



**2019 Environmental Scan
Final Report**

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The following Environmental Scan provides a high-level overview of national and international programs that address the Opioid Crisis. As such, this Environment Scan was not designed to review the curriculum across all the Canadian Undergraduate Medical Education programs. In the second phase of this project, we will consult with all the UGME programs to determine existing resources relating to the Opioid Crisis and build capacity across Canada to create a shared curriculum.

L'analyse contextuelle suivante donne une vue d'ensemble de haut niveau des programmes nationaux et internationaux qui abordent la crise des opioïdes. Par conséquent, la présente analyse contextuelle n'a pas été conçue pour examiner le programme d'études de tous les programmes de formation médicale prédoctorale au Canada. Dans la deuxième phase de ce projet, nous consulterons tous les programmes d'EMPr afin de déterminer les ressources existantes liées à la crise des opioïdes et de renforcer les capacités dans tout le Canada pour créer un programme d'études commun.

Production of this document has been made possible through a financial contribution from Health Canada. The views expressed herein do not necessarily represent the views of Health Canada.

Le présent document a été produit grâce à la contribution financière de Santé Canada. Les opinions exprimées ne représentent pas nécessairement celles de Santé Canada.

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1.0 Executive Summary

In December 2018, the Association of Faculties of Medicine of Canada (AFMC) developed and sought submissions to a Request for Proposal (RFP). The goal of the RFP was for the recipient to conduct a targeted Environmental Scan (hereafter “2019 E-Scan”) to support the AFMC in its strategy as outlined in the “*Academic Medicine Responds to the Opioid Crisis*” report. The 2019 E-Scan’s objectives were to:

- Review and update AFMC’s 2017-2018 Environmental Scan findings and identify national and international best practices in medical education regarding non-cancer pain treatment and management.
- Identify best practices in pain competency frameworks.
- Identify standards for pain educational programming outcomes and evaluation metrics.

The overall goal of the E-Scan was to provide reliable evidence to support the AFMC, its collaborators, and the expert Faculty for the future development of a national, standardized educational program targeted for the undifferentiated undergraduate medical student to enhance competencies in non-cancer pain diagnosis and treatment, effective intervention with opioids, and assessment for risks of addiction.

Employing a triangulated methodology to enhance the objectivity and reliability of the findings, the Research Team identified content and curricula from academic sites, public organizations and published literature, and validated the findings with expert input as well as with the AFMC project team. Seventy-eight (78) Canadian and US-based educational programs in (i) pain assessment, diagnosis and treatment (ii) addictions risk assessment and treatment and (iii) medical intervention with opioids were synthesized and analysed, and four (4) key findings were identified:

1. A Methodological Framework with 17 criteria by which to categorize the relevance, pertinence, and comprehensiveness of pain programs identified by the 2019 E-Scan, and to set scope and parameters for the future pain program development; Eight (8) Canadian and four (4) international programs drawn

from the following institutions and or centers met the 40% best fit threshold as listed below (see Appendix C for details):

- i. University of Calgary
 - ii. Northern Ontario School of Medicine
 - iii. University of Toronto
 - iv. Project ECHO
 - v. Royal College of Surgeons and Physicians of Canada
 - vi. Université de Montréal
 - vii. Université de Laval
 - viii. Memorial University
 - ix. Boston University
 - x. University of Massachusetts Medical School
 - xi. University of Michigan School of Medicine
 - xii. Uniformed Services University of the Health Sciences (USUHS)
2. The competency model identified as the “*best fit*” for AFMC and its collaborators is the ‘*Répertoire des compétences médicales en gestion de la douleur non cancéreuse et en prescription d’opioïdes*’¹ / ‘*Medical competencies directory in non-cancer pain management and opioid prescribing – Update*’². This competency model is inspired by the CanMEDS model, and as such will be recognized by all AFMC stakeholders.
 3. Best practices including metrics for pre/post- *knowledge, confidence, motivation* and *skills* assessment are cited. In addition, due to the heterogeneity of educational programs by region and geography, challenges for a *reliable* and *standardized* tool to evaluate impact on competencies are cited.
 4. Identification of published, validated tools and instruments to assess providers knowledge, understanding, and confidence in pain assessment and treatment, and to assess providers’ knowledge of treatment with opioids and associated risks for addictions. These tools provided standardized items and metrics that

¹ Institut National de Santé Publique du Québec, 2016

² Institut National de Santé Publique du Québec, 2019

can be integrated into the AFMC and/or Medical Council of Canada's (MCC) evaluation plan for the future national program, thereby supporting the reliability of a uniform approach for data collection and analyses.

Based upon the evidence of the 2019 E-Scan, as the AFMC and its collaborators proceed to design and develop the national program in pain for the undifferentiated undergraduate medical student, the following are six (6) recommendations to consider.

To build awareness and credibility of the E-Scan:

1. The AFMC can submit to present a summary of the E-Scan approach and/or findings at a national conference(s) and/or develop an article for publication.
2. The AFMC can develop a communication strategy specific to the Undergraduate Medical Schools' Deans and Administration, with the aim to update on the process, findings and inform regarding the next steps.

To optimize pain curriculum effectiveness and impact:

3. Design curriculum with goal to match format and delivery method, to level of learner (from Novice to Advanced).
4. Design the future curriculum to enhance knowledge, motivation and confidence, and clinical skills for **pain assessment, diagnosis** and for **pharmacological and non-pharmacological treatment of pain** *interdependent* with the enhancing the knowledge and skills to **preventatively assess for risks of addiction**. Curriculum should *exclude* knowledge and skills to *treat addictions*.
5. Integrate a team-based approach for content development and training of medical students, and engage Faculty from Nursing, Pharmacy and other specialities.
6. Incorporate items from validated tools for a reliable and standardized evaluation of the national program, while recognizing the challenges to robust assessment of competencies across multiple programs.

This report synthesizes the approach, methodology, key findings and recommendations of the 2019 E-Scan.

2.0 Introduction

In 2017, the Association of Faculties of Medicine of Canada (AFMC) undertook a substantive initiative supported by Health Canada entitled “*Academic Medicine Responds to the Opioid Crisis: Developing a Canada wide, competency-based curricula for future physicians in pain management, substance abuse and addictions*”.

This initiative is focused on the following key goals:

- To enhance pain and addictions management and treatment competencies in all medical school graduates.
- To increase practitioner and learner interest in choosing Pain and Addiction Medicine as their specialization.
- To foster faculty development in teaching and assessing pain management and addiction competencies across all disciplines.
- To develop a network of pain health educators and a resource repository of educational materials applicable to all disciplines.
- To enhance relationship-building consistency and collaboration across all 17 Faculties of Medicine in Canada and their partners, such as The College of Family Physicians Canada (CFPC), Collège des médecins du Québec (CMQ), The Royal College of Physicians and Surgeons of Canada (RC), and The Medical Council of Canada (MCC), so that common standards of education and practice in pain and addictions competency-based curricula are achieved.

To reach these goals, AFMC needs to have access to current frameworks and education programs with respect to what is already in place (nationally and/or internationally) regarding the assessment, diagnosis and treatment of patients with non-cancer pain, and the education in regard to the utilization of opioids and addictions risks assessment. Armed with this background, AFMC will be in a stronger position to identify and develop a national competency-based Curricula in pain assessment and treatment, addictions risk assessments, as well as proposed evaluation frameworks to assess the success of future curricula.

