

Chronic Pain in Canada: Laying a Foundation for Action

A REPORT BY THE CANADIAN PAIN TASK FORCE, JUNE 2019

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Chronic Pain in Canada: Laying a Foundation for Action

Preamble

The Canadian Pain Task Force was established in March 2019 to help the Government of Canada better understand and address the needs of Canadians who live with pain. Through to December 2021, the Task Force is mandated to provide advice and information to guide government decision-makers towards an improved approach to the prevention and management of chronic pain in this country. The eight Task Force members include people personally impacted by chronic pain, researchers, educators, and health professionals with experience and expertise in preventing and managing chronic pain across major professional disciplines (i.e., medicine, pharmacy, psychology, and physiotherapy). The Task Force is also supported by an External Advisory Panel that provides up-to-date scientific evidence, information, and advice to the Task Force reflecting their wide-ranging areas of expertise and experience.

In the first phase of their mandate ending June 2019, the Task Force assessed how chronic pain is currently addressed in Canada. To inform their assessment, they consulted with Advisory Panel members at a two day workshop in May. They met with representatives from eight federal government departments and agencies. They consulted provincial/territorial government representatives and targeted pain stakeholders, and they reviewed reports and the scientific literature. They also invited twelve people living with chronic pain to provide written responses to questions about their experience with pain and their hopes for the Canadian Pain Task Force. The report herein summarizes their findings from this rapid assessment of the current state of chronic pain in Canada and some of the personal responses from people living with pain. The activities undertaken to inform this report mark only the start of the Task Force's engagement of Canadians in this important work.

Quotations in these boxes throughout the report are responses from twelve Canadians living with chronic pain. These individuals were asked to share their experiences living with pain and their hopes for the Canadian Pain Task Force.

This marks only the beginning of the Task Force's engagement of people impacted by pain in this important work.

Message from the authors

The creation of the Canadian Pain Task Force marks a formal commitment by the Government of Canada to better understand and address the needs of people living with chronic pain. It is an opportunity to build on the incredible work already underway across the country – in peer support groups, clinics, research labs, classrooms, and elsewhere. We see it as a platform to raise the voices of people impacted by pain, to prompt action by all levels of government, and to lay the foundation for a national pain strategy, which will lead to tangible benefits for Canadians living with pain, their families, and society.

One in five Canadians lives with chronic pain. When pain persists, it can affect all aspects of one's life, including work, school, play, caregiving, and community participation. Living with unmanaged pain can lead to sleeplessness, hopelessness, depression and anxiety, diminished quality of life, and isolation. For some Canadians, unmanaged pain has led to poverty, homelessness, and even suicide.

The burden of chronic pain is not shared equally among Canadians. It is more common among older adults, females, Indigenous Peoples¹, Veterans, and populations affected by social inequities and discrimination. A variety of societal, historical, and occupational factors contribute to these trends. These social determinants can lead to a complex interplay between chronic pain, mental illness, and substance use disorders. Combined with the stigma that accompanies these health issues, this places many at high risk for unmanaged pain.

Anxiety and fear around opioids have also led to unmanaged pain. Some Canadians have been unable to access opioid medications when needed for pain and function. Others have faced undue barriers to obtaining or filling their opioid prescriptions, and some have had their opioid dose abruptly lowered or discontinued. This has resulted in unnecessary pain and suffering, and has led some Canadians to obtain illegal drugs to treat their pain. We must do more to strike the right balance – to promote opioid prescribing practices that balance the benefits and risks of these medications based on the individual needs of each patient.

The consequences of pain extend beyond individuals, affecting families, communities, and society as a whole. Chronic pain is costly for Canadians; not only are there significant direct and indirect costs, but people living with pain often struggle to afford the treatments that can improve their quality of life and ability to participate fully in society. Taking action on pain will improve the lives of seven million Canadians plus their families, and save money.

For too long, chronic pain has been unrecognized and its far-ranging impacts ignored. It has been understood as a symptom of something else, not recognized as a condition in its own right. This is shifting, with the emergence of a global consensus acknowledging chronic pain as a legitimate disease. This consensus is driving nations around the world to take action.

The present report reflects the current state of pain care, education, and research in Canada. It tells us pain is a stigmatized and still invalidated condition, health care professionals still lack the knowledge and skills to treat pain, specialized pain services are largely not accessible, and research findings are not always being used to improve care. Improvement efforts are fragmented and hampered by lack of coordination and funding. We hope this report will ignite a commitment to change.

There are home-grown successes to build on. Many people living with pain, health care professionals, researchers, policy makers, and non-governmental organizations have been contributing to a movement

¹ We use the term *Indigenous Peoples* to represent First Nations, Métis, and Inuit populations across Canada.

for action on pain in Canada. Innovative clinical models, proven educational approaches, novel support programs, and world-renowned research already exist across the country. What we need is national policy, coordination, and resources to amplify, spread, and accelerate this work, and to address current gaps and inequities.

The next phase of the Task Force’s work will involve listening to Canadians who live with and care about pain. There will be many opportunities for engagement, including in-person and online consultations. The input and perspectives shared will then be integrated with existing knowledge and leading practices, to outline an improved and coordinated approach to better understand, prevent, and manage pain in Canada.

The Task Force is grateful to Canadians living with pain who shared their stories and reflections for this first report – powerful testaments to the impact of how we currently approach pain in our country. We also appreciate the vital contributions of the External Advisory Panel members and the wide-ranging expertise they offered to inform this report. We look forward to broadening these discussions as we move into the next phase of our mandate.

Respectfully submitted,

The Canadian Pain Task Force

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Section 1: The nature of pain and its impacts on Canadians

Pain is an unpleasant sensory and emotional experience unique to the individual

Pain is an unpleasant sensory and emotional experience that we all encounter at some point in our lives. It is highly personal and can only be fully appreciated by the individual experiencing the pain.

Biological mechanisms of pain are mediated by the nervous system. Sensory neurons or nociceptors throughout our bodies send signals to the brain through the peripheral nervous system and spinal cord. If the brain interprets these signals as dangerous, we experience pain to warn and protect us. The nervous system can change in response to various factors and these changes can make us more or less sensitive to painful stimuli, or even result in a persistent state of heightened pain sensitivity. We can use this plasticity of our nervous system to manage and diminish the experience of pain. There are three main biological mechanisms that underpin pain:

- **Nociceptive pain** arises from damage to body tissue, and is the typical pain one experiences as a result of injury, disease, or inflammation. It is usually described as a sharp, aching, or throbbing pain.
- **Neuropathic pain** arises from direct damage to the nervous system itself. It is typically described as burning or shooting pain, and the skin can be numb, tingling, or extremely sensitive to even light touch.
- **Nociplastic pain** arises from a change in the way sensory neurons function, rather than from direct damage to the nervous system. The sensory neurons become more responsive (sensitization). It is similar in nature to neuropathic pain.

Pragmatically pain is sub-defined not only by these mechanisms, but also by its duration (acute or chronic). Acute pain is typically nociceptive, but can have a neuropathic component, and chronic pain can also be nociceptive, but typically has a neuropathic or nociplastic component.

Chronic pain is a disease in its own right

For most people, pain is temporary and it serves as a warning something is wrong, that something has caused or may cause damage to some part of our body. This is **acute pain**, which usually resolves as we heal.

Chronic pain was recently recognized by the World Health Organization (WHO) as a disease in its own right, resulting in revisions to the latest (11th) version of the International Classification of Diseases (ICD-11). This distinction is important as it validates the experience of the millions of people around the world living with chronic pain. According to ICD-11, chronic pain can be further classified as chronic primary pain or chronic secondary pain.

Chronic primary pain is pain in one or more anatomical regions that:

- (1) Persists or recurs for longer than 3 months; and,

“My pain has had a significant impact on my life. It impacts my ability to get out of bed, get ready, go to school, go to work, exercise, and spend time with my friends and loved ones. Pain causes me to compromise on every aspect of my life.”

- (2) Is associated with significant emotional distress (e.g., anxiety, anger, frustration, depressed mood) and/or significant functional disability (interference in activities of daily life and participation in social roles); and,
- (3) The symptoms are not better accounted for by another diagnosis (Nicholas et. al., 2019).

Chronic primary pain includes the following sub-diagnoses: chronic widespread pain, complex regional pain syndrome, chronic primary headache or orofacial pain, chronic primary visceral pain, and chronic primary musculoskeletal pain.

Chronic secondary pain is diagnosed when pain originally emerges as a symptom of another underlying health condition. It may persist even after the condition has been treated, in which case it is also considered a disease in its own right. Common examples of chronic secondary pain include chronic cancer pain, chronic post-surgical or post-traumatic pain, chronic neuropathic pain, chronic secondary headache, chronic secondary visceral pain, and chronic secondary musculoskeletal pain.

The new ICD-11 classification system also includes a code for pain severity, which accounts for pain intensity, emotional distress, and interference with function.

Biological, psychological, and social factors influence our experience of pain

Biological, psychological, and social factors unique to each individual interact with the nervous system and influence the development and experience of pain. This is the basis of the **biopsychosocial model of pain** (Gatchel et al., 2007). This model shifts the focus away from the traditional biomedical model and expands our approach to the prevention, assessment, and management of pain to encompass the whole person and their experience of pain. Environmental, emotional, and spiritual factors overlap with some elements of this model and broaden it further (PainAustralia, 2019; Institute of Medicine [IOM], 2011).

Below are some of the factors within each of these dimensions that influence the pain experience, along with some concrete examples:

- *“Biological—the extent of an illness or injury and whether the person has other illnesses, is under stress, or has specific genes or predisposing factors that affect pain tolerance or thresholds”* (IOM, 2011)
e.g., sex and stress hormones influence pain sensitivity
- *“Psychological—anxiety, fear, guilt, anger, depression, and thinking the pain represents something worse than it does and that the person is helpless to manage it”* (IOM, 2011)
e.g., distraction decreases pain intensity while focus on pain increases pain intensity
- *“Social—the response of significant others to the pain—whether support, criticism, enabling behavior, or withdrawal—the demands of the work environment, access to medical care, culture, and family attitudes and beliefs.”* (IOM, 2011)
e.g., culture-based coping strategies can reduce pain intensity and the individual’s perceived impact of the pain

Pain is complicated and multi-dimensional. The different dimensions of pain (biological, psychological, and social) must be considered to effectively assess, diagnose, and treat pain. They are also helpful to consider when exploring observed patterns of pain within the Canadian population.

Millions of Canadians live with moderate to severe chronic pain

According to several large population-based surveys, an estimated one in five Canadians lives with chronic pain (Schopflocher et al., 2011; Reitsma et al., 2011; Steingrimsdottir et al., 2017). Two thirds of Canadians living with chronic pain report their pain is moderate (52%) to severe (14%), and 50% have lived with chronic pain for over ten years (Schopflocher et al., 2011).

Certain populations bear more of the pain burden

As with many chronic illnesses, chronic pain is not distributed equally among Canadians. Biological, psychological, social, and other factors that influence how we experience pain also influence who will develop chronic pain in the first place. Often the occurrence of disease, as well as the severity of illness, is higher in populations affected by social inequities and discrimination including those living in poverty, Indigenous Peoples, certain ethnic communities, and women (Allan & Smylie, 2015; IOM, 2011).

