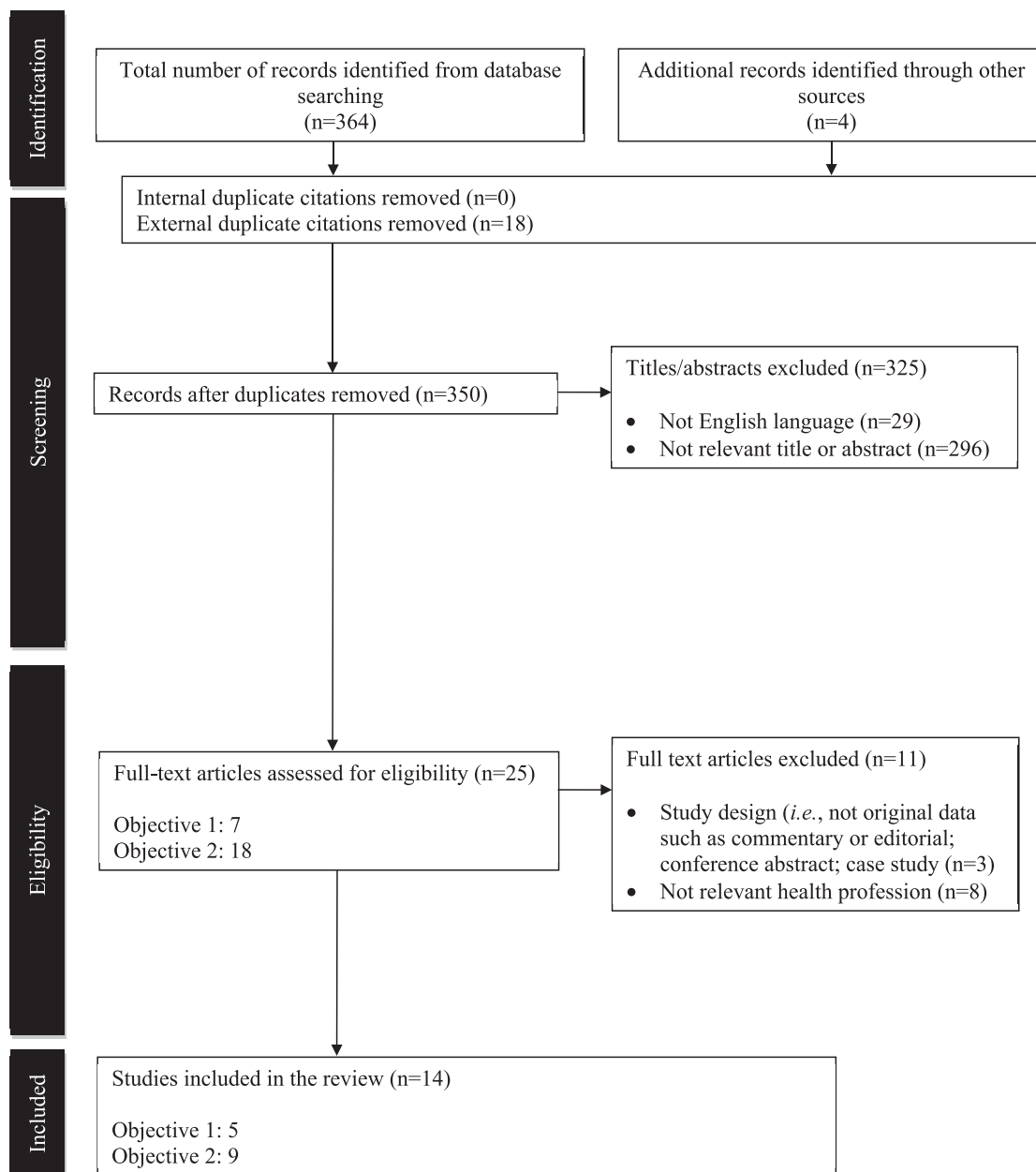
Five manuscripts were included and resulted in the identification of 5 seminal terms.^{16,21–24} These terms were regarded as important concepts towards a common language and shared understanding of CBE: (1) *competency-based education*; (2) *competency*; (3) *competence*; (4) *entrustable professional activities* (EPAs); and (5) *milestones*. In addition, the expert group proposed the addition of 1 more term that was adopted from the CATA program accreditation manual: *national standards of practice*.²⁵ All terms and respective definitions unanimously reached consensus (ie, 100% agreement). All terms and definitions are presented in Table 2.

Phase 3: Evaluating Existing Competency Frameworks

The scoping review identified 6 manuscripts from the search strategy^{26–31} that highlighted 3 frameworks that met inclusion criteria: CanMEDS, Scottish Doctor, and the competency profile for the entry-level physiotherapist in Canada (adapted from CanMEDS). An additional 3 frameworks were identified from a Google search: athletic training education competencies (National Athletic Trainers' Association),³² core competencies of the chiropractic specialist in physical and occupational rehabilitation (adapted from CanMEDS),³³ and sports physiotherapy competencies and standards.³⁴ All 6 frameworks were presented to the expert group. After discussing strengths and weaknesses of each framework, it was proposed that the CanMEDS framework would suit the needs of the CATA best.

The initial voting results were unanimous for the adoption of the CanMEDS framework and all 7 role competency categories within the CanMEDS framework: medical expert, communicator, collaborator, health advocate, leader, scholar, and professional. The expert group also agreed to change *medical expert* to *athletic therapy expert*. Five of 7 role definitions achieved consensus. *Athletic therapy expert* and *collaborator* failed to achieve consensus, thus a face-to-face discussion via videoconferencing technology was required. The discussion was facilitated by the primary author (M.L.), and experts were encouraged to state concerns with the current definition. Conceptual consensus was reached for these role definitions in the videoconference. Using the conceptual consensus, the steering group formulated a new definition, which was circulated to the expert group for a second vote. Subsequently, both revised definitions for *athletic therapy expert* and *collaborator* were approved with over 80% consensus. All 7 roles and definitions are presented in Table 3. Upon sharing the results of the second vote, the steering committee invited members of the expert group to create a visual representation that encapsulated the new competency framework using the CanMEDS framework for inspiration. Only 6 submitted a hand-drawn representation, all with varying conceptual designs. The steering committee met and decided on the final design, which resulted in an artist's rendition of the new visual representation (Figure 1). The resulting image depicts a maple leaf in which 2 roles are central to how athletic therapists have traditionally practiced:

Figure 1. PRISMA flow diagram of the identified studies for the scoping review.



athletic therapy expert and professional. These central roles are highlighted in grey (central roles), whereas the other roles are in white. However, each lobe of the leaf portrays a different complementary role that nourishes the technical expertise of the certified athletic therapist as an independent practitioner. The web of veins that connects all the roles of a certified athletic therapist illustrates a complex network, thus contributing to holistic and integrated competence.