To that end, AFMC conducted a national Environmental Scan in 2017-2018 that identified training opportunities in pain medicine, addictions and substance use in Undergraduate Medical Education (UGME), Post Graduate Medical Education (PGME) and Continuing Professional Development (CPD) drawn from seventeen (17) medical schools and public organizations across Canada. In addition, two (2) Town halls and a panel of pain medicine, addictions and curriculum experts were convened, and the findings identified seventeen (17) key components and/or competencies that should be included in the proposed national curriculum.

https://afmc.ca/sites/default/files/documents/Appendix_2_UGME_PGME_CPD_Opioid_Curriculum_Responses.xlsx

The AFMC thereafter developed and sought submissions to a Request for Proposal (RFP) for a targeted 2019 Environmental Scan (hereafter 2019 E-scan) to support and expand the findings of the Environmental Scan conducted in 2017-2018. This RFP was advertised publicly via the AFMC website, and a robust scoring system applied to all respondents to ensure a balanced review and assessment of the quality, approach, and pricing for submissions. Based upon this independent RFP process, Cohaesio Inc. (www.cohaesio.ca) was awarded the grant to conduct, analyze and present the findings of the targeted 2019 E-Scan to the AFMC, the Project Oversight Committee, and the Undergraduate Curriculum Expert Committee (AFMC Offices March 12th & 13th, 2019, Ottawa, ON).

3.0 AFMC 2019 Environmental Scan

3.1 Objectives

The AFMC 2019 Environmental Scan was designed to complement the findings of the 2017-2018 AFMC Environmental Scan with the following objectives:

1. Review and update AFMC's Environmental Scan conducted in 2017-2018 to extend and validate findings regarding Undergraduate Medical Education

(UGME), Post Graduate Medical Education (PGME) and Continuing Professional Development (CPD) program curricula at seventeen (17) Medical academic settings and public programs nationally.

2. Identify national and international best practices in medical education and competency frameworks for pain treatment by physicians.
3. Identify standards for Continuing Education outcome and evaluation metrics, in order to provide guidance for the future AFMC Evaluation Framework, sustainability matrix and the logic model.

The 2019 E-Scan findings would thereby support the following goals for the AFMC and its stakeholders and partners to:

4. Design and deploy curriculum that is standardized, respects the stratification of the *undergraduate medical education* student learner from Novice to Advanced, and focuses on enhancing the key knowledge, attitudes, motivations, clinical behaviours in pain assessment and treatment, as well as addictions risks assessment, for the *undifferentiated medical provider*.

3.2 Approach & Scope

The 2019 E-Scan approach was developed and implemented by the Cohaesio Research Team (hereafter “Research Team”) to respect the E-Scan goals, as summarized in Figure 1 below. First an objective reviewer with expertise in research methodologies and who does not have any background or knowledge to pain program sources, organizations or any AFMC stakeholders regarding the research topic, established the 2019 E-Scan approach. This approach ensured the research process to be objective, transparent and inclusive of all the data available publicly and online. Secondly, the objective reviewer’s findings were reviewed by the Research Team and thereafter cross-validated with the AFMC project team to clarify alignment with larger project goals.

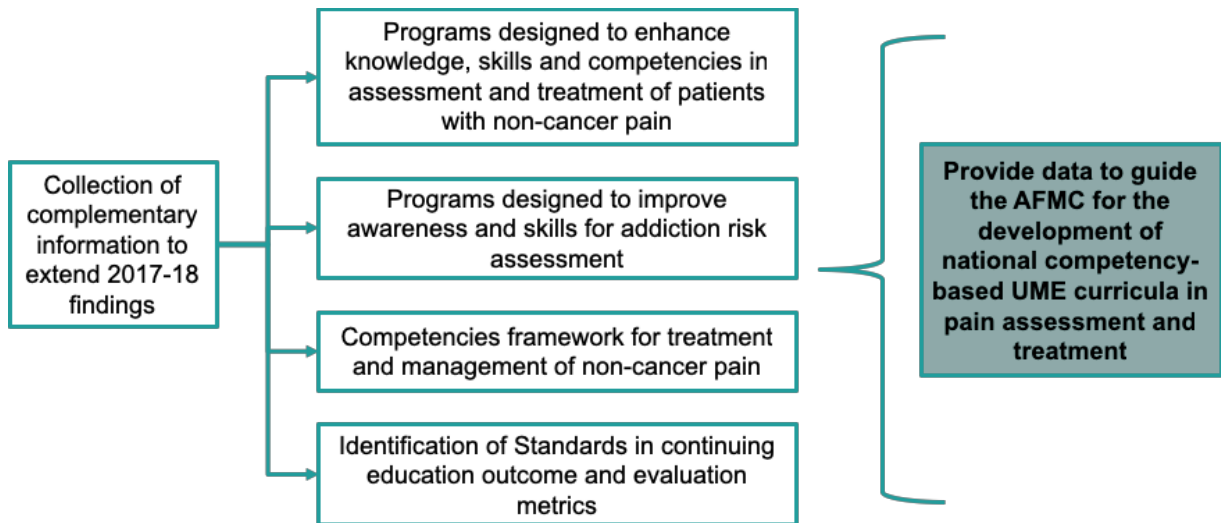


Figure 1: 2019 E-Scan Goals

The scope of work for the 2019 E-Scan was to focus on publicly available programs that were developed in the last five years, and if possible, reflective of CanMEDS Competency Model. The programs reviewed were all educational initiatives for medical students or physicians (i.e. not nurses, pharmacists etc.), who are not specialized in pain treatment and management (e.g. not anesthesiologists, neurologists, or pain specialists).

The literature search (PubMed, Google Scholar, and others) was focused on educational activities that evolved or had been newly developed since July 2018 given the scope of the AFMC 2017-2018 Environmental Scan, and also identified relevant literature published since 2013. Key search terms included: *pain management, education, curricula, Medical Education, CPD Programs, opioids prescription, opioids education, pain treatment, risk assessment, non-cancer pain, accredited programs*, plus derivatives and combinations of all terms.

Content was identified from key organizations and associations specialized in pain management, addictions, and safe opioid prescribing from the official web-sites of:

- 17 faculties of medicine in Canada, and the following Canadian organizations:
Institut national de santé publique du Québec, Centre for Addiction and Mental

Health, Centres for Pain Management, College of Family Physicians of Canada, College of Physicians and Surgeons of Ontario (CPSO), General Practice Services Committee (GPSC), Hotel Dieu hospital, MacHealth, mdBriefCase, NeuroNova Center, Pain Society of Alberta, Pallium Canada, Royal College of Physicians and Surgeons of Canada and SAEGIS Solutions.

- US organizations including the Food and Drug Administration (FDA) of the U.S. Department of Health and Human Services and Risk Evaluation and Mitigation Strategy (REMS), The International Association for the Study of Pain, Accreditation Council for Graduate Medical Education, School of Medicine at Boston University, and the Accreditation Council for Graduate Medical Education (ACGME).

3.3 Timelines to 2019 E-Scan

The following summarizes the timelines, phases and milestones for the 2019 E-Scan.