Older adults

The prevalence of chronic pain increases steadily with age in adults, making this disorder a major health issue for older adults. Approximately one in three Canadians 65 years of age and older lives with chronic pain (Schopflocher et al., 2011; Reitsma et al., 2011). Given the aging population in Canada, we can expect a larger proportion of Canadians to be living with chronic pain in the coming years.

Children and adolescents

Contrary to what many expect, chronic pain is also common among children and adolescents with prevalence estimates ranging from 11% to 38% (King et al., 2011). Common presentations of chronic pain in children include recurrent headaches, abdominal pain, back pain, and musculoskeletal pain (Friedrichsdorf et al., 2016; King et al., 2011). Pain in this age group can impact development and may lead to chronic pain, substance use, and psychological disorders later in life (Groenewald et al., 2019).

“My pain has also had a large impact on my family. It is really hard to see the stress that my pain has caused on my family. My family are the ones that see me at my worst and I wish my parents and siblings didn’t have to help me recover from surgeries or worry about my health. It breaks my heart that my little sister spent most of her childhood being the “big sister” to me or that I pulled away when my brother tried to wrestle me because of the pain.”

Females

Chronic pain is more common among females compared to males across all ages, with women aged 65 years and older consistently reporting the highest prevalence of chronic pain (Schopflocher et al., 2011; Reitsma et al., 2011; King et al., 2011). Fibromyalgia, irritable bowel syndrome, rheumatoid arthritis, chronic pelvic pain, and migraine headache are disproportionately reported by women (International Association for Study of Pain [IASP], 2018b; Bartley & Fillingim, 2013). Prevalence among women may also be influenced by sexual orientation; for example lesbians and bisexual women are at higher risk for a number of chronic illnesses including arthritis compared to heterosexual women (Fredrikson-Goldsen et al., 2012).

Indigenous Peoples

Indigenous populations are disproportionately affected by chronic pain. Among Canadians surveyed in the 2000-01 cycle of the Canadian Community Health Survey aged less than 65 years, Indigenous Peoples had the highest prevalence of chronic pain in Canada (Meana et al., 2004). Among Indigenous adults, diabetes (15.9%), arthritis (18.3%), and chronic back pain (12.4%) are commonly reported chronic

conditions (First Nations Information Governance Centre, 2018). Indigenous Peoples often articulate the experience of physical pain as being secondary to emotional pain. Emotional pain as a result of racism, colonization, premature death of kin, dispossession, dislocation, and community violence deeply impacts the health of Indigenous Peoples (Allan & Smiley, 2015).

Veterans

Veterans report chronic illnesses at a rate two to three times higher than in the general population. Chronic pain affects 41% of Canada's 670,000 Veterans. Almost two thirds (63%) of Veterans with chronic pain also have a diagnosis of a mental health condition, and many say their pain interferes with work, makes it more difficult to adjust to civilian life, and causes stress and activity reductions. The odds of having activity limitations are eleven times greater in those with chronic pain than in those without pain, and 65% of Veterans with past-year suicidal ideation and 76% with past-year suicide attempts also reported chronic pain (Veterans Affairs Canada, 2019).

People who use drugs

The prevalence of chronic pain among people who use drugs is relatively well documented. Prevalence estimates range from 31% to 55% dependent on the specific population surveyed (Heimer et al., 2015; Alford et al., 2016; Voon et al., 2015; Dunn et al., 2015; Peles et al., 2005). This often leads to a cyclical challenge – unmanaged pain may lead to problematic use of substances, which may lead to further declines in health and more pain. In these instances, access to a range of pain management therapies would help to diminish pain and provide a window of opportunity to address the problematic substance use, but the range of therapies required are often not readily available or accessible (Voon et al., 2014; Voon et al., 2015; Dassieu et al., 2019).

Pain affects all aspects of one's life

There is growing awareness of the significant impact of pain on individuals and their families. People living with pain often experience:

- Reduced quality of life and general health;
- Decreased mental and emotional health including increased worrying, stress, anxiety, sadness, depression, anger, and frustration;
- Increased risk of suicide;
- Problems with cognitive function, such as reduced processing speed, selective attention, memory, and executive functioning;
- Increased fatigue, exhaustion, and sleep problems;
- Reduced activities of daily living and physical and social functioning (e.g., sleeping, caregiving, participating in recreation and community life);
- School/work absence and reduced productivity;
- Increased disability and inactivity;
- Decreased social connections and supports; and
- Increased health care utilization.

(IOM, 2011; Duenas et al., 2016; Racine, 2018; Leadley et al., 2012, 2014; Reid et al., 2016)

The magnitude and severity of these impacts are typically higher in populations affected by structural inequities, including those living in poverty, women, Indigenous Peoples, and certain ethnic communities (Allan & Smylie, 2015; IOM, 2011).

There are significant costs to families, communities, and society

Chronic pain carries both human and economic costs for families, communities, and society. In addition to the direct health care costs, pain undermines one's ability to participate fully in relationships, schools, workplaces, and communities.

While there are less robust data in Canada, in the United States, the total annual cost of chronic pain including both direct healthcare costs and costs related to lost productivity were estimated to be \$560 billion (Gaskin & Richard, 2012). Taking these estimates and applying them to the Canadian population, the estimated combined direct and indirect costs of chronic pain in Canada would total approximately \$56 to \$60 billion per year (Wilson et al., 2015). Chronic pain is one of the most common reasons for seeking health care in both Canada and the United States (IOM, 2011; Finley et al., 2018; Todd et al., 2007).

“When I had to stop work, the limited long-term disability benefits that I have received over time have negatively affected the trajectory of our household income. This in turn has affected our children’s access to schooling and many other opportunities.”

A recent study examining the economic burden of chronic pain in Canada estimated the weighted annual direct cost to manage chronic pain across Canada is \$7.2 billion (Hogan et al., 2016). This study examined publicly funded health care costs, so this figure does not include expenses paid by the individual or indirect costs such as lost productivity. Another Canadian study examined publicly and privately (insurance and out-of-pocket) funded health care costs as well as lost worker productivity for individuals on wait lists for multidisciplinary pain treatment facilities. The median economic burden was \$1,462 dollars per month, with 95% of these costs being borne by the individual (Guerriere et al., 2010)

Recent research from PainAustralia suggests that every Australian dollar spent on increasing pain education and improving access to multidisciplinary pain care could result in 4.6 and 4.9 Australian dollars returned, respectively (PainAustralia, 2019). As the costs of providing health care continue to rise and strain government budgets, obtaining more accurate and comprehensive data on the costs associated with chronic pain and on health care utilization in Canada would help to inform health care planning and policy decisions.

Data for action to improve the health and well-being of Canadians and our economy

The data indicate chronic pain is a common disease with a significant impact on the health and well-being of Canadians, as well as our economy. It is also clear this disease has a larger impact on subpopulations that routinely face more health and social challenges. These data can be used to inform policy, programming, and investments to reduce the effects of chronic pain in Canada.

There is an international movement to improve data on chronic pain, which will allow countries to better inform action and monitor results. The new standard diagnostic criteria for chronic pain included in the International Classification of Diseases will increase the comparability of data on chronic pain. This will aid the development of national, provincial, territorial, and regional health profiles, and allow stakeholders to monitor changes in trends over time.

Research networks in Canada are also developing registries of people living with pain and standards to collect key information from all patients who seek care at the hospitals and clinics involved in these networks (e.g., demographic data, pain severity and duration, functional limitations, disability). Combined, these efforts will better enable evidence-based action on chronic pain in Canada.

Section 2: Current approaches to diagnosing and managing chronic pain in Canada

Two fundamental ideas covered in the previous section are critical to the effective diagnosis, treatment, and management of chronic pain. First, chronic pain is a disease in its own right, with important perpetuating factors beyond the initiating injury or illness. Second, chronic pain is influenced by a complex interplay of biological, psychological, and social factors unique to each individual experiencing the pain. Gaps in chronic pain care in Canada often reflect gaps in knowledge around these two ideas among both the general population and health care professionals, and failure to adequately address the psychological and social dimensions of pain in an integrated manner along with biological factors.

Recognition that pain is real and multi-dimensional will support improved diagnosis

Frequently, societal norms and beliefs prevent individuals and their caregivers from investigating pain as a legitimate health issue. Attitudes and beliefs reinforcing pain as a normal part of life, have contributed to underdiagnosed and undertreated pain. Gender biases among individuals and health care providers contribute to fewer men seeking health care for pain than women and women's symptoms being overlooked (Samulowitz et al., 2018; Bartley & Fillingim, 2013). Discrimination prevents Indigenous

"I was bounced between various outpatient clinics and utilizing the ER multiple times a month and making no progress. There was a strong reluctance by the providers to treat based upon the fact there was no "proof" (i.e., positive scan/abnormal bloodwork). I was consistently questioned whether or not I was making up the pain for attention, or if the pain was due to a mental health condition."

"It was during the intake interview and history taking that the doctor stopped writing, put his pen down, and looked at me and said these words that will forever resonate with me: "it's okay, we believe you". Those words, that act of validation was a turning point for me."

People from receiving the help they need and stigma contributes to the perception that people living with substance use disorder are only seeking treatment for pain so they can obtain more drugs (Voon et al., 2015; Dassieu et al., 2019; Wylie & McConkey, 2019). These issues lead to delays in diagnosis and treatment.

The subjective nature of pain and the many conditions that can lead to chronic pain complicate the process of assessment and diagnosis. As with other diseases, health professionals should: i) take a comprehensive history about the chronic pain and its impact including consideration of functional status and the social determinants of health (Health Quality Ontario, 2018); ii) perform a physical examination; and iii) possibly arrange for special tests.

Too often the pain history is reduced to quantifying the level of pain and exploring associated symptoms, without enough emphasis on the full history and description of the pain and its impacts. Best practices emphasize distinguishing between pain intensity (measured by numbers) and suffering (the subjective experience of pain and the ability to function). While pain intensity may

remain unchanged, one's ability to function and (re)incorporate day-to-day activities into their life may change (Ballantyne & Sullivan, 2015). Dynamic and comprehensive assessment frameworks have been proposed (Walton & Elliot, 2017; Wideman et. al., 2019a). However, the current state of chronic pain assessment in Canada still largely focuses on pain intensity and does not widely emphasize functional and emotional impacts, comprehensive understanding of the pain experience, or acknowledge cases without an initiating or underlying injury or illness (e.g., chronic primary pain).

Certain diagnostic tests looking at the structure of the body (e.g., x-rays, computerized tomography (CT)

scans) can be problematic. They do not necessarily help identify meaningful causes of pain, can lead to additional procedures, which pose risks in themselves, and can complicate recovery. While it is important to exclude treatable underlying causes of chronic secondary pain (e.g., arthritis, malignancies, diabetes), for chronic primary pain, exhaustive investigations will be unrewarding. People with chronic primary pain are often left with an unsatisfactory understanding of their diagnosis (e.g., medically unexplained pain, functional pain) and lose faith in the system. Furthermore, they may then embark on a journey of seeking additional medical tests, which interferes with accepting the diagnosis of chronic pain and engaging with treatment.

Physical, psychological, and pharmacological therapies work better together

Chronic pain is difficult to cure; there is no evidence that helps us know the overall cure rate for this diagnosis. Sometimes pain can be successfully treated. Commonly, however, treatment is only partially effective, and is geared toward optimizing pain management to improve function and reduce suffering.

