Effective Management of Chronic Non-Cancer Pain: Assessing Treatment Approaches to Decrease the Use of Prescription Opioids

by

Jessica Sandhu

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Executive Summary

Introduction

The opioid crisis has become a major public health issue in Canada over the past few years. Although all levels of government across Canada have taken a collaborative approach that focuses on the opioid crisis, the use of prescription opioids has not been a large focal point of the epidemic. Opioids can be prescribed by healthcare providers to treat individuals with chronic pain, but many do not feel that they are not adequately trained to do so (Upshur et al., 2006, p. 654). This problem amongst healthcare providers has become an issue, particularly within primary medicine (Upshur et al., 2006, p. 654).

The use of prescription opioids has been an effective method to treat various health issues, but there has been debate on its effectiveness to treat chronic pain for non-cancer patients. The risk of addiction as a result of using prescription opioids for pain management is small if it is directly supervised by medical professionals (Centre for Addiction and Mental Health [CAMH], 2012). However, individuals with a history of abuse or addiction are at a higher risk. It is generally not recommended to use opioids as first-line therapy to treat chronic pain, as other treatment methods, such as a multidisciplinary approach, can be just as effective with less risk and harm (Health Quality Ontario, 2018, p. 3).

Using multidisciplinary, interdisciplinary, and/or multimodal treatment approaches could assist in improving or maintaining the lives of individuals who experience chronic pain. These approaches could improve their lives without the use of opioid therapy, or if needed, a very small and controlled dose. The purpose of this project will explore the use of prescription opioids and provide evidence of effective models that are currently used across Canada and internationally that treat individuals with chronic pain. To do this, the project will (1) analyzes various models that show effective treatment approaches that decrease the number of opioids an individual is prescribed while showing improvements in their everyday life, (2) develop a jurisdictional scan to collect models that have been implemented within Canada, excluding British Columbia, and internationally, and (3) analyze and assess models that were collected in the jurisdictional scan

against a set of baseline measurements to determine the effectiveness of each of the models. To determine what makes these models effective, the literature review analyzes academic and peer-reviewed literature that collected methods using patient satisfaction scales pre- and post-study, standardized with pain rating scales pre- and post-study, and opioid use pre- and post-study.

Method and Methodology

The primary research question is:

1. What is the most effective treatment model of pain management and prescription opioids could Island Health implement to improve the daily lives and function of individuals who experience chronic pain?

The secondary research questions that will support answering the primary research question are:

1. What models have been implemented across Canada and internationally?
2. Are these models effective?

To address these research questions, this research report involved three stages: literature review, jurisdictional scan, and discussion and analysis. In the first stage, the literature review collected academic peer-reviewed research which was assessed and analyzed to inform best practice models that treat chronic non-cancer pain. Based on academic findings in the literature review, an assessment tool was developed to evaluate the effectiveness of treatment models using a set of criteria that utilized best practice measures. In the second stage, the jurisdictional scan reveals various treatment models that have been developed and implemented across various jurisdictions including Canada, the United States, the United Kingdom, Australia, and New Zealand. The third stage was to analyze and assess the treatment models that were collected in the jurisdictional scan against the set of criteria from the assessment tool. The purpose of these three stages was to assess which models were effective to treat chronic non-cancer pain. In addition, the jurisdictional scan highlighted what other jurisdictions outside of British Columbia have implemented to treat and/or manage chronic pain and how they are utilizing prescription opioids.

Key Findings

Key findings from the literature review, jurisdictional scan, and discussion and analysis include:

- Family practice is one of the leading healthcare services that prescribe opioids. Primary care physicians encounter many patients who experience chronic non-cancer pain. Based on various academic studies throughout the literature review, many primary care physicians do not feel they are adequately trained to treat individuals who experience chronic pain and have not received enough training in pain management and opioid prescribing. Overall, attitudes from primary care physicians show that additional training support and tools could be beneficial when treating individuals who experience chronic pain, particularly when prescribing opioids to treat and/or manage their pain.
- Between 2015 and 2017, the International Association for the Study of Pain (IASP) Council developed the IASP Presidential Task Force on Multimodal Pain Treatment. One of the objectives of the task force was to develop terminology to define approaches to treat chronic pain, as there previously was no standardized definition. The task force developed four definitions: Unimodal treatment, multimodal treatment, multidisciplinary treatment, and interdisciplinary treatment. These treatment models were used throughout research studies throughout the literature review and in programs in the jurisdictional scan. Specifically, a multimodal, multidisciplinary, and interdisciplinary treatment approach were most commonly found in various treatment models throughout the report.
- The findings identified that multidisciplinary, interdisciplinary, and multimodal approaches are effective treatment models that improve function, improve quality of life, and reduce pain for individuals who experience chronic pain. Specifically, the findings show that these models included various treatment options including first-line therapy approaches, non-opioid pharmacology, opioid pharmacology, and interventional pain procedure treatments. The literature review also revealed that using a team-based care approach, which includes pain management specialists, physiotherapists, occupational therapists, nurses, and psychologists, were effective in treating individuals with chronic pain.

- The report revealed that outpatient healthcare clinics, such as pain clinics, opioid reassessment clinics, rehabilitation clinics, and co-occurring disorders clinics are also effective models. Specifically, individuals who experience chronic pain with co-occurring mental health and/or substance use issues could benefit from being referred to these programs, as they provide and safe and supportive environment.
- In addition to the models mentioned above, the findings show that other models such as virtual care services, and education and training could also be beneficial for healthcare providers when treating and/or managing individuals who experience chronic pain. Specifically, utilizing virtual care services could provide healthcare providers who work in rural and remote communities the opportunity to connect with pain management specialists. As many individuals who live in rural and/or remote communities may not have access to pain clinics in their community, utilizing virtual care, or telehealth services could be an opportunity to provide support to healthcare providers who are treating and/or managing their pain in their local community. Education and training opportunities could provide healthcare providers with additional training resources and tools, specifically on pain management and utilizing prescription opioids to treat chronic non-cancer pain. These training and educational opportunities could be provided in-person or online, focusing on topics such as treating chronic pain with prescription opioids, treating chronic pain with first-line therapy approaches, prescribing opioids, and other important topics. These sessions could be fundamental in providing healthcare providers more training in pain management.

Options for Consideration

1.0 Develop educational and/or training resources about Chronic Pain and Prescription Opioids for Healthcare Providers

Many healthcare providers acknowledge that they do not have the necessary training to support patients with chronic pain. Healthcare providers may not feel confident to prescribe opioids as a treatment option, especially if there is a risk that it could lead to addiction. For healthcare providers living in rural and remote locations, there is an additional concern that there are limited resources available, such as pain clinics, that could provide specialty services for their patients who are living with chronic pain.

1.1 Opioid Manager

The function of the Opioid Manager, updated in 2017 by the Centre for Effective Practice, is one approach that Island Health could consider is ensuring that healthcare providers have the necessary tools and resources to support a chronic pathway of care. The Opioid Manager provides primary care providers support when they consider using prescription opioid-therapy to treat and manage patients with chronic pain. Island Health could implement this approach across all practices and ensure that all healthcare providers have adequate information and support. If the Opioid Manager has already been implemented across all practices, then Island Health could ensure that all healthcare providers are using the recently updated 2017 version based on feedback in the 2017 Canadian Opioid Guideline.

1.2 Online or In-Person Education and Training

Island Health should encourage healthcare providers to enroll in online education and/or training courses that focuses on pain management and opioid training. Effective options include utilizing the Mental Health Commission of Canada catalogue of opioid training courses for healthcare professionals that are available online or in-person and annual conferences for healthcare providers that focuses on pain management and prescription opioids. Conferences could include pain medicine specialists from across British Columbia and/or Canada that present recent studies, complex cases, and training opportunities for healthcare providers across Island Health.

It could be an opportunity to create learning opportunities and networking between healthcare providers and pain medicine specialists.

2.0 Utilize telehealth or virtual care services between healthcare providers and pain specialists

Telehealth, or virtual care services, are designed to connect healthcare providers and patients, regardless of geographical location. These services could be utilized to connect healthcare providers and pain medicine specialists to discuss complex chronic pain cases and develop treatment plans for individuals who experience chronic pain. Telehealth services could provide healthcare providers in rural and remote areas, who may not have local access to pain clinics, resources and networks with pain medicine specialists who are based in larger metropolitan areas. As more telehealth services are becoming readily available and accessible in various locations across Island Health, this option could be a viable plan to implement. With telehealth services being accessible, Island Health could focus attention on improving access to pain management and addiction medicine for patients and healthcare providers in rural and/or remote communities through their telehealth platform.

Island Health could look at Project ECHO that is currently being implemented across the province of Ontario. This project utilizes telehealth, or virtual care, technology to connect primary care providers, particularly those living in rural and remote areas, with pain specialists. The pain specialists provide support to primary care physicians through weekly virtual sessions that involve looking at specific complex cases of patients who are experiencing chronic pain.

3.0 Implement Multidisciplinary, Interdisciplinary, and/or Multimodal Programs within healthcare services to treat and manage chronic pain

Based on the literature review and jurisdictional scan findings, multidisciplinary, interdisciplinary, and/or multimodal treatment approaches has shown to be best practice strategies to treat and/or manage chronic pain. Multidisciplinary, interdisciplinary, and multimodal programs follow team-based approach that includes physicians, nurse practitioners, physiotherapists, occupational therapists, psychologists, and pain specialists. These program models could be based out of both outpatient clinics and/or pain clinics.

Island Health would benefit from a pilot project that utilizes a multidisciplinary, interdisciplinary, and/or multimodal team in an outpatient clinic, similar to the Multidisciplinary Pain Clinic in Alberta or Integrated Chronic Pain Clinic in Ontario. A pilot project could incorporate a multidisciplinary or interdisciplinary team to treat patients who are currently on prescription opioids and experience chronic pain and patients who are currently not prescribed opioids but experience chronic pain. If Island Health chooses to run a pilot project, it could provide further evidence of the viability of how multidisciplinary, interdisciplinary and/or multimodal programs are needed within the health region.

The following secondary options for consideration focus on two populations who experience chronic pain. Multidisciplinary, interdisciplinary, and programs can be utilized for individuals who are currently prescribed opioids to treat and/or manage their chronic pain but are experiencing challenges tapering off of them completely or to a lower dose. Additionally, they can be utilized as a first-line therapy approach for individuals who experience chronic pain but are not currently prescribed opioids.

3.1 Utilize multidisciplinary, interdisciplinary, and/or multimodal treatment programs for patients who are currently using opioids to treat and/or manage their chronic pain and experiencing challenges tapering

Studies in the literature review show that utilizing multidisciplinary, interdisciplinary, and/or multimodal models can provide patients a safe and supportive controlled environment when patients are tapering off prescription opioids. Island Health could consider developing a pilot project that operates a multidisciplinary, interdisciplinary, and/or multimodal treatment approach to individuals who experience chronic pain and are tapering off prescription opioids. The pilot project could provide safe tapering support for patients and offer non-opioid pharmacology services, such as first-line therapy approaches to patients who are enrolled in the program. The pilot project could be delivered through an outpatient setting which could provide evidence on the vitality of providing a multidisciplinary, interdisciplinary, and/or multimodal treatment programs for pain management.

3.2 Utilize multidisciplinary, interdisciplinary, and/or multimodal treatment programs as a first-line therapy approach for patients who experience chronic pain

First-line therapy approaches, such as physical therapy and/or occupational therapy are recommended treatment approaches for pain management. Some patients may also require other forms of services to treatment and/or manage their chronic pain, such as non-opioid pharmacology treatment. Utilizing a team-based care approach, multidisciplinary, interdisciplinary, and/or multimodal treatment programs could provide patients with treatments and services that meet their needs. An option for consideration is for Island Health to recommend utilizing multidisciplinary, interdisciplinary, and/or multimodal treatment programs as a first-line therapy approach, where healthcare providers across the health region can refer their patients to treat and/or manage their chronic pain, and/or help safely taper prescription opioids.

Contents

1.0 Introduction

1.1 Defining the Problem

The opioid crisis has been a complex issue across Canada for the past few years. This has resulted in a public health concern due to the increasing numbers of overdoses and deaths as a result of opioid use. According to the Canadian Institute for Health Information (CIHI), Canada is the second highest per capita consumer of opioids (CIHI, 2017, p. 6). Between January 2016 and June 2018, there have been approximately 9,000 opioid-related deaths across Canada and approximately, 2066 deaths have occurred within the first half of 2018 (Government of Canada, 2018a). British Columbia (30.2) has the highest rate of opioid-related deaths per 100,000 populations in Canada followed by Alberta (17.6) which are both above the national average (11.2) (Government of Canada, 2018b).

In 2016, there were approximately 27 million individuals globally suffering from opioid-related disorders (World Health Organization [WHO], 2018). Globally, there were an estimated 118,000 individuals who have died as a result of opioid use in 2015 (WHO, 2018). Many individuals have used illicitly cultivated and manufactured heroin as a source for opioids, but the use of prescription opioids has been increasing (WHO, 2018).

As the opioid epidemic has been prevalent across Canada, the use of opioids to treat chronic pain as an effective intervention has been an important focal point. The use of opioids has been effective to treat health issues including moderate to severe chronic pain and cancer pain, but there has been debate on its effectiveness to treat chronic pain for non-cancer patients (CIHI, 2017, p. 6). The most common types of opioids prescribed in Canada are codeine, oxycodone, and hydromorphone (CIHI, 2017, p. 6). According to the Canadian Institute of Health Information [CIHI] (2018), there was approximately 21.3 million opioid prescriptions dispensed in 2017, in comparison to 21.7 million in 2016 (p. 5). Approximately 25% of individuals prescribed opioids, are prescribed strong opioids which can increase the risk of substance abuse (CIHI, 2017, p. 5). According to the CIHI (2017), seventeen percent of individuals are prescribed opioids on a chronic basis, while eight percent of these are strong opioids (p. 5). The

consequences of using opioids could lead to dependence or addiction, which according to the CIHI, has been common when prescribed frequently, long-term, or in high doses (CIHI, 2017, p. 6).

It has been recommended in the 2017 Canadian Guideline for Opioids and Chronic Non-Cancer pain that healthcare providers should refer their patients to use first-line treatment options, such as non-opioid therapies, to treat and manage chronic pain (2017, p. 16). These therapies could include the use of nonsteroidal anti-inflammatory drugs (NSAIDs), exercise, and cognitive behavioural therapy (National Pain Centre, 2017, p. 16). Additionally, the guideline recommends individuals who experience chronic pain to be referred to a formal multidisciplinary program that uses a team-based approach collaboration amongst various health disciplines to treat chronic pain (2017, p. 6). As the use of non-opioid therapy has become a recommended first-line treatment approach, the focus of this report is to assess and analyze the effectiveness of various treatment models that are used to treat and manage chronic pain.

1.2 Project Client

The client for this project is Island Health, Mental Health and Substance Use (MHSU). MHSU is under Island Health's integrated Priority Populations and Initiatives portfolio which also includes Public Health, Child Youth and Family, and Opioid Response. Through these integrated services, Island Health has been focusing on the opioid crisis and its impact across the health region.

1.3 Project Objectives

The objective of this project is to provide an overview of various models that focus on pain management for chronic pain and prescription opioids. The focus will be to identify models within Canada, and internationally. Although this project will identify models across Canada, British Columbia will not be the focus, as there is currently another project being conducted through Island Health that is specifically on this region.

The report is sought to answer the following primary research question:

> What is the most effective treatment model of pain management and prescription opioids could Island Health implement to improve the daily lives and function of individuals who experience chronic pain?

In addition, the secondary research questions that will support answering the primary research question are:

1. What models have been implemented across Canada and internationally?
2. Are these models effective?

1.4 Organization of the Report

The report includes the following sections: literature review, jurisdictional scan, discussions and analysis, and options for consideration. The literature review used peer-reviewed academic literature, Canadian government reports, data sources, grey literature based on the following themes:

- (2.2) opioids
- (2.3) chronic non-cancer pain
- (2.4) models of chronic non-cancer pain and prescription opioid use

The jurisdictional scan focused on current treatment models that have been implemented in provinces outside of British Columbia and internationally. The jurisdictional scan analyzed various models and innovative healthcare programs and project. The themes of the jurisdictional scan include:

- (3.1) opioid prescribing for chronic pain
- (3.2) chronic pain treatment models
- (3.3) virtual care services
- (3.4) education and training
- (3.5) guidelines for opioid prescribing

The discussion and analysis section address the primary and secondary research questions by analyzing the findings from the literature review and jurisdictional scan. This section analyzed the chronic pain treatment models that were found in the jurisdictional scan against a set of criteria to assess the effectiveness of each model.

The final section of the report ended with options for consideration. These options were based on findings from the literature review, jurisdictional scan, and assessment of the collected treatment models.

1.5 Methodology and Methods

This project is comprised of a systematic search methodology using grey and published literature. The three primary methods of the report include a literature review, a jurisdictional scan, and discussions and analysis. The literature review will be comprised of primary, secondary, and available data sources to provide the client with a clear understanding of the opioid crisis in Canada and internationally. The literature review will review and analyze the use of prescription opioids to treat chronic pain, analyze various models that treat chronic pain, and other pain management techniques that could help improve the lives of individuals who suffer from chronic pain. In addition to the literature review, the project will incorporate a jurisdictional scan of various models of pain management from various provinces across Canada, and international countries including Australia, the United States, and the United Kingdom. Finally, the discussion and analysis section will analyze and assess the treatment models that were collected in the jurisdictional scan.

The methodology involves three stages: the literature review, jurisdictional scan, and a discussion and analysis of the models collected in the jurisdictional scan. First, the literature review focused on answering the primary research question and what treatment models are most effective in treating chronic pain and using prescription opioids. The literature review provided a foundation to develop a set of criteria that could assess effective treatment models, which proceeded into the second stage. In the second stage, a jurisdictional scan was conducted to determine what treatment models have been implemented across Canada and other international countries. The third stage was to analyze and assess the pain management models that were

collected in the jurisdictional scan against the criterion that was developed based on evidence from the literature review. These three stages intended to identify which treatment models were most effective and then examine what best practices other jurisdictions are doing to implement these models.

1.5.1 Stage 1: Literature Review

The purpose of this stage was to develop a literature review of existing research on prescription opioids which involved analyzing the risks and harms of prescribing opioids. Additionally, the purpose of the literature review was to analyze research on best practice treatment models to improve and/or maintain chronic pain. The literature review was also used to understand the effect of health care providers prescribing opioids to treat chronic pain. It provided a foundation for further understanding of the use of opioids, the risks and potential harms of prescription opioids, and the complexity that primary care physicians have when treating or managing chronic pain. The literature review was used to develop a set of criteria to assess whether the models collected in the jurisdictional scan were effective.

The literature reviewed various topics regarding chronic pain and prescription opioids. Particularly, the academic research collected in the literature focused on topics such as understanding attituded of primary care physician perceptions of treating individuals who experience chronic pain and prescribing opioids as a treatment approach. Additionally, it analyzed definitions of chronic non-cancer pain treatment models and identifies the effectiveness of various models that improve function, improve the daily lives of individuals who experience chronic pain, and reduce prescription opioid use. These topics provided a foundation to collect information of treatment models and chronic pain and prescription opioid use guidelines of various jurisdictions across Canada and internationally.

The literature review was used to assess academic research to develop an assessment tool. The purpose of the assessment tool was to analyze and assess treatment models that were collected in the jurisdictional scan. The findings of the various academic research studies found a multidisciplinary, interdisciplinary, and/or multimodal treatment model, resulted in improvement of function, improvement in the daily lives of individuals who experience chronic pain, and

successful tapering and reduction of prescription opioid use. The assessment tool was developed based on common themes found in the academic research in the literature review. The common themes found in the academic research were that all of the programs used a team-based care approach and offered a variety of services that were personalized to the patient's needs. Based on the findings and common themes found throughout the academic research, the assessment tool focused on two measures: 1) team-based care approach and 2) services offered. The baseline measures and criterion for the assessment tool was developed based on common healthcare disciplines found within the care teams and the types of services that were offered found throughout the various academic studies. Overall, the literature review focused on various topics that aimed to answer the primary research question, and provide academic evidence to support the secondary research question: *are these models effective?*

The literature review used sources from academic peer-reviewed literature, Canadian government reports, data sources, and grey literature. The sources came from various countries including Canada, the United States, and Australia. The literature was primarily accessed through the University of Victoria's library database.

1.5.2 Stage 2: Jurisdictional Scan

Using the findings from the literature review, the purpose of this stage was to conduct a jurisdictional scan of provinces across Canada, not including British Columbia, and international countries. The primary purpose of conducting a jurisdictional scan is to identify best practices (Kilian et al., 2016, p. 8). It can be used to identify common themes and analyze comparisons across various jurisdictions (Kilian et al., 2016, p. 9). In this study, the jurisdictional scan was used to reinforce the findings of the literature review to answer the primary and secondary research questions. Primarily, it answered the secondary question: *What models have been implemented across Canada and internationally?*

The jurisdictional scan identified various treatment models to treat and manage chronic pain. The jurisdictional scan focused on analyzing three types of models: multimodal, multidisciplinary, and interdisciplinary. In addition to analyzed treatment models, the jurisdictional scan also identified innovative programs that have been implemented that support healthcare providers

treat patients who experience chronic pain. It also analyzed current prescription opioid guidelines that have been developed in Canada and the United States.

The sources used in the jurisdictional scan were obtained from publicly available sources from Canadian and international government and university-affiliated research centres.

1.5.3. Stage 3: Discussions and Analysis

The purpose of this stage was to assess the models collected in the jurisdictional scan against a set of criteria to determine whether the models were effective. To determine the effectiveness of the treatment model, they were assessed against a criterion that was developed based on academic research from the literature review. The literature review informed what models were effective based on academic peer-reviewed research which show significant improvement of function and improvement to the daily lives of individuals who experience chronic pain. According to Whiting et al. (2017), the initial development of a tool should include looking at existing tools, evidence reviews, and expert knowledge (p. 5). This involves reviewing existing academic literature to reduce bias and provide a systematic review of evidence (Whiting et al., 2017, p. 5).

An assessment tool was developed to assess measures of each model. It focused on two measures: 1) a team-based approach and 2) services offered. The tool was designed to assess the features of each model that was discussed in the jurisdictional scan. First, the models were assessed based on its team-based care approach and secondly, the services that were offered. The models found in academic peer-reviewed research that was discussed in the literature review were used to inform and develop the assessment tool. These models were used if they were deemed effective based on if they resulted in functional improvement in chronic pain management, successful tapering practices of prescription opioids, and improvement in the everyday lives of individuals experiencing chronic pain.

In the models discussed throughout the literature review and jurisdictional scan, a team-based collaborative care approach that utilizes healthcare professionals from various disciplines was found to be an essential function of patient-centred care. The assessment tool included healthcare disciplines that were found commonly throughout the literature. Similarly, the second measure includes services that are commonly utilized in various programs that were discussed throughout

the literature. Although each program had different ways of implementing their services and making their programs unique, most of them involved non-pharmacology options, non-opioid pharmacology options, and opioid-pharmacology options that were provided based on individualized assessments and treatment plans.

In the assessment tool, a set of baseline criterion was developed based on reoccurring themes found in models in the academic literature. **Table 1** shows an overview of the models used to develop the assessment tool. All of these models were found to show functional improvement in the daily lives of individuals who experience chronic pain, and successful results in tapering off prescription opioids to manage and/or improve chronic pain.

Table 1: This table shows an overview of the model, care team, and services provided that were found in studies tin the literature review to develop the baseline measures.

Author(s)	Model	Care Team	Services Provided
Hållstam	Multi-disciplinary	• Physiotherapist • Physicians • Psychologist • Nurses	• Referral • Initial assessment • Individualized treatment plan • Non-opioid pharmacology • Individual treatment sessions • Group sessions
Kurklinsky	Inter-disciplinary	• Physiotherapist • Occupational therapist • Pain psychologist • Nurses • Physician	• Referral • Initial Assessment • Individualized treatment plans • Individual treatment sessions • Group sessions
Patwardhan et al.	Multimodal	• Pain physicians • Physiotherapist	• Referral • Initial assessment • Individualized treatment plan • Physical therapy • Non-opioid pharmacology • Interventional pain procedures
Oldfield	Multi-disciplinary	• Internist, addiction psychiatrist • Advanced practice nurse • Health psychologist • administration • Nurse case manager	• Referral • Initial assessment • Individualized treatment plan • Non-opioid pharmacology • Opioid pharmacology

Pade et al.	Multi-disciplinary		• Referral • Initial assessment • Individualized treatment plan • Non-Opioid Pharmacology • Opioid Pharmacology

Upon the completion of the jurisdictional scan, the four models collected were assessed against a set of baseline measures in the assessment tool (**Appendix C**). The tool developed baseline measures that assessed the group of healthcare providers that make up the team-based treatment team in each model. This included registered nurses, pain management specialists, physiotherapists, and psychologists, physicians, program coordinators, and administration. The assessment tool also analyzed the treatment therapies and services that are offered in each model which was used as a measure in the assessment tool. These baseline measures included referrals, initial assessments, individualized treatment plans, non-pharmacology therapies, non-opioid pharmacology therapies, or opioid-pharmacology therapies, group sessions, and individual sessions. In the assessment tool found in **Appendix C**, the columns represented each of the baseline measures and the rows represented the treatment models that were assessed. To assess whether each of the four models met the set of baseline criteria, a mark (x) was attached to it which indicates that it had met each criterion. If there was no attached mark, the model did not meet that criteria. Additionally, under the team-based care measure, the assessment tool also included other healthcare services attached to the model that were not used as a baseline measure.

In addition to the assessment of these models, it also analyzed opioid prescription guidelines from Canada and the United States. These guidelines provide relevant and evidence-based recommendations that support the models that are being assessed in the jurisdictional scan. Additionally, the jurisdictional scan identified innovative approaches that could provide support to the healthcare system and healthcare providers that work in rural and remote communities.

1.5.3 Project Limitations and Delimitations

This project had both limitations and delimitations. According to Theofanidis and Foutouki (2018), limitations are typically out of the researcher's control, and is considered an "imposed"

restriction (p. 156). In contrast, delimitations are consciously set limitations and are within the researcher's control (Theofanidis & Foutouki, 2018, p. 157). Typically, delimitations could include scope, research questions, and objectives (2018, p. 157).

Limitations

The project was limited by publicly available online information that was accessible by the researcher. For example, some jurisdictions could be running various programs or projects that treat individuals with chronic pain but does not provide detailed information about the program and how effective it is in treating chronic pain. As the jurisdictional scan heavily relied on publicly available information through grey literature resources, evidence on reliability and feasibility may be limited. Access to information on the costs of implementing different models or programs is also limited.