Phase 4: Athletic Therapy Competencies Validation

During the first stage of consultation with the CATA membership (n = 2700), the response rate varied on the basis of the role being surveyed (Table 4). The majority of competencies achieved the 80% threshold, and there were only minor editorial changes to the wording of most competencies at this stage. It should be noted that the primary reason for this stage was to identify missing items or

competencies and to confirm breadth of competencies. There was only 1 suggestion across all competency roles for an additional content area: concussion. As a result, a new competency was added under the athletic therapy expert role related to concussion recognition and intervention. Data from the membership were consulted as an additional mechanism of feedback and wording for those items that did not achieve consensus with the expert group.

Consensus among the experts was achieved for the majority of competencies in the first round of voting. Table 5 outlines the results from the first round of blinded voting broken down by competency role. Competencies that did not achieve consensus or that had at least 2 members suggest the competency be deleted were discussed during the face-to-face videoconference. Discussion ensued, resulting in rewording of the competencies, which was communicated through a shared-screen function. All competencies that did not achieve

Table 2. Definitions to Help Guide the CATA Competency-Framework Development Process

Terminology	Definition
Competency-based education (CBE)	A strategy that progressively exposes students to a continuum of learning that fosters the development of general and specific knowledge, skills, and dispositions. CBE requires a combination of instruction, experiential learning, and assessment (Frank, 2010 ²⁴ / Canadian Athletic Therapists Association Program Accreditation Committee, 2016). ²⁵
National Standards of Practice	Performance benchmarks that certified athletic therapists are expected to achieve in accordance with the competencies as defined by the CATA (Canadian Athletic Therapists Association Program Accreditation Committee, 2016). ²⁵
Competence	The array of abilities (knowledge, skills, and attitudes) across multiple domains or aspects of performance in a certain context. Statements about competence require descriptive qualifiers to define the relevant abilities, context, and stage of training. Competence is multidimensional and dynamic. It changes with time, experience, and setting (Frank, 2010). ²⁴
Competency	An observable ability of a health professional related to a specific activity that integrates knowledge, skills, values, and attitudes. Since competencies are observable, they can be measured and assessed to ensure their acquisition. Competencies can be assembled like building blocks to facilitate progressive development (Frank, 2010). ²⁴
Entrustable professional activity (EPA)	An essential task of a discipline (profession, specialty, or subspecialty) that a learner can be trusted to perform without direct supervision and an individual entering practice can perform unsupervised in a given health care context, once sufficient competence has been demonstrated (Englander, 2017). ¹⁶
Milestone	A defined, observable marker of an individual's ability along a developmental continuum (Englander et al, 2017). ¹⁶

Abbreviation: CATA, Canadian Athletic Therapists Association.

Table 3. New CATA Competency Framework Roles and Definitions

Role	Role Definition
AT expert	As health care professionals, athletic therapists apply knowledge and specialized skills to provide acute care, assessment, rehabilitation, and make return to sport/activity decisions to enhance performance for physically active individuals. <i>Athletic therapy expert</i> is the central role in the athletic therapy competency framework and defines both the athletic therapist's clinical and field scope of practice. As part of the athletic therapy expert role, certified athletic therapists integrate competencies from the other 6 roles (communicator; collaborator; scholar; leader; health advocate; professional) in practice.
Communicator	As <i>communicators</i> , athletic therapists gather and manage relevant information from patients and others, including coaches, family, and health care professionals, to guide injury prevention, assessment, and rehabilitation practices. Essential information is shared with patients and pertinent personnel to facilitate return to sport/activity.
Collaborator	As <i>collaborators</i> , athletic therapists work with health care professionals and other stakeholders to provide athletic therapy expertise for physically active individuals.
Leader	As <i>leaders</i> , athletic therapists embrace their distinct role in clinical and field environments and contribute to advancing the quality and efficiency of patient care in their activities as clinicians, administrators, scholars, and/or teachers through consultative processes.
Health advocate	As <i>health advocates</i> , athletic therapists contribute their expertise to inspire individuals to achieve better health; through promoting active living, including injury prevention, and facilitating their return to sport, activity, work, and/or play when injury arises. Athletic therapists strive to understand the needs of their patients and speak on behalf of these patients, when necessary, to benefit health outcomes.
Scholar	As <i>scholars</i> , athletic therapists demonstrate a lifelong commitment to excellence in practice through continuous learning and by teaching others. Athletic therapists evaluate and use evidence-informed practice to guide decision-making. Athletic therapists contribute to scholarship to benefit health outcomes, access and efficiency of health care, and the profession of athletic therapy.
Professional	As <i>professionals</i> , athletic therapists are committed to supporting the health and well-being of active Canadians through high standards of ethical practice. Athletic therapists practice effectively by balancing professional and personal responsibilities. Athletic therapists represent the athletic therapy profession through patient care and by demonstrating integrity in various field, clinical, and academic environments.

Abbreviation: CATA, Canadian Athletic Therapists Association.

Table 4. CATA Survey Responses and Response Rates

Role	CATA Membership Response Rate, n (%)
AT expert	436 (16.15)
Communicator	198 (7.33)
Collaborator	157 (5.81)
Scholar	130 (4.81)
Leader	107 (3.96)
Professional	98 (3.63)
Health advocate	77 (2.85)

Abbreviation: CATA, Canadian Athletic Therapists Association.

consensus in the first round of voting achieved unanimous consensus in the second round. The final competencies can be found in Appendix B.