The biopsychosocial model informs the effective treatment and management of chronic pain. Table 1 outlines a range of possible interventions. This list is not exhaustive but rather introduces some of the more studied approaches to pain. Some of these interventions are more passive in nature (e.g., medications, spinal manipulations), whereas others are more active (e.g., exercise, cognitive behavioural therapy, mindfulness meditation), requiring practitioners and people living with pain to work actively to change environmental, social, behavioural, psychological, or attitudinal practices and patterns. All interventions carry both benefits and risks, which will vary based on the individual, and must be discussed and weighed carefully through shared decision-making by people living with pain and their health care providers.

The availability and quality of evidence around the effectiveness of any individual therapy for addressing chronic pain is limited. Studies are mostly focused on short-term outcomes and often provide conflicting or mixed evidence. Studies are also limited to specific types of pain and rarely compare individual interventions to one another and/or to interventions in combination (Aldington & Eccleston, 2019; CADTH, 2019a). Reviewing this literature is beyond the scope of this report; however, there are a number of initiatives working to distil what we know and the next phase of the Task Force mandate will include more in-depth consideration of best practices (CADTH, 2018a; 2018b; 2018c; 2019a; 2019b; 2019c; Waddell et al., 2017b; Reddan & Wager, 2018). There are also standards, guidelines, and toolkits that aim to translate evidence into clinical practice for various populations and types of pain. Table 2 lists a selection of evidence-based guidelines identified by the Task Force. Despite availability in many forms, awareness and consistent application of these practical resources can be limited (Peter & Watt-Watson, 2008; CADTH, 2018d).

“My experience of pain is ever-changing. Initially it was one of injury, requiring acute symptom management of severe musculoskeletal pain, along with severe and frequent post-trauma headaches...any movement was extremely painful, and even light touch could cause nausea...with time, and as management of the pain became more specific, the extreme pain, although not fully managed, decreased in frequency...it was at this point that I became aware of how universally the pain I experience interacts and exacerbates my other injuries and conditions — specifically cognitive endurance related to post-concussion syndrome and traumatic brain injury, visual and auditory processing issues, and major depression. These remain intertwined, and cannot be understood or managed in isolation.”

What is clear from the available evidence and guidelines noted in Table 2 is that pharmacological treatments are more effective when used as part of an overall multidisciplinary pain management plan that also incorporates psychological, physical, and self-management

dimensions (Gatchel et al., 2007; CADTH, 2018d; 2019c; National Academies of Sciences, Engineering, and Medicine (NASEM), 2019). Accordingly, the International Association for the Study of Pain (IASP) has endorsed integrated multi-modal care models as the best paradigm for the treatment and management of chronic pain. Ultimately, people living with chronic pain must be empowered to choose from and implement both active and passive strategies based on the evidence and their individual needs to best treat or manage their pain.

Table 1: Examples of interventions for the treatment and management of chronic pain

Pharmacological Interventions	Psychological Interventions	Physical / Rehabilitative Interventions	Medical Device / Procedural Interventions	Practitioner Administered / Manual Therapy	Self-Management Interventions
Medications/substances that have a physiological effect when introduced into the body.	An intervention that aims to modify thoughts, emotions, or behaviours.	A process meant to enable an individual to reach or maintain optimal physical functioning.	A procedure or application of a medical device meant to treat or manage pain.	Therapeutic activities administered by a health professional.	Individual-led strategies focused on altering cognitive or behavioural factors or one's ability to cope.
Examples: <ul style="list-style-type: none"> • Nonsteroidal Anti-Inflammatory Drugs • Acetaminophen • Opioids • Cannabinoids • Antidepressants • Anticonvulsants • Muscle Relaxants 	Examples: <ul style="list-style-type: none"> • Individual and Group Psychotherapy • Cognitive Behavioural Therapy • Acceptance and Commitment Therapy • Education Sessions • Mindfulness-Based Interventions • Problem Adaptation Therapy for Pain (PATH) • Support Groups 	Examples: <ul style="list-style-type: none"> • Exercise, Movement, and Physical Activity • Yoga • Tai Chi • Activity Modification • Graded Activity Participation and Exposure • Graded Motor Imagery 	Examples: <ul style="list-style-type: none"> • Deep Brain Stimulation • Steroid Injection • Trigger Point Injections • Nerve Blocks • Transcutaneous Electrical Nerve Stimulation • Shock Wave Therapy • Prolotherapy • Spinal Cord Stimulation • Low-level Laser Therapy • Dental Splint 	Examples: <ul style="list-style-type: none"> • Acupuncture • Massage Therapy • Osteopathic Treatments • Spinal Manipulation • Spinal Mobilization • Physical Therapies 	Examples: <ul style="list-style-type: none"> • Life Skills and Self-Efficacy Programs • Support Groups • Personal Practices such as Meditation • Dietary Practices • Relaxation and Breathing Exercises • Pain Neuroscience Education

Table 2: Clinical practice guidelines for chronic pain

Population-Specific Guidelines
Guidance for Chronic Non-Cancer Pain Management (2019) – Correctional Service Canada
Pain Management (2018) & Guidelines for Pain Assessment and Management for Neonates (2017) – The Hospital for Sick Children (SickKids, 2017, 2018)
Chronic Pain Toolkit (2017) – Children's Healthcare Canada
Assessment and management of pain in older persons (2015) – Quebec Geriatrics Society – Lussier, 2015
Opioid-Specific Guidelines
Guideline for opioid therapy and chronic non-cancer pain (2017) – Busse et. al., 2017
Condition-Specific Guidelines
2012 Canadian Guidelines for the Diagnosis and Management of Fibromyalgia Syndrome – Fitzcharles et. al., 2013
Endometriosis: Diagnosis and Management (2010) – Society of Obstetricians and Gynaecologists of Canada – Leyland et al., 2010
Evidence-based guideline for neuropathic pain interventional treatments: Spinal cord stimulation, intravenous infusions, epidural injections and nerve blocks (2012) – Canadian Pain Society Neuropathic Special Interest Group – Mailis & Taenzer, 2012
Guideline for Primary Care Management of Headache in Adults (2015) – Towards Optimized Practice; Institute of Health Economics Alberta Canada – Becker et. al., 2015

Guideline for the Evidence-Informed Primary Care Management of Low Back Pain (2017) – Toward Optimized Practice Low Back Pain Working Group; Institute of Health Economics Alberta Canada
Pharmacological management of chronic neuropathic pain – Revised consensus statement and guidelines from the Canadian Pain Society (2014) – Moulin et al., 2014.
Diagnosis and management of low-back pain in primary care (2017) – Traeger et. al., 2017
The treatment of neck pain-associated disorders and whiplash-associated disorders: a clinical practice guideline (2016) – Canadian Chiropractic Guideline Initiative – Bussières et al., 2016
Ottawa Panel Clinical Practice Guidelines – Therapeutic Exercise and Manual Therapy in the Management of Osteoarthritis (Brosseau et al., 2005); Knee Osteoarthritis Part 1-3 (Brosseau et al., 2017a, 2017b, 2017c); Therapeutic Exercise in the Management of Hip Osteoarthritis (2016a); Structured Physical Activity in the Management of Juvenile Idiopathic Arthritis (Cavallo et al., 2017)
Spinal Manipulative Therapy and Other Conservative Treatments for Low Back Pain (2018) – Canadian Chiropractic Guideline Initiative – Bussières et al., 2018
The CanPain SCI clinical practice guidelines for rehabilitation management of neuropathic pain after spinal cord: recommendations for treatment (2017) – Guy et. al., 2016
Non-pharmacological management of persistent headaches associated with neck pain: A clinical practice guideline from the Ontario protocol for traffic injury management (OPTIMa) collaboration – Côté et al., 2019
Management of neck pain and associated disorders: A clinical practice guideline from the Ontario Protocol for Traffic Injury Management (OPTIMa) Collaboration – Côté et al., 2016
General Chronic Pain Guidelines
Chronic Pain: Care for Adults, Adolescents, and Children (2018) – Health Quality Ontario
Assessment and Management of Pain (Third Edition) (2013) – Registered Nurses Association of Ontario
Management of Chronic Non-Cancer Pain Tool (2018) – Centre for Effective Practice (CEP), Ontario College of Family Physicians (OCFP), and Nurse Practitioners' Association of Ontario (NPAO)

Opioids and cannabis warrant special attention in the current Canadian context

Opioids

When prescribed and used as directed by a health professional, opioids play an important role in pain management for many Canadians. In the context of severe acute pain, such as after surgery, injury, or in cases of severe cancer pain or end-of-life care, opioids are a commonly used and effective analgesic. Opioid medications have also been widely used for the management of chronic non-cancer pain (Moulin et al., 2014; National Opioid Use Guideline Group, 2010; Meldrum, 2016; Saïdi et al., 2018).

Recent dramatic increases in opioid-related overdose deaths in North America have heightened awareness around the risks associated with both short- and long-term opioid use. A toxic illegal supply of opioids is currently the main factor driving drug overdose deaths. However, increased availability of prescription opioids has also contributed to opioid-related hospitalizations and deaths since the early 2000s (Fischer et al., 2006; Dhalla et al., 2009; Gomes et al., 2011; Chou et al., 2014; Edlund et al., 2014; Gladstone et al., 2015; Gomes et al., 2018a; Gomes et al., 2018b; Sanger et al., 2018; Ministry of Public Safety and Solicitor General, 2018; Fischer et al., 2018). Opioid medications have been diverted to the illegal market providing a supply for non-medical use (Fischer et al., 2006; Fischer & Rehm, 2009; Gladstone et al., 2015; Health Canada, 2017). In addition, a proportion of individuals prescribed opioids for both acute and chronic pain have experienced significant harms including the development of opioid use disorder, overdose and death (Sanger et al., 2018; Gomes et al., 2011; Chou et al., 2014; Gomes et al., 2018a; Gomes et al., 2018b). While the relationship between pain, opioids, and opioid-related harms in Canada requires further clarification, available evidence warranted action.

Actions to promote appropriate use of opioids have included the implementation of prescription monitoring programs, informing Canadians about the risks of opioids, and updating evidence-based clinical practice guidelines for opioid prescribing (Busse et al., 2017). Updated guidelines reflect evidence that opioids provide improvement in pain, physical functioning, and health-related quality of life for an appreciable minority of people with chronic pain and that adverse health effects of long-term opioid use can be significant (Busse et al., 2018; Chou et al., 2014; Filiatrault et al., 2016; Mao, 2002; Colvin et al., 2019). These actions have had positive impacts for some people who have avoided unnecessary exposure to opioids and associated harms. However, they have also had unintended consequences for some people living with pain.

Some people who could benefit from opioids in the management of pain now face significant barriers to obtaining a prescription (Dowell et al., 2019; Antoniou et al., 2019; Dassieu et al., 2019; Sinha et al., 2019; Darnall et al., 2019). In addition, many people who have been using opioids for several years and/or who have been taking them at higher doses than currently recommended are being weaned off the medication. Some of these individuals have seen their quality of life and functioning improve when doses were reduced gradually with their consent. Others report being cut off or aggressively weaned without consent, contrary to the updated Canadian guidelines, resulting in debilitating pain, serious withdrawal symptoms, and higher risk of potential overdose for those who turn to illegal sources to manage their pain (Voon et al., 2015; Kahan et al., 2018; Antoniou et al., 2019; Dassieu et al., 2019; Dowell et al., 2019; Darnall et al., 2019). People who use drugs commonly suffer from chronic pain, and some report being denied opioids to manage severe pain (Dassieu et al., 2019; Voon et al., 2015). Ultimately, many people living with pain feel stigmatized, scrutinized, and in some cases dismissed by health care professionals (Antoniou et al., 2019; Dassieu et al., 2019; Sinha et al., 2019).