Delimitations

The project objectives and scope were determined through conversations with the director of the opioid crisis at Island Health. As Island Health was currently working on a project similar in scope to this project but focused specifically on Vancouver Island and British Columbia, it was decided that the focus of this project would be throughout other provinces across Canada and internationally. Throughout discussions of the scope of this project, it was decided to conduct a jurisdictional scan that gathered information through grey literature resource. Therefore, the jurisdictional scan did not include any formal or informal interviews with any leads for the programs found in the project.

2.0 Literature Review

2.1 Introduction

The literature review focused on establishing a thorough understanding of the use of prescription opioids and pain management. Using primary and secondary sources, the literature review provides detailed information of effective models that are used to treat chronic pain. Information was gathered through the University of Victoria's library catalogue, government websites, and university-affiliated research centres. Therefore, academic and grey literature was primarily used

to analyze and examine information in order to meet the scope of the project. The literature review provided relevant information to inform what treatment models should be examined throughout the jurisdictional scan.

The literature review is categorized into three sections:

1. Opioids
2. Chronic non-cancer pain, and
3. Models of chronic non-cancer pain and prescription opioid use

The first category focuses on common types of opioids that are prescribed in Canada and discusses the harms and risk factors associated with opioids. The literature review then discusses the attitudes of primary care physicians and their challenges and experiences when prescribing opioids, particularly for individuals who experience chronic pain. The second category discusses the definition of chronic non-cancer pain and then examines common chronic non-cancer pain treatments. Lastly, the third category examines various chronic non-cancer pain and prescription opioid use treatment models.

2.2 Opioids

The opioid crisis has been prevalent across Canada for the past few years. This has created a public health concern due to the increasing numbers of overdoses and deaths as a result of opioid use. According to the Canadian Institute for Health Information (CIHI), Canada is the second highest per capita consumer of opioids (CIHI, 2017, p. 6). Between January 2016 and June 2018, there have been approximately 9,000 opioid-related deaths across Canada and approximately, 2066 deaths have occurred within the first half of 2018 (Government of Canada, 2018a). British Columbia (30.2) has the highest rate of opioid-related deaths per 100,000 populations in Canada followed by Alberta (17.6) which are both above the national average (11.2) (Government of Canada, 2018b).

In 2016, there was approximately 27 million individuals globally who suffered from opioid-related disorders (World Health Organization [WHO], 2018). Consequently, approximately 118,000 individuals who suffered from opioid-related disorders have died as a result of opioid

use (WHO, 2018). Many individuals have used illicitly cultivated and manufactured heroin as a source for opioids, but the use of prescription opioids has been increasing (WHO, 2018).

2.2.1 Types of Opioids

Opioids are a class of drug that are typically used to relieve acute and chronic pain but can also be used to treat addiction to other types of opioids or control persistent cough or diarrhea (The Centre for Addiction and Mental Health [CAMH], 2019). Prescription opioids are often used to treat chronic or long-term pain that result from medical conditions such as injuries, surgery, dental procedures (Government of Canada, 2019b). As opioids contain pain relieving properties that can suppress the sensation and emotional response of pain, they are commonly used to treat acute and chronic pain (CAMH, 2019; Government of Canada, 2019a). Additionally, opioids can produce euphoria, drowsiness, and relaxation (CAMH, 2019).

In Canada, opioids can be referred to as "pain killers" or "narcotics" (Canadian Centre on Substance Use and Addiction [CCSA], 2017, p. 2). Common types of opioids include fentanyl, morphine, oxycodone, codeine, and hydromorphone (CAMH, 2019; Government of Canada, 2019). These common types of opioids are referred by either their generic name, trade name, or street name shown on **Table 2.** In Canada, prescription opioids can be used in various forms such as tablets, capsules, syrups, solutions, liquid form for injection, skin patches, transmucosal preparations, suppositories and nasal sprays (CCSA, 2017, p. 2).

Table 2: Common generic, trade, and street names for opioids in Canada

Generic name	**Trade name (examples)**	**Street name**
Buprenorphine	BuTrans®	Bupe, bute
Buprenorphine-naloxone	Suboxone®	Subby, bupe, sobos
Codeine	Tylenol®2,3,4 (codeine + acetaminophen)	Cody, captain cody, T1, T2, T3, T4
Fentanyl	Abstral®, Duragesic®, Onsolis®	Patch, sticky, sticker, nerps, beans
Hydrocodone	Tussionex®, Vicoprofen®	Hydro, vike
Hydromorphone	Dilaudid®	Juice, dillies, dust
Meperidine	Demerol®	Demmies
Methadone	Methadose®, Metadol®	Meth, drink, done
Morphine	Doloral®, Statex®, M.O.S.®	M, morph, red rockets

Oxycodone	OxyNEO®, Percocet®, Oxycocet® Percodan®	Oxy, hillbilly heroin, percs
Pentazocine	Talwin©	Ts
Tapentadol	Nucynta®	Unknown
Tramadol	Ultram® Tramacet® Tridural® Durela®	Chill pills, ultras

Source: Canadian Centre on Substance Use and Addiction, 2017, p. 2.

According to the Canadian Institute for Health Information [CIHI] (2018), approximately ninety-six percent of all opioids prescribed in Canada include codeine, hydromorphone, oxycodone, tramadol, morphine, and fentanyl (p. 8). In 2017, Newfoundland and Labrador (8,102), Manitoba (7,039), and Alberta (6,964) had the highest defined daily doses (DDD) per 1,000 population of the top six opioids in Canada (CIHI, p. 20). Quebec (3,452) and British Columbia (4,704) had the lowest DDD per 1,000 population (2018, p. 20). Between 2016 and 2017, all provinces excluding Newfoundland and Labrador shows a decline in the DDD per 1,000 (2018, p. 20). British Columbia (-14%), Nova Scotia (-12%), Ontario (-12%), and Alberta (-12%) had the biggest decline (2018, p. 20). This data shows that there has been a declining trend throughout Canada (-10 %) of the quantity of opioids dispensed (2018, p. 20).

2.2.2 Opioid Harm/Risk Factors

The use of opioids, whether they are prescribed or come from illicit sources, come with various risk factors which may result in harms. The Canadian Institute for Health Information (CIHA) describes four types of opioid-related harms that have resulted in hospitalization: opioid poisoning, opioid use disorders, adverse drug reactions, and neonatal withdrawal symptoms (p. 8).

The CIHA (2018) defines these four types of harms as:

Opioid Poisoning	occurs when an opioid is taken incorrectly and results in harm.
Opioid use disorders	wide variety of mental health and behavioural disorders that are attributable to the use of opioids.
Adverse drug reaction	occurs when an opioid is taken as prescribed and results in harm.
Neonatal withdrawal symptoms	occurs when an infant experiences withdrawal symptom from the mother's use of drugs of addiction. These include neonatal abstinence syndrome and drug withdrawal syndrome (p. 8).

According to the Canadian Centre on Substance Abuse and Addiction (2017), the rate of hospitalization as a result of opioid poisoning increased from 10.2 per 100,000 population in 2007/8 to 13.5 per 100,000 population in 2014/15 (p. 7).

2.2.3 Prescription Opioids by Primary Care Physicians

Prescribing opioids for individuals with chronic pain could be challenging for physicians, particularly when trying to understand the long-term implications of opioid use. Variation of prescription opioids exist among different specialities. Between 2007 and 2012, the highest opioid-prescribing rates per capita by speciality in the United States was family practice (18.2%), followed by internal medicine (15.1%), non-physician prescribers (11.2%), and general practice (11.2%) (Levy et al., 2015, p. 410). Pain medicine, which includes both anesthesiology, only accounted for five percent (2015, p. 410).

Primary care physicians encounter large numbers of individuals who are experiencing chronic pain symptoms. Research has shown that primary care physicians do not feel that they are adequately trained or prepared to treat patients with chronic pain (Upshur et al., 2006, p. 654). According to a study conducted by Upshur et al. (2006), primary care physicians stated that patient compliance and behavioural factors were two major obstacles that they face rather than issues regarding provider expertise and health system factors (2006, p. 654). This could require primary care physicians to become more adequately trained in patient-centred care approaches when treating patients with chronic pain (2006, p. 654). Participants of the study conducted by Carlin et al. (2018), found that primary care physicians, who are both newly practicing and have been practicing for decades, have received little training about pain management and opioid prescribing (p. 1142). Researchers found that primary care physicians understood regulations and guidelines when monitoring patients but felt challenged when putting it into practice (Carlin et al., 2018, p. 1142). For example, primary care physicians acknowledged these challenges included conversations with patients regarding urine drug testing, distributing patient “agreement contracts”, and “conducting pill counts” all of which could result in conflict and tension between the provider-patient relationship (Carlin et al., 2018, p. 1142).

In a pilot study conducted by Srivastava et al. (2012), researchers provided eighteen primary care physicians education interventions on safe opioid prescribing practices in rural Canada. Physicians in the study noted that they were concerned about the lack of pain clinics and addiction treatment resources and as a result, were not confident in making decisions to prescribe opioids to patients and if it could lead to addiction (Srivastava et al., 2012, pp. 213-214). The initial education workshop that physicians attended focused on:

- safe opioid prescribing techniques, including the evaluation of chronic pain, starting and maintenance doses, and monitoring for evidence of misuse and dependence
- developing treatment agreements with patients
- use of urine drug screening to help in patient advocacy, monitoring, harm-reduction counseling, and treatment strategies
- use of provincial resources including counseling and treatment programs, and
- provision of educational materials to patients on harm reduction strategies and knowledge surrounding opioid abuse and health consequences, such as hepatitis C and safer injection (2012, p. 212).

Over a one-year period following the workshop, physicians attended an interactive video conference, direct clinical support system, a website that provided resources on opioid prescribing practices, an online chatroom, and a toolkit with various paper and electronic pocket card resources (2012, p. 213). During a one-year follow-up, physicians stated that the initial workshop and having email and phone follow-up conversations with experts in the area was very beneficial, as it provided them the opportunity to discuss challenging cases and consultations support (2012, p. 213). Additionally, physicians noted that office tool-kits that are also available online and in mobile-friendly formats are beneficial for their practice (2012, p. 215). Other resources such as the online video conference and online chat resources were minimally used.

A study conducted by Hwang et al. (2016), gathered knowledge and attitudes from primary care physicians in the United States regarding clinical and regulatory interventions to reduce prescription opioid abuse (p. 281). Eighty-eight percent of participants in the study strongly supported the requirement that patients can only receive opioids from single prescribers and/or pharmacies (2016, p. 281). Additionally, more than half agreed that patient agreements or contracts (66%) should be developed prior to physicians prescribing any opioids, and urine drug

testing (57%) should be used to help detect if patients are chronic opioid users (p. 281). Physicians also strongly supported (59%) or somewhat supported (29%) a centralized patient database where they have access to check before they prescribe any type of opioid (p. 2016, p. 282). Overall, primary care physicians support clinical and regulatory interventions to reduce the risk of opioid-related overdose, addiction, or mortality (p. 282).

A study that was conducted by Barry et al. (2010), focused on primary care physicians in New England, and the barriers and facilitators to treat chronic non-cancer pain in community settings (p. 1443). Three barriers and facilitators that were found include: physician factors, patient factors, and logistical factors (Barry et al., 2010, p. 1444). **Table 3** below provides examples of the themes and subthemes that Barry et al. (2010), found regarding the themes, subthemes, and examples of the barriers and facilitators to treat chronic non-cancer pain in community settings (p. 1444).

Table 3: Themes, subthemes, and examples of the barriers and facilitators to treat chronic non-cancer pain in community settings.

Themes	*Subthemes*	*Examples*
Physician factors	Pain assessment	Absence of physiological measures of pain intensity
	Expertise in pain management	Absence of formal training in pain management
	Expertise in POA	Difficulty broaching topic of medication abuse
	Co-existing disorders	Difficulty managing co-occurring psychiatric conditions
	Interest in pain management	Absence of interest in treating pain patients
	Aberrant behaviors	Patients' exclusive focus on opioid analgesics
	Prescribing opioid analgesics	Reluctance to over-prescribe opioids for pain relief
	Opioid agreements*	Specifying expectations about patient behaviors
	Continuity of care*	Enhanced patient compliance
Physicians' perceptions of patient factors	Physicians' response	Physicians not listening to patients' pain reports
	Attitudes to prescription opioids	Concern about addiction potential
	Cost	Concern about covering pain management costs
	Motivation	Patient diversion of prescription opioid medication
Logistical and systemic factors	Pain management referrals	Lack of appropriate pain management referrals
	Addiction referrals	Low patient compliance with referrals
	Diagnostic workup	Absence of sufficient diagnostic data
	Ancillary staff	Lack of confidence in ancillary staff's skills
	Time	Time spent completing paperwork
	Insurance coverage	Concern about pain management reimbursement

Abbreviation: POA, pain and opioid addiction.
*Facilitators.

Source: Barry, D. T., Irwin, K. S., Jones, E. S., Becker, W. C., Tetrault, J. M., Sullivan, L. E., Hansen, H., O'Connor, P. G., Schottenfeld, R. S., and Fiellin, D. A. (2010). Opioids, chronic pain, and addiction in primary care. *The Journal of Pain, 11*(12), pp. 1442-1450.

Table 1: This table shows that barriers and facilitators that primary care physicians face when treating patients with chronic pain include their expertise and training in pain management and

their comfort and ability to manage patients who have co-existing disorders. The table also highlights primary care physicians' perceptions of patient perspectives which include their concern and attitudes for potential addiction when prescribed opioids to treat their chronic pain, and patient diversion of prescription opioids (Barry et al., 2010, p. 1445). This study highlights some examples of barriers and facilitators that primary care physicians have described when treating patients with chronic pain.

In a study that was conducted by Provenzano et al. (2018), evaluated primary care providers knowledge and practice in treating patients living with chronic pain (p. E593). Researchers administered a cross-sectional questionnaire survey to practicing primary care providers in Western Pennsylvania during the summer of 2015. The survey evaluated pain management treatment practices, level of patient monitoring, knowledge, educational sources, and patient challenges and barriers for appropriate chronic pain treatments (Provenzano et al., 2018, p. E594). The results showed that resources and education regarding pain assessment could be beneficial for primary care providers, as less than fifty percent of participants in the study viewed pain assessment scales as a requirement during follow-up care which could impact quality of pain care (2018, p. E599). Additionally, the results showed that sixty-seven percent did not refer to published guidelines of pain management (2018, p. E600). Researchers suggest that educational efforts should be available to both primary care providers and chronic pain physicians when new guidelines for pain management, including opioid therapy, are published (2018, p. E600). According to Provenzano et al. (2018):

> Multiple areas surrounding opioid therapy requiring further education were highlighted in the survey including the use of opioids as first-line treatments and opioid risk assessment tools prior to the initiation of therapy, safe dose limits, extended release opioids, impact of opioids on the endocrine and respiratory systems, and the influence of opioids on driving ability. In addition, continued reinforcement of important practice patterns already being highly considered by PCPs including assessment of substance abuse and discussing the risks and benefits of chronic pain treatment should continue (p. E600).

Overall, the results showed that additional resources such as further education regrading chronic pain management for primary care providers is needed (2018, p. E597). This includes evidence-based guidelines, pharmacological management, opioid compliance monitoring and pain assessment of chronic pain (2018, p. E597).

Based on attitudes and opinions of primary care physicians, Srivastava et al. (2012), and Hwang et al. (2016) acknowledge that both clinical and regulatory interventions are essential. Developing educational opportunities and tools to physicians regarding managing and prescribing opioids are resources towards best practice (Provenzano et al., 2018, p. E600). In addition, developing regulatory interventions within the healthcare system regarding opioids is also essential to reduce potential risks.

2.3 Chronic non-Cancer Pain

Chronic non-cancer pain is defined as “any painful condition that persists for at least three months and is not associated with malignant disease” (Merskey et al., 1994, as cited in Busse et al., 2017, p. E659). According to Reitsma et al. (2011), the prevalence of chronic pain is approximately 15 to 19 percent in Canada between 1996 to 2008 (p. 160). A study conducted by Schopflocher et al. (2011), estimated the prevalence of chronic pain of adults in Canada was approximately nineteen percent (p. 445). Of this population, it was reported that approximately fifty percent of those who experience chronic pain have been suffering for more than ten years (Schopflocher et al., 2011, p. 447). According to one study, the Atlantic region (21.9%) and British Columbia (21.8%) have the highest prevalence rate of chronic pain, while Quebec has the lowest (15.7%) (Schoplocher et al., 2011, p. 447).

Two types of major, non-cancerous chronic pain are musculoskeletal pain and neuropathic pain (Work Wellness and Disability Prevention Institute [WWDPI], 2019). Work Wellness and Disability Prevention Institute (2019), defines these two types of chronic pain as:

- **Musculoskeletal Pain:** Pain that affects the bones, muscles, ligaments and tendons. Musculoskeletal pain can result from various causes including sports or occupational injuries, motor vehicle collisions, repetitive strain injuries and disease processes, such as, arthritis.
- **Neuropathic Pain:** A complex, multi-faceted state of chronic pain that may have no obvious cause. It can involve damaged tissue, injury or malfunctioning nerve fibers or changes in brain processing. An example of neuropathic pain is phantom limb syndrome. The brain still receives signals from nerves that originally carried impulses from the now missing limb. Other types of neuropathic pain include numbness, burning, "pins and needles" sensations and shooting pain.

2.3.2 Chronic Pain and Substance Use Disorder

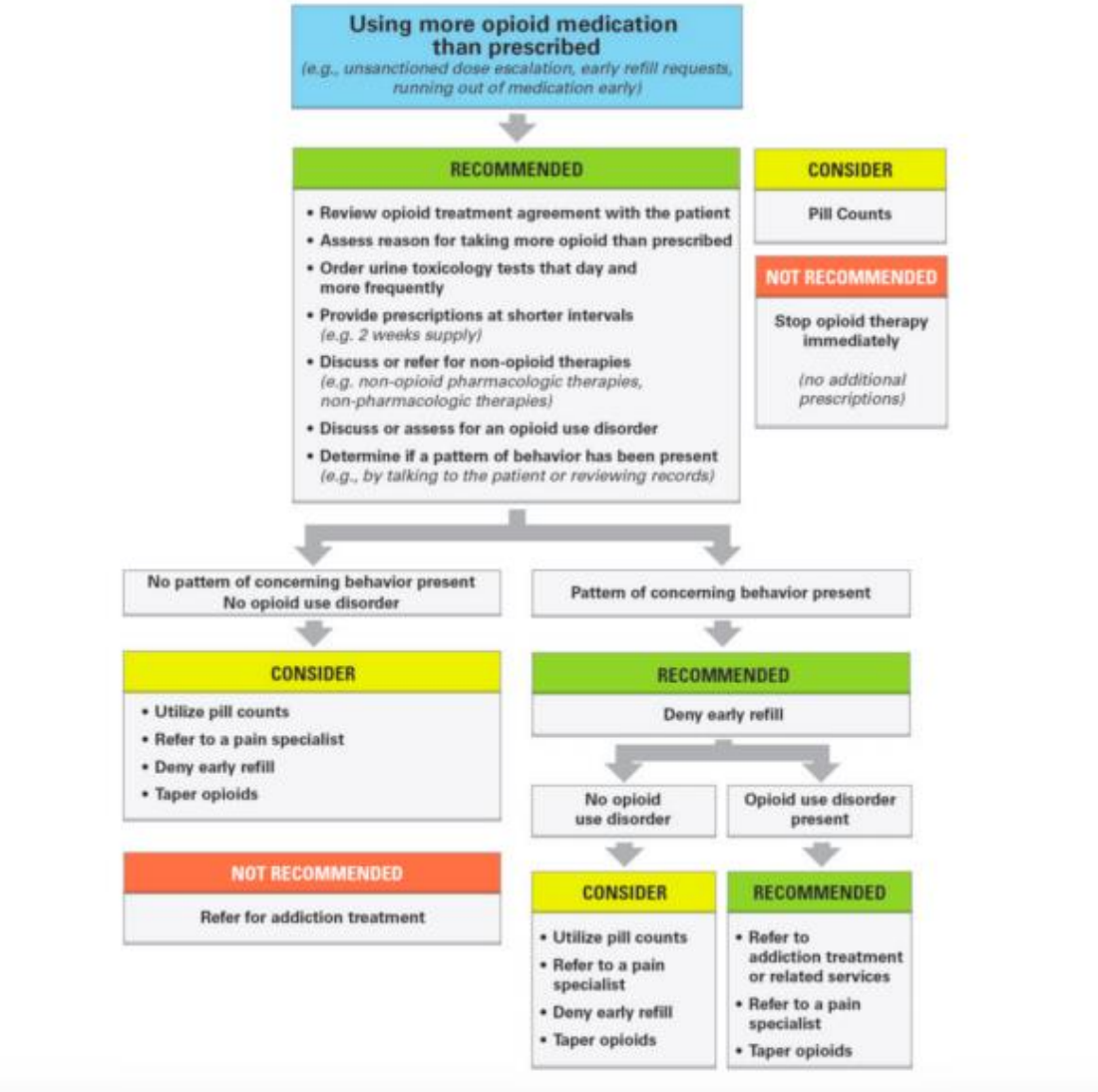
The literature shows that individuals who are living with chronic pain has shown to be comorbid with substance use disorders. According to Merlin (2019),

> pain and substance use disorder do not always occur together, addiction is more common in people with pain than in the general population. This may be because the opioids used to treat pain can be powerful triggers for addiction in people who are predisposed to it, or who have had a substance use disorder prior to developing chronic pain (as cited in The National Academies of Sciences, Engineering, and Medicine, 2019, pp. 36-37).

Treating individuals with chronic pain and substance use disorders is very complex. Research has suggested that when treating individuals with chronic pain and concurrent substance use disorders, physicians should conduct an assessment to determine risk of opioid misuse which includes an assessment of psychological functioning, individual factors that contribute to patients' report of pain, and current and past substance use history (Savage et al., 2008, p. 20; Morasco, 2011, p. 495; Turk, 1999, pp. 1786-1787). Additionally, it is recommended that patients living with chronic pain also have concurrent substance use disorders, be treated through a multidisciplinary approach and includes an addiction specialist on the treatment team (Gourley et al. (2005) as cited in Morasco, 2011, p. 495).

In a study conducted by Merlin et al. (2017), researchers evaluated expert consensus regarding treatment approaches for both common and challenging behaviours amongst patients who are on long-term opioid therapy (p. 166). Researchers found that the most common and challenging behaviours include missing appointments, taking opioids for symptoms other than pain, using more opioid medication than prescribed, asking for an increase in opioid dose, aggressive behavior, and alcohol and other substance use (2017, p. 166). Researchers of this study developed an algorithm based on the results of the study which provide recommended actions **(Figure 1)** (Merlin et al. 2007, as cited in The National Academies of Sciences, Engineering, and Medicine, 2019, p. 40).

Figure 1: Algorithm based on Merlin et al. (2017), recommended actions for long-term opioid therapy.



Source: As presented by Jessica Merlin, November 29, 2018; Merlin et al., 2018.
Additional information: http://mytopcare.org/dealing-with-aberrant-behaviors-in-patients/

2.3.3 Definitions of Chronic Pain Treatments

Throughout the literature, there is no standardized definition of approaches to treat chronic pain. The International Association for the Study of Pain (IASP) Council recommended developing an IASP Presential Task Force on Multimodal Pain Treatment. The task force was comprised of members of multidisciplinary and interdisciplinary pain treatment services and research terms, who conducted their work between December 2015 and May 2017. One of the objectives of the

task force was to develop agreed upon terminology to define approaches to treat chronic pain. The task force developed four definitions:

- **Unimodal treatment:** "a single therapeutic intervention directed at a specific pain mechanism or pain diagnosis. For example: the application of exercise treatment by a physiotherapist";
- **Multimodal treatment:** "the concurrent use of separate therapeutic interventions with different mechanisms of action within one discipline aimed at different pain mechanisms. For example: the use of pregabalin and opioids for pain control by a physician; the use of nonsteroidal anti-inflammatory drugs (NSAID) and orthosis for pain control by a physician";
- **Multidisciplinary treatment:** "multimodal treatment provided by practitioners from different disciplines. For example: the prescription of an anti-depressant by a physician alongside exercise treatment from a physiotherapist, and cognitive behavioral treatment by a psychologist, all the professions working separately with their own therapeutic aim for the patient and not necessarily communicating with each other"; and
- **Interdisciplinary treatment:** "multimodal treatment provided by a multidisciplinary team collaborating in assessment and treatment using a shared biopsychosocial model and goals. For example: the prescription of an anti-depressant by a physician alongside exercise treatment from a physiotherapist, and cognitive behavioral treatment by a psychologist, all working closely together with regular team meetings (face to face or online), agreement on diagnosis, therapeutic aims and plans for treatment and review" (International Association for the Study of Pain [IASP], 2017).

Throughout the literature, researchers have discussed that using a multimodal treatment has shown an improvement of chronic pain (Hechler et al., 2009, p. 156; Hållstam, 2015, p. 246). According to Hechler et al. (2009), a multimodal treatment approach has also shown to "reduce pain, decrease opioid consumption, and decrease length of hospital stay" (p. 6).

Through a qualitative study conducted by Hållstam et al. (2015), individuals who lived have lived with chronic pain (n = 12 years) with co-occurring mental health diagnosis including

anxiety and depression, saw an improvement in their quality of life when treated with a multimodal rehabilitation approach (pp. 243-247). The multimodal rehabilitation model was conducted in Stockholm, where patients were referred and assessed to a coordinated, multidisciplinary team, who worked together to develop their treatment plan. The team included physicians, psychologists, physiotherapists, and nurses (Hållstam et al., 2015, p. 243. The rehabilitation program was three months long and included two to four weekly treatment sessions with the duration of one to two hours each (2015, p. 243). Please refer to **Table 4** for the role of each health care provider within the multidisciplinary team.

Table 4: The multidisciplinary team and their roles within a multimodal rehabilitation model in Stockholm, Sweden.