DISCUSSION

The goal and primary outcome of this study was to develop and validate a new competency framework for athletic therapy education in Canada. The athletic therapy competency framework was developed through a multistage process that involved a blending of the modified Ebel and modified Delphi consensus methodologies.¹⁴ These methodologies were used to evaluate existing frameworks, resulting in the adoption and subsequent adaptation of the CanMEDS role-based framework. The CanMEDS framework has been adopted by many other medical programs internationally.³⁶ More important, this framework was adopted by several allied health care professions in Canada including physiotherapy, chiropractic, and occupational therapy.²⁸ The greatest overlap in scope of practice with athletic therapy in Canada is primarily with medicine, physiotherapy, and chiropractic. The original Canadian athletic therapy competencies acted as the largest foundation for the development of new competencies, but language and concepts were pulled from CanMEDS, Canadian physiotherapy, and Canadian chiropractic education frameworks. Therefore, the adoption of the CanMEDS model for athletic therapy education in Canada will facilitate interprofessional collaboration, communication, education, and practice, in accordance with other health professional organizations in Canada.^{28,35}

Klaman et al³⁷ identified that the most important tenet of CBE is the importance of sufficient description, in advance, of what needs to be learned. Adopting a common framework is an important outcome of this study. Verma et al^{28,35} shared the importance of creating competency frameworks that not only meets the needs of individual health care professions but also helps to facilitate interprofessional collaboration, communication, and education. The framework and language used in the new athletic therapy competencies should help situate the profession in Canadian health care and, ideally, internationally as well. Accredited athletic therapy programs in Canada set a target to deliver CBE by the year 2020.¹³ The new athletic therapy competency framework, the associated roles, the definitions and associated competencies were presented to the CATA in July, 2019. The report that outlined the process and results of this work was ratified and accepted as the new competency framework for the CATA by the

Table 5. Number of Items That Were Pulled for Discussion Due to Lack of Consensus With Expert Group

Role	No. of Items	No. of Items That Did Not Initially Meet Consensus ^a
AT expert	35	3
Communicator	23	5
Collaborator	25	2
Scholar	15	5
Leader	17	6
Professional	20	9
Health advocate	30	8

Abbreviation: AT, athletic therapy.

^a All items resulted in unanimous consensus after face-to-face discussions.

board of directors in August 2019. The competencies were officially adopted into the standards used to accredit programs in Canada commencing in 2020, thus meeting the implementation target originally set out in 2016.

One challenge that the new Canadian athletic therapy framework will create is related to the standards and language across international boundaries. In 2018, Izumi and Tsuru-ike³⁸ compared athletic therapy/training globally. The primary terminology used in this analysis was *tasks*, which would be akin to EPAs in the new framework presented in this study. As a result of these differences, using mutual recognition agreements such as those previously outlined for international athletic training/therapy will need to be carefully compared and analyzed.³⁹ The process to determine equivalency will require some translation to ensure the underpinning spirit of competencies and EPAs are comparable internationally if credential recognition is considered.⁴⁰

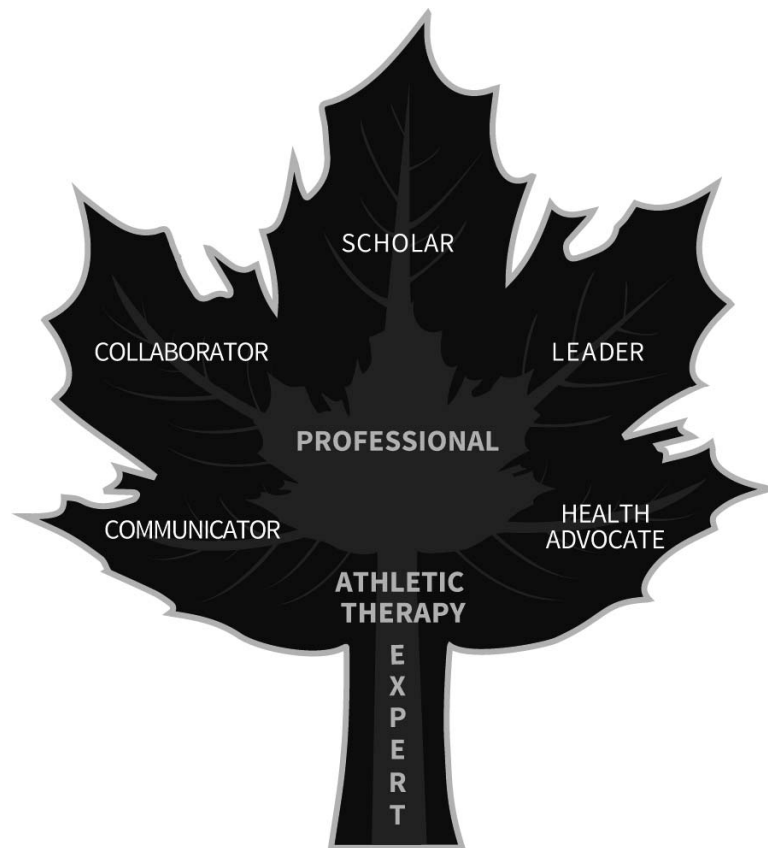
A similar pathway to these kinds of challenges around language has been carved in medical education. Englander et al¹⁶ attempted to provide greater clarity by establishing a shared language among medical educators and researchers. In the current study, we have chosen to adopt a similar language to that presented by Englander et al¹⁶ to facilitate a broader yet consistent understanding of the concepts and theories that comprise CBE.

Limitations

The project took place over a two-and-a-half-year period, and as a result, there was some turnover in experts at various phases according to availability to commit to the voting and discussion required. Seven experts who served in the expert group changed between the first 3 phases and the last phase due to medical or professional leaves of absence. However, the experts who replaced the original program director also met the criteria of expertise with more than 10 years of athletic therapy educational experience.

Another limitation is attributed to the loss of subject anonymity with the blending of the modified Ebel and Delphi procedures. Subject anonymity has the potential to reduce the influence of dominant or authoritative individuals or vice

Figure 2. A visual representation of the new athletic therapy competency framework.



versa. Videoconferencing, however, facilitates a face-to-face meeting and allows the expert group to seek clarification for difficult subject areas that would otherwise not reach consensus. In addition, the primary author (M.L.) attempted to facilitate the face-to-face discussions in such a manner that all parties needed to speak for or against wording of competencies.

One other limitation is respondent fatigue, which led to a decrease in response rates from the CATA membership as subsequent surveys were distributed. Additional context for the data presented was that the response rate was based on the total membership (ie, 2700). However, approximately 700 of those members were students and likely did not participate in the research, although they were all sent an invitation to do so. Although this total reduction in responses could lead to biased results, surveying the CATA membership was a part of a 2-stage consultative approach whereby the expert group contributed to content validation in the second phase, thus ensuring breadth of competencies was attained. Another important limitation is that the framework developed has expert consensus and is a solid representation of current literature, but its development does not ensure that it will work best for education. Validation may only be revealed once students are instructed with this framework in mind and are emerging as competent health care providers.