There is a need to promote shared decision-making between health care professionals and people living with pain. Prescribing decisions must be based on the unique needs of the individual but this is not supported by the current environment. Health care professionals feel pressured to reduce opioid prescribing and often lack the time and knowledge needed to support patient-centred pain care and opioid prescribing (Lynch & Katz, 2017; Dowell et al., 2019). There is an urgent need for stakeholders across the country to reinforce and better support opioid prescribing that balances the benefits and harms of these medications based on the needs of the individual. Efforts are already underway by many – these will be explored and additional opportunities identified in the next phase of our work.

Cannabis

In 2018, there were approximately 340,000 authorized users of medical cannabis in Canada (Health Canada, 2019) and evidence suggests pain is one of the most commonly reported conditions for such use (NASEM, 2017; Nicholas & MacLean 2019). In addition, the legalization of cannabis is increasing access to cannabis, making it available for self-management of chronic pain, without the need for a conversation between patients and their health professionals to inform shared decision-making. Initial population-based studies indicate such legal reforms have resulted in reductions in pain and better self-assessed health among older adults (Nicholas & MacLean 2019) as well as some reduction in chronic pain admissions to health care facilities (Delling et. al., 2019). There are also suggestions that some individuals may be reducing and replacing certain pain medications, such as opioids, in favour of cannabis (Bachhuber et al., 2019; NASEM, 2017; Nicholas & MacLean 2019). However, current clinical evidence to support the use of cannabis for pain is limited.

Reviews of randomized controlled trials and observational studies indicate cannabis may reduce pain intensity. The evidence is stronger in cases of neuropathic pain, and more moderate for conditions such

as musculoskeletal pain, fibromyalgia, headaches, cancer pain, multiple sclerosis, and arthritis (NASEM, 2017; Carr & Schatman, 2019; Whiting et. al., 2015; Stockings et. al., 2018). However, there are significant side effects and safety concerns noted, and many studies have failed to show benefit for physical and emotional function. This has led several investigators to conclude that cannabis is unlikely to be effective for chronic pain (Stockings et. al., 2018; Carr & Schatman, 2019; Mucke et. al., 2018). Because of the potential impacts of policy change and the limited number of clinical studies, there are still many unknowns around efficacy and safety of cannabis for chronic pain management. More specifically there are questions related to product selection, dosing, routes of administration, interactions with other medications, substances and treatments, side effects, and potential long-term complications (Carr & Schatman, 2019; NASEM, 2017).

Multidisciplinary and interprofessional pain clinics are the gold standard

There is evidence indicating multidisciplinary pain clinics are clinically and economically effective, making up an important part of the spectrum of pain care (Tunks et al., 2008; Gatchel & Howard, 2018). Treatment might involve a multidisciplinary approach whereby patients work with multiple health professionals separately to establish care plans, or might include interdisciplinary services involving highly integrated teams working together to establish a single patient-centred pain management plan. Research demonstrates these models often achieve decreases in pain intensity and interference, as well as the fear, stress, depression, and anxiety that can often accompany chronic pain. Multidisciplinary clinics have also been associated with decreases in the use of medication, health care utilization, iatrogenic consequences, and disability claims while increasing activity, functioning, coping, and self-efficacy, which can subsequently result in cost savings for the health system (Katz et. al., 2019; Campbell et. al., 2018; Chao et. al., 2019; CADTH, 2018d; 2019c; Waddell et al., 2017b; Gatchel & Howard, 2018).

Integrated pain services prevent transition from acute to chronic pain and chronic opioid use

Transitional pain services (TPS) focus on optimizing the treatment of significant acute pain and use of opioids in order to prevent the development of chronic pain and opioid use disorder. Typically, these services are provided in tertiary care settings and have a particular focus on preventing and treating pain related to major surgery. TPSs include teams of advanced practice nurses, physicians, physiotherapists, and psychologists all specializing in pain. Patients identified as at-risk of transitioning from acute to chronic pain are identified early and provided a range of services to minimize the likelihood of chronic pain and to ensure the transition from hospital to community results in positive outcomes (Katz et. al., 2015). These clinics also carefully monitor opioid dosing and support patients to taper their use of opioids. Research has demonstrated such services are effective at reducing opioid consumption and duration of use, achieving reductions in pain intensity and interference, and reducing anxiety among patients participating in the services (Clarke et. al., 2018). There are few clinics incorporating transitional services in urban centres in Ontario, British Columbia, Quebec, and Alberta.

Care models that integrate cultural approaches support better outcomes

Chronic pain is often conceptualized by Indigenous Peoples intellectually, spiritually, emotionally, and physically. Many studies looking at the adequacy of available tools for assessing pain indicate Indigenous Peoples prefer more holistic measures or descriptions of pain (Latimer et. al., 2018; Harman, 2015). Furthermore, health care institutions, dominated by the biomedical model, impose restrictions on Indigenous People's access to family and traditional rituals, which are seen as central to healing. The inclusion of traditional healing practices in a multidisciplinary pain treatment program would be beneficial, and the use of traditional medicine need not conflict with conventional treatments.

Canadians have inadequate access to pain services and wait times are long

In reviewing the current state, it is clear many Canadians do not have access to a range of adequate or appropriate pain management services. This can lead to inadequate treatment in the early stages of a condition and exacerbate problems over time. People must also navigate across multiple systems for reimbursement of services, including the public system, private insurance, and out-of-pocket, therefore access can largely depend on the type of insurance and how much money an individual has for services – a concern for those with low-income or without private health insurance. There are also often complex and lengthy transitions associated with moving between primary to more specialized care settings, moving from specialized pediatric care to adult care, and services for pain and other concurrent conditions that may also require specialized care.

The STOP-PAIN project is a longstanding Canadian Institutes of Health Research (CIHR) funded research initiative evaluating the human and economic burden of chronic pain across Canada, particularly for those individuals on wait lists for multidisciplinary pain treatment clinics (MPTC). Research in 2005-2006 indicated the median wait time for a first appointment at a MPTC was 6 months, meaning at least 50% of patients were waiting over 6 months and some were waiting up to 5 years for access to treatment. Access was greatly affected by geography with those in rural, remote, and northern areas having limited access to care (Peng et al., 2007). In a recent update to this work, researchers found little change in the wait times, noting in 2017-2018 the median wait time still hovered around 5.5 months, with some people waiting up to 4 years for access to multidisciplinary pain care (Choinière et. al., 2019). Researchers did, however, see a noticeable change in the number of pediatric MPTCs in Canada, which has doubled to nine in 2018 from five in 2006. The recent study also identified that of only nine provinces with MPTCs, half of the provinces have only 1 MPTC per three hundred thousand population, the majority of which are found in urban areas (91%) (Choinière et. al., 2019).

The STOP-PAIN project has documented the severe impairment caused by these access challenges, including continuous severe pain, interference in ability to carry out daily activities, reduced quality of life as well as significant impact on physical, psychological, and social functioning (Choinière et. al., 2010). It has also demonstrated the economic burden these patients face due to the costs of covering their care (Guerriere et. al., 2010).

Little is known about access for other types of pain services across Canada (e.g., at the primary or secondary care level). A recent scan of non-pharmacological treatments for chronic pain, while only a snapshot based on limited consultations with stakeholders, is the best estimate of non-pharmacological pain treatment across Canada. Detailed appendices listing available services by jurisdiction are listed in their report², which indicates most treatment modalities are paid for through private insurance and out-of-pocket payments. Coverage under private insurance can vary greatly and is typically insufficient to accommodate the needs of long-term chronic pain management. While some services are covered

“It’s hard being a full-time independent student because I don’t have benefits as a part-time employee for sick days. For instance, when I was recovering from my ankle surgery I couldn’t work due to pain, but I didn’t have benefits to offset the time I had to take off.”

“Cognitive Behavioural Therapy really helped me cope with pain, so I get private psychology sessions but I can’t go as often as I need because of coverage. I wish there was more importance placed on psychology for the treatment of chronic pain.”

² <https://cadth.ca/access-and-availability-non-pharmacological-treatments-chronic-non-cancer-pain-canada-0>

under the public system if provided during in-patient and select outpatient clinics, there are extensive wait lists (CADTH, 2018d). Factors impacting availability and access include:

Facilitators

- Straightforward funding models and public-private partnerships;
- Increased time with practitioners;
- Localized community-based delivery;
- Innovative technology (e.g., virtual reality, video conference); and
- Improved education and interprofessional education.

Barriers

- Lack of public funding and reimbursement;
- Distance from urban centres;
- Lack of public and local transportation services;
- Significant wait times in many jurisdictions;
- Lack of coordination across providers;
- Lack of specialists; and
- Language and cultural barriers.

(CADTH, 2018d)

“I found the transition from the pediatric pain clinic to the adult pain clinic very difficult. At the pediatric pain clinic they have a multi-disciplinary team, which include a psychologist, a physiotherapist, a nurse, and a pain specialist. At the adult pain clinic they only have a physician who is amazing but is overstretched, sometimes I can only get an appointment every 6 months. She did refer me to a physiotherapist but there is less collaboration and communication between the two.”

Chronic pain care pathways are complex, fragmented, and difficult to navigate

Similar to other chronic diseases (e.g., diabetes, heart disease), treatment of chronic pain currently takes place across many different care settings. The following is a basic description of the current path a person may take from the onset of symptoms to obtaining the care required to help them manage their pain. This process is not linear, however, and may involve moving back and forth between settings based on symptoms and life circumstances. Self-management underpins each stage and is an important part of relieving pain. It may start with informal efforts but evolves as people are exposed to information, medical advice, and even structured self-management programs that educate people about their condition and build their capacity to take action.

- **Onset of Symptoms:** People with pain will often try to manage on their own, because of stigma, lack of access to care, or other reasons (e.g., social or cultural norms, familial pressure). They consult with individuals or the internet and other resources, attempting to manage pain based on the knowledge and experience of others. The reliability of information obtained can be questionable and lead to frustration and possibly harmful outcomes. Some may even use substances (prescription or non-prescription) to self-medicate, which furthers potential for harm.
- **Primary Care and Complementary/Alternative Care:** People may seek treatment in their community (e.g., by chiropractors, naturopathic doctors, osteopaths, acupuncturists, massage

“I owe my success in managing my pain to my support network, which includes friends, family, and my medical team.”

therapists). If pain continues, worsens, or starts to interfere with sleep, mood, and function, people might then seek the care of pharmacists, physiotherapists, dentists, family physicians, nurse practitioners, or pediatricians – a challenge considering over 15% of Canadians do not have a regular health care provider (Statistics Canada, 2017).

- **Secondary or Specialized Care:** If pain continues, people are often referred to a specialist in diagnosing and treating specific diseases (e.g., rheumatologist for arthritis or dentists for orofacial pain, neurologist for chronic headaches). These specialists help to identify and manage “treatable” underlying conditions causing chronic secondary pain, but they may not have the capacity to manage chronic primary pain as a disease in its own right.
- **Tertiary Care Involving Multidisciplinary and Interprofessional Teams:** When professionals in primary or secondary care are unable to satisfactorily treat chronic pain, they may refer people to specialized chronic pain services in the tertiary sector of care. Treatment might involve working with multiple health professionals to establish care plans, or working with highly integrated teams working together to establish a single patient-centred pain management plan. These services are often inaccessible to most people due to lack of availability or long wait times.