TASKS	Initiated & Completed by
Phase 1: Project kick-off	January 3 rd , 2019
Phase 2: Targeted Assessment of “Best Practices” in UGME/CME	January 7 th – February 15 th 2019
Communication request to Faculties of Medicine (maximum 2) for UGME/CME program updates by AFMC	January 9 th – January 16 th
Program updates from Faculties of Medicine (n:17)	January 16 th -February 1 st , 2019
Phase 3: Best practice identification and validation	February 8 th
Phase 4: Triangulation of Data & Interpretation of Key Themes	February 15 th – March 8 th , 2019
Phase 5a: Reporting to AFMC Presentation of findings on-site at AFMC offices	Week of March 11 th , 2019
Phase 5b: Reporting to AFMC Submission of Final Report	March 30 th , 2019
Project Post-Mortem and Closure	April 3 rd , 2019

3.4 Caveats to 2019 E-Scan Findings

- The depth of the 2019 E-Scan findings is determined by the accuracy and validity of the published online information available from the targeted selected institutions³.
- Availability of program updates from the 17 Faculties of Medicine in Canada given the tight timelines of the initiative, was also a conditioning factor.
- Time period of 2 months did not enable in-depth investigation of program content or formats.
- Findings do not include nor are intended to reflect an evaluation quality of any program cited/not cited.

4.0 Methodology

Acker's (2001) Strategic Information Scanning System (see Appendix A) provides a framework that allows the research team to systematically collect, analyze and synthesize the findings. Table 1 below outlines the Research Team's adaptation of this framework to the 2019 E-Scan.

Table 1. Strategic Information Scanning System

Steps	Tasks
Specify Information needs	<ul style="list-style-type: none"> • Existing curricula in pain treatment and education. • Identification of best practices in medical education and competency frameworks for pain treatment. • Standards for Continuing Education outcome and evaluation.
Specify Information sources	<ul style="list-style-type: none"> • Open source platforms to identify relevant published data since 2013. • MD UGME PGME and CPD program curricula at 17 Faculties of Medicine. • Public programs identified by the AFMC as the credible organizations. • US Food & Drug Administration (FDA) Risk Evaluation &

³ The research team selected the institutions that were previously highlighted in the AFMC's environmental scan conducted in 2017 and other targeted institutions approved from the AFMC. Appendix (B) highlights the complete list of these institutions and match to the Methodological Framework (see Section 4.1).

	Mitigation Strategies (REMS) approved CME. <ul style="list-style-type: none"> ACCME PARS / MedBiquitous standards for CME outcomes and evaluation.
Identify Participants	<ul style="list-style-type: none"> Stakeholders at 17 medical schools in Canada. Google scholar search with no participation or involvement of stakeholders.
Assign Scanning tasks	<ul style="list-style-type: none"> Targeted scan and deliverables such as data collected and analyzed, reports, and presentation of the findings. Validation and agreement: AFMC work in collaboration with Cohaesio to define the selection criteria and identification of the programs.
Storage and processing of information	<ul style="list-style-type: none"> All the notes and data collected from the research project will be stored in a Google Drive shared folder in which only Cohaesio will have access.
Dissemination of information	<ul style="list-style-type: none"> The Research Team will present the main findings and provide AFMC with an executive summary of the process, including the methodology used, the programs and competency frameworks selected, and the suggested evaluation framework.

5.0 Key Findings

The Research Team reviewed and synthesized seventy-eight (78) Canadian and US-based educational programs in non-cancer pain assessment, diagnosis, and treatment, as well as addictions risk assessment and management with opioids. Employing a **triangulated approach** to enhance the reliability of the findings, the Research Team identified content from the published literature, expert input from the Research Team as well as the AFMC project team's expertise on the topic. To ensure multiple levels of interpretations, analyses were conducted by the objective researcher as well as Research Team and validated by the AFMC project team. This methodology fostered robust insights regarding:

- 5.1 A Methodological Framework by which to categorize the relevance, pertinence, and comprehensiveness of pain programs identified by the E-Scan, and to set scope and parameters for the future pain program development.

5.2 “Best Fit” competency models to guide the AFMC and its stakeholders in the design and development of educational curricula, identifying the model articulated by Répertoire des compétences médicales en gestion de la douleur non cancéreuse et en prescription d’opioïdes’ / ‘Medical competencies directory in non-cancer pain management and opioid prescribing – Update” as the optimal model for the AFMC program design needs.

5.3 Best practices (see Appendix B) including metrics for pre-post knowledge, confidence, motivation and skills assessment are cited. In addition, due to the heterogeneity of educational programs by region and geography, challenges for a reliable and standardized tool to evaluate impact on competencies are cited.

As well as:

5.4 Identification of published, validated tools and instruments to assess providers knowledge, understanding, and confidence in pain assessment and treatment, and to assess provider knowledge of treatment with opioids and associated risks for addictions.

Detailed findings are provided below.

5.1 Methodological Framework

Due to the vast information available online in addition to the plethora the content provided by the AFMC from the 2017-2018 Environmental Scan, the Research Team proposed the development of a systematic process to evaluate, select, integrate and synthesize the materials. The research team designed a *Methodological Framework* to classify the programs and content, in order have a better understanding of what has been done in the field of pain treatment and education, as well as addictions risk assessment and treatment, and effective integration of opioids and all other evidence-based treatment protocols for pain. It is particularly important to note that the criteria for programs does not include treatment of addiction. The Research Team with validation by the AFMC, concluded that providing education for treatment of addictions would fall outside the expected scope of competencies for the undifferentiated medical student.

The Methodological Framework articulated *seventeen (17) selection criteria* to classify programs. These 17 criteria were validated in agreement with the AFMC and thereafter grouped into six themes:

- **Continuum of care:** covers aspects of the teaching content, including diagnosis and assessment of pain, comprehensive treatment of pain, management and monitoring of patient, risk assessment for addictions/abuse, and cultural competency for populations with special consideration.
- **Learning objectives:** integrates all the competencies that students will gain at the end of the program, such as knowledge, attitudes, confidence, clinical skills and confidence.
- **Levels of proficiency:** involves levels such as Novice Learner, Advanced Learner and Competent.
- **Competency assessment:** identifies programs that includes prerequisite assessments as well as post-course assessments.
- **Blended learning:** including case studies, scenarios, and residency programs.
- **Program promotion and sustainability:** considers the efforts in program promotion and sustainability.

As shown in Figure 2 (next page), the 17 criteria drawn from the six themes.