CONCLUSION

The new athletic therapy competency framework outlines the final competencies resulting from this methodical process. It

should be noted that these competencies are contemporary and appropriate as of 2020. However, this is the first edition of the athletic therapy competency framework and future revision and renewal should be undertaken in approximately 7 years (by 2027) to ensure these competencies continue to accurately represent the evolving athletic therapy scope of practice in Canada.

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REFERENCES

1. McGaghie WC, Miller GE, Sajid AW, Telder TV. Competency-based curriculum development in medical education: an introduction. *Public Health Pap.* 1978;68:11–91.

2. Spady WG. Competency based education: a bandwagon in search of a definition. *Educ Res.* 1977;6(1):9–14. doi:10.3102/0013189X006001009
3. Custers EJFM, ten Cate O. The history of medical education in Europe and the United States, with respect to time and proficiency. *Acad Med.* 2018;93(3):S49–S54. doi:10.1097/ACM.0000000000002079
4. Carraccio C, Wolfsthal SD, Englander R, Ferentz K, Martin C. Shifting paradigms: from Flexner to competencies. *Acad Med.* 2002;77(5):361–367. doi:10.1097/00001888-200205000-00003
5. Mace KL, Welch Bacon CE. Athletic training educators' knowledge and confidence about competency-based education. *Athl Train Educ J.* 2018;13(4):302–308. doi:10.4085/1304302
6. Frank JR, Snell LS, Cate O ten, et al. Competency-based medical education: theory to practice. *Med Teach J.* 2010;32(8):638–645. doi:10.3109/0142159X.2010.501190
7. Thistlethwaite JE, Forman D, Matthews LR, Rogers GD, Steketeet C, Yassine T. Competencies and frameworks in interprofessional education: a comparative analysis. *Acad Med.* 2014;89(6):869–875. doi:10.1097/ACM.0000000000000249
8. van der Vleuten CPM. Competency-based education is beneficial for professional development. *Perspect Med Educ.* 2015;4:323–325. doi:10.1007/s40037-015-0232-6
9. Ross S, Hauer KE, van Melle E. Outcomes are what matter: competency-based medical education gets us to our goal. *MedEdPublish.* 2018;7(2). doi:10.15694/mep.2018.0000085.1
10. Gruppen LD, Mangrulkar RS, Kolars JC. The promise of competency-based education in the health professions for improving global health. *Hum Resour Health.* 2012;10(1):43. doi:10.1186/1478-4491-10-43
11. O'Dowd E, Lydon S, O'Connor P, Madden C, Byrne D. A systematic review of 7 years of research on entrustable professional activities in graduate medical education, 2011–2018. *Med Educ.* 2019;53(3):234–249. doi:10.1111/medu.13792
12. Lafave MR, Bergeron G. Building professional competence by design or just marking time: suggestions for educational reform in athletic therapy education in Canada. *Athl Train Educ J.* 2014;9(2):59–63. doi:10.4085/090259
13. Lafave MR, Bergeron G, Klassen C, et al. Canadian Athletic Therapists Association Education Task Force consensus statements. *Athl Train Educ J.* 2016;11(1):5–9. doi:10.4085/11015
14. Eubank BH, Mohtadi NG, Lafave MR, et al. Using the modified Delphi method to establish clinical consensus for the diagnosis and treatment of patients with rotator cuff pathology. *BMC Med Res Methodol.* 2016;16:56. doi:10.1186/s12874-016-0165-8
15. Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med.* 2009;6(7):e1000097. doi:10.1371/journal.pmed.1000097
16. Englander R, Frank JR, Carraccio C, Sherbino J, Ross S, Snell L. Toward a shared language for competency-based medical education. *Med Teach J.* 2017;39(6):582–587. doi:10.1080/0142159X.2017.1315066
17. Stanny C. Reevaluating Bloom's taxonomy: what measurable verbs can and cannot say about student learning. *Educ Sci.* 2016;6(4):37. doi:10.3390/educsci6040037
18. Bloom BS. *Taxonomy of Educational Objectives Book 1: Cognitive Domain.* Ann Arbor, MI: Addison Wesley Publishing Co; 1984.
19. Simpson E. *The Classification of Educational Objectives in the Psychomotor Domain.* Ann Arbor, MI: University of Michigan; 1966.
20. Krathwohl, RD. *Affective Domain: The Classification of Educational Goals (Taxonomy of Educational Objectives).* Ann Arbor, MI: David McKay Co; 1964.
21. Stone DH. A method of deriving definitions of specific medical competencies: a framework for curriculum planning and evaluation. *Med Teach J.* 1987;9(2):155–159. doi:10.3109/01421598709089929
22. Gruppen L, Frank JR, Lockyer J, et al. Toward a research agenda for competency-based medical education. *Med Teach J.* 2017;39(6):623–630. doi:10.1080/0142159X.2017.1315065
23. Gruppen LD, Burkhardt JC, Fitzgerald JT, et al. Competency-based education: programme design and challenges to implementation. *Med Educ.* 2016;50(5):532–539. doi:10.1111/medu.12977
24. Frank JR, Mungroo R, Ahmad Y, et al. Toward a definition of competency-based education in medicine: a systematic review of published definitions. *Med Teach J.* 2010;32(8):631–637. doi:10.3109/0142159X.2010.500898
25. Canadian Athletic Therapists Association. Accreditation application process. <https://athletictherapy.org/en/becoming-an-athletic-therapist/accreditation-application-process/>. Accessed May 25, 2020.
26. Frank JR, Danoff D. The CanMEDS initiative: implementing an outcomes-based framework of physician competencies. *Med Teach J.* 2007;29(7):642–647. doi:10.1080/01421590701746983
27. Ellaway R, Evans P, Mckillop J, et al. Cross-referencing the Scottish doctor and tomorrow's doctors learning outcome frameworks. *Med Teach J.* 2007;29(7):630–635. doi:10.1080/01421590701316548
28. Verma S, Paterson M, Medves J. Core competencies for health care professionals: what medicine, nursing, occupational therapy, and physiotherapy share. *J Allied Health.* 2006;35(2):109–115. <http://www.ncbi.nlm.nih.gov/pubmed/16848375>
29. Mirzazadeh A, Hejri SM, Jalili M, et al. Defining a competency framework: the first step toward competency-based medical education. *Acta Medica Iranica.* 2014;52(9):710–716.
30. Shumway JM, Harden RM. AMEE guide No. 25: the assessment of learning outcomes for the competent and reflective physician. *Med Teach J.* 2003;25(6):569–584. doi:10.1080/0142159032000151907
31. Griewatz J, Wiechers S, Ben-Karacobanim H, Lammerding-Koepfel M. Medical teachers' perception of professional roles in the framework of the German national competence-based learning objectives for undergraduate medical education (NKLM)—a multicenter study. *Med Teach J.* 2016;38(11):1157–1165. doi:10.3109/0142159X.2016.1170777
32. Cavallario JM, van Lunen BL, Hoch JM, Hoch M, Manspeaker SA, Pribesh SL. Athletic training student core competency implementation during patient encounters. *J Athl Train.* 2018;53(3):282–291. doi:10.4085/1062-6050-314-16
33. Canadian Chiropractic Specialty College of Physical and Occupational Rehabilitation. Core competencies of the chiropractic specialist in physical and occupational rehabilitation. 2014. <https://ccpor.ca/wp-content/uploads/Core-Competencies-of-GSP-CRS.pdf>. Accessed May 25, 2020
34. Bulley C, Donaghy M, Coppoolse R, et al. Sports physiotherapy competencies and standards. Sports Physiotherapy for All project. 2004. International Federation of Sports Physical Therapy Web site. <http://ifspt.org/wp-content/uploads/2012/04/>