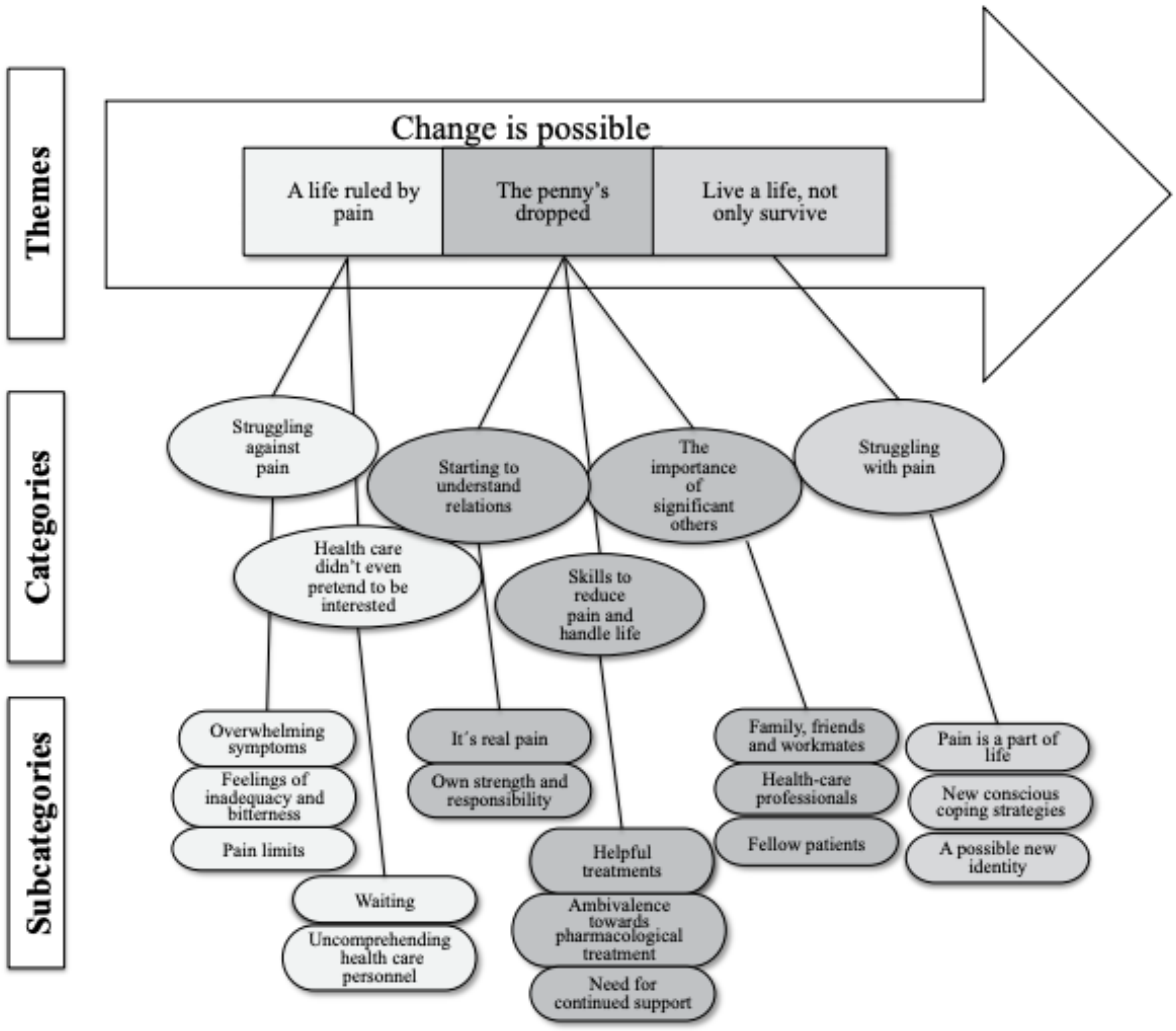
Health Care Provider(s)	Role in treatment
Physician	• Adjusted pharmacological treatment and sick-listing • Ran a mindfulness group
Psychologist	• Individual cognitive behavioural therapy (CBT)
Physiotherapist	• Provided acceptance and commitment therapy (ACT) • Run physical activities including individually adapted training in the gym, warm-water exercise, and basic body awareness therapy
Nurse	• Provided first assessments and treatment with transcutaneous elective nerve stimulation (TENS) • Pharmacological follow-up and counselling
All	• 8-session pain self-management courses and training groups which is comprised of approximately ten participants per session. • One team member is assigned as a contact person who support each participant in identifying and following up with rehabilitation goals

Source: Hållstam, A., Stålnacke, B. M., Svensen, C., and Löfgren, M. (2015). "Change is possible": Patients experience of a multimodal chronic pain rehabilitation programme. *Journal of Rehabilitation Medicine, 47*(3), pp. 242-248.

Based on the rehabilitation program for chronic pain, researchers found three core themes based on the entire program process. Before the rehabilitation program, participants described the theme as "*a life ruled by pain"*, during the rehabilitation program as "*the penny's dropped"*, and their life one-year after the program as "live a life, not only survive". **Figure 2** below shows the

experiences by patients throughout their rehabilitation process which include the three core themes, categories, and subcategories (Hållstam et al., 2015, p. 244).

Figure 2: Patient experiences throughout their non-cancer chronic pain rehabilitation process.



Source: Hållstam, A., Stålnacke, B. M., Svensen, C., and Löfgren, M. (2015). "Change is possible": Patients experience of a multimodal chronic pain rehabilitation programme. *Journal of Rehabilitation Medicine*, *47*(3), pp. 242-248.

After one-year post-treatment, participants of the study found that their functioning and quality of life had improved (2015, p. 246). Some participants were able to begin working and/or study, and others were able to integrate and manage their daily lives. Participants noted that support from significant others and family, and their knowledge and skills from the rehabilitation program to help reduce pain, such as new conscious coping strategies and new identities, were

important factors to develop and maintain a normal life (2015, p. 246). Researchers found that positive encounters with healthcare providers is essential during the treatment process, as participants valued an interpersonal process approach. (2015, p. 247).

Access to treatment through a shared decision-making approach is very important when treating individuals who are experiencing chronic pain. According to Health Quality Ontario (2018), it is beneficial for health care professionals to communicate various treatment options, including both non-opioid and opioid therapies, when developing a treatment plan with their client (p. 3). One potential barrier to multidisciplinary treatments is access to care and wait times within the healthcare system. Healthcare providers, particularly primary care providers, could face multiple barriers when referring their patients to a multidisciplinary care treatment approach because there may not be access to specialists such as psychologists, addiction specialists, physiotherapists, and other healthcare professionals who are part of a multidisciplinary team (Health Quality Ontario, 2018, p. 3).

2.4 Models of Chronic non-Cancer Pain and Prescription Opioid Use

2.4.1 Co-occurring Disorders Clinic

In a study conducted by Pade et al. (2012), researchers "evaluated outcomes from an innovative continuing care clinical model using buprenorphine to treat veterans with co-occurring chronic non-cancer pain and opioid dependence embedded in a primary care setting" (p. 447). The Co-occurring Disorders Clinic (COD) was established in 2009 within a primary care service in the tertiary care Raymond G. Murphy VA Medical Center in Albuquerque, New Mexico (Pade et al., 2012, p. 447). The COD manages challenging and complex patients who are diagnosed with co-occurring chronic pain and substance use problems, which include high-risk opioid use, substance use disorders, and high-dose or complex therapeutic pain management regimens (2012, p. 447). The co-occurring disorders clinic uses an integrated model to coordinate care for patients with psychiatric, medical, and substance use disorders (2012, p. 450).

The clinic receives patient referrals from various providers including primary care providers, interventional pain management specialists, internal medicine and surgical sub-specialists, and

substance use disorder clinics (2012, p. 447). New referrals go through an intake process at the co-occurring disorders clinic, where health care providers collect detailed information of a patient, including past treatments of pain and its efficiency and effects, standard parameters of pain, substance use history, and a psychiatric evaluation (2012, p. 447). In addition, a physical examination is conducted regarding a patient's underlying pain condition, mental status examination, and any signs of substance abuse (2012, p. 447). Tools that healthcare providers use to conduct examination include a Brief Pain Inventory (BPI), Screener and Opioid Assessment for Patients with Pain (SOAPP), and Diagnosis, Intractability, Risk and Efficacy (DIRE) (2012, p. 447). Approximately seventy-three percent of the patients were also diagnosed with at least one psychiatric disorder and sixty-five percent also had a substance use disorders, aside from opioid dependence (2012, p. 450). Major depression (49%) and post-traumatic stress disorder (30%) were the most common psychiatric diagnosis of the total sample (2012, p. 448).

Researchers provided patients a buprenorphine and naloxone (BUP/NLX) treatment for 143 patients who were diagnosed with comorbid opioid dependence and chronic pain between July 2009 and December 2011. The aim of the study was to provide evaluated outcomes that patients with challenging and complex co-occurring disorders can receive treatment within a primary care setting. The results of the study showed that sixty-five percent of patients (93 out of 143) who were provided buprenorphine continued on the medication post-study, and sixty-five percent of this sample who continued on the medication for more than six months (2012, p. 449). These patients who continued on opioid agonists were using lower doses than pre-intervention to help manage their chronic pain (2012, p. 449). The results also showed that 50 out of 143 patients were no longer taking any opioids (2012, p. 449). Researchers found that the average pain scores for patients who used BUP/NLX decreased which could be a potential factor in low relapse rates, high treatment retention, and fewer overdoses (2012, p. 449). In addition to the BUP/NLX treatment, patients also received adjunctive medications and other non-pharmaceutical measures such as therapeutic treatments for chronic pain and psychological treatment (2012, pp. 449-450).

According to Merlin (2019), "chronic pain is heavily influenced by biological, psychological, and social factors, and the optimal treatment should be multidisciplinary and include both pharmacological and non-pharmacological approaches" (as cited in The National Academies of

Sciences, Engineering, and Medicine, 2019, p. 36). Overall, literature has suggested that a multimodal, multidisciplinary approach is most effective when treating patients living with chronic pain.

2.4.2 Interdisciplinary Rehabilitation Clinic

In a study conducted by Kurklinsky et al. (2016), examined the efficacy of functional improvement within an interdisciplinary rehabilitation program for patients with chronic pain (p. 1). The Comprehensive Pain Rehabilitation Centre (PRC) program ran from October 2011 to August 2012 with 150 patients over a three-week period within an outpatient setting (Kurklinsky et al., 2016, p. 2). The three-week program was comprised of an interdisciplinary team that is highlighted in **Table 5.**

Table 5: Interdisciplinary team at the Comprehensive Pain Rehabilitation Centre.

Health Care Provider(s)	Role in treatment
Physician	• Clear each patient to participate in the 3-week program.
Physiotherapist	• Focused on general reconditioning: graded exposure to activity, gradual reduction of fear-avoidance behaviours, incremental elimination of other pain behaviours • Ran three daily exercise programs for patients: o *Morning stretch group:* 15 to 20 minutes of whole-body active range of motion, gentle dynamic stretching, moderate static stretching, balance and coordination stretching. o *Cardio group:* 20 to 30 minutes of moderate conditioning activities that is determined by a target heart zone based on age. o *Stretch group*: 45 to 60 minutes where patients complete a whole-body strengthening and stability circuit using free weights, resistance bands, or body weight resistance (2016, p. 2).
Occupational Therapist	• Occupational therapists assist patients on balancing their daily activity with the aim to increase functional independence and participation in life roles. • Group information lectures include: o Bathroom safety, body mechanics, cleaning, cognitive strategies, driving, fall prevention, garage, garbage, home safety, kitchen, laundry, making the bed, moderation, medication, self-

	care, shopping, time management, values, vocation, workspace ergonomics, and yard work (2016, p. 2) • Lead an individual time management as part of a weekend planning session every Friday, as program is ran Monday to Friday. • Individually meet with patients to play their journey when the program is completed. • Run three individual biofeedback sessions with the aim to teach diaphragmatic breathing and muscle relaxation techniques during daily life.
Pain Psychologist	• Runs three group therapy sessions per day that focus on: o Anger, anxiety, assertiveness, behaviour change, central sensitization syndrome, cognitive behavioural therapy, cognitive coping skills, chronic pain cycles, depression, difficult day planning, distraction, drug interventions, fear, forgiveness, goal setting, grief, maintaining lifestyle changes, pain behaviors, PRC programs concepts, perfectionism, personal responsibility, problems solving, relationships, relaxation, self-esteem, sleep, stress, and withdrawal (2016, p. 2). • Run weekly question and answer sessions for family and friends to learn about the program.
Nurses	• Individualized and highly specialized care coordinators of the program. • Take the lead in medication management and tapering which is under the direction of the physician and physician assistance. • Communicates with physicians and specialists who are outside of the PRC program team in order to plan continuity of care for the patient in the future (2016, p. 2).

Source: Kurklinsky, S., Perez, R. B., Lacayo, E. R., and Sletten, C. D. (2016). The efficacy of interdisciplinary rehabilitation for improving function in people with chronic pain. *Pain Research and Treatment, 2016,* pp. 1-6.

Researchers used the Six Minute Walk Test (6mWT) as an outcome measure, which is a functional capacity performance-based measure (2016, p. 2). In addition, researchers also used the Canadian Occupational Performance Measure (COPM), which measures quality-of-life based on capturing limitations related to daily living activities (2016, p. 3). The results of the study showed patients improved their functional capacity from 375 metres (3750 metres per hour, 1.0 metres per second) pre-admission of the program to 523 metres (5227 metres per hour, 1.4 metres per second) at discharge (2016, p. 3). Researchers found that this is an increase of 148

metres and approximately 39% improvement of functional capacity (2016, p. 3). In addition, researchers found an improvement of their occupational capacity based on the COPM (3.4 out of 10 pre-admission; 7.5 at discharge) (2016, p. 4).

Researchers of this study focused on an interdisciplinary approach to measure functional and occupational capacity of patients through a three-week pain rehabilitation program. Overall, through the duration of the program, patients who were living with chronic pain improved their function and quality of life which could provide them the opportunity to live more independently in their everyday activities.

2.4.3 Pain Clinics

Historically pain clinics have been used for interventional approaches towards treating symptoms of pain (Patwardhan et al., 2018, p. E604). In addition to treating symptoms of pain, these clinics have also been utilized to administer chronic opioid therapy for patients (2018, p. E604). In recent years, as a result of the opioid epidemic, pain clinics have staffed pain physician specialists, who are trained to use a multimodal approach to treat complex patients, i.e., those who are more at risk to become dependent on opioids to manage their pain (2018, p. E604).

In a study conducted by Patwardhan et al. (2018), researchers evaluated the role of the outpatient pain clinic at Banner-University of Arizona and its effect to reduce pain and opioid use in patients who live with chronic pain (p. E603). Researchers 296 patients of the pain clinic, who were living with non-cancer chronic pain with chronic opioid use (2018, p. E604). All patients were treated with conventional pain management approaches that were individualized to their condition. As per Patwardhan et al. (2018), **Table 6** shows the common pain management techniques that patients were treated with during the study:

Table 6: Common pain management procedures at the Outpatient Pain Clinic at Banner-University of Arizona.

Procedure	Indication
Physical therapy, yoga, acupuncture, cognitive behavioral	Multiple pain conditions
Epidural steroid injections	Radicular pain
Medial branch blocks and radiofrequency ablation	Diagnosis and treatment for axial back and neck pain from spinal spondylosis
Peripheral nerve pulse radiofrequency neuromodulation	Longer term relief for pain origin localized to a peripheral mixed nerve
Joints and bursa steroid injections	Arthritic joints and inflamed bursa
Trigger point injections	Muscular and myofascial pain
Spinal cord stimulation	Failed back surgical syndrome, lumbar spondylosis, non-operative radicular pain, abdominal and pelvic pain, complex reginal pain syndrome, peripheral ischemic neuropathy, anginal pain
Peripheral nerve stimulation	Occipital neuralgia, migraine, peripheral neuropathy
Intravenous lidocaine or ketamine infusion	Diffuse body pain such as in Dercum's disease
Chemodenervation with botulinum toxin A	Intractable migraine, muscle spasticity-evoked pain
8% capsaicin (Qutenza) patch	Post-herpetic neuralgia, peripheral neuropathy (p. E605).

Source: Patwardhan, A., Matika, R., Gordon, J., Singer, B., Salloum, M., and Ibrhim, M. (2018). Exploring the role of chronic pain clinics: Potential for opioid reduction. *Pain Physician, 21*(6), pp. E603-E610.

Researchers used the Numeric Rating Scale (NRS-11), which ranges from a scale of 0 to 10 to indicate the patients perceived intensity of their pain (2018, p. E605). In addition, researchers cross-checked the NRS-11 with the State of Arizona's prescription monitoring system and medical records to calculate the patients opioid use (2018, p. E605). Using an opioid calculator, researchers converted different types of opioids to morphine milligram equivalent (MME). (2018, p. E605). Researchers collected in-depth information for patients during their initial visit such as their health history, pain history, and their current use of pain medication. During follow-up visits, patients were asked to fill out a modified brief pain intake form that asks if there has been any changes in their intensity of pain, frequency of pain, duration of pain, ability to fall and stay asleep, ability to work, ability to exercise, and ability to do chores (2018, p. E605).

The results of the study showed that the NRS-11 score decreased from an average of 6.8 out of 10 to 4.5 (33.8% decrease) (2018, p. E605). In addition, the study showed that patients reduced their total opioid use from an average of 53.8 (plus or minus 4) morphine milligram equivalents (MME) to 24 (plus or minus 2.8) MME (2018, p. E605). Overall, researchers found that patients' quality of life and functional capacity improved (2018, p. E606). According to Patwardhan et al. (2018), the results showed that oxycodone group of opioids showed the greatest improvement in controlling pain and reducing opioid consumption (p. E606). In contrast, hydromorphone has the least improvement in pain and quality of life. The morphine group of opioids were more likely to improve a patient's sleep patterns to fall and stay asleep, and the hydrocodone group saw most improvement in patient's ability to work and perform chores (2018, pp. E606-E607). According to Patwardhan et al. (2018), using a "a multimodal approach to chronic pain management utilizing pain physicians, physical therapists, acupuncturists, psychologists, psychiatrists, and addiction medicine specialists would most likely lead to a more successful outcome in terms of pain and opioid reduction" (p. E609).

Overall, the study showed that using a multimodal approach within interventional pain clinics resulted in a reduction in opioid use, while also improving their patient's quality of life and pain control (2018, p. E606).

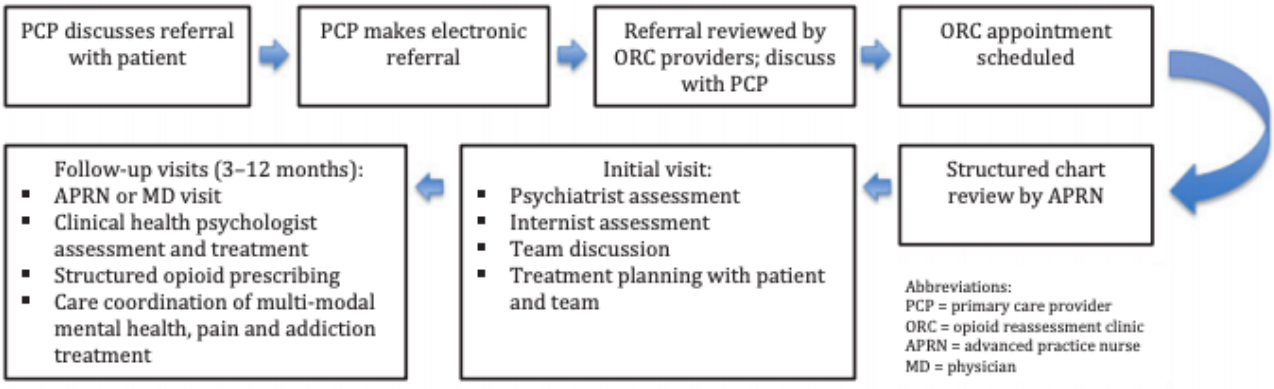
2.4.4 Opioid Reassessment Clinic

The Opioid Reassessment Clinic (ORC) is a multidisciplinary clinic that offers "team-based assessment and longitudinal, multimodal treatment of pain in patients prescribed opioid regimens deemed unsafe by their primary care providers" (Oldfield et al., 2018, p. S39). The clinic is staffed by an addiction psychiatrist, an internist with addiction and pain training, a behavioural health advanced practice nurse (APRN) with addiction training, a clinical health psychologist, and a nurse case manager (Becker et al., 2018, p. 1420). Physicians at the ORC were buprenorphine and naloxone (BUP/NX) certified which provides them the ability to transition patients to BUP/NX therapy without having to refer patients to other substance use treatment clinics (2018, p. 1420). The clinic runs one half-day per week, where two new patients are assessed and twelve follow-up patients are evaluated by the ORC team (Becker et al., 2018).

Individuals who are eligible to be accepted at the clinic are those who are found to have problems with safety, efficacy, or misuse of prescription opioids (Becker et al., 2018, p. 1420).

Before a patient's initial appointment, the behavioural health advanced practice nurse performs a structured chart review and presents each new individual case to the ORC team (Becker et al., 2018, p. 1420). During their first appointment, a patient is seen by an addiction psychiatrist and internist, who use a biopsychosocial framework to conduct an standardized assessment of the patient's pain, pain-related functioning, history of pain treatment, history of medical, psychiatric, and substance abuse disorders, and their individual goals and treatment preferences (2018, p. 1420). After a patient is assessed, the ORC team collaboratively develops a multimodal treatment plan for the patient, which is followed by planning with the patient and beginning their prescribed treatment plan (2018, p. 1420). A follow-up appointment is scheduled two-weeks following their initial appointment, where the patient meets with the clinical health psychologist to assess pain-related functioning and quality of life which could result in determining if any psychosocial treatment is required for their pain or any other related problems (2018, p. 1420). Additional follow-up appointments occur between one to four weeks after the initial visit for structured opioid prescribing, where patients are provided intensive monitoring and coordination of pain and mental health care which are provided by an APRN or physician (2018, p. 1420). Patients are typically stabilized after approximately three to twelve months (2018, p. 1420). **Figure 3** below highlights the clinical flow process of ORC.

Figure 3: Clinical flow of the Opioid Reassessment Clinic (ORC).



Source: Becker et al. (2018), p. 1420.

In an evaluation study conducted by Becker et al. (2018), researchers found that the Opioid Reassessment Clinic provided efficient treatment to medically complex, high-risk, high-utilizing patients (p. 1423). Researchers also found that, on average, patients reduced their amount of prescription opioids after being referred to the clinic (2018, p. 1423). The average wait time to be accepted was approximately 22.1 days and the average length of treatment was approximately 137 days (2018, p. 1422). The study acknowledged that patients could be at risk for engaging in unsafe use of prescription opioids when they finish the program and return to receiving treatment by their primary care physician (2018, p. 1423). As such, researchers acknowledge the role of the nurse case manager is to manage the patient transition of care from the ORC to the primary care physician (2018, p. 1423). One limitation of the program is the amount of resources that may be required to run an ORC. As an alternative, researchers noted that the clinical approach management of the ORC may be an effective model to be adapted within other facilities (2018, p. 1423).

In a similar study conducted by Oldfield et al. (2018), researchers compared an intervention group, who engaged in treatment at the ORC to a control group, who did not engage in treatment. Researchers found that participants, who are United States veterans, were prescribed opioid doses of 60 mg morphine equivalent daily dose (MEDD) on average at referral (p. S41). The study showed that veterans who participated in the study were significantly more likely to slowly taper opioids (37%) than those who did not (3%) (2018, p. S41). Additionally, participants who were referred to the ORC were more likely to trial partial agonist therapy (62%) than those we were not referred (2%) (2018, p. S41). In the study, the most common partial agonist therapy used was buprenorphine/naloxone. Overall, the participants who were referred to the ORC saw a median decrease of 30 mg MEDD compared to those were not referred (0 mg MEDD decrease) (2018, p. S42). In a follow-up, participants who did engage in the ORC, maintained their level of MEDD once they transitioned back to their primary care physician, and approximately sixty-six percent rotated to buprenorphine (2018, p. S42). According to Oldfield et al. (2018), rotating to buprenorphine has “improved safety profile compared with full-agonist opioids” (p. S42). Researchers noted that patients may be reluctant to taper off opioids if they do not feel supported or communicated with by their primary care provider (2018, p. S42). Moving forward,

researchers acknowledge that on-going education about the Opioid Reassessment Clinic and its potential benefits should be communicated to primary care physicians.

2.4.5 Summary

The literature review revealed that multidisciplinary, interdisciplinary, and multimodal approaches are effective practices to improve the function and the daily lives of individuals who experience chronic pain. In addition, research has shown that those who were prescribed prescription opioids prior to entering the program, reduced their total opioid use after being referred to the program. Once individuals were referred and accepted into pain management programs, the team-based care and services that were offered, provided support to help them tapper completely or reduce the opioids they were previously prescribed. The literature review showed that physicians who are buprenorphine and naloxone certified were able to treat patients who are diagnosed with opioid dependence within these clinics effectively. Patients who were referred to the program and rotated to buprenorphine were shown to have an improvement in their chronic pain in comparison to those who were prescribed with full agonist opioids (Oldfield et al., 2018, p. S42). The literature revealed that patients should also receive non-pharmacology and non-opioid pharmacology treatments, such as physiotherapy and/or occupational therapy, to treat and manage their chronic pain.

Research has shown that outpatient healthcare clinics such as pain clinics, opioid reassessment clinics, rehabilitation clinics, and co-occurring disorders clinics are effective models to treat patients who experience chronic pain and those who also may be diagnosed with other co-occurring health disorders or substance use issues. It was shown in the literature review that individuals who experience chronic pain and are also diagnosed with mental health and/or substance use issues, may benefit from being referred to these programs as they provide a safe and supportive environment.

Overall, the literature review showed that using a multimodal treatment approach through team-based care, has shown to reduce pain, opioid consumption, and improve the daily lives of those who experience chronic pain (Hechler et al., 2019, p. 6).

3.0. Jurisdictional Scan

A jurisdictional scan was conducted to develop detailed information of current models that treat individuals that experience chronic pain. The purpose of the jurisdictional scan was to review and analyze collected information to compare the differences and similarities in trends and common themes of models and frameworks across various jurisdictions. British Columbia was not used as a jurisdiction in this study, as there is a current project that focused on chronic pain and prescription opioid use on Vancouver Island and across British Columbia.

The jurisdictional scan is organized into five categories:

1. Opioid prescribing for chronic pain,
2. Chronic pain treatment models,
3. Virtual care services,
4. Education and training, and
5. Guidelines for opioid prescribing

The first category focuses on recommendations and tools that can be used to guide and support healthcare providers in monitoring and treating individuals who experience chronic pain. The second category discusses various chronic pain treatment models that have been implemented in various jurisdictions that focus on treating and managing chronic pain through a team-based approach. The third category examines utilizing virtual care services in healthcare practices. In Canada and in the United States, a virtual care service called Project ECHO provides healthcare providers virtual support and resources from pain management specialists. The fourth category examines online or in-person education and training opportunities for healthcare providers. These education and training opportunities focus on various topics including safe opioid prescribing practices for chronic pain. Lastly, the fifth category cross-examines Canada and the United States current guidelines for opioid prescribing.

This report focuses on jurisdictions across Canada and internationally, excluding the province of British Columbia. Across Canada, the report discusses treatment models that are implemented in Alberta and Ontario. These provinces were chosen because they represent populations that are similar to populations in British Columbia. The international countries that are used within this report were chosen because they are socially, economically, and politically similar to Canada.

The United Kingdom, Australia, and New Zealand were chosen because they have similar public health systems with Canada.