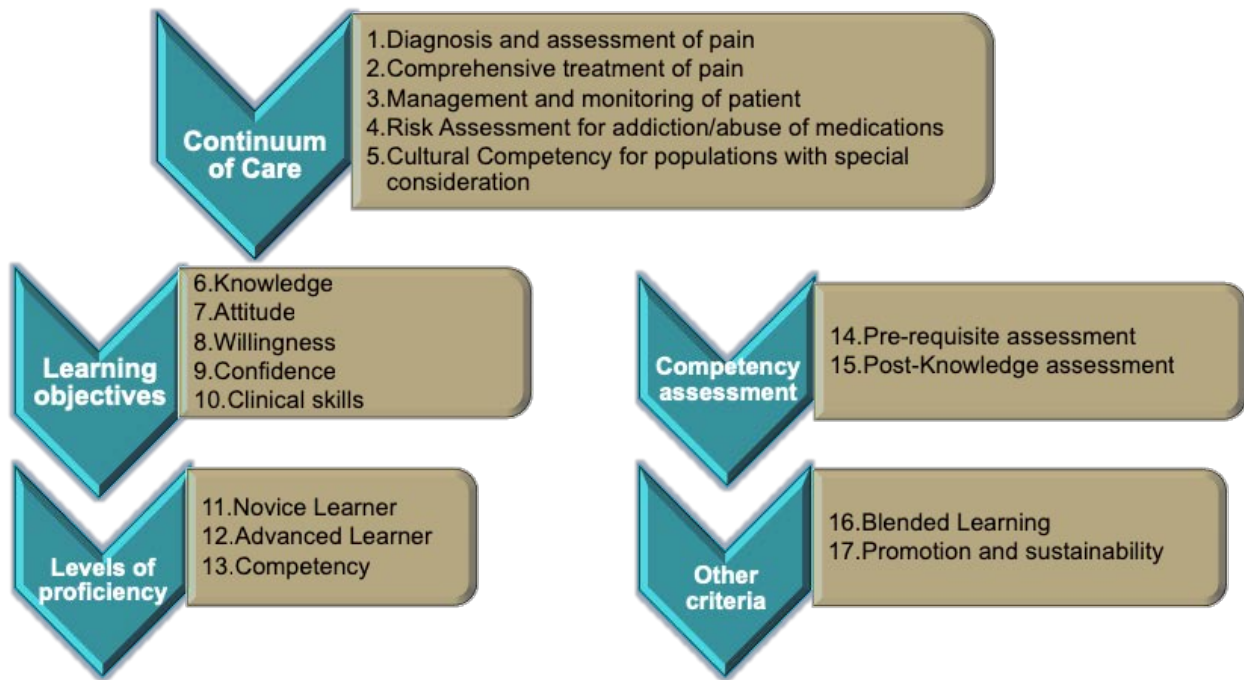


Figure 2: Criteria for fit to AFMC needs

Using an evenly weighted criteria match, the Research Team classified programs as to each program's fit to the percentage match (%) of the total 17 (100%) criteria (see Appendix (C)). It was agreed in collaboration with the AFMC that programs meeting a minimum threshold of 40% fit to the total criteria would be investigated further by the AFMC for possible sharing of content in the future program design. Eight (8) Canadian and four (4) international programs drawn from the following institutions and or centers met the 40% best fit threshold as listed below (see Appendix C for details):

- i. University of Calgary
- ii. Northern Ontario School of Medicine
- iii. University of Toronto
- iv. Project ECHO
- v. Royal College of Surgeons and Physicians of Canada
- vi. Université de Montréal
- vii. Université de Laval
- viii. Memorial University
- ix. Boston University

- x. University of Massachusetts Medical School
- xi. University of Michigan School of Medicine
- xii. Uniformed Services University of the Health Sciences (USUHS)

5.2 “Best Fit” Competency models

According to Lane and Ross (1998), a competence is defined as a set of knowledge, skills and abilities that can be applied successfully to any situation (as cited in Kak, Burkhalter, & Cooper, 2001). In the clinical context, a competency framework is essential for determining the ability and readiness of health care professionals to provide quality services (Kak, Burkhalter, & Cooper, 2001).

In their efforts to develop a competency-based curriculum, the 2019 E-Scan identified best practices in national and/or international competency frameworks regarding the assessment and treatment of patients with non-cancer pain as well as for addictions risks assessment and treatment. To that end, this research has identified *three (3) best practice competency frameworks* that have been developed and published.⁴

A) Répertoire des compétences médicales en gestion de la douleur non cancéreuse et en prescription d’opioïdes

(Institut National de Santé Publique du Québec, 2016)

Medical competencies directory in non-cancer pain management and opioid prescribing – Update

(Institut National de Santé Publique du Québec, 2019)

This competency model is inspired by the guidelines of the CanMEDS Competency Framework, specifically on the seven roles of the model: Medical Expert, Communicator, Collaborator, Leader, health advocate, scholar and professional (Frank, Snell, & Sherbino, 2015). Additionally, this framework

⁴ The selection criteria of the outlined frameworks were validated with the AFMC, based on information available in official websites and research conducted and published within the past five years regarding application of these frameworks. It was also a requirement to highlight frameworks that reflect the criteria established by the AFMC to evaluate and score current and future programs in pain treatment and risk assessment.

differentiates different levels of proficiency, (Pre-Doctoral, and Post-Doctoral who take on long term care), according to the requirements of each competency and its objectives. It also outlines essential competencies, suggested competencies and optional competencies.

B) Core Competencies for Pain Management (International Association for the Study of Pain, 2013)

This framework was developed by an interprofessional committee who collectively brought expertise in pain management, education science, and development of evidence-based consensus. This framework outlines four main domains: Multidimensional nature of pain, pain assessment and measurement, management of pain and clinical conditions.

C) Core Competencies in Integrative Pain Care for Entry-Level Primary Care Physicians (Tick, Chauvin, Brown, & Haramati, 2015)

This framework uses the Accreditation Council for Graduate Medical Education guidelines and integrates complementary frameworks from different fields such as integrative medicine, interprofessional education and pain medicine. This framework highlights the main aspects of each competency, as well as its key performance indicators.

In agreement with the AFMC, The Research Team highlighted the competency model espoused by the *Institut national de santé publique du Québec* as the framework that represents the best fit the needs of the stakeholders. This framework is a comprehensive model of assessment, diagnosis treatment, and addictions, and it incorporates the CanMEDS Competency Framework. It thus will be recognized and understood by the AFMC collaborators and Expert Faculty for the future program design needs.

5.3 Evaluation Frameworks and Outcome Metrics

In order to validate the accuracy and pertinence of any educational content, it is necessary to identify an optimal evaluation process to assess the *efficiency and impact of educational program* upon participants. The evaluation process provides

information and feedback that can be used to adjust, refine and or change educational programs. Examples of selected evaluation approaches are cited below:

- a) **University of Western Ontario:** The Department of Anesthesia and Perioperative Medicine at Western University created a Pain Medicine residency program that has a comprehensive evaluation framework (St. Joseph's Health Care London, Western University, London Health Sciences Centre, University of Windsor, 2016). This framework includes different assessment formats such as journal club presentations, annual short assessments, rotations, faculty evaluations and others. This program has integrated different platforms to facilitate the management, scheduling and tracking the progress of the student. Appendix C outlines the main characteristics of the University of Western Ontario program assessment and evaluation framework.
- b) **Boston University “SCOPE of Pain”:** SCOPE of Pain is a program that educates physicians on the safe and effective management of patients with chronic pain. This program is based on the US Food and Drug Administration Blueprint which is the official standard for educational content of the Risk Evaluation and Mitigation Strategy (REMS) to promote safe use of opioids. The program designers have developed and published examples of how to assess the impact of SCOPE (See Boston School of Medicine [BUSM], 2019, retrieved from: <https://www.scopeofpain.org>). To ensure that the program covers all the requirements of the FDA Blueprint, the School of Medicine of Boston University had created a framework (hereafter, SCOPE OF PAIN) to assess the impact of this program on participants' knowledge, attitudes, confidence, and self-reported practice (Alford et. al, 2015). The framework tests different levels of proficiency at different times, prior to taking the course, right after the end of the course, and two-months post assessment. This evaluation frequency tracks the progress of the student, and their level of competency which gives more accurate information related to the success of the course over time. The items evaluated in Scope of Pain are quantitative, with a combination of multiple-choice responses including,

true-false questions and item matching questions. Likert-type responses were included for self-reported assessments.

The Research Team concludes that while there is clear direction and capacity to design standardized metrics to assess the *understanding, knowledge and confidence gained* by participants post-program. However, program designers and developers, as well as outcomes experts identify clear challenges to design **standardized and validated** assessments to assess *the clinical skills and competencies* of participants post program, due to the heterogeneity of purpose, focus, and unique requirements for each program.