The lack of a clear pathway to care often requires people to assume the responsibility of identifying whom they should see and in which order. This process places a burden on people with pain, and because of a lack of communication amongst practitioners, requires them to repeat their story to numerous health professionals, while navigating multiple, often conflicting treatment recommendations. A diagnosis of chronic pain and commencement of appropriate treatment can therefore take many years. Evidence suggests there is much efficiency that can be gained through better stratification of care. Models of pain care that are tailored to the needs of individuals and where the majority of care and management takes place through self-management and community-based primary care are more efficient and hold potential for cost savings. Specialty services and more intensive care can then be made available for complex cases.

Section 2: Summary

Reviewing the current state of chronic pain treatment and management, it is clear that we need a better way to diagnose, assess, and manage chronic pain and its impacts. The benefits of programs that integrate pharmacological, psychological, and physical treatment options are clear. However, more evidence is needed to clarify the individual and combination therapies that will provide optimal benefits for different people and different types of pain. Research suggests pain care needs to be tailored to the individual and the majority of care and management should ideally take place through self-management and community-based primary care, with specialty services available for complex cases. There is also clearly an issue with limited and variable access to pain services across Canada. Evidence points to the need for increased availability of pain care, from wellness-oriented, community-based care for people with mild functional impairment due to pain, to specialized, multidisciplinary and interdisciplinary care for those experiencing moderate to severe pain and functional impairment. Many services are outside of the publicly funded health system and vary based on insurance coverage and geography. We need to explore how to address these challenges and how the use of technological advances and innovation could help to improve reach and coverage (e.g., telehealth, online platforms, communities of practice). Strategies must also account for populations disproportionately affected and undertreated.

Section 3: Awareness, education, and specialized training for pain

There are significant gaps in pain education of health professionals

Pain education for health professionals is needed for improving and enabling prevention and treatment practices. However, the current state of pain education in Canada remains inadequate across disciplines, with significant knowledge gaps in both pre- and post-licensure contexts (NASEM, 2019; Thompson et. al., 2018).

Dedicated pain curricula are needed in pre-licensure education across health professions

Pain-specific pre-licensure curricula can significantly improve knowledge and beliefs about pain among health science students (Watt-Watson et. al., 2009). Despite the value, there are major gaps across academic programs. In a review of 10 Canadian universities across 7 provinces, involving the health science faculties of medicine, nursing, dentistry, pharmacy, physical therapy, occupational therapy, and veterinary medicine, 68% of programs were unable to specify any designated hours for pain education and veterinary students were shown to receive 2 to 5 times more pain education than that of health science students (Watt-Watson et. al., 2009). Educational content also typically lacks integration of biological aspects with the psychosocial factors that contribute to the experience of pain (Wideman et. al., 2019b).

“Nobody understood how I had pain without an injury, including my family physician. Once I started seeing experts in the chronic pain field I became a much better advocate for myself. It takes away a lot of stress when you understand what is happening to your body and why. I think pain education is a great approach.”

The Royal College of Physicians and Surgeons of Canada (RCPSC) officially recognized pain medicine as a subspecialty in 2010 and has now established standards for training in this field (RCPSC, 2018). Currently, there are seven Canadian universities with RCPSC accredited two-year pain medicine residency programs³, with the first-ever pain medicine residency having been offered by Western University in 2014 (Johnston, 2014). Additional recent developments are improving the fundamental understanding of pain and its impacts. In 2019, the Association of Faculties of Medicine Canada received funding to work in partnership with Canada’s 17 medical schools, to develop a curriculum for future physicians in the diagnosis, prevention, and treatment of pain. Similarly, the Canadian Association of Schools of Nursing, Association of Faculties of Pharmacy of Canada, and Canadian Association for Social Work Education recently started a three-year interprofessional education program for additional professionals. The International Association for the Study of Pain has created multidimensional, widely available curricula for health professionals, which is subdivided into a core curricula and supplementary curricula specific to certain health professions (IASP, 2018a). Despite these developments, there is still a clear need for more standard and widely available pain-related curricula and resources across all health professions.

³ <http://www.royalcollege.ca/rcsite/documents/arps/pain-medicine-e>

Team-based education and training enables collaborative and multidisciplinary care

Effective pain management can be complex and often involves a range of treatment modalities and approaches that exceed the expertise of any one profession. However, students in health science programs have few collaborative learning experiences. Interprofessional approaches to education have been shown to help balance socialization within one's profession while also learning to understand and work with the strengths of other professionals and reduce the development of misconceptions and stigma (Peter & Watt-Watson, 2008; Watt-Watson et. al., 2009; NASEM, 2019).

A survey from across Canada found a need for more opportunities that support interprofessional collaboration, multidisciplinary care, and training in the provision of non-pharmacological options (CADTH, 2018d). Several organizations have developed curricula related to interprofessional education (IASP, 2018a); and there are many excellent models that promote collaborative practice (NASEM, 2019). For example, a learning model in Quebec involves physiotherapists in the training of medical residents (CADTH, 2018d). Of note is the University of Toronto Interfaculty Pain Curriculum – a three-day, globally recognized leading model in pre-licensure education.⁴ The program uses a series of teaching modalities to focus on current research and understanding of pain and clinical practice in pain management and has consistently shown positive changes in students' pain knowledge and beliefs (Watt-Watson et. al., 2004; Hunter et. al., 2008; Watt-Watson et. al., 2017; Murphy et. al., 2018). The program is currently exploring how best to disseminate the model to other Canadian institutions. Other less intensive models include the North American Pain School (Quebec Pain Research Network)⁵ and the Connaught Summer Institute in Pain (University of Toronto)⁶.

Professional development and clinical support opportunities build pain competencies

Professional development allows health professionals to continually develop the competencies they require to successfully provide care. It is often more experiential- and practice-based learning, focused on underlying problems and solutions, and more likely to be patient-centered, collaborative, and team-based. Various models have shown to be successful for improving knowledge and attitudes among different health professions (Peter & Watt-Watson, 2008). Learning is enhanced when patients are involved in the development, delivery, and outcomes and when learning is practice rather than theory-based (Thompson et. al., 2018). The current landscape in Canada has many examples of promising practices, involving:

- Intensive multi-day workshops that incorporate interactive sessions, panel discussions, and lectures such as the Practice Support Program for General Practitioners in British Columbia and Clinical Workshops run by Pain BC⁷;
- Online training modules and e-resources that build on core curriculum related to pain such as the SickKids Online Pediatric Pain Curriculum⁸, the Pain BC Online Pain Foundations Course, and the Musculoskeletal Clinical Translation Framework (Curtin University, Australia)⁹;
- Specialty certification in pain that recognize advanced competency development such as the Canadian Physiotherapy Association Clinical Specialty Program¹⁰, and the University of Alberta Graduate Certificate in Pain Management¹¹; and

⁴ <http://sites.utoronto.ca/pain/research/interfaculty-curriculum.html>

⁵ <https://northamericanpainschool.com/>

⁶ <http://sites.utoronto.ca/pain/connaught/pain-across-the-ages.html>

⁷ <https://www.painbc.ca/health-professionals/education>

⁸ <http://www.sickkids.ca/pain-centre/Health-care-Professionals/Online%20Pain%20Curriculum/index.html>

⁹ <https://www.musculoskeletalframework.net/>

- Mentoring programs that match mentee with experienced pain professionals, such as the Canadian Physiotherapy Association Pain Mentorship Programs¹², the Medical Mentoring for Addictions and Pain Network, and the Pharmacist Mentoring in Addictions and Pain Program¹³.

Interprofessional platforms and communities of practice improve access to care

Recognizing the importance of multidisciplinary approaches and collaboration, particularly for health professionals in rural, remote, and northern communities, innovative online and digital platforms have launched to link different types of providers with needed pain expertise, thereby improving access to specialist care for patients with chronic pain. These models are building on initial successes to slowly scale up to other jurisdictions across Canada.

- Project ECHO¹⁴ (Extension for Community Healthcare Outcomes) connects health professionals in local communities with specialists from a range of professions, and in some cases patient representatives, via videoconferencing to train and build capacity in the delivery of specialty and complex care. There are over 15 ECHO projects in Ontario – 3 with a pain focus, including chronic pain and opioid stewardship (University Health Network), pediatric pain (SickKids), and chronic pain and opioid stewardship in the north (St. Joseph’s Care Group). While Canadian ECHO projects started in Ontario, hubs have recently started in Quebec, Saskatchewan, and British Columbia.
- Champlain BASE™ eConsult¹⁵ service improves access to specialist care for patients with chronic pain by facilitating secure electronic communication between health professionals and pain management specialists. Evaluations have demonstrated participants using eConsult have higher levels of satisfaction, enhanced collegiality, increased trust, and improved patient flow (Liddy et. al., 2019). Next steps include expanding the service across Ontario, and potentially connecting with other provinces such as Manitoba, Quebec, Newfoundland and Labrador, and several national agencies representing Canada’s northern communities.
- The Atlantic Mentorship Network – Pain and Addiction (AMN-P&A)¹⁶ is a community of practice linking mentees directly to more than 200 pain/addiction experts via small groups over email and online forums to discuss cases and receive various education components. It is the largest network of pain and addiction providers in Canada (CADTH, 2018d).

“I know that so many people live with chronic pain, yet finding support, whether that be physical, psychological, or health-related, is so difficult, and I don’t understand why it has to be. Even though I received remarkable care for my pain, I always felt that I had no one to talk to, besides my family that really understood what I was going through. I could have benefited from talking to other people living with chronic pain who could have provided me with helpful advice or even just a listening ear.”

¹⁰ <https://physiotherapy.ca/clinical-specialist-program>

¹¹ <https://www.ualberta.ca/rehabilitation/professional-development/certificate-programs/certificate-in-pain-management>

¹² <https://physiotherapy.ca/blog/rep-26-mentorship-program-pain-science-division-initiative>

¹³ <https://www.ontariofamilyphysicians.ca/education/collaborative-mentoring-networks/medical-mentoring-for-addictions-and-pain-mmap>

¹⁴ <https://superhub.echoontario.ca/>

¹⁵ <https://www.champlainbaseeconsult.com/publications>

¹⁶ <https://www.atlanticmentorship.com/>

Increased public awareness and education are needed to improve prevention and care

Awareness building efforts are an increasingly common strategy to help prevent and manage acute and chronic health conditions. They are designed to better align evidence-based clinical guidelines with widely held beliefs and address issues related to stigma and discrimination. The effects of such campaigns involve shifts in knowledge and attitudes about health conditions along with related shifts in behaviours and lifestyles, which can result in positive changes to prevention and health care utilization (Buchbinder et. al., 2008; Waddell et al., 2017b).

There are organizations working at the provincial and national level to try to build education, awareness, and support around pain and the experience of living with chronic pain (e.g., Pain BC, l'Association québécoise de la douleur chronique, Chronic Pain Association of Canada) and disease specific organizations advocating for chronic pain related issues (e.g., The Arthritis Society). There are also several nationally based pain-focused networks (e.g., Solutions for Kids in Pain, National ME/FM Action Network, Canadian Pain Society) and tools designed for clinical environments and patient self-management that could be leveraged for public education and awareness. There would therefore be tremendous value in coordinating activities and leveraging lessons from existing efforts to ensure a unified and consistent approach to pain awareness and education in Canada. This approach should include multiple settings, such as schools, workplaces, health care institutions, and homes, and be targeted to multiple populations.