- SPTCompetenciesStandards-final-draft.pdf. Accessed May 26, 2020.
35. Verma S, Broers T, Paterson M, et al. Core competencies: the next generation—comparison of a common framework for multiple professions. *J Allied Health*. 2009;38(1):47–53. doi:10.1097/00001416-201010000-00010
 36. Norman G, Norcini J, Bordage G. Competency-based education: milestones or millstones? *J Grad Med Educ*. 2014;6(1):1–6. doi:10.4300/jgme-d-13-00445.1
 37. Klamen DL, Williams RG, Roberts N, et al. Competencies, milestones, and EPAs—are those who ignore the past condemned to repeat it? *Med Teach J*. 2016;38(9):904–910. doi:10.3109/0142159X.2015.1132831
 38. Izumi HE, Tsuruie M. Comparison of the practice patterns of athletic training and therapy professionals across three countries. *Int J Athl Ther Train*. 2018;23(3):108–112. doi:10.1123/ijatt.2017-0055
 39. Frank EM, O'Connor S, Bergeron G, Gardner G. International athletic training and therapy: comparing partners in the mutual recognition agreement. *Athl Train Educ J*. 2019;14(4):245–254. doi:10.4085/1404245
 40. Commission on Accreditation of Athletic Training Education. 2012 substantial equivalent documentation for non-US programs standards and instructions. https://caate.net/wp-content/uploads/2018/07/2012-Substantial-Equivalent-Standards-Approved-12_12_2017. Accessed May 25, 2020.

APPENDIX A

Table A1. Summary of Articles Retrieved to Propose a Common Language

Author(s)	Year	Title	Study Design	Relevant Terminology
Englander et al ¹⁶	2017	Toward a shared language for competency-based medical education	Expert consensus	<ul style="list-style-type: none"> • Entrustable professional activity • Milestone
Frank, Mungroo, et al ²⁴	2010	Toward a definition of competency-based education in medicine: a systematic review of published definitions	Systematic review	<ul style="list-style-type: none"> • Competence • Competency • Competency-based education
Gruppen et al ²³	2016	Competency-based education: programme design and challenges to implementation	Curriculum development and program evaluation	<ul style="list-style-type: none"> • Competency-based education
Gruppen et al ²²	2017	Toward a research agenda for competency-based medical education	Expert consensus	<ul style="list-style-type: none"> • Competence • Competency
Stone ²¹	1987	A method of deriving definitions of specific medical competencies: a framework for curriculum planning and evaluation	Curriculum development	<ul style="list-style-type: none"> • Competence

Table A2. Summary of Articles Describing Competency Frameworks

Author(s)	Year	Title	Country of Study	Corresponding Health Profession	Competency Framework(s)
Canadian Chiropractic Specialty College of Physical & Occupational Rehabilitation ³³	2018	Core competencies of the chiropractic specialist in physical and occupational rehabilitation	Canada	Chiropractors	<ul style="list-style-type: none"> Core competencies of the chiropractic specialist in physical and occupational rehabilitation (Adapted from CanMEDS) Athletic training education competencies
Cavallario et al ³²	2018	Athletic training student core competency implementation during patient encounters	United States	Athletic trainers	<ul style="list-style-type: none"> Athletic training education competencies
Griewatz et al ³¹	2016	Medical teachers' perception of professional roles in the framework of the German national competence-based learning objectives for undergraduate medical education (NKLM)—a multicenter study	Germany	Physicians	<ul style="list-style-type: none"> CanMEDS
Ellaway et al ²⁷	2007	Cross-referencing the Scottish doctor and tomorrow's doctors learning outcome frameworks	Scotland	Physicians	<ul style="list-style-type: none"> Scottish Doctor
Frank & Danoff ²⁶	2007	The CanMEDS initiative: implementing an outcomes-based framework of physical competencies	Canada	Physicians	<ul style="list-style-type: none"> CanMEDS
Bulley et al ³⁴	2005	Sports physiotherapy competencies and standards. Sports Physiotherapy for All project	NA	Physiotherapists	<ul style="list-style-type: none"> Sports physiotherapy competencies and standards
Mirzazadeh et al ²⁹	2014	Defining a competency framework: the first step toward competency-based medical education	Iran	Physicians	<ul style="list-style-type: none"> CanMEDS Scottish doctor
Shumway et al ³⁰	2003	The assessment of learning outcomes for the competent and reflective physician	United States/ United Kingdom	Physicians	<ul style="list-style-type: none"> CanMEDS Scottish doctor
Verma et al ²⁸	2006	Core competencies for health care professionals: what medicine, nursing, occupational therapy, and physiotherapy share	Canada	Physicians Physiotherapists	<ul style="list-style-type: none"> CanMEDS Competency profile for the entry level physiotherapist in Canada (Adapted from CanMEDS)

Abbreviation: NA, not applicable.