5.4 Instruments

The Research Team identified a list of published validated tools that can be useful for the AFMC to evaluate existing and future programs. The following tools measure knowledge and attitudes to treating pain and opioid prescription:

- KnowPain-50: Tool for Assessing MDD Pain Management Education (Harris et. al, 2008)
- City of Hope Pain Audit Tool (PAT) (City of Hope, 2012)
- Opioid Therapy Provider Survey (Pearon et. al, 2017)
- Test of Opioid Knowledge (TOK) (McCracken et. al, 2012)
- Beliefs & attitudes...prescribing opioids among health care providers seeking continuing education (Hooten et. al, 2011)
- Long-Term Evaluation Survey of REMS CE (REMS, 2014)

While many of these tools report validation testing of the tools, the Research Team concluded that few if any published tools are optimally tested for reliability, or content and criterion validity.

6.0 Summary & Work in Progress

The 2019 AFMC Environmental Scan sought to compliment and extend the findings of the 2017-2018 Environmental Scan findings. The rigorous and systematic approach facilitated the following key findings that provide reliable direction and guidance to the AFMC and the Faculty for the development of the national, standardized educational program targeted for undergraduate undifferentiated medical students regarding pain assessment, diagnosis and treatment, as well as effective use of opioids and assessment for risks of addictions.

1. A Methodological Framework with 17 criteria by which to categorize the relevance, pertinence, and comprehensiveness of pain programs identified by the 2019 E-Scan, and to set scope and parameters for the future pain program development.
2. The competency model identified as “best fit” for AFMC and it’s collaborators is the *‘Répertoire des compétences médicales en gestion de la douleur non cancéreuse et en prescription d’opioïdes’ / ‘Medical competencies directory in non-cancer pain management and opioid prescribing – Update’*. This competency model is inspired by the CanMEDS model, and as such will be recognized by all AFMC stakeholders.
3. Best practices including metrics for pre-post *knowledge, confidence, motivation* and *skills* assessment are cited. In addition, due to the heterogeneity of educational programs by region and geography, challenges for *reliable* and *standardized* tool to evaluate impact on competencies are cited.
4. Identification of published, validated tools and instruments to assess providers knowledge, understanding, and confidence in pain assessment and treatment, and to assess providers’ knowledge of treatment with opioids and associated risks for addictions. These tools provided standardized items and metrics that can be integrated into the AFMC and/or Medical Council of Canada’s (MCC) evaluation plan for the future national program, thereby supporting the reliability of a uniform approach for data collection and analyses.

As of March 9th, 2019, the AFMC took the lead in engaging with chairs and directors of programs identified by the Methodological Framework as a fit of 40% of the criteria (see Appendix C) to explore curriculum content sharing, legal and intellectual property considerations as well as SCORM compliance. Key considerations for discussion and next steps by the AFMC with these program directors include:

- Explore sharing course content and resources
- Respect for Intellectual Property and copyright
- License to AFMC to use, adapt for New Competency-based Curriculum Framework
- Attribution to authors and institutions
- Final Curriculum to be shared with all 17 Canadian medical schools
- Strictly for non-commercial use
- Integrated into school platforms

Effective March 12th and 13th the AFMC met with the project Oversight Committee and Undergraduate Curriculum Expert Committee, as well as the curriculum design and development team to initiate planning for the proposed curriculum.

7.0 Recommendations

The following are the key recommendations for the AFMC, the Oversight Committee, the Undergraduate Curriculum Expert Committee, and the curriculum design and development Team to consider.

7.1 Present/publish Findings of E-Scan

We recommend that the AFMC, in collaboration with the Research Team and additional Faculty upon discussion, present or submit for publication article on the methodology and the findings of the 2019 E-Scan. AFMC's initiation of this project in conjunction with the approach used and findings would be beneficial in positioning the curriculum to the 17 faculties of medicine across Canada.

7.2 Communicate Findings of Comprehensive AFMC E-Scan (2017-2019)

Develop a “Program Design & Deployment” *Communication Strategy* to inform and update all medical college undergraduate deans of activities to date, as well as scheduling and plan for future phases of the project. This communication strategy would facilitate the positioning of the new curriculum and enable the integration in the different medical faculties.

7.3 Match Format to Learner Level

Recognize the variable educational learning levels of students and match the optimal formats for learning in the development of curriculum modules to that level, in terms of the usability and relevance to the student. For example, for Novice -1st year UGME student may be best suited to didactic learning formats, whereas Advanced Learner – 4th year UGME student will benefit from interactive, self- and peer-driven learning formats etc.

7.4 Curriculum Scope

Recognize that the scope of the curriculum is interdependent and simultaneous, rather than sequential in nature and integrate the phases of pain assessment and treatment with the addiction risk assessment (but *not* addictions treatment) while taking into account the cultural competencies, legal and ethical issues.

7.5 Integrate Team-based Approach to Curriculum

Given complexities and chronic, dynamic nature of many pain conditions, medical students need to recognize the value of a team-based approach. To this goal, incorporate faculty and professionals from other disciplines to curriculum design and development phase, and integrate opportunities for medical students to learn with peers from Faculties of Nursing, Pharmacy, and Dentistry.

7.6 Evaluation Framework & Outcomes

In collaboration with the Medical Council of Canada, identify at the design stage of curriculum the “*how*” and “*when*” students will be assessed post-module participation, annually, and what level of performance (Moore et. al, 2009) will be expected of participants who complete the entire curriculum. Incorporating items or questions from the identified validated tools (see Section 4.4) is also recommended.

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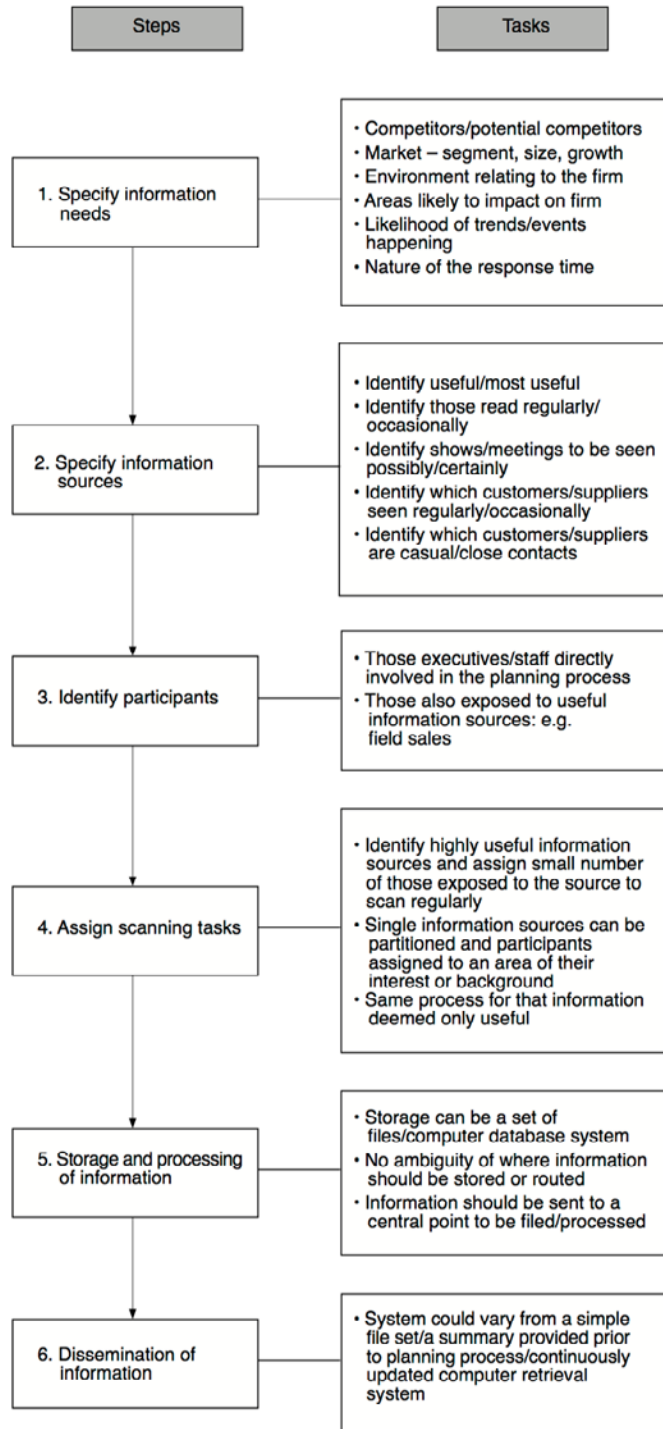
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Appendix A: Strategic Information Scanning System