Innovative knowledge translation activities transform research into practice and build pain awareness

There are several examples of activities across Canada focused on improving health outcomes for children by translating knowledge into practice. Some activities are more targeted in nature and involve online tools. The *Pain in Child Health Initiative* (PICH) at the Hospital for Sick Children recently created PICH2GO¹⁷, a dynamic mobile version of their initiative to improve pain awareness and management for trainees (Bhandri et. al., 2019). Similarly, the University of Alberta developed parenting tools, including videos, infographics, and e-books, focused on reducing procedural pain (e.g., pain related to vaccination), improving management of common childhood conditions associated with pain, and improving management of chronic pain. The *Learning to Live with Chronic Pain*¹⁸ e-book shares the experiences of one family dealing with chronic pain and how the family learned to manage and cope. *A Journey to Learn about Pain*¹⁹, is another resource presenting the neurophysiological processes of living with pain in an illustrated story form involving a series of characters finding information about pain and how to deal with it (Reis et. al., 2018).

“Stigma was something I faced as a young adult, not only from peers and the health care system, but also the education system. It was incredibly difficult for teachers to grasp that I could act fine one day but struggle the next with increased pain levels. My outward appearance of laughing or smiling was used against me as proof I was fabricating my pain and looking for special attention. There were many times that graduating high school seemed unattainable due to the lack of support and understanding.”

¹⁷ <http://www.sickkids.ca/PICH/activities/PICH2GO/index.html>

¹⁸ <http://www.echokt.ca/do-you-know-a-child-dealing-with-chronic-pain/>

¹⁹ <https://www.yumpu.com/en/document/read/61002254/a-journey-to-learn-about-pain>

Other translation activities are focused more at a whole population level, such as the *#ItDoesntHaveToHurt*²⁰ social media campaign and the newly announced *Solutions for Kids in Pain* (SKIP) network. *It Doesn't Have to Hurt* is a series of innovative research and knowledge translation activities with a focus on developing, implementing, and evaluating branded social media campaigns designed to bring best practice research and tools directly to parents and families. Similarly, SKIP²¹ is a knowledge mobilization network focused on better pain management for children, based at Dalhousie University and co-led by Children's Healthcare Canada. It aims to build capacity and bridge the gap between current treatment practices and available evidence in Canadian health institutions. SKIP brings together pediatric pain researchers, front-line knowledge user organizations, patients, and caregivers to assess and understand user needs, improve access to pain management tools, and increase public understanding about pain in children and its consequences.

Section 3: Summary

Pre-licensure education and continuing professional development must better integrate sufficient, pain-specific learning into curricula. This would provide health professionals with the knowledge and skills required to prevent and treat pain; furthermore it would enable an essential cultural transformation to better support Canadian actions on pain. Reducing disparities in curricula through common learning resources and outcomes across disciplines, in addition to improved quality assurance of training programs, would help to foster better education. Several examples exist that incorporate people living with pain in the design, delivery, and evaluation of education innovations, shifting from theory- to practice-based education, and emphasizing interprofessional education and collaboration. Similarly, some stakeholders are beginning to implement more general awareness building campaigns in select jurisdictions and for particular populations. As well, knowledge mobilization efforts are underway to accelerate the transformation of research evidence into practice. Currently, most studies look at indicators of practitioner knowledge and satisfaction; few examine whether improvements in knowledge are also leading to better care and improved patient outcomes. There are few studies examining the reach, dissemination, and sustained implementation of awareness building efforts. There is a clear need for better coordination across jurisdictions and health disciplines, and future efforts grounded in anti-oppression approaches that are trauma-informed and sensitive to different social and cultural needs.

²⁰ <https://itdoesnthavetohurt.ca>

²¹ <https://www.kidsinpain.ca/>

Section 4: Pain research in Canada

Globally, pain research focuses on the biopsychosocial mechanisms, epidemiology, clinical features, management principles, and health service delivery models for pain. Canada's pain research landscape is nested in this international research ecosystem, while having its own unique strengths and challenges. For example, Canada is a world leader in biomedical research focused on the basic mechanisms of pain (Council of Canadian Academies, 2012) particularly in areas such as pain genetics and sex differences in the physiology and pathophysiology of pain (Sorge et. al., 2015). Yet there remains much work to be done to understand key aspects of pain such as what governs the transition from acute to chronic pain and how early childhood events lead to chronic pain later in life. More work is also needed to translate basic discoveries and mechanistic insights into education and safe and effective therapies that can be delivered cost-effectively to individuals who need them. Considering the breadth and scope of the pain research agenda, it is important to identify research priorities where Canadians can continue to excel and harness the strengths of their existing programs, while ensuring knowledge translation activities facilitate better integration of chronic pain research, education, and clinical practice.

World-leading research requires national networks, infrastructure, and supports

Between 2013-14 and 2017-18, CIHR invested more than \$88 million in pain research in areas such as the development of novel analgesics and tools to help health care providers provide more personalized treatments. CIHR also committed \$12.5 million (matched by \$12.5 million from external partners) to fund a large multidisciplinary pain research network through its Strategy for Patient-Oriented Research (SPOR) from 2016 to 2021. The CIHR SPOR – Chronic Pain Network²² (CPN) is a national collaboration of patients, researchers, health care professionals, educators, industry, and government who are working to direct new research in chronic pain, train researchers and clinicians, and translate knowledge into guidelines and policy. Patients are engaged as partners, working with researchers and health care professionals to improve health outcomes, identify new treatments, and deliver a more effective health care system to Canadians.

In addition to supporting communication and collaboration among pain stakeholders, the network supports individual research projects on topics related to chronic pediatric pain, pain in older adults, pain in Indigenous populations, the role of mental health and other comorbidities (e.g., obesity, insomnia) in chronic pain, therapeutic targets, pain mechanisms and biomarkers, strategies for pain assessment, and tailored pain interventions. It also supports infrastructure to enable better research including establishing a pain registry, common indicators and outcome measures, and multi-trial coordination.

Canada has a solid foundation for a national pain research agenda

In 2016, CIHR hosted the Canadian Pain Research Summit wherein researchers, clinicians, partners, charities, patients, and policymakers with a common interest in pain came together to reflect on what funding agencies could do to better stimulate pain research. Participants came from across Canada, the United States, and the United Kingdom, to identify opportunities, develop a pain research agenda and encourage new collaborations and initiatives (CIHR, 2016). The discussion resulted in a short list of research areas related to two themes (Table 3): (1) translate basic research into clinical applications; and (2) personalization of pain medicine. Particular emphasis was placed on the importance of partnerships

²² <http://cpn-rdc.ca/>

between and among researchers, clinicians, people living with pain, and decision-makers in this research strategy.

Table 3: Research agenda for chronic pain from the 2016 Pain Summit hosted by CIHR

Translate basic pain research into novel targets for new diagnostics and therapeutics			
<p>Measurement: Research is needed to improve assessment of pain, response to treatment, and translation of basic research to patient care. This includes biomarkers that are not necessarily markers of pain but also of vulnerability or resilience.</p>	<p>Phenotyping: There are different levels of phenotyping (stratification) and more research is needed related to better understanding how to predict risk or protection for chronic pain.</p>	<p>Sex differences: The need to build knowledge around sex differences in the neurobiology of nociception and pain.</p>	<p>Pharmacological, physical, and psychological methods: Research is needed around the interactions between these methods and to bring all of the complex variables to bear (e.g., effects of meditation in combination with drug therapy for pain management).</p>
Personalize pain medicine			
<p>Fragmentation of care: Fragmentation of care is an important issue in addition to the impact of transitions between care settings/systems. Nowhere is care more fragmented than for people with chronic pain. More research is needed related to the problem and potential solutions.</p>	<p>Pain across the lifespan: Research is needed on early life events and their impact on acute and chronic pain throughout the lifecycle and during end-of-life care.</p>	<p>Gender and access to care and response to treatment: Many people living with pain are women, but there is much stigma associated with pain for men as well. Understanding the role of gender in gaining access to care, patient-provider interactions, and treatment is important.</p>	<p>Indigenous Peoples: Research is needed to understand and implement holistic two-eyed-seeing models of care in the management of chronic pain and to better understanding how these models can complement pharmacological and non-pharmacological interventions.</p>

People living with chronic pain must be equal partners in research

Patient engagement provides many valuable outcomes to the research process and improves feasibility, acceptability, rigor, and relevance (Forsythe et. al., 2019). As such, Canada is becoming a leader in the engagement of patients in the pain research enterprise, spanning the full spectrum of research prioritization, ethical and peer review, conduct of research, and knowledge translation. For example, since 2017, the Canadian Pain Society has made their Annual Scientific Meetings officially accredited to include people living with pain.²³ In addition to the CIHR SPOR – CPN mentioned above, there have also been several projects in Canada employing a priority setting process that brings together patients, family members, and clinicians as equal partners to identify research priorities²⁴ (Birnie et. al., 2019; Fitzcharles et. al., 2017; Poulin et. al., 2018). Each of these projects highlights important patient-centred priorities focused on:

- Improving knowledge and competencies in chronic pain;
- Preventing chronic pain and reducing associated symptoms;
- Understanding the impacts of chronic pain;
- Improving patient-centered treatment of chronic pain;
- Improving access to and coordination of chronic pain care; and
- Understanding the interaction of pain with other co-morbidities.

²³ <https://patientsincluded.org/>

²⁴ <http://www.jla.nihr.ac.uk/>

Section 4: Summary

There is a great foundation in Canada for national action on chronic pain research. National research funding agencies, research and advocacy-based organizations and networks, and individual research teams, some collaborating with people living with chronic pain, have worked to define clear directions for a research agenda. However, there is limited research on how to monitor the quality and effectiveness of our health care system for treating chronic pain. Most research investment is concentrated in basic sciences or clinical trials. Research on different treatment options often does not evaluate whether the intended benefits for patients and society are being achieved. Furthermore, there are major gaps in research exploring how to tailor particular treatments to individual patients (personalized medicine). Most research involves data averaged over groups, which may not translate well to all individuals. A paradigm shift is required that enables accounting for inter-individual variability and identifying which patients are most and least likely to benefit from a specific treatment or a combination of treatments.

Section 5: Domestic and international action on pain

The groundwork exists in Canada for a national pain strategy

In 2011, the Canadian Pain Society led calls to governments at the federal, provincial, and territorial levels to develop a coordinated approach to pain in Canada through a national pain strategy. The strategy focused on access to care, awareness and education, research, and ongoing monitoring for pain (Lynch, 2011; Canadian Pain Society [CPS] and the Canadian Pain Coalition [CPC], 2011).

Since that time several initiatives have taken place with the aim of further articulating how to establish a strategy in Canada. In 2017, the McMaster Health Forum convened a stakeholder dialogue with leaders from across Canada on the development and advancement of a national pain strategy. Participants agreed that responses to the drug overdose crisis had resulted in unintended consequences and created uncertainty for those with chronic pain. They also noted the lack of tools available to support effective pain management, the lack of leadership at the policy level, and the need to create a national coordinating body (Waddell et al., 2017a; 2017b).

