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Best Practice Guideline

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Pain: Prevention, assessment and management

Fourth edition

RNAO

Registered Nurses' Association of Ontario
L'Association des infirmières et infirmiers
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Declaration of conflict of interest

In the context of RNAO best practice guideline development, the term "conflict of interest" (COI) refers to situations in which an RNAO staff member or expert panel member's financial, professional, intellectual, personal, organizational or other relationship may compromise their ability to conduct panel work independently. Declarations of COI that might be construed as constituting a perceived and/or actual conflict were made by all members of the RNAO expert panel prior to their participation in guideline development work using a standard form. Expert panel members also updated their COI at the orientation meeting, the recommendation build meetings and prior to guideline publication. Any COI declared by an expert panel member was reviewed by the RNAO best practice guideline development and research team and expert panel co-chairs. No limiting conflicts were identified by members of the expert panel. See "Declarations of Conflicts of Interest Summary" under the "methodology documents" tab on the BPG webpage.

Land acknowledgment

We recognize that RNAO's office is located on the traditional and unceded territory of the Huron-Wendat, Haudenosaunee, and the territory of the Mississaugas of the Credit. This territory was the subject of the Dish with One Spoon Wampum Belt Covenant, which is an agreement between the Iroquois Confederacy and the Ojibwe and allied nations to peaceably share and care for the resources around the Great Lakes. We also acknowledge that Toronto is covered by Treaty 13 under the Toronto Purchase Agreement with the Mississaugas of the Credit. Today, this land is still the home to many First Nations, Inuit and Métis peoples from across Turtle Island and we are grateful to have the opportunity to work on this territory. By making a land acknowledgement, we are taking part in an act of reconciliation, honouring the land and Indigenous heritage which dates back more than 10,000 years. We encourage readers to learn about the land where you reside and the treaties that are attached to it. Land acknowledgements are an act of reconciliation and we must all do our part.

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Pain: Prevention, assessment and management

Fourth edition

Greetings from Dr. Doris Grinspun,

Chief Executive Officer, Registered Nurses' Association of Ontario

The Registered Nurses' Association of Ontario (RNAO) is delighted to present the fourth edition of the clinical best practice guideline (BPG) *Pain: Prevention, Assessment and Management*. Evidence-based practice supports the excellence in service that health providers are committed to delivering every day.

We offer our heartfelt thanks to the many partners who made this BPG a reality. First, and most important, we thank the Government of Ontario that recognized in 1999, RNAO's capacity to lead a program that has gained worldwide recognition and is committed to funding it. We also thank the co-chairs of the RNAO expert panel, for their invaluable expertise and stewardship of this BPG.

- Dr. Céline Gélinas, RN, PhD, FCAN, Full Professor, Ingram School of Nursing, McGill University and Senior Researcher, Centre for Nursing Research and Lady Davis Institute, Jewish General Hospital
- Dr. Lindsay Jibb, RN, PhD, Scientist, The Hospital for Sick Children

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Successful uptake of BPGs requires a concerted effort from educators, clinicians, employers, policy makers, researchers and funders. The nursing and health communities, with their unwavering commitment and passion for excellence in patient care, provide the expertise and countless hours of voluntary work essential to developing new and next edition BPGs. Employers have responded enthusiastically by becoming Best Practice Spotlight Organizations® (BPSO®), joining more than 1,500 service and academic institutions in Canada and abroad, committed to implementing RNAO's BPGs. They have sponsored best practice champions, now numbering more than 150,000 nurses, other health professionals and persons with lived experience – all eager to advance person-centred evidence-based care. BPSOs are also diligently monitoring and evaluating the impact of BPG implementation on patients, organizations, and health system outcomes.

We invite you to share this BPG with nursing and all other team members, client navigators and advisors in the wider health systems and communities in which you work. We have so much to learn from one another. Together, we must ensure that the public have access to and receives the best possible health and wellness services, always.

Doris Grinspun

Dr. Doris Grinspun, RN, BScN, MSN, PhD, LLD (hon), Dr (hc), DHC, DHC, FAAN, FCAN, O.ONT.
Chief Executive Officer and Founder of the Best Practices Guidelines Program
Registered Nurses' Association of Ontario

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How to use this document

Throughout this document, terms that are bolded and marked with a superscript G (^{G}) can be found in the **Glossary of terms** in **Appendix A**.