Adapted from Costa, J. (1995).

Appendix B: U.W.O. Handbook of Pain Medicine Residency Program

Assessments, Examinations, Projects & Policies

Resident Assessments, CEX, DOPS, Multisource Feedback, Journal Club, Exams, Program Evaluation and Conferences

RESIDENT ASSESSMENTS

Clinical supervisors will complete and review with the resident at the end of rotation In-Training Evaluation Report (ITER) for summative feedback. All ITERs will be articulated via the CanMEDS roles. All program ITERs will be managed through the web based One45 program at Western University. Completed forms are forwarded to the Program Director for review and maintained in the resident's file.

At the mid-point of each rotation, the resident reviews a mid-point ITER with the clinical supervisor as a self-evaluation. The midpoint ITER reflects the final ITER, allowing resident and supervisors to modify the final part of the rotation if necessary to meet the resident's learning needs.

Quarterly meetings with the Program Director will be held for reviewing the resident's goals or objectives, satisfaction, reports from supervising physicians, progress with the scholarly project, career counseling, and ITER evaluation.

CLINICAL EVALUATION EXERCISES (CEX)

This evaluation takes place within Multidisciplinary Pain Clinic Blocks. Residents are asked to request at least one of these evaluations per block from a supervising pain clinic physician.

This evaluation is intended to facilitate formative assessment of core clinical skills by direct observation of a resident-patient interaction. Faculty should provide timely and specific feedback to the resident after each assessment of a trainee-patient encounter.

It is the responsibility of the resident to ensure that these evaluations are completed each block. Evaluation forms are available from Dr. Bellingham or Charlotte Sikatori upon request. Evaluations can be left in Dr. Bellingham's mailbox in the pain clinic for collection.

DIRECT OBSERVATION OF PROCEDURES (DOPS)

This evaluation takes place within Multidisciplinary Pain Clinic Blocks. Residents are asked to request at least one of these evaluations per block from a supervising pain clinic physician.

This is a structured checklist for assessing the resident's procedural skill performance. This may include any landmark-based injections within the clinic (eg, trigger point injections, soft tissue injections, joint/bursa injections), ultrasound guided interventions, fluoroscopic interventions, or intravenous infusions.

It is the responsibility of the resident to ensure that these evaluations are completed each block. Evaluation forms are available from Dr. Bellingham or Charlotte Sikatori upon request. Evaluations can be left in Dr. Bellingham's mailbox in the pain clinic for collection.

MULTISOURCE FEEDBACK ASSESSMENTS

In order to help further assess the CanMEDs roles for the residency program, Multisource Feedback Assessments will be requested twice per year. This is a self-assessment combined with an evaluation by the pain clinic administrative staff, nursing, peers, radiation technologists, and faculty.

Appendix C: Methodological Framework Match to Programs

(Attached, next page)

Canadian Programs

Institution	Programs	CONTINUUM OF CARE					LEARNING OBJECTIVES					LEVELS OF PROFICIENCY			COMPETENCY ASSESSMENT		OTHER CRITERIA		FIT TO AFMC CRITERIA FOR PROGRAMS
		Diagnosis and Assessment of Pain	Comprehensive treatment of Pain	Management/Monitoring of patient	Risk assessment for addiction/abuse of medications	Cultural Competency for populations with special consideration	Knowledge	Attitudes	Willingness	Confidence	Clinical Skills	Novice Learner	Advance Learner	Competency	Pre-requisite Assessment	Post-Knowledge Assessment/Competency acquisition	Blended Learning format-Case studies/ hands on	Promotion/sustainability	
College of Physicians and Surgeons of Ontario (CPSO)	Simulation-Based Learning for Methadone Prescribing Skills				X					X						X		18%	
Centre for Addiction and Mental Health (CAMH)	Safe and Effective Use of Opioids for Chronic Non-cancer Pain			X	X					X								18%	
CPD-ECHO Ontario Chronic Pain/Opioid Stewardship	CPD-CHO Ontario Chronic Pain/Opioid Stewardship	X	X	X				X	X				X	X				59%	
Centres for Pain Management	CPM Training program	X	X							X				X				35%	
Canadian Family Medicine	The Shared Canadian Curriculum in Family Medicine	X		X						X							X	24%	
Pallium Canada	LEAP ONCO-			X													X	12%	
Royal College & MdBriefcase	MOC Self Assessment program		X	X	X					X							X	29%	
Royal College of Physicians *Includes competency model and milestones	CPD-Prescribing safely Canada	X	X	X	X					X					X		X	47%	
MdBriefcase	Revisiting Acetaminophen for Mild to Moderate Pain Relief in Patients with		X	X						X			X	X			X	35%	
MdBriefcase-Family Physicians	NSAIDs in Opioid-Sparing Strategies: Putting Evidence into Action		X	X	X					X			X	X			X	41%	
MDCME- Memorial University	Opioids for Chronic Non-Cancer Pain: Using the Canadian Guideline in Your	X		X	X					X							X	35%	
MDCME	Introduction to Safe Prescribing: Opioids, Benzodiazepines, and				X					X								12%	
Machealth	Opioids Clinical Primer	X	X	X	X					X							X	41%	
Neuronova Center	Mindfulness-Based Chronic Pain Management		X							X	X				X			24%	
Neuronova Center	Mindfulness-Based Chronic Pain Management Advanced Review									X	X				X			18%	
Algo-md (The website is no longer active/ the latest update on social	Chronic Pain Education Programs		X							X							X	18%	
General Practice Service Committee	Pain Management	X	X	X						X			X	X				35%	
SAEGIS Solutions	Safer Opioid Prescribing skills		X	X	X					X				X				29%	
Pain Society of Alberta	An Update on the Treatment of Pain: Chronic Non Cancer Pain, Addiction and Mental Health	X	X	X	X					X							X	35%	
Hotel Dieu Hospital	Chronic Pain Clinic	X	X	X						X								24%	
INSPQ Centre d'expertise et de référence en santé publique	Traitement des troubles de l'usage d'opioïdes : une approche de collaboration interdisciplinaire				X					X								18%	
University of British Columbia	UBC Pain Medicine Residency		X	X		X				X	X			X		X		47%	
University of British Columbia	Faculty of Medicine- Undergraduate program	X	X	X						X							X	35%	
University of British Columbia	CPD- Safe Prescribing				X					X								18%	
University of Alberta	PGME-Palliative Medicine	X				X				X								18%	
University of Alberta	PGME-Palliative Medicine		X	X						X								18%	
University of Alberta	Certificate in Pain Management	X	X							X								18%	
University of Calgary	PGME- Family Medicine, Enhanced Skills-Drive			X						X								18%	
University of Calgary	PGME- Pain Medicine Residency Program	X	X		X					X			X	X			X	41%	
University of Calgary	CPE: Essential Strategies for Chronic Pain Management	X		X	X					X				X			X	41%	