In the same year, the Arthritis Society held a 2-day pain symposium, which focused on improving pain research, management, policy, and strategy. Attendees reached consensus on the importance of increasing awareness of pain as a distinct issue, supporting pain research, building national networks and coordination, and including patient voices. The findings also point to priorities for future pain policy and strategy in Canada, which include enabling patient engagement and empowerment, building research and surveillance, establishing standards of care, and improving education (Arthritis Society, 2017).

Similarly in 2018, at the Canadian Academy of Health Sciences (CAHS) Major Forum on Chronic Pain, over 120 participants came to the conclusion that key priorities in Canada include:

- Improving knowledge around the causes, physiology, and experience of pain, including mapping of the current realities for people living with and treating pain;
- Developing a more wholesome picture of the socio-economic costs of pain in Canada;
- Enabling better knowledge translation of pain-related research and practices; and
- Mapping the full range of evidence-based treatments and solutions for pain (CAHS, 2018).

Over the last few years, the Canadian Pain Care Forum (CPCF) has been working to coordinate and focus the efforts of organizations across Canada with an interest in and desire to improve national and/or

“We urgently need a National Pain Strategy embraced by policymakers, health professionals, and patients to provide effective pain management services for all Canadians who need them.”

“While I am fortunate to be seen periodically by a pain specialist, I do not have access to a multidisciplinary pain clinic where key services, such as physiotherapy and psychology are provided. Many patients in my community have even less (or no) access to a pain specialist and are unduly suffering as a result. They do not know where to turn.”

provincial pain care public policy. This open forum includes non-profit patient/consumer education and advocacy organizations, health care professional(s) associations, policy organizations, medical services organizations, academic health-science centres, law enforcement, and pharmaceutical and medical product businesses. They meet quarterly and are supported by the Michael G DeGroote Institute for Pain Research and Care and the National Pain Centre, at McMaster University.

In May 2018, the CPCF completed an updated proposal for a Canadian Pain Strategy that has been shared with executives in the organizations of its 80 members across the country including Health Canada. The proposal is a bold but achievable plan to improve the prevention and treatment of chronic pain in Canada and, in so doing, help to address the opioid crisis. The proposal outlines a comprehensive approach involving four elements to address the problem and puts forward milestones by one-, three- and five-year time frames emphasizing quick wins in year one to build momentum (Table 4).

Table 4: The Canadian Pain Care Forum’s proposed elements for a Canadian Pain Strategy

Better care	Better prevention/education	Better research/implementation	Better coordination
<ul style="list-style-type: none"> - Improve primary care-based chronic pain management - Create/expand interdisciplinary specialty-care teams throughout the life cycle 	<ul style="list-style-type: none"> - Reduce the impact of chronic pain and its sequelae (including opioid use problems) once it has emerged - Raise awareness and educate the public, employers, and future health professionals to produce long-term societal shift 	<ul style="list-style-type: none"> - Enhance Canada’s comprehensive pain research capacity to reflect the magnitude of the problem - Diagnose the causes of emerging challenges, test innovations to address the causes, and scale up successful efforts 	<ul style="list-style-type: none"> - Create a national coordinating body for the prevention and management of chronic pain - Build on the lessons learned from initiatives like the Canadian Partnership Against Cancer and the Mental Health Commission of Canada

National leadership and coordination would amplify provincial/territorial efforts

Provinces and Territories across Canada have initiated their own strategies and actions (Table 5) in an effort to improve pain outcomes for people living with pain in their respective jurisdictions. While much focus has been on mental health, substance use disorder, and opioid prescribing, some activities relate to chronic pain more specifically. Common characteristics across these activities include:

- Environmental scanning exercises designed to map services and identify best practices;
- High-level provincial strategy and guidance;
- Network creation;
- Support for self-management programs and multidisciplinary clinics;
- Clinical guideline development;
- Chronic pain care pathways;
- Prescription monitoring programs; and
- Support for educational activities for both patients and health professionals.

“I think the Task Force will be able to promote a level of awareness about chronic pain that has never existed before. My personal vision is that the awareness about chronic pain takes on the same level of awareness that conditions such as mental health and breast cancer have received.”

Table 5: Provincial and territorial actions on pain

Jurisdiction	Strategies and Actions
British Columbia	<ul style="list-style-type: none"> • In June 2016, the College of Physicians and Surgeons of BC released new standards for opioid prescribing – Practice Standard on Safe Prescribing of Opioids and Stimulants. • In 2018, the Ministry of Health, in collaboration with the Ministry of Mental Health and Addictions, Pain BC, and health system partners, worked on identifying gaps and opportunities to improve chronic pain prevention and management, subsequently developing a draft Provincial Chronic Pain Strategy and Action Plan. Options are now being developed for strategy implementation. • The BC Guidelines and Protocols Advisory Committee is currently developing a chronic pain clinical practice guideline for primary care. • In 2018, the first Transitional Pain Service launched at Vancouver General Hospital with a focus on improving outcomes related to both pain management and opioids for post-surgical patients. • Several Divisions of Family Practice are working on pain-related planning and service initiatives. • The Shared Care Committee – a Joint Committee of the Doctors of BC and the BC Ministry of Health, have created a “Chronic Pain Spread Network” to bring together communities of primary care physicians working on pain initiatives to share their successes and challenges. • A number of new Primary Care Networks are developing with a focus on enhancing community-based pain services. • BC Children’s Hospital is undertaking a site-wide pediatric pain initiative. • Changes to Procedural Pain Management (PPM) standards are being considered to support consistent practice. The College of Physicians and Surgeons of BC developed draft accreditation PPM standards and public feedback concluded May 27, 2019. The next step is for the standards to be approved and then followed by an implementation plan.
Alberta	<ul style="list-style-type: none"> • Strategic Clinic Networks undertook an environmental scan on current state of pain care in the province as well as numerous consultations. The results subsequently informed the development of a provincial pain strategy drafted together with the Pain Society of Alberta. A provincial steering committee is being developed to oversee the priority actions within the 3 streams of the strategy. A pain research strategy is also being developed by the University of Calgary, the University of Alberta, and Campus Alberta Neuroscience, in partnership with the Hotchkiss Brain Institute and Alberta Children’s Hospital Research Institute. • Several innovative pilot programs underway across the province, e.g., SpineAccess Alberta, is evaluating a multidisciplinary pathway system for individuals with chronic pain. The goal is to increase efficiency within the diagnostic and consultation process for patients. • Efforts by a subgroup within the Alberta Health’s Opioid Safety Working Group to develop an approach to substance use disorder and pain management. • Transitional Pain Service: Focus on the implementation of this service more broadly within Alberta to address challenges, including the development of chronic postsurgical pain and postoperative opioid dose escalation. • Primary Healthcare Opioid Response Initiative (Provincial): The Alberta College of Family Physicians, Alberta Medical Association, and Alberta Health Services are working collaboratively with Alberta Health to lead the work of a \$9.5 million provincial grant. The grant is for a primary health care response through Primary Care Networks and is intended to provide increased access to services and provide training for primary care providers, who are offering treatment, medication, and care to patients and families affected by the opioid crisis. • Provincial Electronic Medical Record: Develop standardized provincial postoperative surgical and discharge analgesia order sets. • Alberta is home to the largest multidisciplinary pain program in Canada, partnered with numerous successful primary care based pain projects to keep pain prevention, assessment, and management in the medical home. Work is currently underway to spread this innovation to other primary care networks throughout the province.
Saskatchewan	<ul style="list-style-type: none"> • SaskPain – a provincial network of health professionals dedicated to improving chronic pain has been created. • Based on 2014 and 2016 stakeholder dialogues on the state of chronic pain in the province, working groups were created to develop strategies in the areas of pain foundation, education, research and knowledge translation, and practice. • Currently undertaking priority setting exercises to inform future provincial strategy. • Creation of a multidisciplinary SaskPain Professional Practice Group and on-going work by SaskPain to secure provincial funds to support specialized pain clinics in the province. • Workshops, peer support networks, and online courses offered by the Saskatchewan Health Authority such as the <i>LiveWell with Chronic Conditions</i> and <i>LiveWell with Chronic Pain workshops</i>, which assist individuals with attaining support and education on how to manage their pain to improve activities of daily living.
Manitoba	<ul style="list-style-type: none"> • In 2018, a pediatric clinic for complex chronic pain was established at the Winnipeg Health Sciences Centre. Utilizing the biopsychosocial model of chronic pain management and a patient and family centred model, the program is embedded in a larger, region-wide complex pain management program.
Ontario	<ul style="list-style-type: none"> • In 2016 provincial funding announced for the establishment or enhancement of 17 multidisciplinary chronic pain clinics (adult and pediatric). • Expansion of Rapid Access Clinics aimed at reducing wait times for services and eliminating unnecessary

	<p>diagnostic procedures.</p> <ul style="list-style-type: none"> • The <i>Well Initiative</i> provides health care tools and resources, with a dedicated aspect to chronic non-cancer pain that connects individuals to local pain care services through Local Health Integration Networks. • Chronic conditions self-management programs delivered through Local Health Integration Networks. • Health Quality Ontario has published quality standards on opioid prescribing for acute pain, chronic pain, and low back pain, as well as drafted quality standards for chronic pain care.^{25,26,27} • The Low Back Pain Strategy administered by the Ministry of Health and Long-Term Care aims to improve pain care to individuals through improvements to access to diagnostic services and self-management tools. The strategy also aims to test two new provincial models of care, including the Inter-professional Spine Assessment and Education Clinics Pilot program and the Primary Care Low Back Pain Pilot program.²⁸ • Interdisciplinary initiatives such as Health Links and Health TAPESTRY provide support and coordination of care for patients and assist them in navigating the health system and the resources available to them.
Quebec	<ul style="list-style-type: none"> • In 2004, creation of l'Association québécoise de la douleur chronique (AQDC), an association of and for individuals with lived/living experience. • Based on the recommendations from AETMIS²⁹, a national committee on chronic pain management has been in place since 2008, with representation from clinical management, research pain experts, and individuals with lived/living experience. • The committee established a continuum of services involving different levels of care. Currently, there are four "Centres d'expertise" in chronic pain management, which are comprised of a Centre Hospitalier Universitaire (tertiary care teaching hospital) with a pain clinic, a rehabilitation center with expertise in the field of pain, and other institutions as necessary. There are also several regional centres located outside of urban centres. A standard referral process has been adopted by each Centre d'expertise and regional centres in the province. • Several chronic pain management "algorithmes de prise en charge" have been revised and published on the MSSS pain management web site³⁰ for lumbar pain, neuropathic pain, fibromyalgia, and complex regional pain syndrome and additional algorithms on vestibulodynia, shingles, myelopathy, and spinal stenosis are under development. • Efforts and consultations are underway to define a "Plan d'action national en douleur chronique 2020-2025" with a focus on the full continuum of care. • Several projects have been implemented for coordination and optimization of medical and pharmaceutical practices concerning opioids and the treatment of pain³¹. • Creation of the Quebec Pain Research Network and a registry of pain patients was established by the Quebec Pain Research Network. • Continuing progress to develop an initiative to improve knowledge translation of opioids and pain standards to health care professionals. • Creation of a Research Chair in Knowledge Translation in Pain.
New Brunswick	<ul style="list-style-type: none"> • New opioid prescribing guidelines for the management of pain released by the College of Physicians and Surgeons of New Brunswick.
Nova Scotia	<ul style="list-style-type: none"> • Creation of the Nova Scotia Pain Initiative and a related environmental scan of pain services across the province. An Action Plan was developed following the 10 recommendations from a report on pain care in the province (December 2018). A key element of the plan is to leverage IT resources to create a provincially centralized referral and triage system and avoid the duplication of patients on multiple waitlists and refer patients to the right level of care in the right area (geographically). The greatest barrier to success of the Action Plan is the lack of financial resources to support it. • Patient Website: The Nova Scotia Health Authority (NSHA) has a live patient http://www.nshealth.ca/ and provider https://www.cdha.nshealth.ca/physicians website providing education and support to health care professionals in the province. • Several education initiatives are underway including creation of standardized/minimum pain education for providers, a dedicated working group is looking at the possibility of incorporating Pain BC's five-module program, and the NSHA is partnering with Pain BC to conduct a coast-to-coast research project.