3.1 Opioid Prescribing for Chronic Pain

3.1.1 Health Quality Ontario

Health Quality Ontario is an organization that provides objective advise, data, and support to improve the healthcare system in Ontario. The organization is governed by a twelve-member Board of Directors, whom is appointed by the Minister of Health and Long-Term Care, comprising of doctors, nurses, patients, and health care professionals (Health Quality Ontario, 2020). In 2018, Health Quality Ontario published *Opioid Prescribing for Chronic Pain: Care for People 15 Years of Age and Older*. This quality standard report focuses on "guidance on the prescribing, monitoring, and tapering of opioids to treat chronic pain for people 15 years of age and older in all care settings" (Health Quality Ontario, 2018, p. 2).

The quality standard report focused on ten quality statements that could improve quality care for individuals who experience chronic pain and have been prescribed or may be considering using opioids as treatment (2018, p. 2). Each quality statement includes indicators that guide measurement of quality improvement efforts in relation to the implementation of each quality statement (2018, p. 5), These quality statements include:

1. Comprehensive Assessment
2. Setting Goals for Pain Management and Function
3. First-Line Treatment with Non-opioid Therapies
4. Shared Decision-Making and Information on the Potential Benefits and Harms of Opioids for Chronic Pain
5. Initiating a Trial of Opioids for Chronic Pain
6. Co-prescribing Opioids and Benzodiazepines
7. Opioid Use Disorder
8. Prescription Monitoring Systems
9. Tapering and Discontinuation
10. Health Care Professional Education (2018, p. 7).

1) Comprehensive Assessment

When considering opioid therapy for individuals who experience chronic pain, it is recommended for healthcare professionals to assess relevant physical and/or psychological diagnoses. This includes providing documented assessments on their health history, comorbidities, using validating tools to assess functional status, quality of life, and pain (2018, p. 8). In addition, the Quality Standard Advisory Committee recommends examining socioeconomic factors, such as social determinants of health (2018, p. 8).

2) Setting Goals for Pain Management and Function

It is recommended for healthcare professionals to work with individuals who are experiencing chronic pain, and their families, to develop realistic, specific, and measurable goals (2018, p. 10). The development of these goals will focus on pain management, functional improvement, improvement in an individual's ability to perform activities in their daily life, and any other specific improvements that are important to them and their quality of life (2018, p. 10). It is recommended that healthcare professionals also consider the side effects of various therapies used when setting management goals, in order to minimize potential harms to the individual (2018, p 10). This could include pain intensity and function when experience inter-dose withdrawals from opioids (2018, p. 10).

3) First-Line Treatment with Non-opioid Therapies

Health Quality Ontario recommends that first-line treatment for individuals who are experiencing chronic pain should be an individualized, multidisciplinary or multimodal treatment approach that does not use pharmacological or pharmacotherapy treatment (2018, p. 14). Using non-pharmacological or non-pharmacotherapy multimodal or multidisciplinary approaches as first-line treatments could improve function and quality of life (2018, p. 14). Although this approach to first-line treatment is recommended, there could be financial inequities and barriers when individuals access non-opioid therapy to improve their chronic pain (2018, p. 14). In order to reduce these barriers, it is recommended that healthcare providers become aware of low-cost non-opioid therapies in their communities that can provide individuals access to appropriate care.

4) Shared Decision-Making and Information on Potential Benefits and Harms of Opioids for Chronic Pain

When collaborating with individuals and their families on a share-decision making process to develop a treatment plan, healthcare professionals should communicate the potential harms and side-effects of opioid therapies to treat chronic pain (2018, p. 18). According to Health Quality Ontario (2018), some of these side effects could include constipation, nausea and vomiting, hypogonadism, cognitive changes, physical dependence, opioid use disorder, nonfatal unintentional overdose, and death (p. 18). Healthcare professionals should also discuss the responsibilities of all parties involved when prescribing opioids. This include the responsibilities of the individual who the opioids are prescribed to, the pharmacist, and the opioids prescriber (Health Quality Ontario, 2018, p. 18). Additionally, it is recommended that healthcare professionals establish a monitoring schedule to reassess goal progression and function at least every three months (2018, p. 18).

5) Initiating a Trial of Opioids for Chronic Pain

If first-line treatments such as multimodal or multidisciplinary therapies have not improved function, quality of life, or pain for individuals, then healthcare providers could consider initiating a trial of prescription opioids (2018, p. 24). Following the previous quality statements, and having informed discussions with individuals and their family, healthcare providers also need to be aware of past history of mental health disorders and substance use disorders before prescribing opioids to treat chronic pain (2018, p. 24). If healthcare providers decide that the most appropriate therapy is prescribed opioids, a trial prescription should start at the lowest effective dose. Health Quality Ontario recommends that individuals should preferably be prescribed lower than 50 mg morphine equivalents per day, but if a higher dose is required, then healthcare professionals must communicate the increased risks such as overdose and death with individuals and their family (2018, p. 24). It is also recommended that if individuals require a higher dose of prescription opioids, then they could seek second opinion from another healthcare provider or colleague to determine an appropriate dose (2018, p. 24). In addition of prescription opioid therapy to treat chronic pain, individuals should be recommended to use multimodal or multidisciplinary non-opioid pharmacotherapy and nonpharmacological therapies (2018, p. 24).

6) Co-prescribing Opioids and Benzodiazepines

Health Quality Ontario (2018) recommends that healthcare professionals should not prescribe opioids when an individual is also prescribed benzodiazepines, sedative hypnotics, or other central nervous system depressants (p. 28). When prescribing opioids, healthcare professionals should check a prescription monitoring system to be aware of all of the medications that the individual is currently prescribed, as well as ask the individual what medications they are currently taking in order to be fully informed and eliminate the risks of combining current medications with prescription opioids. If an individual is prescribed benzodiazepines, potential options could be to taper off of benzodiazepines before a trial period of opioids, or if the healthcare professional decides a concurrent treatment, then both prescription opioids and benzodiazepines should be at the lowest effective dose (2018, p. 28).

7) Opioid Use Disorder

When individuals are prescribed long-term opioid therapy to treat their chronic pain, they are at risk for developing opioid use disorder. If an individual has concurrent chronic pain and untreated opioid use disorder, it is recommended that healthcare professionals provide opioid agonist therapy with buprenorphine/naloxone or methadone (2018, p. 31).

8) Prescription Monitoring Systems

Prescription Monitoring System is an effective tool for healthcare professionals to access in order to identify and monitor opioid or other prescription drugs that an individual may be prescribed to eliminate potential risks or harms (2018, p. 34). Healthcare professionals should access this system to check an individual's prescription history before prescribing any opioids, and closely review it if a dose is increased (2018, p. 34). If an individual is on a long-term stable dose of prescription opioids, their prescription history should be reviewed every three to six months.

9) Tapering and Discontinuation

Health Quality Ontario (2018) recommends that healthcare professionals should offer tapering for individuals who are prescribed long-term opioids every three to six months (p. 37). If the healthcare professional and individual who is experiencing chronic pain decide to taper to a

lower dose or discontinue prescription opioids, a gradual reduction of 5% to 10% every two to four weeks is recommended (Health Quality Ontario, 2018 p. 38). Developing a tapering strategy is important when tapering off of high doses of opioids. If necessary, healthcare professionals could refer the individual to an addiction medicine specialist, psychiatry, or other multimodal or multidisciplinary programs that can support them when tapering off of high doses of opioids (2018, p. 38). This referral could be important for individuals who have a history of experiencing withdrawal symptoms or have other complex health issues (2018, p. 38).

10) Health Care Professional Education

It is beneficial that healthcare professionals and students be provided with educational opportunities that can improve and educate them about non-opioid related therapies using multimodal or multidisciplinary approaches to treat chronic pain (2018, p. 41). Education on alternative non-opioid therapeutic approaches can reduce the risk of opioid-related harms and provide improved quality of life for individuals who are experiencing chronic pain. Health Quality Ontario (2018) recommends that "barriers and facilitators to aligning opioid prescribing practices with current best evidence should be determined and supports for prescribers to change practice when indicated should be implemented" (p. 41).

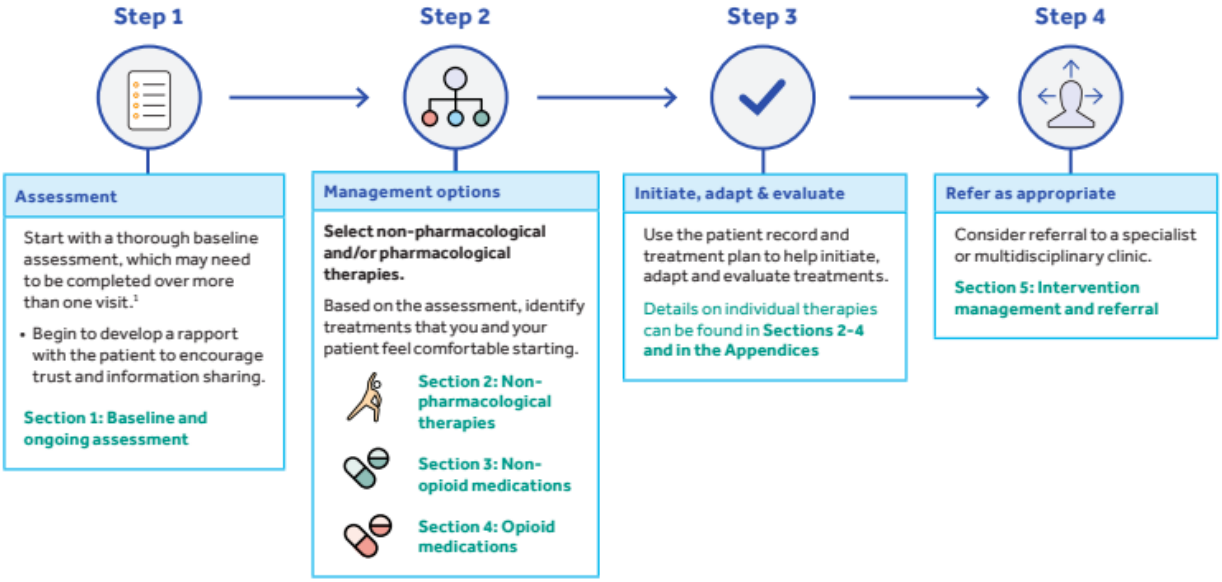
3.1.2 Centre for Effective Practice: Chronic Non-Cancer Pain Tool

The Centre for Effective Practice (CEP), in collaboration with Ontario College of Family Physicians and the Nurse Practitioners' Association of Ontario developed the Chronic Non-Cancer Pain Tool to assist healthcare providers develop and implement management plans for individuals who experience chronic non-cancer pain (The Centre for Effective Practice [CEP], 2018, p. 1). The CEP Chronic Non-Cancer Pain Tool uses a multimodal approach to manage chronic pain within a primary care setting that focuses on developing individualized goals and management plans (CEP, 2018, p. 1).

Figure 4 highlights the general approach of the Chronic Non-Cancer Pain Tool using a four-step process that includes:

1. Assessment
2. Management options
3. Initiate, adopt and evaluate, and
4. Refer as appropriate (CEP, 2018, p. 1).

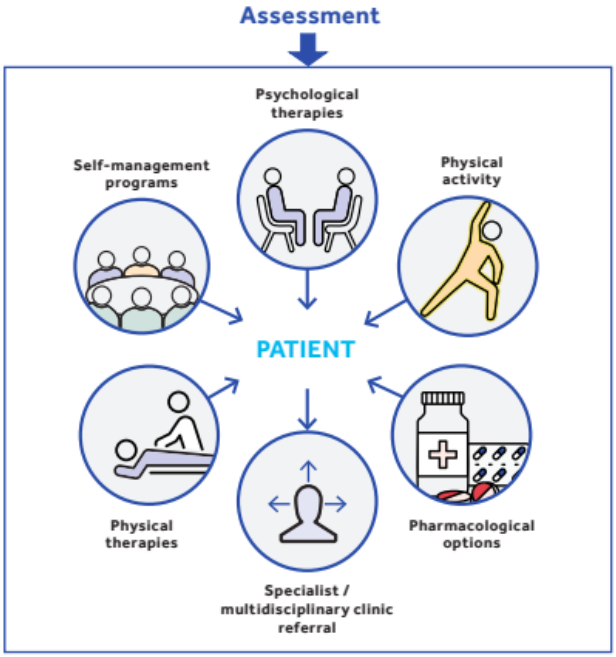
Figure 4: Four-step process of the Chronic Non-Cancer Pain Tool



Source: Centre for Effective Practice. (2018). Management of chronic non-cancer pain. Retrieved from https://cep.health/clinical-products/chronic-non-cancer-pain/

Figure 5 shows an example of the multimodal assessment approach that healthcare providers can use to create a baseline of information to develop individualized management plans. Through a baseline assessment, healthcare providers should focus on an individual's functional and social history, mental health, substance use history and opioid risk assessment, physical examination, and pain condition (CEP, 2018, p. 2). Healthcare providers and their patients could collaborate using a multimodal approach to develop a management plan that could include physical therapy, physical activity, psychological therapies, self-management programs, referrals to specialized clinics, or pharmacological options to improve and manage their chronic pain when developing individualized management plans (CEP, 2018, p. 1).

Figure 5: Multimodal assessment approach for healthcare providers to develop an individualized assessment plan.



Source: Centre for Effective Practice. (2018). Management of chronic non-cancer pain. Retrieved from https://cep.health/clinical-products/chronic-non-cancer-pain/

Non-Pharmacological Options

It is recommended that non-pharmacological options should be a first treatment options for chronic pain (CEP, 2018, p. 3). As mentioned above, examples of non-pharmacological treatment options included physical activity, physical therapy, self-management programs, and psychological therapies. According to the Centre for Effective Practice (2018), "when determining the benefit of a therapy, an improvement of 30% in pain and function scores is considered clinically meaningful; however, even a smaller improvement may be meaningful to the patient" (p. 3). Once healthcare providers and individuals are comfortable with the treatment plan, step 3 of the four-part process, *initiate, adopt and evaluate*, will be executed. The Centre for Effective Practice includes a detailed process of step 3 in the Chronic Non-Cancer Pain Toolkit for each of the four non-pharmacological options mentioned above.

Pharmacological Options

The toolkit provides recommendations of non-opioid medications that include topical, anti-depressants, anti-convulsant, and general non-opioid pharmacological options (CEP, 2018, p. 4). If healthcare providers recommend using pharmacological options, then non-opioid pharmacological options are preferred, in combination of non-pharmacological therapies (2018, p. 4). Using opioid medications could be considered as a treatment option for some individuals, if it is recommended by their healthcare provider. Individuals who have tried other treatment options, are at a low risk of Opioid Use Disorder (OUD), and experience severe pain that hinders their daily function could be recommended to use opioid medication (CEP, 2018, p. 5). The toolkit recommends using opioids in combination with non-opioid pharmacological and non-pharmacological treatments (CEP, 2018, p. 5). The toolkit provides detailed information of initiation, dosing and titration, and evaluation when prescribing opioids to treat chronic pain.

Intervention Management and Referral

The Chronic Non-Cancer Pain Toolkit provides information when healthcare providers who work in primary care settings could consider recommending an individual to psychological therapy, multidisciplinary pain management programs, and/or pain specialist services (CEP, 2018, p. 6). Healthcare providers must provide relevant documentation that may be required upon making a referral.

The Chronic Non-Cancer Toolkit provided healthcare providers who work in primary care settings. The toolkit includes a patient record and treatment plan template that could be used during an assessment and when developing a treatment plan. Overall, this toolkit could be used as a resource when treating an individual who experiences chronic pain.

3.2 Chronic Pain Treatment Models

As discussed in the literature review, there are a variety of treatment approaches and models to treat chronic pain. These treatment models include a multimodal, multidisciplinary, interdisciplinary, and integrated approach. These treatment models could be based within pain clinics, rehabilitation clinics, and other outpatient centres. The following chronic pain treatment

models are based on current practices that are occurring within Canada and abroad. These treatment models are based on approaches that were discussed within the literature review.

3.2.1 Alberta: Multidisciplinary Pain Clinic

The University of Alberta's Faculty of Medicine and Dentistry runs a Multidisciplinary Pain Clinic that provides care for individuals who experience chronic pain (University of Alberta, 2020a). As the multidisciplinary pain clinic is located at the University of Alberta, the clinic also focuses on research and education. The pain clinic also provides consultations in the management of complex perioperative pain, specifically for individuals who require high doses of opioids (University of Alberta, 2020a). According to the University of Alberta's Faculty of Medicine and Dentistry, the mission of the Multidisciplinary Pain Clinic is to:

- Treat and care for people who have chronic pain.
- Educate the medical profession and others about pain.
- Conduct research into pain and pain treatments.
- Raise the profile of chronic pain as a health issue (University of Alberta, 2020a).

The pain clinic is comprised of a multidisciplinary team that is highlighted in **Table 7.** In addition to this multidisciplinary team, the pain clinic has close collaborative relationships with other disciplines including the Oral/Facial Pain Clinic of the Department of Dentistry and the Division of Palliative Care (University of Alberta, 2020a).

Table 7: The multidisciplinary team at the University of Alberta's Multidisciplinary Pain Clinic.

Staff	Additional Information
4 Anaesthesiologists	Have a special interest and fellowship in pain medicine
1 Full-Time Registered Nurse	
1 Full-Time Psychologist	50% clinical; 50% academic
1 Full-Time Clerk	
2 Neurosurgeons	Seen at the pain clinic by referral
1 Psychiatrist	Seen at the pain clinic by referral
1 Allied Physical Therapist	Located at a nearby location at the University of Alberta

Source: University of Alberta. (2020). Multidisciplinary pain clinic: About us. Retrieved from https://www.ualberta.ca/medicine/institutes-centres-groups/multidisciplinary-pain-clinic/about-us

There are various treatment options that the multidisciplinary pain clinic offers such as:

- Medical consultation
- Medical (drug) treatment
- Injection treatments
- Surgical procedures
- Psychology
- Life Despite Pain program (University of Alberta, 2020a).

The multidisciplinary pain clinic offers three programs: Kundalini Yoga, Life Despite Pain, and Pain 101. Pain 101 is run by the clinics psychologists and team that provide individual or group sessions that focus on various topics regarding pain management (University of Alberta, 2020d). These topics include:

1. Pain Education
2. Tension and Relaxation
3. Pacing
4. Dealing with Negative Thoughts
5. Sleep
6. Stress and Anxiety
7. Communication
8. Setbacks
9. Mindfulness
10. Life Despite Pain (University of Alberta, 2020d).

The *Life Despite Pain* program began in 2005 and focuses on providing people who experience untreatable chronic pain a better quality of life. The program provides guidance to individuals while making realistic goals and strategies to improve their daily lives (University of Alberta, 2020c). The treatment team for the Life Despite Pain program is comprised of five individuals: the patient, their spouse or other significant person, pain management physician, registered nurse, and clinical psychologist (University of Alberta, 2020c). When individuals are deciding whether they want to join the program, they are first shown a one-hour video educating them on chronic pain (University of Alberta, 2020c). The video focuses on topics that include:

1. Chronic Pain myths
2. Realistic goal setting
3. Staying active

4. Staying on track and being accountable
5. Role of caregivers
6. Relaxation
7. Insight into how chronic pain influences values, priorities and goals in everyday life situations
8. Learning to set priorities despite chronic pain
9. Avoidance and activity cycling
10. Pacing activity
11. How chronic pain influences the pattern of communication with our primary support system
12. Coping with stress and anxiety
13. Depression and pain
14. Challenging negative thoughts (University of Alberta, 2020c).

After this education session, the individual will need to make a decision whether they want to join the program and stop their current treatment. There are two required conditions if an individual chooses to join:

1. Accepts the fact that their pain is permanent
2. Has specific goals they want to achieve (University of Alberta, 2020c).

If the individual decides to join the program, they are provided support from the program team to develop an action plan with a step by step breakdown in order to meet their goals (University of Alberta, 2020c). For example, goals that an individual may set for themselves could include being involved in more social activities, doing daily household chores, working, or exercising (University of Alberta, 2020c). The program also helps manage individuals their medications and provides counselling sessions (University of Alberta, 2020c). The intention of the program is to help develop and manage realistic goals for individuals, but it also holds them accountable for the goals they have set for themselves (University of Alberta, 2020c).

The Multidisciplinary Pain Clinic through the University of Alberta provides access to pain management specialists and services. One barrier to this program is the current wait times for individuals to be referred and triaged into the pain clinic (University of Alberta, 2020b). In 2012, there was a waitlist of 2,277 patients and a wait time of approximately 23 to 38 months. (University of Alberta, 2020b). This barrier is a result of the limited number of physicians and

other healthcare professionals in the pain management field of medicine (University of Alberta, 2020b).

3.2.2 Ontario: Integrated Chronic Pain Clinic

The Integrated Chronic Pain Clinic is located at the Sudbury Outpatient Centre in Ontario. Individuals must be referred by the primary care provider or specialist to the chronic pain clinic (Health Sciences North, 2018). Additionally, individuals who are being referred to the chronic pain clinic must have experienced pain for longer than three months and have tried other methods of pain management therapy that they have not responded to successfully (Health Sciences North, 2018). Currently the program is only offered to individuals over the age of eighteen (Health Sciences North, 2018). The chronic pain clinic consists of an interdisciplinary team that includes:

- Clinical Manager Program Coordinator
- Administrative Support
- Case Manager
- Occupational Therapist
- Pain Specialists - Physicians
- Pharmacist
- Physiotherapists
- Psychological Associates Recreation Therapist
- Registered Nurses
- Registered Social Worker (Health Sciences North, 2018).

The Sudbury Chronic Pain Management Clinic offers various pain management services to individuals based on individual assessments and shared decision making. When an individual is referred to the clinic, they will need to attend a mandatory welcome workshop, where they will be given information about the various programs, resources, goal setting and questionnaires (Health Sciences North, 2018). After the mandatory workshop, individuals will be given an assessment from team members, where they will decide in collaboration, which program will be best suited to meet their goals (Health Sciences North, 2018). **Table 8** shows the services offered at the Integrated Chronic Pain Clinic.

Table 8: The services offered at the Integrated Chronic Pain Clinic located in the Sudbury Outpatient Centre in Ontario.

Service	Schedule	Detailed Information
Accelerated 6-week Program	4 hours per day, two days per week.	Led by multiple team members. *Each day will include:* 1. Physical activity, 2. Relaxation 3. Goal Setting 4. 1 hour of education.
Regional/Outreach Programming	Shorted version of the accelerated program.	A shortened version of our accelerated programming for patients and families living outside the Greater Sudbury Area (>100km).
Individual Assessments		Available with the goal of getting participants ready to learn in a group setting.
Chronic Pain Self-Management Program	6-week workshop, 2.5 hours per week.	Peer Led. *Topics include:* • Making an Action Plan • Problem Solving; • Exercises to improve your strength, flexibility and endurance. • Fatigue management, • Depression Management, • Communication.
Family and Caregiver Programming	One evening per month. 6-week workshop available.	Family workshop. For those interested in more support and education a 6-week workshop will be available. Led by a trained professional.
Mindfulness Based Stress Reduction	8-week workshop, 3 hours per week.	Led by a trained professional. *Skills include:* • Awareness of Breath, • Body Scan, • Mindful Movement, • Walking Meditation, • Non– judgement, acceptance and self-compassion. • Maintenance groups available after completion.

Source: Health Sciences North. (2018). Integrated chronic pain program. Retrieved from https://www.hsnsudbury.ca/portalen/Programs-and-Services/Community-Care-and-Rehabilitation/Integrated-Chronic-Pain-Program

The Integrated Chronic Pain Clinic provides various programs and services to individuals who experience chronic pain through an interdisciplinary pain management therapy approach. Individuals who are accepted into the chronic pain clinic must be willing to commit to at least six weekly sessions that can range from 2.5 to 4 hours each week (Health Sciences North, 2018). Overall, the pain clinic provides various services and options for individuals who are accepted into the program, depending on what program will be individually best suited to meet their needs and improve their daily life.

3.2.3: Ontario: Michael G. DeGroote Pain Clinic

The Michael G. DeGroote Pain Clinic, located in Hamilton, Ontario, is an interdisciplinary program that treats individuals who are experiencing chronic pain to improve their quality of life (Hamilton Health Sciences, 2019a). The clinic focuses on innovative and evidence-based practices, that works in collaboration with their patients, and their families (Hamilton Health Sciences, 2019a). The goal of the pain clinic is to "support adaptive changes to improve daily functioning, productivity and overall quality of life. Through exemplary care chronic pain patients will be empowered to improve their quality of life" (Hamilton Health Sciences, 2019b).

The Michael G. DeGroote Pain Clinic is an interdisciplinary clinic that focuses on a team-based approach. The interdisciplinary team includes:

- Administrative Staff
- Nursing Staff
- Nurse Practitioner
- Occupational Therapist
- Pain Specialist (medical doctor)
- Pharmacist
- Physician Assistant
- Physiotherapist
- Psychologist
- Social Worker (Hamilton Health Sciences, 2019b).

An individual must be referred to the pain clinic by a healthcare provider. Once the pain clinic receives their referral, they are invited to an information session to learn about the services that

are offered. Individuals then book a 1-hour assessment session with an allied health professional, which could be a physiotherapist, occupational therapist, pharmacist, social worker, or nurse. The pain clinic offers two group-based programs: an 8-Day Pain Program and an Intensive Pain Program. The objective of the 8-day pain program is to:

- Improve patients understanding of chronic pain and the factors that influence their ability to live a healthier, more active lifestyle.
- Assist patients in learning ways to identify, manage and reduce stress and tension in their body.
- Enhance existing treatment or programs that they are currently involved in.
- Teach patients the basics of managing chronic pain.
- Provide patients with resources that are available in the community (Hamilton Health Sciences, 2019b).

Once an assessment is completed, an individual collaborates with healthcare professionals to develop a treatment plan, that is then provided to their general practitioner (Hamilton Health Sciences, 2019a). The treatment plan can include education, fitness, relaxation, and goal setting (Hamilton Health Sciences, 2019b). The pain clinic also provides management for chronic pain through epidural steroid injections, facet joint injections, radiofrequency lesioning, stellate ganglion and lumbar sympathetic blocks, acupuncture, paraverbal injections, and other minor nerve blocks (Hamilton Health Sciences, 2019b). The pain clinic also offers an intensive pain program which patients could enroll in, but they will be required to pay a fee for service. This program is an intensive program over the course of four weeks, Monday to Friday. In this program, patients participate in structured activities where they can connect with other patients and healthcare providers to provide strategies and skills where they can manage their chronic pain in their daily lives (Hamilton Health Sciences, 2019a). Patients set individualized goals and are involved in activities in areas such as productivity, work, physical fitness, social re-integration, recreation, nutrition, and family (Hamilton Health Sciences, 2019a). Services that are offered through the intensive pain program include:

- Occupational therapy
- Functional activities (e.g. group outings and horticulture)
- Fitness programs (e.g. hydrotherapy and yoga)
- Psychology
- Medication management
- Social work

- Nutrition
- Daily relaxation therapy
- Goal setting
- Group discussions
- Return to work discussions (Hamilton Health Sciences, 2019a).