Note: Identified and made publicly available Feb 28/19

Canadian Programs

Institution	Programs	CONTINUUM OF CARE					LEARNING OBJECTIVES					LEVELS OF PROFICIENCY			COMPETENCY ASSESSMENT		OTHER CRITERIA		FIT TO AFMC CRITERIA FOR PROGRAMS
		Diagnosis and Assessment of Pain	Comprehensive treatment of Pain	Management/Monitoring of patient	Risk assessment for addiction/abuse of medications	Cultural Competency for populations with special consideration	Knowledge	Attitudes	Willingness	Confidence	Clinical Skills	Novice Learner	Advance Learner	Competency	Pre-requisite Assessment	Post-Knowledge Assessment/Competency acquisition	Blended Learning format-Case studies/ hands on	Promotion/sustainability	
University of Saskatchewan	UGME: Pain Management	X	X				X												18%
University of Manitoba	Fellowship- Interventional Chronic Pain		X	X			X								X				24%
University of Manitoba	UGME: Curriculum -Drive			X		X	X												18%
NOSM	UGME: Curriculum-Drive	X	X		X	X	X					X					X		41%
NOSM	Opioids, Benzodiazepines, and Stimulants	X	X				X										X		24%
NOSM	Pain: Using the Canadian Guideline in Your Practice	X	X			X	X												24%
Western University	Pain Medicine Residency Program	X	X	X			X	X				X							35%
Western University	UGME: Pain Medicine Course	X		X		X	X					X					X		35%
Western University	PGME: Anesthesiology, Emergency Medicine, Surgical Foundations, General Internal Medicine -Drive			X			X					X							18%
McMaster University	PGME: Anesthesia-Drive				X		X					X					X		24%
McMaster University	PGME: Family Medicine-Drive			X	X		X					X					X		29%
McMaster University	PGME: Radiation Oncology- Drive			X			X					X					X		24%
McMaster University	PGME: Surgical Problems			X			X												12%
University of Toronto	UGME: Opioid Education	X	X	X	X	X	X					X					X		47%
University of Toronto	PGME: Pain Medicine Residency	X	X	X		X	X					X		X			X		47%
Queens University	UGME: Pain, Pain Management, and Substance Use Disorder - Drive			X		X	X					X					X		29%
Queens University	PGME: Family Medicine-Drive	X		X	X	X	X										X		35%
Queens University	PGME: Anesthesiology- Drive			X			X												12%
Queens University	PGME: Med Onc, Emergency Medicine- Drive			X			X					X					X		24%
Queens University	PGME: Physical Medicine and Rehabilitation- Drive	X		X		X	X					X					X		35%
Queens University	CME: Educating Family Physicians in Palliative Care			X			X										X		18%
University of Ottawa	PGME: Family Medicine			X	X		X					X							24%
University of Ottawa	PGME: Pain Medicine			X	X		X					X							24%
McGill University	UGME: Fundamentals of Medicine and Dentistry- Drive	X	X	X			X					X					X		35%
McGill University	PGME: Family Medicine- Drive			X			X					X			X		X		29%
McGill University	PGME: Anesthesiology- Drive			X		X	X					X			X		X		35%

Note: Identified and made publicly available Feb 28/19

Canadian Programs

Institution	Programs	CONTINUUM OF CARE					LEARNING OBJECTIVES					LEVELS OF PROFICIENCY			COMPETENCY ASSESSMENT		OTHER CRITERIA		FIT TO AFMC CRITERIA FOR PROGRAMS
		Diagnosis and Assessment of Pain	Comprehensive treatment of Pain	Management/Monitoring of patient	Risk assessment for addiction/abuse of medications	Cultural Competency for populations with special consideration	Knowledge	Attitudes	Willingness	Confidence	Clinical Skills	Novice Learner	Advance Learner	Competency	Pre-requisite Assessment	Post-Knowledge Assessment/Competency acquisition	Blended Learning format-Case studies/ hands on	Promotion/sustainability	
McGill University	PGME: Palliative Care-Drive	X		X			X				X					X		29%	
McGill University	PGME: Med Onc, Urology, Neuroly-Drive			X			X											12%	
McGill University	PGME: Neurosurgery, Pediatric General Surgery- Drive			X			X			X						X		24%	
McGill University	PGME: Internal Medicine - Drive			X			X											12%	
McGill University	PGME: Pediatrics- Drive			X		X	X			X						X		29%	
McGill University	Graduate Certificate in Chronic Pain Management (online learning)	X	X	X			X			X								29%	
University of Montreal	UGME: Etudes Médicales de 1er Cycle- Baccalauréat: Science biomédicales, sciences biopharmaceutiques	X	X	X			X			X	X	X				X		47%	
University of Montreal	PGME: Etudes médicales de 2em Cycle: Maîtrise en sciences biomédicales, Pharmacologies	X	X	X			X							X		X		35%	
University of Montreal	PGME- Etudes Médicales postdoctorales, Including: Médecine de l'adolescence, Spécialité en	X	X			X	X			X				X		X		41%	
University of Montreal	CME: Programme d'avis d'expert		X	X			X											18%	
Laval University	Études des 2em Cycle: DOULEUR ET CHRONICITÉ	X	X	X		X	X											29%	
Laval University	Fellowship en douleur chronique	X	X		X	X	X			X								35%	
Sherbrooke University	PGME: Microprogramme de 2e cycle en évaluation et en gestion de la douleur	X	X	X			X				X	X				X		41%	
Sherbrooke University	PGME: Évaluation et gestion de la douleur (en ligne)	X	X				X									X		24%	
Dalhousie University	UGME: Drive		X				X											12%	
Memorial University	UGME: Symptom Management, Palliative Care, End of life, Opioids-Drive	X	X	X		X	X									X		35%	
Memorial University	CME: Introduction to Safe Prescribing- Drive	X		X		X	X			X						X		35%	
Memorial University	CME: Opioids for Chronic Non-Cancer Pain-Drive		X			X	X											18%	