APPENDIX B. Canadian Athletic Therapists Association Competency Framework

Athletic Therapy Expert

As health care professionals, athletic therapists apply knowledge and specialized skills to provide acute care, assessment, and rehabilitation, and make return to sport/activity decisions to enhance performance for physically active individuals. *Athletic therapy expert* is the central role in the athletic therapy competency framework and defines both the athletic therapist's clinical and field scope of practice. As part of the athletic therapy expert role, certified athletic therapists integrate competencies from the other six roles (communicator; collaborator; scholar; leader; health advocate; professional) in practice. In this role, the certified athletic therapist is able to:

1. Describe and differentiate the physiological and pathophysiological responses to inflammatory and non-inflammatory conditions and their influence on the design, implementation, and progression of a rehabilitation program.
2. Compare and contrast variations in the physiological response to injury and healing across the lifespan.
3. Use techniques and procedures for neuromusculoskeletal (NMSK) evaluation of common athletic injuries/illnesses, including (a) history-taking; (b) observation; (c) functional testing (active, passive, isometric/resisted); (d) special tests; and (e) palpation.
4. Interpret the findings of a NMSK evaluation using a differential diagnosis strategy.
5. Identify urgent health conditions (red flags) that require immediate attention and take appropriate action.
6. Formulate a clinical impression based on the NMSK evaluation.
7. Identify and prioritize therapeutic goals and objectives with the patient, including control of (a) pain; and (b) inflammation/swelling; improvement of (c) strength; (d) endurance; (e) power; (f) flexibility/joint range of motion; (g) proprioception/coordination; (h) neuromuscular control; (i) postural control; and (j) stability/balance; establishment and maintenance of (k) cardiorespiratory fitness; and (l) core stability; and addressing (m) psychological considerations; (n) injury protection/tertiary prevention; (o) functional testing; (p) sport/activity-specific progressions; (q) return to sport/activity/work considerations; and (r) development of a home program.
8. Construct a comprehensive, evidence-informed rehabilitation program based on the NMSK evaluation by selecting rehabilitative exercises, therapeutic modalities, and manual therapy techniques that address therapeutic goals and objectives.
9. Evaluate rehabilitation progress and adapt to findings for optimal patient care.
10. Assess the patient before operating therapeutic modalities for indications and contraindications associated with modalities from the following categories: (a) electrical, (b) mechanical, and (c) thermal.
11. Appropriately and safely apply therapeutic modalities.
12. Appropriately and safely use exercise equipment.
13. Perform manual therapy techniques consistent with the rehabilitation program.
14. Develop and complete a discharge plan.
15. Execute emergency action plans to facilitate safe and efficient patient care.

16. Detect life-threatening conditions by performing an effective primary assessment, including (a) a scene survey; (b) spinal and/or other required stabilization; (c) determination of level of responsiveness; and assessment of (d) airway; (e) breathing; (f) circulation; (g) deadly bleeds; and (h) pulse oximetry.
17. Recognize when emergency medical services are necessary for patient care based on the primary assessment.
18. Activate emergency medical services efficiently for patient care.
19. Use lifesaving techniques in prehospital care according to current Canadian Red Cross Professional Responder standards and provincial/territorial legislation.
20. Remove sports equipment, as necessary, for emergency procedures.
21. Perform an effective secondary assessment according to the Canadian Red Cross Professional Responder scope of practice, including (a) history-taking; (b) head-to-toe assessment/physical exam; (c) vitals; (d) ongoing monitoring; and (e) patient care.
22. Differentiate between normal and abnormal vital signs to guide assessment and treatment, as appropriate.
23. Triage individuals in emergency and nonemergency situations.
24. Provide patient assistance with medications according to Canadian Red Cross Professional Responder scope of practice and provincial/territorial legislation.
25. Provide appropriate patient care for nonimmediate life-threatening injuries and conditions according to Canadian Red Cross Professional Responder standards and provincial/territorial legislation.
26. Make a secondary transport decision on the basis of the secondary assessment findings.
27. Evaluate whether the injured patient should be referred to a physician for medical examination.
28. Perform a sideline evaluation to determine whether there is potential for same-day return to sport/activity for the patient.
29. Facilitate potential return to sport/activity by (a) applying taping and wrapping techniques; (b) fabricating or using padding or bracing devices; and/or (c) fitting regulated protective equipment to the patient.
30. Appropriately fit and modify protective equipment to maintain safety standards (for example, CSA).
31. Use or develop appropriate functional tests by analyzing sport-specific skills and movement patterns required by the patient to evaluate potential for return to sport/activity.
32. Evaluate the functional effectiveness of applied taping techniques and/or equipment modifications to facilitate safe return to sport/activity for the patient.
33. Use evidence-informed criteria and appropriate outcome measures to make return to sport/activity decisions based on functional testing.
34. Modify taping and wrapping techniques or equipment, as necessary, to facilitate safe return to sport/activity for the patient.
35. Prevent, screen, evaluate, manage, and treat concussions.

Communicator

As communicators, athletic therapists gather and manage relevant information from patients and others, including

coaches, family, and health care professionals, to guide injury prevention, assessment, and rehabilitation practices. Essential information is shared with patients and pertinent personnel to facilitate return to sport/activity. In this role the certified athletic therapist is able to:

1. Use effective communication strategies (ie, cultural competence, situational awareness, and timeliness) to build rapport and trust with the patient:
2. Use communication strategies to facilitate effective patient care.
3. Use empathy, respect, and compassion as part of a patient-centered approach to communication.
4. Adapt communication approach to situational context.
5. Inquire about and explore the patient's beliefs, values, preferences, context, and expectations.
6. Facilitate nonjudgmental discussions with the patient, considering cultural context.
7. Detect, interpret, and respond appropriately to the patient's verbal and nonverbal cues for effective communication.
8. Actively listen and adapt to the individual needs and goals of each patient.
9. Explain the rationale for a return to sport/activity decision to the patient, team personnel (including coaches), and family.
10. Use counselling strategies (ie, guide, advise, and/or rationalize) to help the patient make informed decisions regarding their health care.
11. Use communication skills that help the patient and family make informed decisions regarding their health care while ensuring confidentiality and privacy.
12. Recognize when the values, biases, or perspectives of the athletic therapist, the patient, physicians, or other health care professionals may have an impact on the quality of care.
13. Use diplomacy, tact, and discretion to manage conflict and emotionally charged conversations.
14. Use appropriate terminology to effectively communicate findings to the patient and relevant stakeholders, including the patient's family.
15. Use appropriate history-taking skills to effectively gather relevant patient information.
16. Obtain relevant information from bystanders and the patient's family for patients with altered levels of responsiveness.
17. Use communication tools and electronic technologies effectively and responsibly.
18. Provide patient education to facilitate healthy lifestyle behaviours.
19. Provide patient education for ergonomic principles and their relationship to the prevention of illness and injury.
20. Demonstrate and provide patient education for warmup and stretching techniques to promote safe participation in sport/activity.
21. Demonstrate, educate, and counsel for correct and safe exercise performance.
22. Educate patients to develop self-management and self-treatment skills for initial injury management and to facilitate therapeutic goals and objectives.
23. Demonstrate effective written communication skills (ie, clear, concise, and organized).