In addition to the two programs mentioned above, the Michael G. DeGroote Pain Clinic also offers other pain programs including the Pelvic Pain Program and the Fibromyalgia Pain Management Program (Hamilton Health Sciences, 2019). The pain clinic also offers self-management program that are held in Hamilton and four other surrounding areas. The self-management program is offered two hours per week over a period of six weeks (Hamilton Health Sciences, 2019a). This is a free, first come first serve program, that provides tools and resources for individuals to learn how to manage their pain. According to Hamilton Health Sciences (2019), in comparison to individuals who have not taken the self-management program, those who have found improvements in their everyday lives and have "more vitality, less pain, less dependence on others, improved mental health, and more involved in everyday activities". The pain clinic offers pharmacy services, where patients will meet with a pharmacist and physician during their first week of the program to review and potentially modify their medications (Hamilton Health Sciences, 2019c). The role of this service is to:

- Review medications and help patients understand their role in their condition as well as their side effects.
- Help patients decide if they should decrease or stop any medication. If it is decided to decrease or stop any medication, the pain clinic will provide a safe environment to the patient.
- Provide a summary with clear directions about any decisions made by the pain clinic and how the medications are used for the patient's conditions. The pain clinic will provide this summary to the patient's doctors once they have completed the program (Hamilton Health Sciences, 2019c).

The medications that could be prescribed at the pain clinic could include non-opioid pharmacological and opioid-pharmacological options. This includes over-the-counter medications, NSAIDs, acetaminophen, opioids, muscle relaxants, antidepressants, anticonvulsants, and medical marijuana (Hamilton Health Sciences, 2019d).

The Michael G. DeGroote Pain Clinic provides programs and services for individuals who are looking to improve and manage their chronic pain. Through an interdisciplinary team-based

approach, healthcare providers help patients develop goals, learn tools and methods, and modify tasks to help improve their everyday lives and manage their chronic pain. The pain clinic also provides opportunities for individuals, who may not require participating in intensive pain programs, to learn how to manage their chronic pain through the community-based self-management program.

3.2.4 The Integrated Pain and Spinal Service (IPASS)

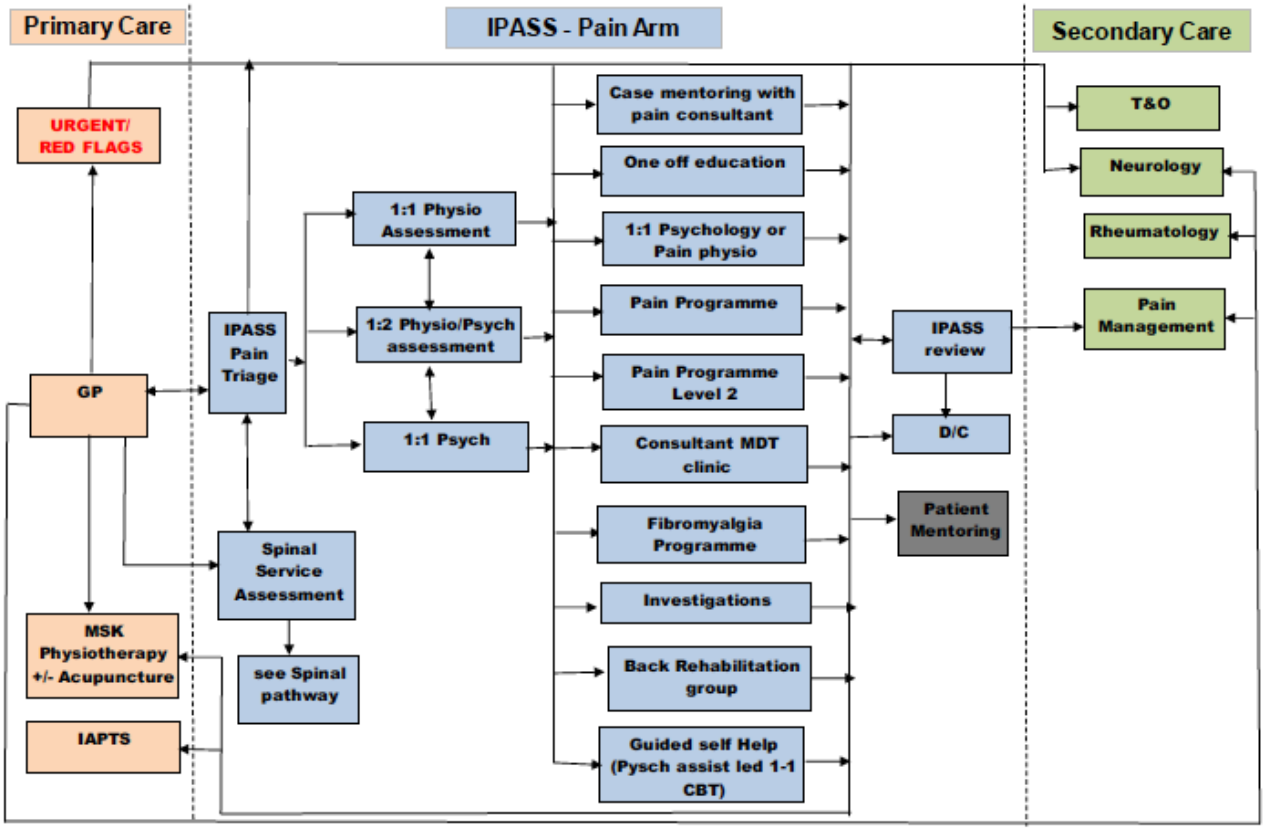
The Integrated Pain and Spinal Service (IPASS) is a multidisciplinary approach to assess and treat individuals with back and generalized persistent pain (National Institute for Health and Care Excellence [NICE], 2018). This collaborative and holistic approach focuses on improving individual's quality of life, function, and mental health (NICE, 2018). The multidisciplinary team works with the individual to develop their treatment plan through a variety of options including psychological, pharmacological, physical, and invasive treatments (NICE, 2018). The IPASS multidisciplinary team includes:

- Physiotherapist
- Psychologist
- Pain Consultant
- Spinal Consultant
- Psychologist
- Psychology Assistant
- Extended Scope Physiotherapist
- Administration and Clerical Manager
- Administration and Clerical (National Health Services Foundation [NHS] 2017, p. 13).

The Berkshire Healthcare National Health Service (NHS) Foundation Trust implemented the IPASS program in 2015. Prior to the program being implemented, wait times for individuals to see a specialist was approximately nine months (Berkshire Healthcare NHS Trust, 2018). Individuals who pain symptoms were seen at multiple out-patient consultations with different specialists to be tested which increased overall costs (Berkshire Healthcare NHS Trust, 2018). As a result of the long wait-times and high costs, the Berkshire Healthcare NHS Trust began developing a project that to establish a new community pain service which will integrate with the existing spinal service to provide an integrated and multidisciplinary community care service for

patients who experience persistent pain. In order to access the program, individuals are referred by their general practitioner to the IPASS program. **Figure 6** shows the service pathways map of the IPASS program.

Figure 6: This figure shows the service pathways for the Integrated Pain and Spinal Service. The pathways include referral from primary care into the IPASS program. If required, individuals may be referred to secondary services including neurology and rheumatology.



Source: National Health Services Foundation. (2017). Integrated pain and spinal service: IPASS tool-kit. Retrieved from https://www.nice.org.uk/Media/Default/sharedlearning/Example%2017-086IPASS.zip

According to the Berkshire Healthcare NHS Trust (2020), the aims of the Integrated Pain and Spinal Service program were:

- To deliver high quality, safe, effective and consistent treatment approaches for patients with back and generalized persistent pain.
- To improve guidance for general practitioners (GPs) to enable better pain management early on in primary care.
- To establish a multidisciplinary community pain service for rapid multidisciplinary treatment (MDT) assessment and treatment of patients with back and chronic pain.

- To improve communication between primary, community and secondary care to enable more co-ordinated care.
- To offer better support for patient self-management (as cited on National Institute for Health and Care Excellence [NICE], 2018).

The objectives of the IPASS service were:

- To provide appropriate assessment and treatment earlier on in the patient journey, avoiding duplication, delay and inappropriate referrals.
- To provide access to specialist spine and pain services in the community closer to patient's home.
- To offer a range of strategies including back and pain management classes to engage patients in exercise activities and promote self-management strategies.
- To reduce the number of attendances in secondary care, therefore making a cost-efficient service.
- To release capacity to secondary care in order for 'red flag' patients and those requiring invasive procedures to be seen more quickly (as cited on NICE, 2018).

The multidisciplinary team works with individuals to create a treatment plan that could include psychological treatments, education on pain management, physiotherapy, and a variety of other treatments. **Table 9** below shows pain and spinal treatments that could be included in an individual's treatment plan.

Table 9: The Integrated Pain and Spinal Service (IPASS) pain and spinal treatments that can be utilized in individual treatment plans.

IPASS Multidisciplinary Treatment Plans	
Pain Treatments	**Spinal Treatments**
• Referring you to our groups, such as our Pain Management Program or Fibromyalgia group • One-to-one Physiotherapy sessions • One-to-one Psychology sessions • Psychology sessions with your partner • One-off educational sessions on pain management (Berkshire Healthcare NHS Foundation Trust, 2020).	• One-to-one Physiotherapy sessions • Referring you to our exercise rehabilitation or pain management groups • Spinal injections, such as epidurals and nerve root blocks • An orthopedic surgical opinion • Arranging onward referral to other services, such as neurology or rheumatology (Berkshire Healthcare NHS Foundation Trust, 2020).

Source: Berkshire Healthcare National Health Service Foundation Trust. (2020). Retrieved from https://www.berkshirehealthcare.nhs.uk/our-services/adult-healthcare/integrated-pain-and-spinal-service-ipass/

The National Health Services (NHS) Foundation produced the IPASS toolkit in 2017. The toolkit is a guide on how to implement the IPASS program. Through outcome measurements on the service level, the NHS found an overall positive response from both the individual using the service and their medical referrer (NHS, 2017, p. 22). The outcomes show that 90% of individuals are seen for an initial assessment within a six-month period, and 90% of those referred receive definitive treatment within eighteen weeks of referral (2017, p. 22). There was a significant reduction of wait times from approximately eight months to three weeks across multiple IPASS sites (NHS, 2017, p. 3). This significant wait time reduction has provided patients the ability to access early intervention treatments for spinal and pain specialists within their community, which could reduce the risk of chronic pain (NICE, 2018). The program showed an overall improvement both mental and physical health based on six outcome measures. **Table 10** shows the outcome measures used to evaluate the IPASS program.

Table 10: Measures used to evaluate the outcomes of both mental and physical health of patients who were referred to the IPASS program.

Measure	***Description***
Patient Health Questionnaire (PHQ-9)	a multipurpose tool to screen, diagnose, monitor and measure the severity of depression.
Generalized Anxiety Disorder (GAD-7)	a tool to screen and measure severity of generalized anxiety disorders.
Work & Social Adjustment Scale (W&SAS)	a measure of impairment in function, e.g. day to day activities, work.
Flourishing Scale	a measure of self-perceived success in important areas such as relationships, self-esteem, purpose and optimism.
Pain Self-Efficacy (PSEQ)	a tool to assess the confidence a patient with chronic pain has in performing activities whilst in pain.
Patient Specific Functioning Scale (PSFS)	a tool to quantify activity limitation and measure functional outcome for patients with any musculoskeletal disorder.

Source: National Health Services Foundation. (2017). Integrated pain and spinal service: IPASS tool-kit. Retrieved from https://www.nice.org.uk/Media/Default/sharedlearning/Example%2017-086IPASS.zip

3.3 Virtual Care Services

3.3.1 Project ECHO

Project ECHO (Extension for Community Healthcare Outcomes) was launched in 2003 by Dr. Sanjeev Aurora, a liver disease physician in Albuquerque, New Mexico. Project ECHO is "a movement to demonopolize knowledge and amplify the capacity to provide best practice care for underserved people all over the world" (Project ECHO, 2019). The ECHO model provides accessible healthcare knowledge between specialty physicians and primary care physicians with the aim to save and improve people's lives who need access to treatment in rural and remote communities across the globe (Project ECHO, 2019; Dubin et al., 2015, p. 17). Currently, there are over 220 Project ECHO hubs in thirty-one countries across the club and provides collaborative knowledge and information for over one hundred diseases (Project ECHO, 2019). The four core elements of Project Echo are:

1. Use telehealth technology to leverage scarce healthcare resources;
2. Share best practices and reduce variation in care;
3. Harness practice-based learning and develop specialty training expertise among primary care providers; and
4. Monitor and evaluate outcomes of the ECHO model and, when indicated, adopt changes to improve desired outcomes (Dubin et al., 2015, p. 17).

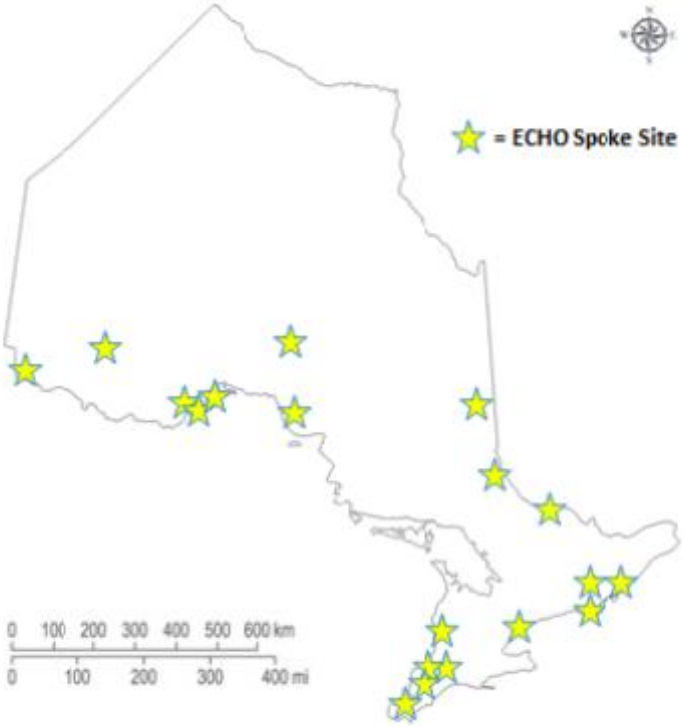
In 2014, ECHO Ontario Chronic Pain & Opioid Stewardship project was funded by the Ontario Ministry of Health and Long-Term Care (ECHO Ontario, 2019). The project aims to address chronic pain issues and "increase primary care physicians' competence and confidence in managing chronic pain" across the province (2015, p. 16). The learning objectives of the ECHO chronic pain in Ontario are:

- Interpret comprehensive assessments to make an accurate and timely pain diagnosis, plan treatment and follow-up.
- Employ assessment techniques to determine origin, track evolution, and support treatment of chronic pain.
- Self-regulate attitudes and beliefs about patient presentations to provide safe and effective chronic pain management.
- Develop comfort level, self-efficacy in managing chronic pain.

- Develop ability to mentor and be mentored by colleagues in a community of practice that ultimately benefits the patient (ECHO Ontario, 2019).

In Ontario, Project ECHO connects primary care physicians using multipoint video and teleconference technology, through telemedicine infrastructure (2015, p. 17). There are currently two Project ECHO hubs located at academic health centres co-located in Toronto and Kingston, and various "spoke" sites distributed across the province (2015, p. 17). **Figure 7** below shows Project ECHO sites across the province of Ontario.

Figure 7: Project Echo sites across Ontario.



Source: Dubin, R. E., Flannery, J., Taenzer, P., Smuth, A., Smith, K., Fabico, R., Zhao, J., Cameron, L., Chmelnitsky, D., Williams, R., Carlin, L., Sidrak, H., Arora, S., and Furlan, A. D. (2015). ECHO Ontario chronic pain & opioid stewardship: Providing access and building capacity for primary care providers in underserviced, rural, and remote communities. *Studies in Health Technology and Informatics*, *209*, pp. 15-22.

In Ontario, the project includes representation of health care professionals from various fields including psychiatry, pain medicine, neurology, addiction medicine, family medicine pain expert, psychology, nursing, social work, physical therapy, occupational therapy, pharmacy, chiropractic, clinical librarian, and telemedicine technicians (2015, p. 18). Primary care physicians are represented from urban, rural, remote, and underserved communities (2015, p.

18). As this is an accredited learning activity, physicians and specialists can receive credits per hour, and other healthcare providers can be provided up to eighty hours of continuing education (ECHO Ontario, 2019).

Project ECHO run weekly sessions for 1.5 hours which connect primary care physicians across the province with experts in chronic pain, who typically are located at one of the two academic centres (2016, p. 17). The weekly sessions include a short didactic lecture and a de-identified case presentation by participants (ECHO Ontario, 2019). After each case presentation, the specialist team and community partners provide the presenter recommendations moving forward with their case (ECHO Ontario, 2019). Dubin et al. (2015), highlight the ECHO Ontario structure:

- **Didactics:** "After announcements and roll-call of participants, a member of the hub gives a brief lecture on a chronic pain topic. The topics for these didactics are based on needs assessment of the spokes and program outcomes which is contingent upon new developments or local issues. Examples of topics covered to date include: the 5 pillars of chronic pain management, functional goal setting, the qualitative sensory exam, switching/tapering and stopping opioids, urine drug screening, pain psychology, and non-pharmacological treatment for chronic pain".
- **Case presentations:** "Each week, one or more PCPs present a de-identified patient case. These cases are highly complex, with chronic pain, mental health, addictions, and often multiple additional medical diagnoses. Most are disadvantaged psychosocially, economically, ethnically, and geographically. Revisiting patient cases is also encouraged to allow further reflection and follow up. The case presentation is coordinated by a facilitator. The facilitation skills include excellent listening skills, supportive non-judgmental summary of cases, and genuine curiosity as to how the spoke PCPs would approach this management of the case prior to closing comments and recommendations from the hub experts" (p. 18).

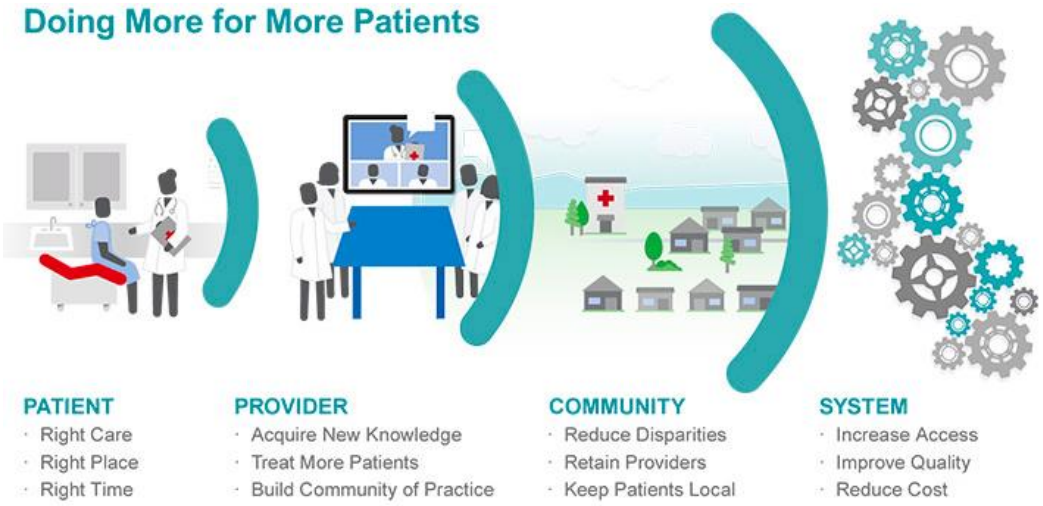
The model can provide access and knowledge from specialists regarding chronic pain towards building capacity for primary care providers who live in urban, rural, remote, and underserved communities (Dubin et al., 2015, p. 20). Project Echo takes an interdisciplinary multimodal approach that is cost efficient, as it does not require stand-alone pain rehabilitation programs (Dubin et al., 2015, p. 20). Using existing telemedicine capabilities, this model can provide accessible learning opportunities for all primary care physicians across the province which can fill in the gap between geographical distance and isolated communities and specialty services. In

a qualitative study conducted by Carlin et al. (2018), results showed that primary care physicians gained confidence and knowledge through Project ECHO, particularly regarding the scope of challenges when treating chronic pain, responsible opioid prescribing, and finding new strategies when prescribing opioids (p. 1143). Creating collective support amongst health care providers was found to be very positive and beneficial, particularly when managing difficult and complex cases regarding treating chronic pain and opioid prescribing (Carlin et al., 2018, p. 1143). There are also disadvantages of the project such as time constraints, issues regarding virtual connection and technology issues, and finding a balance on how to structure the weekly sessions efficiently (Carlin et al., 2018, p. 1143). As per Dubin et al. (2015), the ECHO model in Ontario is a "promising approach for healthcare system improvement that is attracting attention from many jurisdictions (p. 21).

Project ECHO at St. Joseph's Care Group

In Thunder Bay, Ontario, at Project ECHO is part of the "ECHO 'North' Chronic Pain and Opioid Stewardship" at St. Joseph's Care Group. St. Joseph's Care Group Chronic Pain Management Program, which supports Project ECHO, is to recruit, train, and support primary care providers (St. Joseph's Care Group, 2019). The Chronic Management Program focuses one evidence-based best practices to improve the lives of individuals living with chronic pain (St. Joseph's Care Group, 2019). Project ECHO at St. Joseph's Care Group runs weekly web-based sessions for primary care providers in the Northern Ontario Region (St. Joseph's Care Group, 2019). **Figure 8** below shows the focus of what Project ECHO at St. Joseph's Care Group could achieve. **Figure 9** below shows examples of various topics that are provided through Project ECHO. The full poster is in **Appendix A.**

Figure 8:



Source: St. Joseph's Care Group. (2019). Project echo. Retrieved from http://www.sjcg.net/services/mental-health_addictions/echo.aspx

Figure 9:

ECHO sessions include a de-identified patient case and a didactic presentation

Chronic Pain, Arthritis, & Rheumatic Diseases

Date	Topic	Speaker
Jan. 8	Overview of Rheumatic Diseases	Wes Fidler, MD, FRCPC
Jan. 15	Neurophysiology of Chronic Pain in Arthritis	Bryan MacLeod, MD, CFPC, FCFP
Jan. 22	Non Pharmacological Approaches to Chronic Pain & Arthritis	Mandy McGlynn, MSc, B.Sc(PT), ACPAC
Jan. 29	Inflammatory Spondyloarthropathies	Laura Passalent, PT, ACPAC

Register at sjcg.echoontario.ca or contact sjcgecho@tbh.net

Source: St. Joseph's Care Group. (2019). Project echo. Retrieved from http://www.sjcg.net/services/mental-health_addictions/echo.aspx

3.4 Education and Training

3.4.1 Australia and New Zealand

Better Pain Management

Better Pain Management is an online education and training modules for primary health professionals. This training program was developed by the Faculty of Pain Medicine of the Australian and New Zealand College of Anesthetics. The Faculty of Pain Medicine provides training, education, and standards of clinical practice in pain medicine. The aim of Better Pain Management is to "present unbiased, prioritized, educational messages as interestingly, engagingly and as accessibly as possible while emphasizing core themes in pain medicine to capture the attention of the professionals engaged in the care of patients with persistent pain" (Faculty of Pain Medicine of the Australian and New Zealand College of Anesthetics, [FPM ANZCA], 2016). Better Pain Management is comprised of twelve modules that focus on various areas of pain medicine. These modules and their descriptions are highlighted in **Table 11** below.

Table 11: Better Pain Management education and training modules.

Module	Module Name	Description
1	Making an effective pain diagnosis: a whole person approach	Understand the importance of a whole person approach to pain assessment, including awareness of important pathophysiological pathways and the complexities underlying pain experiences.
2	The impact and management of psychological factors in pain	Recognise patients at risk for long-term distress and disability. Develop a management plan for psychosocial comorbidities in patients with chronic pain.
3	A whole person approach to chronic pain	Comprehensively assess and manage complex chronic pain presentations. Educate patients about multidisciplinary pain management.
4	Identification and management of neuropathic pain in the primary care setting	Use a systematic assessment to diagnose neuropathic pain, including how to distinguish between neuropathic and nociceptive pain. Develop a treatment plan to address common comorbidities, including when referral is indicated.

5	Identification and management of low back pain in the primary care setting	Develop an evidence-based approach to assessing low back pain, with a focus on using practical, effective and time-efficient strategies. Understand why a multimodal vs. unimodal approach to low back pain is more effective.
6	Opioids in pain management	Initiate and monitor opioid therapy appropriately in patients with non-malignant chronic pain. Includes resources such as the Opioid Risk Tool for assessing a patient's risk of problematic opioid behaviour.
7	Pharmacology of pain medicine	Develop an understanding of analgesic medications and mechanisms present in chronic pain to drive rational prescribing.
8	Non-join musculoskeletal pains	Explore less understood causes of chronic musculoskeletal pain.
9	Post-discharge acute pain management	Learn about current evidence and best practice in the management of post-surgical acute pain in the community.
10	Understanding pain-related procedures	Commonly performed procedures for pain reduction explained in detail.
11	High-dose problematic opioid use	Unravel this complex problem by understanding the influences that drive high opioid use within vulnerable patients.
12	Pain in children	Appreciate the differences between adult pain and acute and chronic pain in children to improve your practice.

Source: Faculty of Pain Medicine of the Australian and New Zealand College of Anesthetics. (2016). Better pain management: Pain education for professionals. Retrieved from https://www.betterpainmanagement.com/catalog?pagename=Modules

Better Pain Management provides accessible continuing education and professional development for healthcare professionals. As the program was developed by pain medicine specialists and other experts in the area of pain management, it provides comprehensive up to date knowledge and skills from specialists in the field (FPM ANZCA, 2016). This program is an opportunity for healthcare professionals, particularly those working in primary care, the opportunity to learn more extensively about pain management and gain additional knowledge and skills to treat individuals who are suffering with chronic pain.

3.4.2 Canada

The Mental Health Commission of Canada developed a catalogue that includes various courses for health care providers focusing on opioid training. These courses vary from online or in-person training opportunities across Canada. The courses are organized into four categories:

- Treatment for opioid use disorder
- Safe prescribing of opioids
- Pharmacology; and
- Other (Mental Health Commission of Canada [MHCC], 2019).

These courses focus on various topics that are targeted towards specific audiences including primary care providers, physicians, and/or nurses. The length of the course can vary from one hour to a full day, depending on its scope. **Figure 10** and **Figure 11** below show examples of opioid training courses available for healthcare providers.

Figure 10: Opioid training courses that are focused on pain management.