Note: Identified and made publicly available Feb 28/19

US-Programs

Institution	Programs	CONTENT OF THE PROGRAM					LEARNING OBJECTIVES					LEVELS OF PROFICIENCY			COMPETENCY ASSESSMENT		OTHER CRITERIA		Accomplishment of criteria (%)
		Diagnosis and Assessment of Pain	Comprehensive treatment of Pain	Management/Monitoring of patient	Risk assessment for addiction/abuse of medications	Cultural Competency for populations with special consideration	Knowledge	Attitudes	Willigness	Confidence	Clinical Skills	Novice Learner	Advance Learner	Competency	Pre-requisite Assessment	Post-Knowledge Assessment/Competency acquisition	Blended Learning format-Case studies/ hands on	Promotion/sustainability	
University of Massachusetts Medical School	Opioid Conscious Curriculum-Opioid Safe Training immersion	X	X		X		X	X					X			X		41%	
University of Michigan School of Medicine	Managing Patients with Chronic Non-Terminal Pain [2015 revision]	X	X	X	X		X								X			41%	
Uniformed Services University of the Health Sciences (USUHS)	Joint Pain Education Program	X	X	X	X	X	X								X			41%	
Boston University SCOPE	Scope of Pain Safe and Competent opioid prescribing education	X	X		X		X	X		X	X				X	X	X	59%	
Warren Alpert School of Medicine at Brown University	Interdisciplinary Treatment of Pain and Foundational Principles Regarding Addiction, Pain and Opioids	X	X	X			X								X			29%	
EDX-Harvard University	The Opioid Crisis in America-opioid epidemic in the United States and information about treatment and		X	X	X		X									X		29%	

Note: Identified and made publicly available Feb 28/19

Appendix D: Additional Materials Reviewed

Association / University / Entity / Journal	Type of Resource	Link
Academy of Integrative Pain Management	Education Program	Advanced Pain Management Practitioner (APMP) Certificate Program – Prescriber Edition
American Academy of Physical Medicine and Rehabilitation (AAPM&R)	Education Program	Program: REMS Playbook for Opioid Prescribing: Online Interactive Learning Experience
American College of Physicians	Education Program	Program: Educational Recording - Safe Opioid prescribing 2018
ASHP, pharmacists advancing healthcare	Education Program	Program: Safe Opioid Prescribing: Dashboards and Clinical Care
Boston University / School of Medicine - SCOPE of Pain	Education Program	Program: SCOPE of Pain, Safe and Competent Opioid Prescribing Education
International Association of the Study of Pain (IASP) Interprofessional Pain Curriculum Outline	Education Program	Course Outline-February 25th 2018
Johns Hopkins Medicine Pain Treatment Program for patients	Education Program	Program-Johns Hopkins Medicine (REMS Not explicitly stated)
Keck School of Medicine Pain Medicine-Online Degree Program	Education Program	Program: Master/Certificate - Keck School of Medicine of USC (REMS Not explicitly stated)
Stanford Medicine Division of Pain Medicine	Education Program	Program-University of Stanford

Stanford Medicine, Division of Pain Medicine	Education Program	Program: Safe Opioid Prescribing and Risk Evaluation and Mitigation Strategies (REMS)
The American Academy of Pain Medicine	Education Program	Essential tools for treating the patient in Pain (REM Not explicitly stated)
The Society of Hospital Medicine, Multimodal Pain Strategies-Guide for Postoperative Pain Management	Education Program	Guide-Full text-Year Published:2017
Tufts University Pain Research, Education and Policy	Education Program	Program-Certificate/Masters-Tufts University (REMS Not explicitly stated)
University of Connecticut Pain Management Online Graduate Certificate	Education Program	Pain Management Online Graduate Certificate (REMS not explicitly stated)
University of Southern Indiana Pain Management Program Certificate	Education Program	Program: Certificate - University of Southern Indiana (REMS Not explicitly stated)
College of Physicians and Surgeons of British Columbia Practice Standard Safe Prescribing of Opioids and Sedatives	Guideline	https://www.cpsbc.ca/files/pdf/PSG-Safe-Prescribing.pdf
	June 2018-Updated guidelines regarding opioid prescribing	https://cdn.ymaws.com/harims.site-ym.com/resource/resmgr/docs/rims_docs/dr_mcdonaldletter_final.pdf
Provincial guidelines (BCCSU/MoH Guidelines for the Clinical Management of Opioid Use Disorder)	Report	http://www.bccsu.ca/wp-content/uploads/2018/05/BC_OUD_Guideline.pdf

Full Report National Opioid Use Guideline Group (NOUGG) Summary	Report-Full report	http://nationalpaincentre.mcmaster.ca/documents/Opioid%20GL%20for%20CMAJ_01may2017.pdf
National Opioid Use Guideline Group (NOUGG) Summary	Report-Summary	http://nationalpaincentre.mcmaster.ca/documents/opioid_guideline_part_b_v5_6.pdf
American Pain Society Interdisciplinary Pain Management	Research Article	Article-Full Text-Year Published: 2009
ASA Monitor Multimodal Approaches are a Focus for Pain Management Program	Research Article	Article-Abstract- Date published: April 2018
Clinical Therapeutics, The US Food and Drug Administration's Risk Evaluation and Mitigation Strategy (REMS) Program – Current Status and Future Direction"	Research Article	Article - Year Published: 2016
Disability and Rehabilitation "The Current State of Pain Education Within Canadian Physiotherapy Programs: A National Survey of Pain Educators"	Research Article	Article-Abstract- Date published: 08 Jan 2019
FDA "Opioid Analgesic REMS Education Blueprint for Health Care Providers Involved in the Treatment and Monitoring of Patients with Pain"	Research Article	Article - Full Text - Year Published: 2018
Pain Medicine "SCOPE of Pain: An Evaluation of an Opioid Risk Evaluation and Mitigation Strategy Continuing Education Program."	Research Article	Article - Full Text - Year Published: 2016

Postgraduate Medicine, Chronic Pain Management in Medical Education: A Disastrous Omission	Research Article	Article Full text-Year published: 2017
American Academy of Pain Medicine	Website	Website
American Headache Society	Website	Website
American Society for Pain Management Nursing	Website	Website
American Society of Pain Educators	Website	Website
American Society of Regional Anesthesia and Pain Medicine	Website	Website
Association of American Medical Colleges	Website	Website
Eastern Pain Association, A Regional Section of the American Pain Society	Website	Website
International Association for the Study of Pain (IASP)	Website	Website
National Pain Institute	Website	Website
National Vulvodynia Association (NVA)	Website	Website
Pain Research & Education Conference for Clinicians	Website	Website-Conference Feb 24
The American Chronic Pain Association	Website	Website
The American Osteopathic Academy of Addiction Medicine	Website	Website

The American Pain Society (APS)	Website	Website
University of Washington-Anesthesiology and Pain Medicine	Website	Website
US Pain Foundation	Website	Website
Western Pain Society	Website	Website

Canadian Society of Palliative Care Physicians	Online Methadone Course Online - Not very detailed on pain management programs
CCSA: Canadian Center on Substance Use and Addiction	No programs related
CDHA: Canadian Dental Hygienists Association	No programs related
CFPC: The College of Family Physicians of Canada	No programs related
CMA: Canadian Medical Association	No programs related
CMPA: Canadian Medical Protective Association	They offer risk management information for physicians https://www.cmpa-acpm.ca/static-assets/pdf/about/annual-meeting/com_16_opioids_chronic_non-cancer_pain-e.pdf
CMQ: Collège des médecins du Québec	Outlines different universities where people can take their medical studies, residency programs, and fellowship (uLaval, McGill, uMontréal, U de Sherbrooke)
FMEQ: Fédération médicale étudiante du Québec	No programs related
FMQR: Fédération des médecins résidents du Québec	No programs related
MCC: Medical Council of Canada	They do evaluations/assessments for physicians-They do not offer programs
NOSM: Northern Ontario School of Medicine, Project ECHO	Project ECHO SJGC Chronic Pain & Opioid Stewardship Hub https://www.nosm.ca/
Nova Scotia Health Authority	Programs for patients