Collaborator

In this role as collaborators, athletic therapists work with health care professionals and other stakeholders to provide athletic therapy expertise for physically active individuals. The certified athletic therapist is able to

1. Describe the role of the athletic therapist within the context of the health care system.
2. Negotiate overlapping and shared responsibilities, in multidisciplinary settings, with other health care professionals to prevent misunderstandings related to scope of practice, including physicians, physiotherapists, chiropractors, occupational therapists, massage therapists, and others.
3. Work with physicians and other health care professionals to manage differences and resolve conflicts.
4. Determine when NMSK evaluation findings warrant physician referral.
5. Collaborate with physicians to confirm injury diagnoses (for example, using laboratory studies and/or diagnostic imaging).
6. Collaborate with a physician in the implementation of a return to sport/activity protocol for the patient with a concussion.
7. Use the appropriate patient care pathway(s) to facilitate interprofessional medical care.
8. Demonstrate effective hand-overs to prehospital and hospital personnel for patient safety and continuity of care.
9. Differentiate the responsibilities of the athletic therapist from other prehospital and hospital-based care providers, including emergency medical technicians/paramedics, nurses, physician assistants, sport medicine physicians, and orthopaedic surgeons.
10. Collaborate with orthopaedic surgeons regarding post-operative care.
11. Facilitate the use of medications prescribed by physicians and pharmacists to ensure continuity of care.
12. Contribute as a valuable team member on an athletic therapy staff.
13. Integrate complementary care by referring to other health care professionals when optimal for the patient to return to sport/activity.
14. Collaborate with other health care professionals to provide specialized care for patients with physical and/or intellectual disabilities.
15. Engage in shared decision-making as an effective medical team member with other athletic therapists, physicians, and/or additional health care professionals during event coverage.
16. Plan and implement components of a comprehensive injury/illness prevention program (with relevant stakeholders), including (a) physical examinations and preparticipation screening (physicians); (b) conditioning (strength and conditioning coaches, certified exercise physiologists); (c) fitting and maintenance of protective equipment (equipment managers); (d) application of bracing and prosthetic devices (orthotists, pedorthists, podiatrists); and (e) control of risk factors (sport organizations, administrators, coaches).
17. Collaborate with strength and conditioning coaches, certified exercise physiologists, kinesiologists, and certified personal trainers to administer and interpret standard tests, protocols, and prescreening procedures

to assess cardiorespiratory fitness, body composition, flexibility, strength, balance, power, speed, agility, and endurance.

18. Identify health services, community health agencies, and community-based psychological and social services to support patients through personal health and psychosocial issues.
19. Identify common signs and symptoms related to mental health concerns, behavioral/emotional disorders, stress, substance abuse, and interpersonal conflict that warrant patient referral.
20. Use appropriate protocol for patient referral to health, psychological, or social services based on recognition of signs and symptoms.
21. Recognize and acutely manage psychological and emotional responses to a critical incident and refer affected parties to mental health care professionals, as necessary.
22. Adapt, where appropriate, a rehabilitation or conditioning program that is based on collaboration with mental health care professionals including (sport) psychologists, psychiatrists, counsellors, and social workers.
23. Act as an effective liaison between patients, athletes, coaches, health care professionals, family, and other stakeholders.
24. Collaborate with team personnel, including coaches and the team dietician/nutritionist to plan good nutrition and diet for sport/activity and injury rehabilitation.
25. Work collaboratively with organization administrators and staff members regarding the operation of athletic therapy programs and services.

Scholar

In this role as scholars, athletic therapists demonstrate a lifelong commitment to excellence in practice through continuous learning and by teaching others. Athletic therapists evaluate and use evidence-informed practice to guide decision-making. Athletic therapists contribute to scholarship to benefit health outcomes, access and efficiency of health care, and the profession of athletic therapy. The certified athletic therapist is able to

1. Describe and differentiate between quantitative, qualitative, and mixed methods research designs.
2. Find best available evidence to answer a clinical question in athletic therapy practice by identifying key concepts and using appropriate keywords, subject headings, and limits to search relevant databases.
3. Critically appraise research design, statistical analyses, and levels of evidence to interpret and evaluate research that informs athletic therapy practice.
4. Use standard criteria or developed scales to critically appraise the structure, rigour, and overall quality of research studies for integration into athletic therapy practice.
5. Identify risk factors, causes, and types of injuries related to sport/activity based on contemporary epidemiological data.
6. Incorporate best available evidence into decision-making for injury prevention, assessment, management, and rehabilitation.

7. Interpret best available evidence (eg, reliability, sensitivity, and specificity) to select NMSK evaluation and diagnostic procedures.
8. Integrate subjective clinical outcome measures (eg, generic, disease-specific, region-specific, and health-related quality-of-life measures) into athletic therapy practice.
9. Integrate objective clinical outcome measures (eg, functional and instrument-based testing) into athletic therapy practice.
10. Integrate clinical practice guidelines into athletic therapy practice.
11. Regularly reflect on the use of evidence in athletic therapy practice for lifelong learning and professional improvement.
12. Educate health care professionals based on contemporary evidence and innovation related to athletic therapy practice.
13. Recognize knowledge gaps in professional encounters, and explore or generate focused questions that contribute to athletic therapy practice and health care delivery.
14. Contribute to the improvement of athletic therapy practice and/or health care delivery through ethical research and scholarly endeavours that facilitate knowledge creation, knowledge translation, and/or practice integration.
15. Follow ethical protocols (ie, Tri-Council Policy Statement 2) when conducting research.

Leader

In this role as Leaders, athletic therapists embrace their distinct role in clinical and field environments and contribute to advancing the quality and efficiency of patient care in their activities as clinicians, administrators, scholars, and/or teachers through consultative processes. The certified athletic therapist is able to

1. Provide leadership in athletic therapy practice.
2. Identify and address contemporary issues and problems confronting athletic therapy practice and health care delivery.
3. Contribute to the improvement of health care delivery at all levels.
4. Evaluate, mitigate, and manage risks in athletic therapy practice.
5. Promote and advocate for the athletic therapy profession.
6. Promote the value of athletic therapy services.
7. Educate colleagues, students, patients, the public, employers, insurance companies, government entities, and other health care professionals about the roles, responsibilities, academic preparation, and scope of practice of athletic therapists.
8. Foster a culture that promotes patient safety including adapting systems and services based on adverse events.
9. Facilitate a safe learning environment for professionals and developing professionals.
10. Integrate mentorship for professionals and developing professionals into athletic therapy practice.
11. Support the professional development of others for quality improvement of athletic therapy practice and services.