PAIN MANAGEMENT					
COURSE	**FORMAT**	**LENGTH**	**AUDIENCE**	**DESCRIPTION**	**ORGANIZATION**
First Do No Harm: Optimizing Pain Relief with Opioids while Minimizing Risks	Online	1 Hour	Physicians	Prescribers of opioids are often in the position of determining if the benefits of an opioid exceed the risk of prescribing. Developed in collaboration with Royal College of Physicians and Surgeons of Canada, this program was designed to provide physicians with common patient scenarios, provide expert commentary on the specific issues and allow physicians to share how they would manage these patient cases.	Royal College of Physicians and Surgeons of Canada
Project Extension of Community Healthcare Outcomes (ECHO): Chronic Pain & Opioid Stewardship	In-person	2 Hours	Primary care providers	Extension of Community Healthcare Outcomes (ECHO) Ontario Chronic Pain/Opioid Stewardship is the first ECHO launched in Ontario in 2014. It has a unique ECHO structure with 2 Academic Centres – University Health Network in Toronto and Queen's University Continuing Professional Development Office in Kingston. The mission is to link primary care providers in a supportive community of practice that will enhance their skills and confidence to manage their patients safely and effectively.	University Health Network
Opioids for Chronic Non-Cancer Pain: Using the Canadian Guideline in Your Practice	Online	2 Hours	Physicians	This module explores the 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain through case presentations and summaries, and includes many useful tools to help manage, assess and monitor patients using opioid therapy for chronic non-cancer pain.	Memorial University of Newfoundland

Source: Mental Health Commission of Canada. (2019). Opioid training for healthcare providers course catalogue. Retrieved from https://www.mentalhealthcommission.ca/sites/default/files/2019-06/opioid_course_catalogue_2019.pdf

Figure 11: Opioid training courses that are focused on safe prescribing of opioids.

SAFE PRESCRIBING OF OPIOIDS					
COURSE	**FORMAT**	**LENGTH**	**AUDIENCE**	**DESCRIPTION**	**ORGANIZATION**
The Prescribing Course: Safe Opioid Prescribing	In-person	1 Day	Physicians and pharmacists	Safe opioid prescribing from assessment to tapering, including additional sections on special populations and practice safety. Based on the Canadian Guidelines for Safe and Effective Opioid Prescribing for Chronic Non-Cancer Pain.	Dalhousie University
Safer Opioid Prescribing Strategies	Blended delivery: Online and in-person	6 Hours	Physicians, residents, and other healthcare professionals and nurses who prescribe opioids	This program has been created to assist physicians in acquiring knowledge and new skills in the field of pain management, especially in the area of chronic non-cancer pain.	College of Family Physicians of Canada
Safer Opioid Prescrbing Strategies	Online	1.5 Hours	Physicians, other health care professionals, and health professional trainees	Understand your role in minimizing opioid-related harms through patient education and safe prescribing and dispensing practices. Learn how to assess patients on opioids for adverse effects, and when and how to taper and switch opioids.	MacHealth

Source: Mental Health Commission of Canada. (2019). Opioid training for healthcare providers course catalogue. Retrieved from https://www.mentalhealthcommission.ca/sites/default/files/2019-06/opioid_course_catalogue_2019.pdf

3.5 Opioid Manager/Calculator

Developing tools and resources for healthcare providers is essential when they are considering using opioid therapy to treat individuals who experience chronic pain. The Opioid Manager in Canada and the Opioid Calculator in Australia and New Zealand are resources that healthcare providers could use when treating or managing patients who are prescribed opioids.

3.5.1 Canada: Opioid Manager

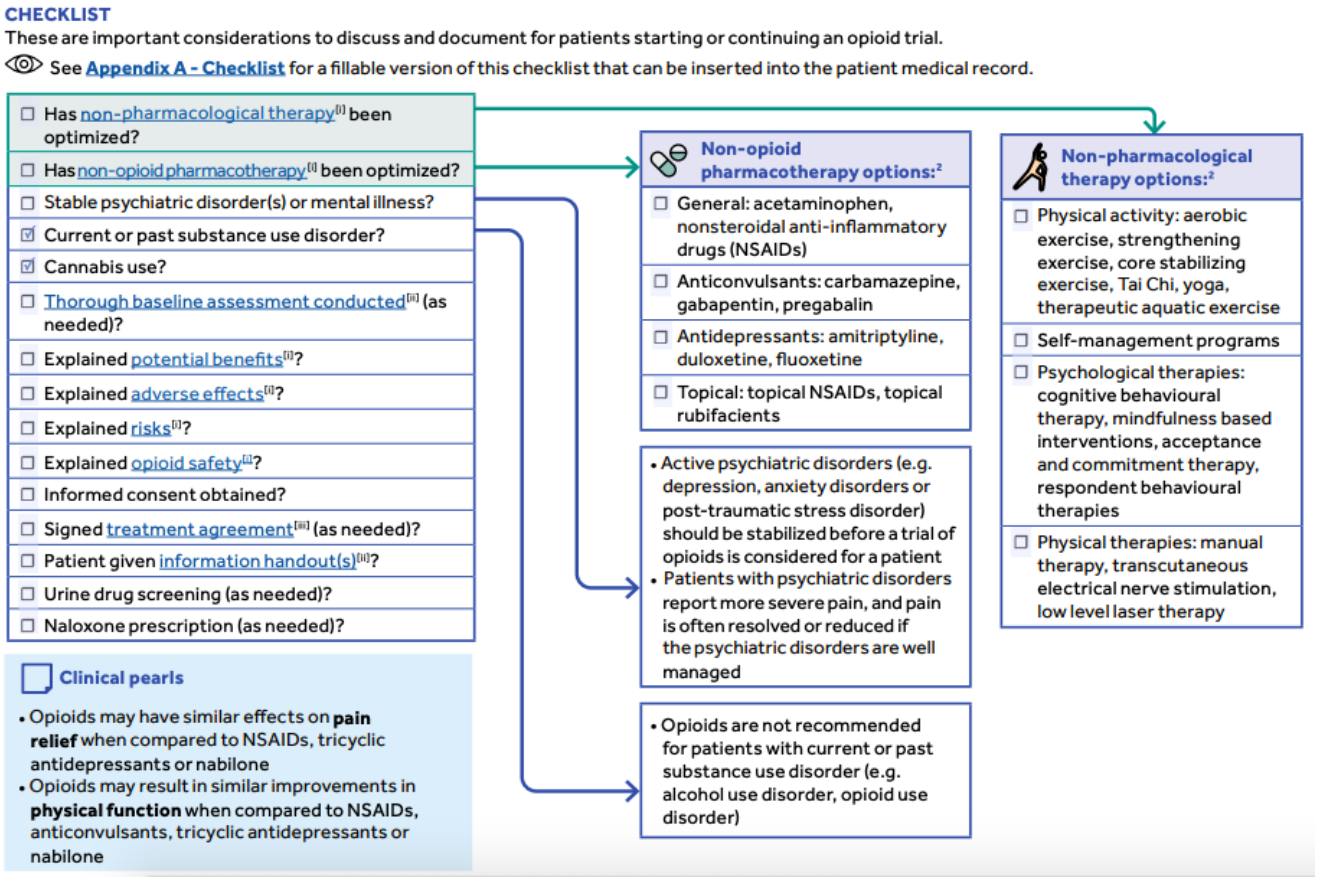
In 2017, the Centre for Effective Practice, in partnership with the University Health Network, updated the Opioid Manager tool to support primary care providers when prescribing or managing opioid to patients who experience chronic pain (Centre for Effective Practice [CEP], 2017). The opioid manager was last updated in 2011, but it was recommended in the *2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain*, as well as received feedback from healthcare providers, that it required an update. The Opioid Manager tool consists of five sections including:

a) Important Considerations for Opioid Therapy Trials
b) Opioid Therapy Trial
c) Maintaining & Monitoring

d) Switching
e) Tapering (CEP, 2017a).

Each of these sections provide detailed information that healthcare providers should consider if they are treating patients with opioid therapy. For example, in Section A: Important Considerations for Opioid Therapy, the tool provides a checklist of considerations and documentation for healthcare providers if they are beginning an opioid therapy trial for their patients, shown in **Figure 12.**

Figure 12: A checklist of important considerations for healthcare providers when trialing opioid therapy for patients. This checklist is part of the 2017 Opioid Manager tool.



Source: Centre for Effective Practice (2017b). Opioid manager. Retrieved from https://cep.health/media/uploaded/CEP_Opioid_Manager_2017.pdf

According to the Centre for Effective Practice (2017a), the Opioid Manager:

- Emphasizes the importance of optimizing non-pharmacological and non-opioid pharmacotherapy interventions.

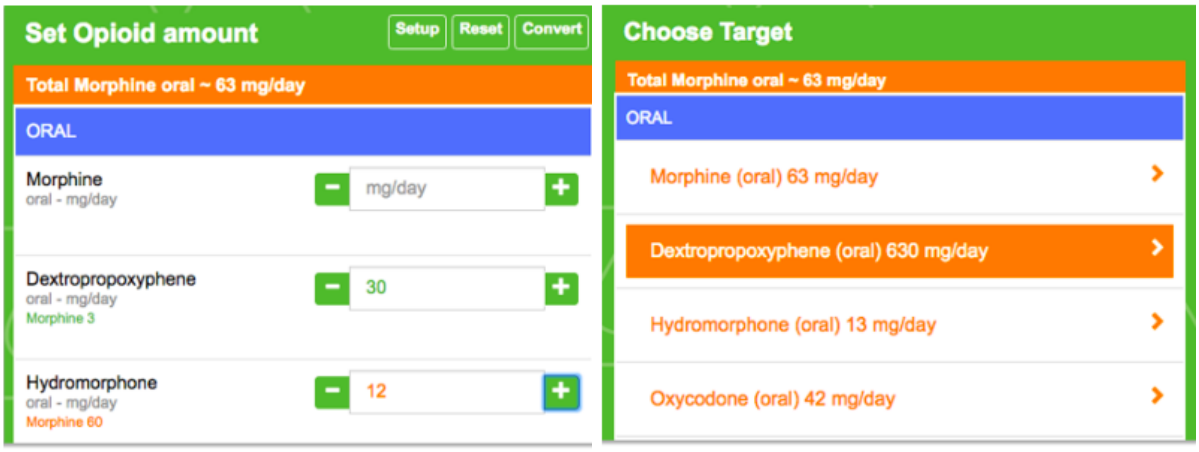
- Contains initial dosing, titration and morphine equivalency information for all recommended opioids.
- Contains succinct information and examples on how to appropriately monitor, taper and switch opioid prescriptions.
- Includes accompanying fillable appendices that can inserted into the patient medical chart.

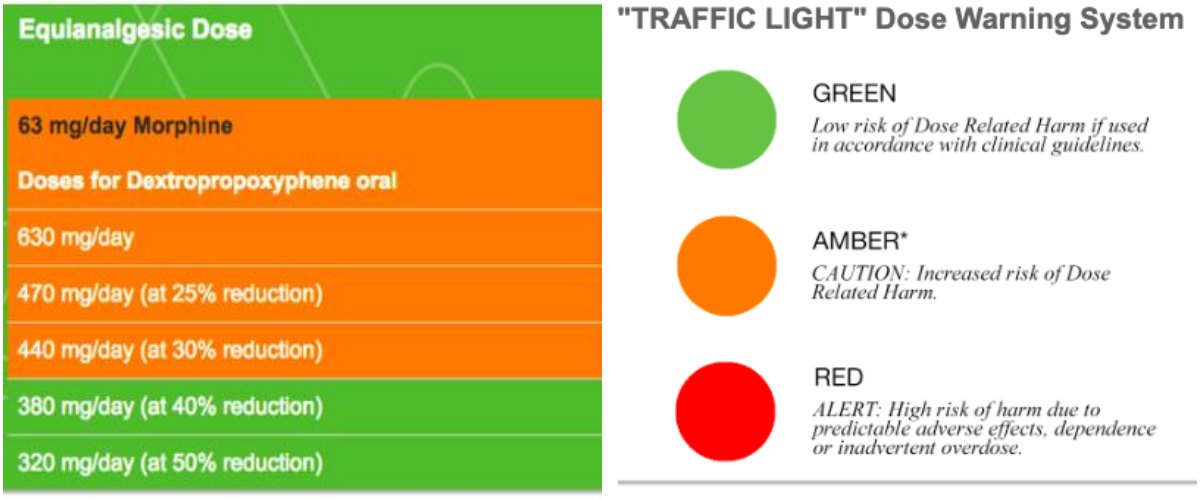
Overall, the Opioid Manager provides in-depth information and resources for healthcare providers for all steps of initiating, maintaining, or tapering opioid therapy (CEP, 2017b). The Opioid Manager tool will be provided in **Appendix B.**

3.5.2 Australia and New Zealand: Opioid Calculator

The Faculty of Pain Medicine of the Australian and New Zealand College of Anesthetics developed an opioid calculator which is available on smartphone devices. The opioid calculator is targeted towards specialist and medical practitioners, medical students, nurses, and allied health practitioners. The aim of the tool is to simplify the calculation of equianalgesic dosing of opioids to total the oral morphine equivalent daily dose (oMEDD). The opioid calculator includes a "traffic light", or opioid dose warning system, and provides easy access to resources and other information regarding opioid guidelines.

Figure 13: Example of the Opioid Calculated developed by the Faculty of Pain Medicine of the Australian and New Zealand College of Anesthetics.





Source: Faculty of Pain Medicine of the Australian and New Zealand College of Anesthetics. (2016). Opioid calculator. Retrieved from http://www.opioidcalculator.com.au/

3.5 Guidelines for Opioid Prescriptions

3.6.1: Canada

In 2017, the Busse et al. published *the 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain*. According to the National Pain Center (2017), the purpose of the guideline is to provide guidance to "provide guidance on the use of opioids to manage chronic non-cancer pain for adults" (p. 7). The guideline provides ten recommendations that focus on initiation and dosing of opioids and rotation and tapering of opioids (Busse et al., 2017, p. 3). Each recommendation is categorized as either a strong recommendation or a weak recommendation, based off of guidelines and using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system approach (Busse et al., 2017, p. 12). According to Busse et al., (2017), the strong recommendations "indicate that all or almost all fully informed patients would choose the recommended course of action, and indicate to clinicians that the recommendation is appropriate for all or almost all individuals" whereas the weak recommendations "indicate that the majority of informed patients would choose the suggested course of action, but an appreciable minority would not" (p. 7). In addition to the ten recommendation, the guideline also provides detailed information of best practice and clinical expert guidance (Busse et al., 2017, p. 7). **Table 12** below shows the *2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain's* ten recommendations.

Table 12: Ten recommendations from the *2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain.* The table shows detailed recommendation statements and whether the guideline considers each recommendation weak or strong.

2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain	
Initiation and Dosing of Opioids in patients with Chronic Non-Cancer Pain	
Recommendation	**Recommendation Statements**
1. First line therapy *Strong recommendation*	When considering therapy for patients with chronic noncancer pain, we recommend optimization of nonopioid pharmacotherapy and nonpharmacologic therapy, rather than a trial of opioids.
2. Persistent pain despite optimization of nonopioid therapy *Weak recommendation*	For patients with chronic noncancer pain, without current or past substance use disorder and without other active psychiatric disorders, who have persistent problematic pain despite optimized nonopioid therapy, we suggest adding a trial of opioids rather than continued therapy without opioids.
3. Opioid add-on therapy for patients with active substance use disorder *Strong recommendation*	For patients with chronic noncancer pain with an active substance use disorder, we recommend against the use of opioids.
4. Opioid add-on therapy for patients with other active psychiatric disorder *Weak recommendation*	For patients with chronic noncancer pain with an active psychiatric disorder whose nonopioid therapy has been optimized, and who have persistent problematic pain, we suggest stabilizing the psychiatric disorder before a trial of opioids is considered.
5. Opioid add-on therapy for patients with history of substance use disorder *Weak recommendation*	For patients with chronic noncancer pain with a history of substance use disorder, whose nonopioid therapy has been optimized, and who have persistent problematic pain, we suggest continuing nonopioid therapy rather than a trial of opioids.
6. Recommended dose restriction for patients beginning opioid therapy	For patients with chronic noncancer pain who are beginning opioid therapy, we recommend restricting the prescribed dose to less than 90 mg morphine equivalents daily, rather than having no upper limit or a higher limit on dosing.

Strong recommendation	
7. Suggested dose restriction for patients beginning opioid therapy *Weak recommendation*	For patients with chronic noncancer pain who are beginning opioid therapy, we suggest restricting the prescribed dose to less than 50 mg morphine equivalents daily.
Rotation and Tapering of Opioids, for Patients with Chronic Noncancer Pain	
8. Opioid Rotation *Weak recommendation*	For patients with chronic noncancer pain who are currently using opioids and have persistent problematic pain and/or problematic adverse effects, we suggest rotation to other opioids rather than keeping the opioid the same.
9. Tapering of opioids *Weak recommendation*	For patients with chronic noncancer pain who are currently using 90 mg morphine equivalents of opioids per day or more, we suggest tapering opioids to the lowest effective dose, potentially including discontinuation, rather than making no change in opioid therapy.
10. Multidisciplinary opioid tapering programs *Strong recommendation*	For patients with chronic noncancer pain who are using opioids and experiencing serious challenges in tapering, we recommend a formal multidisciplinary program.

Source: Busse, J. W., Craigie, S., Juurlink, D. N., Buckley, N., Wang, L., Couban, R. J., Agoritsas, T., Akl, E. A., Carrasco-Labra, A., Cooper, L., Cull, C., da Costa, B. R., Frank, J. W., Grant, G., Iorio, A., Persaud, N., Stern, S., Tugwell, P., Vandvik, P. O., and Guyatt, G. H. (2017). Guideline for opioid therapy and chronic noncancer pain. Retrieved from http://nationalpaincentre.mcmaster.ca/documents/Opioid%20GL%20for%20CMAJ_01may2017.pdf

The recommendations in the guideline show that non-opioid therapies should be considered as a first-line therapy before recommending a trial-based period of opioid-therapy (Busse et al., 2017, p. 15). The guideline also recommends using a multidisciplinary opioid reduction programs for individuals who are currently on opioid-therapy but are having difficulties in tapering from them (2017, p. 74). There could be potential barriers with multidisciplinary opioid reduction programs such as limited funding, availability, and access for individuals who do not live in major cities (2017, p. 75). Although there are considerable barriers, multidisciplinary programs could increase the success of safely tapering or discontinuing the use of opioid-therapy (2017, p. 75). Overall, the guideline provides detailed information and resources for healthcare providers when they are treating individuals who experience chronic pain.

3.6.1 United States

The Centers for Disease Control and Prevention (CDC) in the United States released the *CDC Guideline for Prescribing Opioids for Chronic Pain* in 2016. This guideline provides recommendations for primary care clinicians who are treating individuals with chronic non-cancer pain with opioid medications in an outpatient setting (Dowell et al., 2016, p. 3). The guideline provides twelve recommendations that are organized into three recommendation categories, highlighted in **Table 13**. These recommendations are based off of a systematic review that the CDC conducted in order to provide best evidence to ensure safe and effective treatment for individuals who are experiencing chronic pain (Dowell et al., 2016, p. 2). The three recommendation categories are:

1. Determining When to Initiate or Continue Opioids for Chronic Pain
2. Opioid Selection, Dosage, Duration, Follow-Up, and Discontinuation, and;
3. Assessing Risk and Addressing Harms of Opioid Use (Dowell et al., 2016, p. 2).

Table 13: Detailed information of each of the twelve recommendations, organized under the three recommendation categories.

CDC Recommendations for Prescribing Opioids for Non-Cancer Chronic Pain
Determining When to Initiate or Continue Opioids for Chronic Pain
1. Nonpharmacologic therapy and nonopioid pharmacologic therapy are preferred for chronic pain. Clinicians should consider opioid therapy only if expected benefits for both pain and function are anticipated to outweigh risks to the patient. If opioids are used, they should be combined with nonpharmacologic therapy and nonopioid pharmacologic therapy, as appropriate. 2. Before starting opioid therapy for chronic pain, clinicians should establish treatment goals with all patients, including realistic goals for pain and function, and should consider how therapy will be discontinued if benefits do not outweigh risks. Clinicians should continue opioid therapy only if there is clinically meaningful improvement in pain and function that outweighs risks to patient safety. 3. Before starting and periodically during opioid therapy, clinicians should discuss with patients known risks and realistic benefits of opioid therapy and patient and clinician responsibilities for managing therapy (Dowell et al., 2016, p. 16).
Opioid Selection, Dosage, Duration, Follow-Up, and Discontinuation
4. When starting opioid therapy for chronic pain, clinicians should prescribe immediate-release opioids instead of extended-release/long-acting (ER/LA) opioids. 5. When opioids are started, clinicians should prescribe the lowest effective dosage. Clinicians should use caution when prescribing opioids at any dosage, should carefully reassess evidence of individual benefits and risks when increasing dosage to ≥50

morphine milligram equivalents (MME)/day, and should avoid increasing dosage to ≥90 MME/day or carefully justify a decision to titrate dosage to ≥90 MME/day. 6. Long-term opioid use often begins with treatment of acute pain. When opioids are used for acute pain, clinicians should prescribe the lowest effective dose of immediate-release opioids and should prescribe no greater quantity than needed for the expected duration of pain severe enough to require opioids. Three days or less will often be sufficient; more than seven days will rarely be needed. 7. Clinicians should evaluate benefits and harms with patients within 1 to 4 weeks of starting opioid therapy for chronic pain or of dose escalation. Clinicians should evaluate benefits and harms of continued therapy with patients every 3 months or more frequently. If benefits do not outweigh harms of continued opioid therapy, clinicians should optimize other therapies and work with patients to taper opioids to lower dosages or to taper and discontinue opioids (Dowell et al., 2016, p. 16).
Assessing Risk and Addressing Harms of Opioid Use
8. Before starting and periodically during continuation of opioid therapy, clinicians should evaluate risk factors for opioid-related harms. Clinicians should incorporate into the management plan strategies to mitigate risk, including considering offering naloxone when factors that increase risk for opioid overdose, such as history of overdose, history of substance use disorder, higher opioid dosages (≥50 MME/day), or concurrent benzodiazepine use, are present. 9. Clinicians should review the patient's history of controlled substance prescriptions using state prescription drug monitoring program (PDMP) data to determine whether the patient is receiving opioid dosages or dangerous combinations that put him or her at high risk for overdose. Clinicians should review PDMP data when starting opioid therapy for chronic pain and periodically during opioid therapy for chronic pain, ranging from every prescription to every 3 months. 10. When prescribing opioids for chronic pain, clinicians should use urine drug testing before starting opioid therapy and consider urine drug testing at least annually to assess for prescribed medications as well as other controlled prescription drugs and illicit drugs. 11. Clinicians should avoid prescribing opioid pain medication and benzodiazepines concurrently whenever possible. 12. Clinicians should offer or arrange evidence-based treatment (usually medication-assisted treatment with buprenorphine or methadone in combination with behavioral therapies) for patients with opioid use disorder (Dowell et al., 2016, p. 16).

Source: Dowell, D., Haegerich, T.M., Chou, R. (2016). CDC guideline for prescribing opioids for chronic pain – United States, 2016. Retrieved from https://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm

The CDC guideline provides detailed evidence and information that support each recommendation. Overall the *CDC Guideline for Prescribing Opioids for Chronic Pain* shows

various strategies that could help improve prescribing practices within primary care settings (Dowell et al., 2016, p. 33). In addition to the guideline, the CDC has developed a checklist for prescribing opioids and a mobile application that provide information and support for primary care clinicians when implementing these recommendations into practice (Dowell et al., 2016, p. 33).

3.6.3 Summary of Guidelines

The *2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain* and the United States *CDC Guideline for Prescribing Opioids for Chronic Pain* provide useful information and resources to improve opioid prescribing standards when treating chronic pain. Both guidelines recommend using non-opioid first-line therapy approaches to treat individuals who experience chronic pain. This could include a multidisciplinary, multimodal, or interdisciplinary approach using therapies such as physiotherapy, occupational therapy, psychology services, and others. If individuals have experienced substance use disorders, it is strongly recommended to evaluate the potential risks and harms of using opioid-therapy, and healthcare providers should strongly consider using first-line therapy and non-opioid pharmacological therapy approaches. If healthcare providers decided to use opioid-therapy to treat chronic pain, both guidelines recommend beginning with a trial period and an opioid dose restriction to less than 50 morphine milligram equivalents (MME) per day and restricting to less than 90 MME per day.

The *2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain* also strongly recommends that healthcare providers refer individuals to multidisciplinary programs that support individuals when tapering off of opioids. Overall, these guidelines present recent evidence-based information that could help support healthcare clinicians when they are treating individuals who experience chronic pain. It was recommended that healthcare providers should consider alternative approaches to treatment, such as first-line therapy and non-opioid pharmacological therapy approaches, before considering prescription opioid-therapy to treat chronic pain.

4.0 Discussions and Analysis

The jurisdictional scan explored how other jurisdictions across Canada and internationally are managing and treating individuals with chronic pain and providing resources for healthcare providers. The focus of the jurisdictional scan was to find and assess various treatment models based on measures that were found in the literature review. The jurisdictional scan also explored other innovative programs and projects that other provinces and countries have developed. It also analyzed what current policies and guidelines have been produced when treating chronic pain with prescription opioid-therapy. This chapter is divided into two sections. First, it will analyze the results of the assessment tool. Second, it will discuss the findings of other innovative approaches to treat and manage chronic pain and prescription opioid use.

The assessment tool was developed to analyze and assess the models that were collected in the jurisdictional scan against a set of criteria to determine its effectiveness. The criteria in the assessment tool was developed based on academic peer-reviewed research from the literature review. The academic research informed which models were effective because the results of the studies showed improvement of function and improvement in the daily lives of individuals who experience chronic pain, and success tapering off prescription opioids.

The assessment tool focused on two measures: 1) a team-based approach and 2) services offered. These measures were based on common themes found throughout the academic peer-reviewed literature. Themes throughout the literature found that team-based care was a common and effective approach. Common healthcare disciplines within the team-based care approach throughout the literature include pain specialists, physical therapists, nurses, physicians, occupational therapists, psychologists, and administration. Additionally, many of the models that were found in the literature provided variety of services that would meet the needs of most individuals who were referred to the program. These services include first-line therapy approaches (physical therapy, occupational therapy), non-opioid pharmacology therapy, opioid pharmacology therapy, and interventional pain procedures. These services were offered through individual and/or group sessions which are personalized to each referred patient.