²⁵ <https://www.hqontario.ca/portals/0/documents/evidence/quality-standards/qs-opioid-acute-pain-clinician-guide-en.pdf>

²⁶ <https://www.hqontario.ca/evidence-to-improve-care/quality-standards/view-all-quality-standards/low-back-pain>

²⁷ <https://www.hqontario.ca/evidence-to-improve-care/quality-standards/view-all-quality-standards/opioid-prescribing-for-chronic-pain>

²⁸ http://www.health.gov.on.ca/en/pro/programs/ecfa/action/primary/lower_back.aspx

²⁹ https://www.inesss.qc.ca/fileadmin/doc/AETMIS/Rapports/Autres/2006_04_res_fr.pdf

³⁰ <http://www.msss.gouv.qc.ca/professionnels/maladies-chroniques/douleur-chronique/>

³¹ <http://publications.msss.gouv.qc.ca/msss/document-002016/>

Prince Edward Island	<ul style="list-style-type: none"> Activities of the PEI Action Plan to Prevent and Mitigate Opioid-Related Overdoses and Deaths include education and awareness and guidance on opioid prescribing.³²
Newfoundland and Labrador	<ul style="list-style-type: none"> “Improving Health: My Way” six-session program funded by the province to provide self-management support for chronic diseases, including pain.³³ Mandatory safe prescribing course for all physicians practising medicine in the province. Introduction of “Improving Health Together: A Policy Framework for Chronic Disease Prevention and Management in Newfoundland and Labrador”. Chronic pain is included in the framework as one of 4 focus areas.³⁴ Provincial Pain Management Advisory Council created to enable a coordinated and standardized pain management service across the province based on best practices. Main focus is to review national and international leading practices, scan current state of pain management services available within the Regional Health Authorities, identify opportunities to develop standards, guidelines, and protocols for system-wide adoption, coordinate efforts across province, and identify and share key performance indicators.
Nunavut	<ul style="list-style-type: none"> Creation of the Canada-Nunavut Emergency Treatment Fund Bilateral Agreement, which will in part fund enhanced community-based systems offering trauma recovery support, on-the-land healing camps, and other in-community supports³⁵.
Northwest Territories	<ul style="list-style-type: none"> Network of primary care physicians and nurse practitioners are working to improve chronic pain. A single territorial electronic medical record, which provides prescription oversight for controlled substances, has been created. There is a self-management pain program at the tertiary care hospital in Yellowknife and out of Territory chronic pain centres are used for more challenging chronic pain management. The Territory is currently reviewing the data on these referrals to assess if developing a chronic pain program in the NWT would provide patients the benefit of management in-territory when possible.
Yukon	<ul style="list-style-type: none"> The Opioid Pain Management Working Group includes internal and external to government stakeholders who work to identify opportunities to improve health care. One of their seven priority areas is to improve acute and chronic pain management.

Existing pain strategies offer lessons learned

Organizations and jurisdictions across the world have taken action to address the issue of chronic pain (Table 6). International efforts collectively focus on several key elements:

- Pain should be seen and managed as a public health issue, given the prevalence, contributing biopsychosocial factors, and need for coordinated action globally;
- Efficient and effective assessment methods and tools is a key pillar to any strategy, as this can be used to inform the correct care pathway for an individual, as well as keep the individual involved in their care;
- Pain care models should be a flexible pathway in which individuals receive dedicated services reflective of their pain experience and can move up and down the pathway, as dictated by their specific needs;
- There should be improved and accessible pain education for members of the general public as well as health care professionals; and
- The creation of national data collection methodologies should be used to inform a proactive research agenda and a system focused on quality assurance, where effective evidence-based interventions and care services can be identified, implemented, and monitored.

“Chronic pain is a debilitating and disabling condition that is hidden, episodic, variable and unpredictable and requires a level of social awareness that does not stigmatize and exclude those experiencing chronic pain”

³² <https://www.princeedwardisland.ca/en/publication/pei-action-plan-prevent-and-mitigate-opioid-overdoses-and-deaths>

³³ https://www.health.gov.nl.ca/health/chronicdisease/improving_health_my_way.html

³⁴ https://www.health.gov.nl.ca/health/chronicdisease/Improving_Health_Together.pdf

³⁵ <https://www.canada.ca/en/health-canada/services/substance-use/problematic-prescription-drug-use/opioids/responding-canada-opioid-crisis/emergency-treatment-fund/nunavut-2018.html>

Table 6: International pain-related actions

United States of America	Australia	Other International Actions
<p>2010 Patient Protection and Affordable Care Act</p> <p>2011 IOM report on improving pain education, care, and research</p> <p>2016 launched a National Pain Strategy with the following priorities:</p> <ul style="list-style-type: none"> • Population Research • Prevention and Care • Disparities • Service Delivery and Payment • Professional Education and Training • Public Education and Communication <p>2017 established the Pain Management Best Practices Inter-Agency Task Force to issue recommendations to address gaps in chronic and acute pain management</p> <p>Federal research strategy under development to identify gaps in research areas, steer federal initiatives and programs, and highlight topics that should be explored in future studies</p> <p>2019 Pain Management Best Practices Inter-Agency Task Force Report: Updates, Gaps, Inconsistencies, and Recommendations</p>	<ul style="list-style-type: none"> • 2010 National summit to establish an enhanced pain management framework • 2011 launched a National Pain Strategy • 2011 established PainAustralia to implement the National Strategy • 2019 released National Strategic Action Plan for Pain Management setting out new goals and actions for 2018-2021 focused on: <ul style="list-style-type: none"> ○ Pain as a national public health priority ○ Empowered consumers, carers, and communities ○ Well-informed and skilled health practitioners and delivery of care ○ Timely access to consumer-centred best practice pain management ○ Outcomes in pain management are improved and evaluated on an ongoing basis ○ A national research strategy ○ Improved prevention and early intervention strategies ○ Supports for people living with pain to participate in work and community 	<p>England³⁶</p> <p>-National Pain Audit</p> <p>-2009 Chief Medical Officer’s Annual Report – dedicated chapter on pain</p> <p>Jordan³⁷</p> <p>-Jordan Initiative for Pain Management</p> <p>Malaysia³⁸</p> <p>-Pain as the 5th Vital Sign</p> <p>Norway³⁹</p> <p>-National Guidelines for Evaluating Pain</p> <p>Portugal⁴⁰</p> <p>-National Program for Pain Management</p> <p>Wales⁴¹</p> <p>-Designed for People with Chronic Conditions: Service Development and Commissioning Directives, Chronic Non-Malignant Pain</p>

³⁶ https://www.britishpainsociety.org/static/uploads/resources/files/members_articles_npa_2012_1.pdf and https://s3.amazonaws.com/rdcms-iasp/files/production/public/Content/NavigationMenu/Advocacy/InternationalPainSummit/England_EffortsToImprovePain.pdf

³⁷ <https://s3.amazonaws.com/rdcms-iasp/files/production/public/Content/NavigationMenu/Advocacy/InternationalPainSummit/JordanReport.pdf>

³⁸ [http://www.moh.gov.my/moh/resources/Penerbitan/Program%20Bebas%20Kesakitan/Garis%20Panduan/2_in_1_P5VS_Guideline_2018_\(3rd_Ed.\)_.pdf](http://www.moh.gov.my/moh/resources/Penerbitan/Program%20Bebas%20Kesakitan/Garis%20Panduan/2_in_1_P5VS_Guideline_2018_(3rd_Ed.)_.pdf)

³⁹ <https://s3.amazonaws.com/rdcms-iasp/files/production/public/Content/NavigationMenu/Advocacy/InternationalPainSummit/Norway-NationalGuidelinesForEvaluatingPain.pdf>

⁴⁰ <https://s3.amazonaws.com/rdcms-iasp/files/production/public/Content/NavigationMenu/Advocacy/InternationalPainSummit/PortugalPainStrategy.pdf>

⁴¹ <https://s3.amazonaws.com/rdcms-iasp/files/production/public/Content/NavigationMenu/Advocacy/InternationalPainSummit/WalesDirectives.pdf>

Section 5: Summary

There is tremendous momentum for national action on chronic pain. Stakeholders have articulated the main priorities of a national strategy and several provinces are leading efforts to better coordinate and support optimal chronic pain prevention and management within their jurisdictions. Chronic pain appears to be on many provincial agendas. Mapping exercises that outline available services are underway. Evidence is growing around best practices for action based on provincial initiatives in Canada and from international partners working to improve chronic pain management. Defining features for a future national strategy would include awareness building and education, treatment standards and guidelines, self-management strategies, multidisciplinary and specialized pain services, communication and collaboration across jurisdictions, and research. Pain stakeholders across the country have laid the groundwork – national leadership and coordination on the issue of chronic pain could bring this work together for a customized approach that maximizes results for Canadians.

Section 6: Conclusions and next steps

It is clear that chronic pain is a significant public health issue impacting individuals, families, the health system, and society. People living with pain have limited access to the services they require and often face stigma and undue suffering as a result of their condition. This stigma often intersects with other forms of discrimination related to poverty, housing and employment instability, mental illness, race and ethnicity, and other factors further complicating the challenge of living with pain. Canadians living with pain and their loved ones simply deserve better.

There is a range of made-in-Canada approaches and successes that can serve as the foundation for much needed change. A tremendous opportunity exists to leverage and improve existing national data and surveillance in Canada, including deeper explorations of the social context related to chronic pain. Multidisciplinary and interprofessional clinical models and proven education approaches across the health sciences offer promising practices that could be more widely supported. Provincial/Territorial policies and efforts could be better coordinated to reduce duplication of effort, maximize efficiency and implementation of best practices, and ensure people living with pain have the same level of care across Canada. A Canadian pain research agenda is required, together with the infrastructure to support future clinical and system-level change. Ultimately, leadership and resources are needed to amplify, spread, and accelerate current activities, coordinate responses, and address current gaps and inequities. International learning tells us this sort of national leadership and investment is likely to yield significant returns in both human and economic terms.

The Canadian Pain Task Force would like to thank all who participated in this initial assessment of the state of chronic pain in Canada. Priority areas for change have been identified but our work is not done. Using this report as a foundation, the Task Force will continue to review evidence and conduct additional consultations with stakeholders across Canada. This next phase of our work will expand on the areas discussed in this report to identify best and leading practices and elements of an improved approach to the prevention and management of chronic pain in Canada. We will continue to increase awareness of chronic pain and to build relationships and networks for change across the country. Together, by igniting a commitment to change, we can improve the health and well-being of Canadians.

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