12. Conduct business practices in accordance with CATA, local, provincial/territorial, and federal governing laws, policies, and procedures.
13. Develop and implement administrative policies and procedures to facilitate athletic therapy services.
14. Develop and continually review a comprehensive emergency action plan.
15. Manage supplies, equipment, and resources in a cost-effective manner.
16. Orient, coordinate, and manage personnel in a variety of professional domains.
17. Facilitate cooperation among athletic therapists, other health care professionals, patients, family, coaches, and administrators.

Health Advocate

In this role as health advocates, athletic therapists contribute their expertise to inspire individuals to achieve better health through promoting active living, including injury prevention, and facilitating their return to sport, activity, work, and/or play when injury arises. Athletic therapists strive to understand the needs of their patients and speak on behalf of these patients, when necessary, to benefit health outcomes. The certified athletic therapist is able to

1. Champion the health needs of patients.
2. Develop, implement, and evaluate to improve disease prevention and health promotion strategies, using best practices.
3. Use health promotion strategies that align with occupational health and safety standards to prevent and control the spread of infectious diseases.
4. Advocate for good nutrition, regular exercise, and healthy lifestyle habits for health maintenance, performance enhancement, and disease prevention.
5. Evaluate contemporary nutrition and dietary intake recommendations and explain how to perform a basic dietary analysis.
6. Evaluate prevailing nutrition and lifestyle misconceptions or fads.
7. Evaluate changes in dietary requirements that occur on the basis of health status, age, and activity level, and provide guidance or refer where appropriate.
8. Advocate for good nutrition to facilitate optimal healing and tissue repair.
9. Recognize and compare general and adverse effects of commonly used dietary supplements.
10. Evaluate healthy weight management methods and strategies.
11. Recognize, support, and refer an individual with an eating disorder.
12. Promote the World Anti-Doping Agency (WADA) guidelines for pharmaceuticals and nutraceuticals (for example, supplements, ergogenics, and herbal remedies) that facilitate recovery, function, and performance.
13. Facilitate doping control programs in cooperation with the Canadian Centre for Ethics in Sport (CCES) to protect athlete health and to ensure fair play.
14. Develop, implement, and evaluate to improve injury prevention programs, utilizing best practices.
15. Facilitate safe participation for all populations in sport/activity through preparticipation screening for medical conditions, diseases, and injury risk factors.

16. Appraise the patient's readiness for participation based on sport/activity requirements.
17. Advocate for the patient when sport/activity risks could compromise the patient's health.
18. Advocate for the athlete/patient when coaching method(s), sport demands, and/or conditioning technique(s) could potentially compromise the athlete/patient's health and wellness.
19. Integrate guidelines and practices associated with preventing sudden death during physical activity into athletic therapy practice.
20. Construct and implement an effective heat illness prevention program.
21. Assess weight loss and hydration status to evaluate an athlete/patient's ability to participate in sport/activity in a hot, humid environment.
22. Manage environmental risks to promote athlete and patient health.
23. Apply prophylactic techniques to promote primary injury prevention (for example, taping).
24. Recognize and support psychosocial and emotional responses to trauma and modified activity that may affect the rehabilitation process.
25. Apply behavioural change theories in rehabilitation to educate, motivate, lead, and inspire patients.
26. Apply psychological techniques that can be used to motivate the patient during injury rehabilitation and to facilitate safe return to sport/activity.
27. Describe pharmacokinetic and pharmacodynamic principles related to commonly used prescription and non-prescription drugs, and performance-enhancing substances.
28. Recognize and describe how pharmacokinetics and pharmacodynamics of commonly used pharmaceutical and nutraceutical products may affect health and/or physical activity.
29. Describe and compare common drug administration routes.
30. Describe how common pharmacological agents influence pain and healing and integrate this information into the rehabilitation program design.

Professional

In this role as professionals, athletic therapists are committed to supporting the health and well-being of active Canadians through high standards of ethical practice. Athletic therapists practice effectively by balancing professional and personal responsibilities. Athletic therapists represent the athletic therapy profession through patient care and by demonstrating integrity in various field, clinical, and academic environments. The certified athletic therapist is able to:

1. Perform professional responsibilities according to ethical, moral, and provincial/territorial legal parameters.
2. Practice according to the CATA Code of Ethics and Professional Conduct, Bylaws, and standards.
3. Prioritize professional duties when managing multiple patients, competing needs, and/or available resources.
4. Obtain consent and establish professional therapeutic relationships with patients.
5. Recognize the dependent relationship of a patient to the certified athletic therapist and establish professional boundaries.

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6. Share health information (verbally, in writing, and/or electronically) with patients and others on a need-to-know basis according to provincial/territorial legislation to ensure patient privacy and confidentiality.
 7. Document patient health information (in writing and/or electronically) according to organizational standards and provincial/territorial legislation to ensure patient privacy and confidentiality.
 8. Use documentation and/or effective processes to facilitate patient referral.
 9. Use an information management system to maintain medical records and ensure compliance with provincial/territorial legislation.
 10. Comply with manufacturer, institutional, and provincial/territorial/federal inspection, maintenance, and safety standards to operate therapeutic modalities and rehabilitation equipment.
 11. Manage time and priorities effectively to balance career, inclusive of self care.
 12. Maintain personal health and wellness to meet practice demands.
 13. Explain the process of obtaining and maintaining national and/or provincial/territorial certification.
 14. Maintain certification by accumulating continuing education units (CEUs) and possessing current CPR certification.
 15. Implement a planned approach to maintain competence across all 7 athletic therapy roles.
 16. Reflect on personal competence and integrate external feedback to create a professional development plan that promotes lifelong learning.
 17. Evaluate the need for mentorship and/or collegial support for professional development.
 18. Identify the implications of provincial/territorial health care regulation.
 19. Identify important historical events, milestones, and the influential contributions of leaders in the development of the athletic therapy profession in Canada.
 20. Describe the role and function of the CATA and all regional chapters and their importance to the athletic therapy profession.