Based on the common themes and information found in **Table 14**, the assessment tool was developed based on the models found throughout the academic literature. The purpose of the literature review was to find models through studies that resulted in improving the daily lives and function of individuals who experience chronic pain and to reduce the number of opioids they were prescribed. The outcomes of these studies show significant improvement in the daily lives and function of patients who were referred to these programs. In addition, outcomes of these studies show that patients who were referred to these programs resulted in tapering to a lower dose or completely stopping their prescription opioids. As the academic literature was used to inform effective practices, their common themes were used develop a set of baseline measures to analyze the effectiveness of the models collected in the jurisdictional scan.

Table 14: This table shows an overview of the model, care team, and services provided that were found in studies tin the literature review to develop the baseline measures.

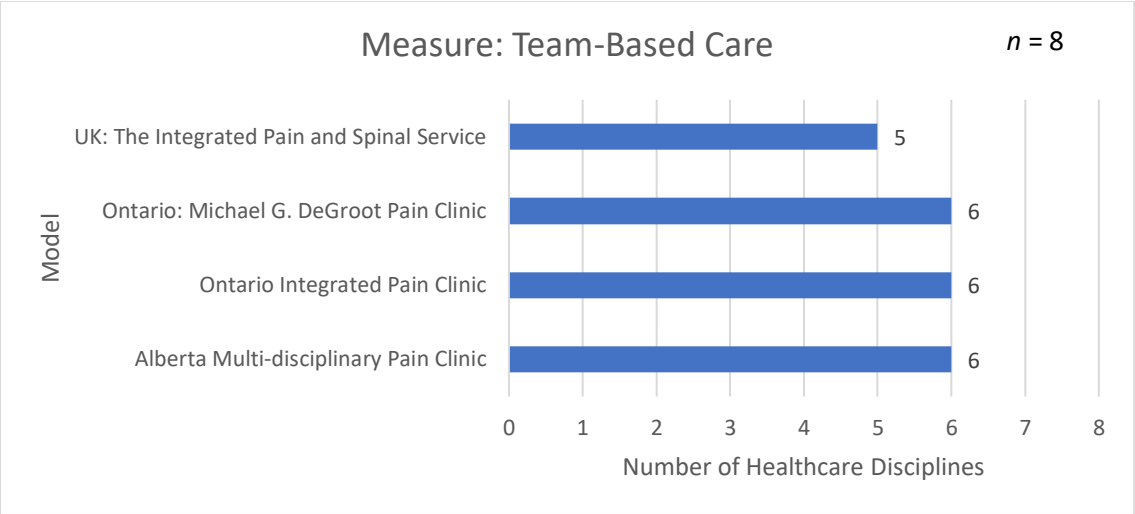
Author(s)	Model	Care Team	Services Provided
Hållstam	Multi-disciplinary	• Physiotherapist • Physicians • Psychologist • Nurses	• Referral • Initial assessment • Individualized treatment plan • Non-opioid pharmacology • Individual treatment sessions • Group sessions
Kurklinsky	Inter-disciplinary	• Physiotherapist • Occupational therapist • Pain psychologist • Nurses • Physician	• Referral • Initial Assessment • Individualized treatment plans • Individual treatment sessions • Group sessions
Patwardhan et al.	Multimodal	• Pain physicians • Physiotherapist	• Referral • Initial assessment • Individualized treatment plan • Physical therapy • Non-opioid pharmacology • Interventional pain procedures
Oldfield	Multi-disciplinary	• Internist, addiction psychiatrist • Advanced practice nurse • Health psychologist	• Referral • Initial assessment • Individualized treatment plan • Non-opioid pharmacology • Opioid pharmacology

		• administration • Nurse case manager	
Pade et al.	Multi-disciplinary		• Referral • Initial assessment • Individualized treatment plan • Non-Opioid Pharmacology • Opioid Pharmacology

4.1 Assessment Tool Results

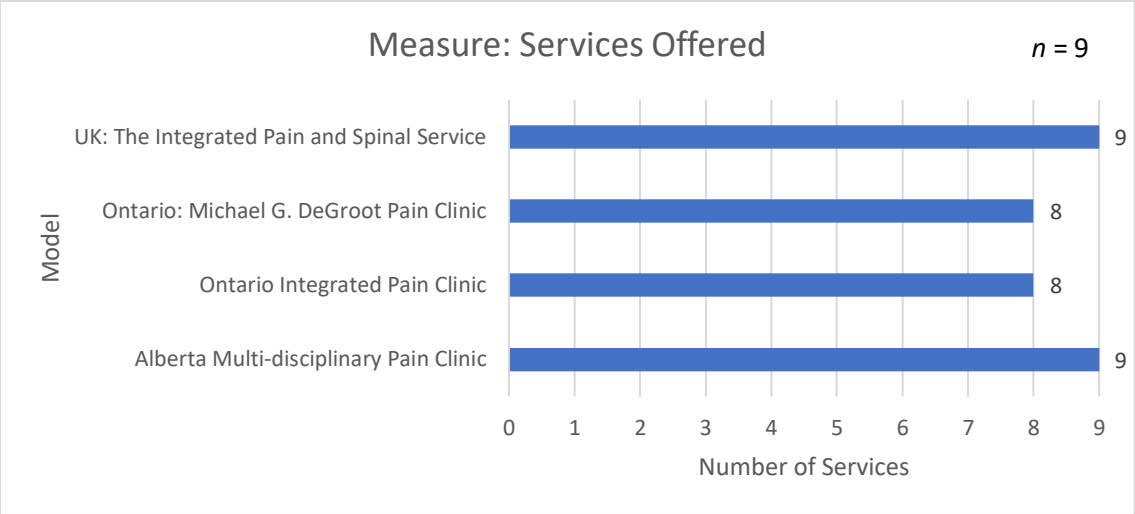
The chronic pain treatment models included four models; three from Canada and one from the United Kingdom. These treatment models included two multidisciplinary approaches and two interdisciplinary approaches. Generally, all four treatment models involved a team-based approach that included registered nurses, physiotherapists, pain specialists, psychologists, and administration. The models varied in other healthcare providers such as occupational therapists, program coordinators, nurse practitioners, social workers, pharmacists, and case managers. In programs that involved specialty pain services, other specialty healthcare providers were part of their team-based care. For example, the Integrated Pain and Spinal Service provided a spinal consultant to patients who experienced chronic spinal pain. Although there is modification between each of these different models, most of them provided core services by pain specialists, registered nurses, physiotherapists, and psychologists. These results show that using a multidisciplinary or interdisciplinary approach through team-based care is an effective approach to provide services to individuals who experience chronic pain. **Figure 14** shows the number of health care disciplines that are utilized within the team-based care approach for each of the models found in the jurisdictional scan. The team-based care category has a total of 8 measured based on common healthcare disciplines found throughout the academic literature. Each of the four models that are discussed in the jurisdictional scan met at least five out of the eight baseline measures. In addition to these eight measures, all of the four models incorporated other healthcare disciplines that are utilized in their team-based care approach which is highlighted in **Appendix C**.

Figure 14: This figure shows the number of healthcare disciplines that each model incorporates into their team-based care approach based on a total of eight baseline measures.



In addition to analyzing team-based healthcare service providers, the assessment tool also assessed services that are offered through these various treatment models. All of the models involved a referral pathway from an individual's primary care provider to the program. Upon referral, all of the models involved an initial assessment for new patients with one of the healthcare providers from the team. After an initial assessment, all patients developed, in collaboration with the team, an individualized treatment plan. Most of the models align with the baseline measurements of services offered to treat and manage chronic pain. All of the models offered services such as non-pharmacological therapies, which aligns with first-line therapy approaches, non-opioid pharmacology therapies opioid pharmacology therapies, and group therapies. Most of the models also offered interventional pain procedures and individual treatment therapies. These results show that there is an alignment with baseline services that should be offered, based on the evidence from the literature review and the results of the jurisdictional scan. **Figure 15** shows the number of services that are offered within each of the four models. The services offered category has a total of nine measures that are based on common themes found throughout the academic literature. Each of the four models that are discussed in the jurisdictional scan met at least eight out of nine of the baseline measures.

Figure 15: This figure shows the number of services that each model incorporates into their team-based care approach based on a total of nine baseline measures.



Overall, these measures were based on evidence that was found in the academic literature. After gathering models that are currently being implemented in Canada and internationally, these models have shown to use a similar approach to the models that were discussed in the literature review. Some of the models offer additional healthcare provider services and support within their team. As mentioned above, this includes case management, program management, and social work. Overall, a team-based care approach is effective when treating patients who experience chronic pain and offering a variety of services that meet their needs.

4.1.1 Baseline Requirements

All of the models were assessed based on two main requirement categories: 1) team-based approach and 2) services offered, which is presented in **Appendix C.** In each of these categories, based on the evidence presented in the literature review and upon completion of reviewing these models and their organizations, it is apparent the requirements that were presented are based on models of best practice. All of the models that are discussed and assessed in the jurisdictional scan have met the requirements of best practice.

a) Team-Based Care

A team-based care approach was found to have evidence of best practices. Evidence shows that team-based care creates better clinical outcomes measures and patient satisfaction (Grumbach and Bodenheimer, 2004, p. 1248). Team-based care, whether it is through a multidisciplinary, interdisciplinary, or multimodal approach, was used as a baseline requirement to assess the effectiveness of the models. Each of the models was assessed based on the healthcare providers that were part of their care team. All of the models had registered nurses, physiotherapists, pain specialists, psychologists, and administration as part of their care team. There were some similarities and differences between the models on the other healthcare providers and support staff that were also part of their care teams. For example, some models included social workers, case managers, psychiatrists, and occupational therapists as part of their care team.

b) Services Offered

The models were assessed based on services that were offered. Based on evidence found in the literature review, the services that were used as baseline requirements to assess each model. As the literature recommended that first-line therapy approaches to treat patients with chronic pain, every model assessed met this requirement. The academic literature revealed that the treatment models that showed best practice outcomes also offered non-pharmacology, opioid pharmacology, interventional pain procedures, group sessions, and individual treatment sessions. All of the models met these requirements, except for the Ontario Integrated Pain Clinic, who did not offer individual treatment sessions, as they focused on a group treatment approach. It was not surprising that all of the models met the baseline requirements of the services they offered. Each model had its unique way of how they ran these services, particularly in group sessions, but they all had a variety of options that would meet the needs of each patient.

4.2 Discussion of other models

4.2.1 Virtual Care

Virtual care, or telehealth, uses technology to provide healthcare services to patients across the province. Using innovative health solutions, virtual care could be utilized to connect healthcare providers to pain management specialists across the province, and across the country. Project ECHO has been utilized across Ontario to connect primary care physicians, particularly those living in rural and remote areas, with specialty physicians. As the literature discussed how pain clinics are a critical resource to treat and manage chronic pain, individuals in rural and/or remote areas may not have access to them in their communities. Therefore, access to virtual care technology for healthcare providers living in these communities could provide them opportunities to connect to pain management specialists.

4.2.2 Education and Training

Education and training are important learning tools and resources for healthcare providers. It was discussed in the literature review that primary care providers do not feel like they are adequately prepared to treat individuals who experience chronic pain (Upshur et al., 2006, p. 654). In addition, many primary care physicians believe they have received not enough training in pain management and using opioids as a treatment approach (Carlin et al., 2018, p. 1142). Based on the discussion in the literature review, continuous education and training are important to provide healthcare providers appropriate knowledge, skills, and attitudes towards pain management and using prescription opioids as a therapy approach. Education and training for healthcare providers can be offered on-line and in-person. These sessions could focus on various areas and topics regarding pain management, including prescribing opioids to treat chronic pain. Education and training sessions could be fundamental in providing healthcare providers, particularly primary care physicians, who work directly in the community, to help treat and manage their patients who experience chronic pain.

5.0 Options for Consideration

1.0 Develop educational and/or training resources about Chronic Pain and Prescription Opioids for Healthcare Providers

Many healthcare providers acknowledge that they do not have the necessary training to support patients with chronic pain. Healthcare providers may not feel confident to prescribe opioids as a treatment option, especially if there is a risk that it could lead to addiction. For healthcare providers living in rural and remote locations, there is an additional concern that there are limited resources available, such as pain clinics, that could provide specialty services for their patients who are living with chronic pain.

1.1 Opioid Manager

The function of the Opioid Manager, updated in 2017 by the Centre for Effective Practice, is one approach that Island Health could consider is ensuring that healthcare providers have the necessary tools and resources to support a chronic pathway of care. The Opioid Manager provides primary care providers support when they consider using prescription opioid-therapy to treat and manage patients with chronic pain. Island Health could implement this approach across all practices and ensure that all healthcare providers have adequate information and support. If the Opioid Manager has already been implemented across all practices, then Island Health could ensure that all healthcare providers are using the recently updated 2017 version based on feedback in the 2017 Canadian Opioid Guideline.

1.2 Online or In-Person Education and Training

Island Health should encourage healthcare providers to enroll in online education and/or training courses that focuses on pain management and opioid training. Effective options include utilizing the Mental Health Commission of Canada catalogue of opioid training courses for healthcare professionals that are available online or in-person and annual conferences for healthcare providers that focuses on pain management and prescription opioids. Conferences could include pain medicine specialists from across British Columbia and/or Canada that present recent studies, complex cases, and training opportunities for healthcare providers across Island Health.

It could be an opportunity to create learning opportunities and networking between healthcare providers and pain medicine specialists.

2.0 Utilize telehealth or virtual care services between healthcare providers and pain specialists

Telehealth, or virtual care services, are designed to connect healthcare providers and patients, regardless of geographical location. These services could be utilized to connect healthcare providers and pain medicine specialists to discuss complex chronic pain cases and develop treatment plans for individuals who experience chronic pain. Telehealth services could provide healthcare providers in rural and remote areas, who may not have local access to pain clinics, resources and networks with pain medicine specialists who are based in larger metropolitan areas. As more telehealth services are becoming readily available and accessible in various locations across Island Health, this option could be a viable plan to implement. With telehealth services being accessible, Island Health could focus attention on improving access to pain management and addiction medicine for patients and healthcare providers in rural and/or remote communities through their telehealth platform.

Island Health could look at Project ECHO that is currently being implemented across the province of Ontario. This project utilizes telehealth, or virtual care, technology to connect primary care providers, particularly those living in rural and remote areas, with pain specialists. The pain specialists provide support to primary care physicians through weekly virtual sessions that involve looking at specific complex cases of patients who are experiencing chronic pain.

3.0 Implement Multidisciplinary, Interdisciplinary, and/or Multimodal Programs within healthcare services to treat and manage chronic pain

Based on the literature review and jurisdictional scan findings, multidisciplinary, interdisciplinary, and/or multimodal treatment approaches has shown to be best practice strategies to treat and/or manage chronic pain. Multidisciplinary, interdisciplinary, and multimodal programs follow team-based approach that includes physicians, nurse practitioners, physiotherapists, occupational therapists, psychologists, and pain specialists. These program models could be based out of both outpatient clinics and/or pain clinics.

Island Health would benefit from a pilot project that utilizes a multidisciplinary, interdisciplinary, and/or multimodal team in an outpatient clinic, similar to the Multidisciplinary Pain Clinic in Alberta or Integrated Chronic Pain Clinic in Ontario. A pilot project could incorporate a multidisciplinary or interdisciplinary team to treat patients who are currently on prescription opioids and experience chronic pain and patients who are currently not prescribed opioids but experience chronic pain. If Island Health chooses to run a pilot project, it could provide further evidence of the viability of how multidisciplinary, interdisciplinary and/or multimodal programs are needed within the health region.

The following secondary options for consideration focus on two populations who experience chronic pain. Multidisciplinary, interdisciplinary, and programs can be utilized for individuals who are currently prescribed opioids to treat and/or manage their chronic pain but are experiencing challenges tapering off of them completely or to a lower dose. Additionally, they can be utilized as a first-line therapy approach for individuals who experience chronic pain but are not currently prescribed opioids.

3.1 Utilize multidisciplinary, interdisciplinary, and/or multimodal treatment programs for patients who are currently using opioids to treat and/or manage their chronic pain and experiencing challenges tapering

Studies in the literature review show that utilizing multidisciplinary, interdisciplinary, and/or multimodal models can provide patients a safe and supportive controlled environment when patients are tapering off prescription opioids. Island Health could consider developing a pilot project that operates a multidisciplinary, interdisciplinary, and/or multimodal treatment approach to individuals who experience chronic pain and are tapering off of prescription opioids. The pilot project could provide safe tapering support for patients and offer non-opioid pharmacology services, such as first-line therapy approaches to patients who are enrolled in the program. The pilot project could be delivered through an outpatient setting which could provide evidence on the vitality of providing a multidisciplinary, interdisciplinary, and/or multimodal treatment programs for pain management.

3.2 Utilize multidisciplinary, interdisciplinary, and/or multimodal treatment programs as a first-line therapy approach for patients who experience chronic pain

First-line therapy approaches, such as physical therapy and/or occupational therapy are recommended treatment approaches for pain management. Some patients may also require other forms of services to treatment and/or manage their chronic pain, such as non-opioid pharmacology treatment. Utilizing a team-based care approach, multidisciplinary, interdisciplinary, and/or multimodal treatment programs could provide patients with treatments and services that meet their needs. An option for consideration is for Island Health to recommend utilizing multidisciplinary, interdisciplinary, and/or multimodal treatment programs as a first-line therapy approach, where healthcare providers across the health region can refer their patients to treat and/or manage their chronic pain, and/or help safely taper prescription opioids.

5.1 Options for Consideration Order of Priorities

The following table (table 15) shows the order of priorities that Island Health could consider when reviewing the options for consideration. As the focus of the project report was to find effective models that are used to treat chronic non-cancer pain and reduce the use of prescription opioid use, Option 3.0 to 3.2 would be the first three priority action items. Option 2.0, *utilize telehealth or virtual care services between healthcare providers and pain specialists*, is recommended at the fourth priority action item, as Island Health has telehealth services becoming more readily available and accessible in various locations, this option could be a viable priority action to implement that utilizes existing resources. The final three priority actions are Option 1.0 to 1.2. Although these are the last three options on the list of priorities, they are still very important because they provide healthcare providers resources and education and training opportunities for pain management and opioid prescribing.

6.0 Implementation Table

A detailed implementation plan for the Options for Consideration is found in **Table 15.** The implementation table includes next steps, advantages of each of the options, and a potential timeline.

Table 15:

Options for Consideration		Next Steps	Advantages	Timeline
1.0	Develop educational and/or training resources about Chronic Pain and Prescription Opioids for Healthcare Providers	• Review the research report and its associated findings.		1 Month
1.1	Opioid Manager	• Review if Island Health has adopted and updated the Opioid Manager recommended by in 2017 by the Centre for Effective Practice. • Develop communication with healthcare providers across Island Health to ensure they are utilizing the Opioid Manager resource in their practice. • If the Opioid Manager has been implemented across Island Health practices, then ensure healthcare	• Provides all healthcare providers across Island Health up-to-date resources and tools that can be utilized in their current practices.	1 Month

		providers are utilizing the recently updated 2017 version.		
1.2	Online or In-Person Education and Training	• Review active educational and/or training resources that focus on pain management and/or prescription opioids offered to healthcare providers through Island Health. • Develop an updated list of current training and education opportunities for healthcare providers through Island Health. • Develop and plan an annual conference where healthcare professionals can learn about up-to-date pain management practices and studies and develop networking opportunities with pain management specialists.	• Creates opportunities for healthcare providers across the Island Health region to have access to learning and training opportunities that focus on pain management and prescribing opioids. This could be an effective approach and providing more tools and resources for healthcare providers who feel like they have little training or experience in this specialty. • Creates networking opportunities between healthcare providers and pain management specialists.	2 to 3 Months
2.0	Utilize telehealth or virtual care services between healthcare providers and pain specialists	• Review the research report and its associated findings. • Develop a working group to review current telehealth opportunities to improve access to pain management and addiction medicine across Island Health. • Develop a working group to review Project ECHO or other telehealth	• Utilizes telehealth services which can provide opportunities for healthcare providers, particularly in rural and remote communities, to connect with pain management specialists who are in larger cities. • This could provide support to healthcare providers who are treating patients with chronic pain	6 to 12 months

		opportunities to provide opportunities for healthcare physicians from across the Island Health region to connect with pain management specialists. • The working group could evaluate the feasibility of planning and implementing telehealth services that are focused on pain management and present potential opportunities to the committee and executives. • Plan and implement telehealth services through Island Health.	and/or patients who have complex cases. • Utilizes telehealth services can help healthcare providers treat their patients without having to refer their patients to other communities for treatment. This could reduce the costs and travel time for individuals who are needing to receive treatment.	
3.0	Implement Multidisciplinary, Interdisciplinary, and/or Multimodal Programs within healthcare services to treat and manage chronic pain	• Review the research report and its associated findings. • Compare research report findings with findings from the report that focused on chronic pain and prescription opioid models that have been implemented in British Columbia. • Identify common findings from both research reports to develop findings that can be presented to the committee. • Develop a working group to work out the feasibility of planning and developing multidisciplinary, interdisciplinary, and/or multimodal	• Provides patient-centred care through a team-based approach that offered a variety of services that meet the needs of patients who experience chronic pain. • Utilizes first-line therapy approaches to treat and manage chronic pain but also provide other services such as non-opioid pharmacology or interventional pain services to treat and manage chronic pain. • Taper and reduce the number of opioids that patients were	6 to 12 Months
3.1	Utilize multidisciplinary, interdisciplinary, and/or multimodal treatment programs for patients who are currently using opioids to treat and/or manage their chronic pain and experiencing challenges tapering			

3.2	Utilize multidisciplinary, interdisciplinary, and/or multimodal treatment programs as a first-line therapy approach for patients who experience chronic pain	treatment programs through Island Health. • The working group presents feasibility findings to the committee to gain approval to present findings to executives. • The current working group to develop a larger working group that is comprised of physicians, coordinators, and managers from various departments within Island Health. • The new working group could begin to plan and organize a pilot program that provides chronic pain and prescription opioid treatment through an outpatient clinic ran by Island Health. • Report findings from pilot study to the committee and executives. • Recommend utilizing these treatment models as a first-line therapy approach.	prescribed in a safe and secure environment. • If other first-line therapy or non-opioid pharmacology approaches do not work, prescribe opioids in a safe and secure environment. • Could improve the daily lives and function of individuals who experience chronic pain.	

6.1 Order of Priorities

This section provides an order of priorities for each of the options for consideration found in **Table 16**. As the focus of the project report was to provide an overview of effective treatment models for chronic pain management and prescription opioids, the top priority options for Island Health to consider is Option 3.0 to 3.2. These options focus on implementing a multidisciplinary, interdisciplinary, and/or multimodal program to treat and/or manage chronic pain and to provide support for those who are experiencing challenges tapering off of prescription opioids. The next priority option is Option 2.0. As telehealth services are becoming more readily available across Island Health, this service could be a viable option and provide pain management and addiction medicine services to patients and support to healthcare providers in rural and/or remote communities. Options 1.0 to 1.2 are the final priority options. Although these options are last on the priority list, they are still important to consider, as they can provide additional resources, tools, and training opportunities for healthcare providers in pain management and prescribing opioids.

Table 16: This table shows the order of priorities for the options for consideration.

Options for Consideration		**Priority**
3.0	Implement Multidisciplinary, Interdisciplinary, and/or Multimodal Programs within healthcare services to treat and manage chronic pain	Priority #1
3.1	Utilize multidisciplinary, interdisciplinary, and/or multimodal treatment programs for patients who are currently using opioids to treat and/or manage their chronic pain and experiencing challenges tapering	Priority #2
3.2	Utilize multidisciplinary, interdisciplinary, and/or multimodal treatment programs as a first-line therapy approach for patients who experience chronic pain	Priority #3
2.0	Utilize telehealth or virtual care services between healthcare providers and pain specialists	Priority #4
1.0	Develop educational and/or training resources about Chronic Pain and Prescription Opioids for Healthcare Providers	Priority #5
1.2	Online or In-Person Education and Training	Priority #6
1.1	Opioid Manager	Priority #7

6.2 Options for Consideration Timeline and Potential Costs

The timeline in the implementation plan is an approximate time that each of the recommendations could take to plan and implement. Each of the options range from larger and more complex projects to smaller projects.

Option 1.0 and 1.2 could utilize already existing resources to plan and implement education and training resources to plan an annual conference and develop resources that focus on pain management and prescription opioids. Additionally, the tools and resources for Option 1.1 have already been developed by the Centre for Effective Practice in the *Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain*. As these resources have already been developed, the timeline and potential costs to implement would take less time and resources than the other options.

As telehealth services are becoming more readily available across the Island Health region, the potential timeline can vary depending on the pain management and addiction medicine resources that are available through the telehealth network. This option could take approximately six months to one year to develop working groups to evaluate the feasibility and implementation of utilizing a telehealth network to provide access to pain management and addiction medicine specialists. As telehealth services are being more accessible in various communities, this could reduce the potential costs to implement these services. The potential costs that would need to be taken into consideration would be the resources to hire or allocate full-time equivalent (FTE) resources of healthcare providers and specialists who provide telehealth services.

The final options for consideration take approximately six months to one year to review the findings to the project report, and to assess the feasibility and viability of planning and implementing a multidisciplinary, interdisciplinary, and/or multimodal treatment program through Island Health. This is a larger project and would require much more time and resources to plan and implement. The potential costs to implement this option could be vary depending on resources already available. The resources and costs that would need to be taken into consideration are space availability, FTE staff for a multidisciplinary, interdisciplinary, and/or

multidisciplinary care team, and services that could be offered. These options would require a large budget in the upcoming fiscal year to plan and implement.

7.0 Conclusion

The purpose of this project report was to provide an overview of effective treatment models for chronic pain management and prescription opioids. This process involved the development of a literature review, where evidence was collected from academic literature to determine effective best practices that could be utilized to treat individuals with chronic pain. The report then developed a jurisdictional scan of various models that have been implemented across Canada and internationally. An assessment tool was developed that included various measures based on evidence of best practice based on the academic research conducted in the literature review. The assessment tool analyzed the treatment models collected in the jurisdictional scan to determine their effectiveness. The evidence collected showed that utilizing a multidisciplinary or interdisciplinary approach is the most effective treatment practice to treat chronic pain. Additionally, the evidence showed that using first-line therapy approaches, before individuals are prescribed opioids, is recommended when healthcare providers are treating individuals with chronic pain. If individuals are prescribed opioids by their healthcare provider, referring them to a multidisciplinary or interdisciplinary program could provide them a safe and secure environment to taper and/or eliminate the number of opioids they are taking to treat and/or manage their pain. The findings also suggest that other models such as utilizing virtual care services and providing learning and training opportunities for healthcare providers are also effective practices when treating individuals with chronic pain.

This report was primarily focused on jurisdictions across Canada, excluding British Columbia, and international countries. As there is a current project underway through Island Health that focuses on specific programs and services that have already been implemented across British Columbia, this project report could be utilized to support its findings.

Further studies may wish to explore the effectiveness of specific services that are offered through multidisciplinary, interdisciplinary, and/or multimodal treatment models. Specifically, they could

explore whether group therapy or individual therapy sessions are more efficient when treating individuals who experience chronic pain and whether these therapy sessions are efficient by providing community support to individuals who could be tapering prescription opioids completely or lowering their daily dose. Further studies may also wish to explore which health care professions are most efficient in a team-based care approach to treating individuals with chronic pain, who are also lowering or completely tapering their daily dose of prescription opioids. This report focused on the effectiveness of various models but further research into the efficiency of specific services and team-based model approaches could provide a further understanding of the efficiency of these treatment models.

The opioid crisis has been a major health care issue in Canada. Providing services to individuals to treat chronic pain without using prescribing opioids as a first-line treatment is a priority to reduce the risk of potential harms as a result of opioids. Utilizing a team-based care approach that offers a range of services that are individualized to each patient is an effective model that could improve function, improve quality of life, and reduce pain for individuals who experience chronic pain.

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Appendix A: Project ECHO

Project ECHO®
St. Joseph's Care Group
Ontario

ECHO "North"
Chronic Pain & Opioid Stewardship

Wednesdays, 7:00 - 8:30 pm EDT
January 8, 15, 22, & 29, 2020

Join by computer or phone

ECHO sessions include a de-identified patient case and a didactic presentation

Chronic Pain, Arthritis, & Rheumatic Diseases

Date	Topic	Speaker
Jan. 8	Overview of Rheumatic Diseases	Wes Fidler, MD, FRCPC
Jan. 15	Neurophysiology of Chronic Pain in Arthritis	Bryan MacLeod, MD, CFPC, FCFP
Jan. 22	Non Pharmacological Approaches to Chronic Pain & Arthritis	Mandy McGlynn, MSc, B.Sc(PT), ACPAC
Jan. 29	Inflammatory Spondyloarthropathies	Laura Passalent, PT, ACPAC

Register at sjcg.echoontario.ca or contact sjcgecho@tbh.net

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This one-credit-per-hour Group Learning program meets the certification criteria of the College of Family Physicians of Canada and has been certified by the Continuing Education and Professional Development Office at the Northern Ontario School of Medicine for up to 1.5 Mainpro+ credits. | *Project ECHO Chronic Pain & Opioid Stewardship - SJCG/TOH* is a self-approved group learning activity (Section 1) as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada.

Appendix B: Opioid Manager

Opioid Manager

The Opioid Manager is designed to support health care providers prescribe and manage opioids for patients with chronic non-cancer pain. All information is based on the 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain,[1] unless cited otherwise.

This is an update of the original Opioid Manager, released in 2011.

Section A: Important Considerations for Opioid Therapy Trials

- When considering therapy for patients with chronic non-cancer pain, optimize non-opioid pharmacotherapy and non-pharmacological therapy, rather than initiating a trial of opioids.
- For patients starting or continuing an opioid trial, discuss and document patients' goals **(SMART goals: Specific, Measurable, Agreed-upon, Realistic, Time-based),** on a regular basis.

OVERDOSE RISK

- Fatal and non-fatal overdose risk is significant at doses as low as < 20 mg morphine equivalents daily
- Risk of overdose increases in dose
- Risk of overdose increases in patients with active or prior substance use disorder and current serious mental illness

Dose	Fatal overdose	Non-fatal overdose
> 100 mg MED/d	0.23 %/yr	1.8 %/yr
50 – 99 mg MED/d	0.18 %/yr	0.7 %/yr
< 20 mg MED/d	0.1 %/yr	0.2 %/yr

Legend: d = day, MED = morphine equivalent dose, yr = year

CHECKLIST

These are important considerations to discuss and document for patients starting or continuing an opioid trial.

See Appendix A - Checklist for a fillable version of this checklist that can be inserted into the patient medical record.

- ☐ Has non-pharmacological therapy[ii] been optimized?
- ☐ Has non-opioid pharmacotherapy[iii] been optimized?
- ☐ Stable psychiatric disorder(s) or mental illness?
- ☑ Current or past substance use disorder?
- ☑ Cannabis use?
- ☐ Thorough baseline assessment conducted[iv] (as needed)?
- ☐ Explained potential benefits[v]?
- ☐ Explained adverse effects[v]?
- ☐ Explained risks[v]?
- ☐ Explained opioid safety[vi]?
- ☐ Informed consent obtained?
- ☐ Signed treatment agreement[vii] (as needed)?
- ☐ Patient given information handout(s)[iv]?
- ☐ Urine drug screening (as needed)?
- ☐ Naloxone prescription (as needed)?

Non-opioid pharmacotherapy options:[2]

- ☐ General: acetaminophen, nonsteroidal anti-inflammatory drugs (NSAIDs)
- ☐ Anticonvulsants: carbamazepine, gabapentin, pregabalin
- ☐ Antidepressants: amitriptyline, duloxetine, fluoxetine
- ☐ Topical: topical NSAIDs, topical rubifacients

Non-pharmacological therapy options:[2]

- ☐ Physical activity: aerobic exercise, strengthening exercise, core stabilizing exercise, Tai Chi, yoga, therapeutic aquatic exercise
- ☐ Self-management programs
- ☐ Psychological therapies: cognitive behavioural therapy, mindfulness based interventions, acceptance and commitment therapy, respondent behavioural therapies
- ☐ Physical therapies: manual therapy, transcutaneous electrical nerve stimulation, low level laser therapy

- Active psychiatric disorders (e.g. depression, anxiety disorders or post-traumatic stress disorder) should be stabilized before a trial of opioids is considered for a patient
- Patients with psychiatric disorders report more severe pain, and pain is often resolved or reduced if the psychiatric disorders are well managed

- Opioids are not recommended for patients with current or past substance use disorder (e.g. alcohol use disorder, opioid use disorder)

Clinical pearls

- Opioids may have similar effects on **pain relief** when compared to NSAIDs, tricyclic antidepressants or nabilone
- Opioids may result in similar improvements in **physical function** when compared to NSAIDs, anticonvulsants, tricyclic antidepressants or nabilone

Section B: Opioid Therapy Trial

- This section is intended to support providers starting a patient on opioid therapy. For patients continuing opioid therapy, see **Section C: Maintenance & Monitoring.**
- A reasonable trial of opioid therapy should be accomplished within 3–6 months; opioids provide less pain relief after 3 months, due to tolerance.
- Restrict the prescribed dose to < 90 mg morphine equivalents daily for patients beginning long-term opioid therapy.

Clinical pearls

- Start at lowest available dose of the opioid (remember overdose risk is significant even at low doses)
- In patients with continuous pain including pain at rest, health care providers can prescribe controlled release opioids for both comfort and simplicity of treatment during the day
- Activity related pain might not require sustained release treatment and opioid therapy may be initiated with immediate release alone
- Opioids NOT recommended for initiating a trial of therapy include fentanyl, meperidine, methadone and pentazocine
- Opioids that ARE recommended are listed in the **Suggested Initial Dose and Titration** table
- Oral preparations are preferred
- Prescriptions for chronic pain should be provided by the primary treating provider only, for no more than 28 days at a time

SUGGESTED INITIAL DOSE AND TITRATION[3]

This table provides practical guidance regarding optimal dosing when beginning patients on a trial of opioid therapy. For opioids with multiple dosage forms and singular values in subsequent columns, subsequent column values are applicable across all dosage forms.

Note: Brand names are shown if formulations vary from that of the generic. Reference to brand names does not imply endorsement of any of these products.

Opioid	Dosage forms	Initial dose	Minimum time interval for increase	Suggested dose increase	Maximum dose/day	50 MED	90 MED
Codeine CR	• Tab: 50, 100, 150, 200 mg	• 50 mg q 12 h	• 2 days	• 50 mg/d	• 300 mg q 12 h	• 334 mg/d	• 600 mg/d
Codeine IR	• Tab: 15, 30 mg • Syrup: 5 mg/mL • Elixir: 16 mg/10 mL with Acetaminophen 320 mg • Tab: 8, 15, 30, 60 mg with Acetaminophen 300 mg • Tab: 15, 30 mg with Acetaminophen 325 mg • Tab: 15, 30 mg with Acetylsalicylic acid 375 mg	• 15–30 mg q 4 h prn	• 7 days	• 15–30 mg/d	• 600 mg/d or acetaminophen 4 g/d	• 334 mg/d	• 600 mg/d
Hydromorphone CR, PR	• CR: 3, 4.5, 6, 12, 18, 24, 30 mg • PR: 4, 8, 16, 32 mg	• 3 mg q 12 h, maximum 9 mg/d • 4 mg q 24 h, maximum 8 mg/d	• Minimum 2 days • Minimum 4 days, recommended 14 days	• 3 mg/d • 4 mg/d	• N/A	• 10 mg/d	• 18 mg/d
Hydromorphone IR	• Tab: 1, 2, 4, 8 mg • Syrup: 1 mg/mL	• 1–2 mg q 4–6h prn, maximum 8 mg/d	• 7 days	• 1–2 mg/d	• N/A	• 10 mg/d	• 18 mg/d
Morphine CR, ER	• Tab: 15, 30, 60, 100, 200 mg • Cap (12 h): 10, 15, 30, 60, 100, 200 mg • Cap (24 h): 10, 20, 50, 100 mg	• 10–15 mg q 12 h • 10 mg q 12 h • 10 mg q 24 h	• Minimum 2 days, recommended 14 days	• 5–10 mg/d	• N/A	• 50 mg/d	• 90 mg/d
Morphine IR	• Oral solution: 1, 5, 10, 20, 50 mg/mL • Tab: 5, 10, 20, 25, 30, 50 mg • Cap: 5, 10, 20, 30 mg	• 5–10 mg q 4 h prn, maximum 40 mg/d	• 7 days	• 5–10 mg/d	• N/A	• 50 mg/d	• 90 mg/d
Oxycodone CR with naloxone CR	• Tab: 5/2.5, 10/5, 20/10, 40/20 mg	• 5 mg/2.5 mg q 12 h	• Minimum 1–2 days	• 5/2.5 mg/d	• 80 mg/d oxycodone and 40 mg/d naloxone	• 33 mg/d oxycodone	• 60 mg/d oxycodone
Oxycodone CR	• Tab: 5, 10, 15, 20, 30, 40, 60, 80 mg	• 10 mg q 12 h	• Minimum 2 days, recommended 14 days	• 10 mg/d	• N/A	• 33 mg/d	• 60 mg/d
Oxycodone IR	• Tab: 5, 10, 20 mg • Tab: 5 mg with acetylsalicylic acid or acetaminophen 325 mg • Tab: 2.5 mg with acetaminophen 325 mg	• 5–10 mg q 6 h prn, maximum 30 mg/d • 1–2 tab q 6 h prn • 1–2 tab q 6 h prn	• 7 days	• 5 mg/d	• N/A • Acetaminophen 4 g/d	• 33 mg/d	• 60 mg/d
Tapentadol ER	• Tab: 50, 100, 150, 200, 250 mg	• 50 mg q 12 h	• 3 days	• 50 mg q 12 h	• Not recommended >500 mg/d	• 160 mg/d	• 300 mg/d
Tapentadol IR	• Tab: 50, 75, 100 mg	• 50 mg q 4–6 h prn	• On the first day of dosing, the 2nd dose may be administered 1 hour after the first dose, if adequate pain relief is not attained with the first dose	• 50 mg q 4–6 h	• Not recommended daily doses > 700 mg on the first day of therapy and 600 mg on subsequent days	• 160 mg/d	• 300 mg/d
Tramadol CR	• Tab (Zytram XL®): 75, 100, 150, 200, 300, 400 mg • Tab (Tridural®): 100, 200, 300 mg • Tab (Ralivia®): 100, 200, 300 mg • Tab (Durela®): 100, 200, 300 mg	• 150 mg q 24 h • 100 mg q 24 h • 100 mg q 24 h • 100 mg q 24 h	• 7 days • 2 days • 5 days • 5 days	• 75–100 mg q 24 h	• 400 mg/d • 300 mg/d • 300 mg/d • 300 mg/d	• 300 mg/d	• 540 mg/d* • Over maximum dose
Tramadol IR	• Tab: 50 mg • Tab: 37.5 mg with acetaminophen 325 mg	• 25 mg once daily** • 1 tablet q 4–6 h prn	• 4 days • Depends on patient's clinical response	• 25 mg/d • 1–2 tablet(s) q 4–6 h prn	• 400 mg/d • 8 tabs/day or acetaminophen 4 g/d	• 300 mg/d	• 540 mg/d* • Over maximum dose

Legend: ~ = approximately equal to, cap = capsule, CR = controlled release, d = day, ER = extended release, g = gram, h = hour, IR = immediate release, MED = morphine equivalent dose, mg = milligram, mL = milliliter, µg = microgram, N/A = not available, PR = prolonged release, prn = as needed, q = every, SL = sublingual, tab = tablet

*The maximum recommended daily dose of tramadol is 300 mg – 400 mg depending on the formulation.

**Cut tablet in half to start at 25 mg. Pharmacy can cut tablets in half if required.[3]

Note: Information on the buprenorphine transdermal patch and buprenorphine/naloxone sublingual tablets is available in Section D: Switching and Section E: Tapering, respectively. Buprenorphine/naloxone sublingual tablets are NOT recommended for an initiation trial of opioid therapy.

Section C: Maintenance & Monitoring

- This section is intended to support providers with patients continuing opioid therapy.
- Monitor and document a patient's response to the opioid therapy through regularly scheduled appointments.

INITIATION, MAINTENANCE & MONITORING

These are the key elements to document upon initiating a trial of opioid therapy (3–6 month) and on an ongoing basis for monitoring purposes.

See Appendix B - Initiation, Maintenance & Monitoring Chart for a fillable version of this table that can be inserted into the patient medical record.

- ☐ Date (patient seen)
- ☐ Opioid prescribed
- ☐ Daily dose, frequency and timing
- ☐ Daily morphine equivalent dose
- ☐ Date of new dose to be administered
- ☐ Status of patient goals
- ☐ Pain intensity (Brief Pain Inventory[bvi])
- ☐ Functional status changes
- ☐ Adverse effects (e.g. fatal and non-fatal overdose, motor vehicle accident, addiction, sleep apnea, osteoporosis, drowsiness, constipation, dizziness/ vertigo, hypogonadism/sexual dysfunction, vomiting, nausea, opioid induced hyperalgesia, dry skin/pruritis)
- ☐ Presence of clinical features of opioid use disorder (see Clinical Features of Opioid Use Disorder table)
- ☐ Date and result of last urine drug screening
- ☐ Naloxone prescription written
- ☐ Tapering offered
- ☐ Non-pharmacological therapies being used for pain
- ☐ Non-opioid pharmacotherapy being used for pain

Clinical pearls

- Opioids increase the risk of gastrointestinal adverse events vs. non-opioid therapy alone (64 more events per 1000 patients treated)
- Identify the lowest effective dose for patients continuing opioid therapy

Section D: Switching

- Consider switching opioids if problematic pain and/or adverse effects persist.
- While switching over to the new opioid, it is important to warn the patient (and family, caregivers or friends) about signs of overdose: slurred or drawling speech, emotional lability, ataxia, "nodding off" during conversation or activity.
- Consider a 3-day follow-up to assess withdrawal symptoms and pain; contact the patient 3 days after starting the new opioid to check for signs of over-sedation and to ensure that pain relief is at least comparable to the pre-switch treatment.
- Switching opioids may be done as a way of facilitating a dose reduction.

MORPHINE EQUIVALENCE TABLE

Opioid conversion table.

Opioids* Oral preparations (mg/d)	To convert to oral morphine equivalent, multiply by:	To convert from oral morphine, multiply by:
Buprenorphine[3]	• 5 µg/h patch = 9–14 mg MED/d • 10 µg/h patch = 18–28 mg MED/d	• 15 µg/h patch = 27–41 mg MED/d • 20 µg/h patch = 36–55 mg MED/d[4,5]
Buprenorphine/ naloxone SL[3]	16 mg SL = 90 mg MED	
Codeine	0.15 (0.1–0.2)	6.67
Hydromorphone	5.0	0.2
Methadone	Dose equivalents unreliable	
Morphine	1.0	1
Oxycodone	1.5	0.667
Tapentadol	0.3–0.4	2.5–3.33
Tramadol**	0.1–0.2	6
Fentanyl[6]***	60–134 mg morphine = 25 µg/h patch 135–178 mg morphine = 37 µg/h patch 180–224 mg morphine = 50 µg/h patch 225–269 mg morphine = 62 µg/h patch 270–314 mg morphine = 75 µg/h patch 315–359 mg morphine = 87 µg/h patch 360–404 mg morphine = 100 µg/h patch	

When to switch opioids:

- Uncontrolled pain
- Intolerable adverse effects
- Switching route of administration (e.g. oral to transdermal)

How to switch:

The two methods for switching opioids are presented below. There is no evidence that favours one method over another. Careful attention must be taken when swiching an opioid to ensure the patient is seen each week and understands prescription instructions.

- **Method 1:** Decrease the total daily dose of the current opioid by 25–50% and convert to new opioid equivalent dose.
- **Method 2 (Cross Taper Method):** Decrease the total daily dose of the current opioid by 10–25% per week while titrating up the total daily dose of the new opioid weekly by 10–20% with a goal of switching over 3–4 weeks (also consider dose formulations available). Consider more regular (e.g. weekly) follow-ups, weekly dispensing and/or dosette/blisterpack if required.

See Appendix C - Switching Opioids for succinct steps and examples on how to switch opioid therapies, and fillable switching templates that can be completed and inserted into the patient medical record.

Legend: h = hour, MED = morphine equivalent dose, mg = milligram, mL = milliliter, µg = microgram, SL = sublingual

*Conversion ratio for opioids are subject to variations in kinetics governed by genetics and other drugs.

**The maximum recommended daily dose of tramadol is 300 mg–400 mg depending on the formulation.

***The information provided can be used to determine the morphine equivalents for a patient on fentanyl. If used for switching opioids the dose conversions are for **unidirectional conversion to fentanyl** in patients for chronic use and not opioid naive patients. The dose conversions were **not intended to convert patients from fentanyl to other opioids**; doing so may result in overdose and toxicity.

SUGGESTED INITIAL DOSE AND TITRATION FOR BUPRENORPHINE TRANSDERMAL PATCH[3]

The buprenorphine transdermal patch is indicated for the management of pain severe enough to require daily, continuous, long-term opioid treatment and for which alternative options are inadequate. It can be prescribed to opioid naive patients.

Opioid	Dosage forms	Initial dose	Minimum time interval for increase	Suggested dose increase	Maximum dose/day	50 MED	90 MED
• Buprenorphine*	• Patch: 5, 10, 15, 20 µg/h	• 5 µg/h every 7 days	• 7 days	• 5 µg/h every 7 days	• 20 µg/h every 7 days	• 20 µg/h[4,5]*	• Not available

Legend: h = hour, MED = morphine equivalent dose, µg = microgram

*The oral morphine to buprenorphine transdermal patch ratio can range from 75:1 to 115:1, therefore the mid-point of this range (i.e. 95:1) is suggested.

Section E: Tapering

- Consider a discontinuation of the opioid therapy if improvement in pain or function is not achieved.
- Consider tapering opioids to the lowest effective dose for patients with a prescribed dose ≥ 90 mg morphine equivalents daily.
- Opioid withdrawal symptoms are unpleasant, but not life-threatening. What is life-threatening with opioids is overdose. Careful consideration needs to be taken with patients who are pregnant; severe, acute opioid withdrawal has been associated with premature labour and spontaneous abortion.
- Careful attention must be taken when tapering an opioid to ensure the patient is seen each week and understands prescription instructions.

WHEN TO CONSIDER TAPERING OPIOIDS

	Examples and consideration (if applicable)
Pain condition resolved	• Patient receives definitive treatment for condition • A trial of tapering is warranted to determine if the original pain condition has resolved
Risks outweigh benefits	• Overdose risk has increased • Clear evidence of diversion • Clinical features of opioid use disorder have become apparent (see Clinical Features of Opioid Use Disorder table)
Adverse effects outweigh benefits	• Adverse effects impairs functioning below baseline level • Patient does not tolerate adverse effects • Non-adherence to the treatment plan
Patient requests	• Patient requests opioid prescription to be tapered or stopped
Medical complications	• Medical complications have arisen (e.g. hypogonadism, sleep apnea, opioid induced hyperalgesia)
Opioid not effective	• Opioid effectiveness = improved function or at least 30% reduction in pain intensity • Opioid being used to regulate mood rather than for pain control • Pain and function remains unresponsive • Periodic dose tapering or cessation of opioid therapy should be considered to confirm opioid therapy effectiveness • Consider that tapering can result in withdrawal mediated pain that can present as increased pain for the patient; this should not be taken as evidence confirming opioid effectiveness for pain
≥ 90 Morphine equivalent dose	• For patients with chronic non-cancer pain who are currently using ≥90 mg morphine equivalents daily tapering opioid to the lowest effective dose with potential discontinuation is suggested • For patients with chronic non-cancer pain who are using opioids and experiencing serious challenges in tapering, referral to a formal multidisciplinary program or interprofessional coordinated multidisciplinary collaboration is strongly recommended

How to taper – the essentials

How do I stop? The opioid should be gradually tapered rather than abruptly discontinued. Patients should be actively engaged in a discussion about the merits of gradual dose reduction, including the potential for better pain control and quality of life. See Opioid Tapering - Information for Patients.[v]

How long will it take to taper the opioid? Tapers can usually be completed between 2 weeks and 4 months. For some patients on very long-term, high dose opioid therapy, it may take longer.

When do I need to be more cautious when tapering? In patients who are pregnant; severe acute opioid withdrawal has been associated with premature labour and spontaneous abortion. Also in patients with acute coronary disease, or severe/unstable psychiatric disorder(s) or mental illness.

How do I taper the dose? Example tapering approaches are presented below. There is no evidence that favours one approach over another.
For additional details and a template please see the Opioid Tapering Template.[vi]

- Gradually reduce dose by 5–10% of morphine equivalent dose every 2–4 weeks with frequent follow-up. Switching from immediate release to controlled release opioids on a fixed dosing schedule may assist some patients in adhering to the withdrawal plan.
- Switch opioid to methadone or buprenorphine/naloxone preparations and then gradually taper (see Morphine Equivalence table and Suggested Initial Dose and Titration for Buprenorphine/Naloxone Sublingual Tablets table).
- Reduce the opioid dose rapidly over a few days/weeks or immediately. This method must be carried out in a medically supervised withdrawal centre as it may result in severe withdrawal symptoms.

Tips for tapering fentanyl transdermal patch

- Converting fentanyl to other opioids is not recommended as conversions are unreliable, and doing so may result in overdose and toxicity
- Consider reducing fentanyl by 12–25 µg/h patches every 2–4 weeks
- Consider adding immediate release oral opioid for pain relief (e.g. morphine IR 5 mg qid prn up to a maximum dose of 20 mg/d, may be required at lower doses of fentanyl for breakthrough pain)
- Once fentanyl is at the lowest available dose (e.g. 12 µg/h every 72 hours), stop the fentanyl transdermal patch and only use the immediate release oral opioid for pain relief
- **Note:** It takes 17 hours or more for the fentanyl serum concentration to decrease by 50% after patch is removed

Clinical features of opioid use disorder[7] (see full table[xi])

- Altering the route of delivery*
- Accessing opioids from other sources*
- Unsanctioned use
- Drug seeking
- Repeated withdrawal symptoms
- Accompanying conditions
- Social features
- Views on the opioid medication

*Behaviours more indicative of addiction than the others.

Legend: d = day, h = hour, IR = immediate release, mg = milligram, µg = microgram, prn = as needed, qid = 4 times a day
Recommendations in the above table have been developed in part from a consensus of expert opinion.

SUGGESTED INITIAL DOSE AND TITRATION FOR BUPRENORPHINE/ NALOXONE SUBLINGUAL TABLETS[3]

Buprenorphine/naloxone sublingual tablets are indicated for substitution treatment in patients with problematic opioid drug dependence. It is also used to taper opioids.

Opioid	Dosage forms	Initial dose	Minimum time interval for increase	Suggested dose increase	Maximum dose/day	50 MED	90 MED
• Buprenorphine/ naloxone SL*	• SL: 2/0.5, 8/2 mg	• 4–12 mg on day 1, maintenance dose of 12–16 mg	• Daily	• Guided by clinical and psychological status of the patient	• 24 mg/d	• 9 mg SL	• 16 mg SL

Legend: d = day, MED = morphine equivalent dose, mg = milligram, SL = sublingual
*Health care providers do not require an exemption to prescribe buprenorphine. Providers who wish to use buprenorphine for substitution treatment in patients with problematic opioid drug dependence should obtain knowledge regarding its intended impacts, side effects and role in addiction treatment.[xii]

Supporting Material

[i] **Management of Chronic Non Cancer Pain - Appendices**
cep.health/cncp

[ii] **Management of Chronic Non Cancer Pain**
cep.health/cncp

[iii] **Opioid Medication Treatment Agreement**
https://link.cep.health/om5

[iv] **Brief Pain Inventory (BPI)**
https://link.cep.health/om7

[v] **Opioid Tapering - Information for Patients**
https://link.cep.health/om8

[vi] **Opioid Tapering Template**
cep.health/opioidtapering

[vii] **FAQ About Prescribing Buprenorphine**
https://link.cep.health/om10

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Appendix C: Assessment Tool

Measures: Team-Based Care										
	Model	**Physician**	**Registered Nurse**	**Physiotherapist**	**Occupational Therapist**	**Pain Specialist**	**Psychologist**	**Program Coordinator**	**Administration**	**Other**
Alberta Multidisciplinary Pain Clinic	Multidisciplinary	x	x	x		x	x		x	-Psychiatrist
Ontario Integrated Pain Clinic	Interdisciplinary		x	x	x	x		x	x	-Case Manager -Pharmacist -Social Worker -Therapist -Clinical Lead -Program Manager
Ontario: Michael G. DeGroot Pain Clinic	Interdisciplinary		x	x	x	x	x		x	-Social Worker -Pharmacist -Nurse Practitioner -Physician Assistant
UK: The Integrated Pain and Spinal Service	Multidisciplinary			x		x	x	x	x	-spinal consultant -psychology and physiotherapy assistant

Measures: Services Offered									
	Referral	**Initial Assessment**	**Individualized Treatment Plan**	**Non-Pharmacological Therapies**	**Non-Opioid Pharmacology**	**Opioid Pharmacology**	**Interventional Pain Procedures**	**Group Sessions**	**Individual Treatment Sessions**
Alberta Multi-disciplinary Pain Clinic	X	X	X	X	X	X	X	X	X
Ontario Integrated Pain Clinic	X	X	X	X	X	X		X	X
Ontario: Michael G. DeGroot Pain Clinic	X	X	X	X	X	X	X	X	
UK: The Integrated Pain and Spinal Service	X	X	X	X	X	X	X	X	X