This **best practice guideline (BPG)**^{G} is a comprehensive document that provides guidance and resources for **evidence-based practice**.^{G} It is not intended to be a manual or "how-to" guide; rather, it is a tool to guide best practices and enhance decision making for **nurses**,^{G} the **interprofessional team**,^{G} educators, health service **organizations**,^{G} academic institutions, and **persons**^{G} and **families**.^{G} This BPG should be reviewed and applied in accordance with the needs of individual health service organizations, academic institutions or other practice settings, and with the preferences of people experiencing **pain**.^{G} This document provides evidence-based **recommendations**^{G} and **good practice statements**^{G} and descriptions of: (a) practice, education and organizational policy; (b) benefits and harms; (c) values and preferences; and (d) **health equity**^{G} considerations.

Nurses, members of the interprofessional team, educators and administrators who lead and facilitate practice changes will find this document invaluable for developing policies, procedures, protocols and educational programs to support service delivery. Nurses and members of the interprofessional team in direct care will benefit from reviewing the recommendations and supporting evidence. Recommendations and good practice statements for **health providers**^{G} are to be implemented according to scope of practice and based on the providers knowledge, skill and judgement.

If your organization(s) (or integrated system of care) is adopting this BPG, the Registered Nurses' Association of Ontario (RNAO) recommends organizations establish change teams whose responsibilities include but are not limited to, the following:

1. Conduct a gap/opportunity analysis: assess your existing policies, procedures, protocols and educational programs in relation to the good practice statements, recommendations and supporting discussions of evidence in this BPG, and identify any strengths, needs or gaps.
2. Note the recommendations and good practice statements applicable to your setting and that can be used to address existing priorities, needs or gaps within your organization(s).
3. Develop a plan for implementing recommendations and good practice statements, sustaining best practices and evaluating **outcomes**^{G} by applying the Social Movement Action Framework (1,2) and/or the Knowledge-to-Action Framework (3).

Implementation science^{G} resources, including the Leading Change Toolkit, are available online (4). A description of the Leading Change Toolkit can be found in **Appendix G**. For more information, see **Implementation strategies** on page 67.

All RNAO BPGs are available for download, free of charge, from the RNAO website. To locate a particular BPG, search by keyword or browse by topic. Additional supplementary materials such as **evidence profiles**^{G} and search strategies related to each recommendation can be found under the "methodology documents" tab on the BPG webpage.

We are interested in hearing your feedback on this BPG and how you have implemented it. Please share your story with us at RNAO.ca/contact.

The two-decade journey of RNAO BPGs is documented in the following resource: Grinspun D, Bajnok I, editors. Transforming nursing through knowledge: best practices for guideline development, implementation science, and evaluation, Indianapolis (IN): Sigma Theta Tau International; 2018.

Purpose and scope

Purpose

RNAO's BPGs are systematically developed, evidence-based documents that include recommendations on specific clinical, healthy work environment and health system topics. They are intended for nurses, members of the interprofessional team in direct care positions, educators, administrators and executives, policy makers, and researchers in health service and academic organizations. **Persons with lived experience**G including their **families**G and **caregivers**G are encouraged to become familiar with the BPG to support their involvement in evidence-based decision-making related to their care. BPGs promote consistency and excellence in clinical care, administrative policies, procedures and education, with the aim of achieving optimal health outcomes for people, communities and the health system. RNAO aims to meet international reporting standards for clinical practice guidelines, including the standards outlined in the Appraisal of Guidelines for Research and Evaluation (AGREE II) Instrument and the Reporting Items for practice Guidelines in HealThcare (RIGHT) statement (5,6).

This BPG replaces the RNAO BPG *Assessment and Management of Pain, Third Edition* (7). This BPG is one of the most highly utilized guidelines by RNAO's **Best Practice Spotlight Organizations® (BPSO®)**.G

The purpose of this fourth edition guideline is to provide nurses and the interprofessional team with evidence-based guidance for the **prevention**,G **assessment**,G and **management**G of all types of pain across the lifespan. This BPG recognizes that people at risk of or experiencing any type of pain across the lifespan and their families are experts in their health and decision-making; collaboration among the interprofessional team, the person receiving care and their family (if applicable) is therefore essential to achieving improved health outcomes.

In October 2022, RNAO convened an expert panel to determine the scope of this next edition BPG and to develop **recommendation questions**G to inform the **systematic reviews (SR)**.G The interprofessional RNAO expert panel included persons with lived experience and individuals with knowledge and experience in clinical practice, education, research and policy across a range of health service organizations, academic institutions, practice areas and sectors. They shared their insights on supporting and caring for people at risk of or experiencing any type of pain across the continuum of care including (but not limited to) primary care, home and community care, acute care, rehabilitation and long-term care (LTC).

A comprehensive review and analysis were completed by the RNAO best practice guideline development and research team and the RNAO expert panel to determine the scope and priority recommendation questions for this BPG (refer to supplementary materials under the "methodology documents" tab on the BPG webpage).

Scope

To determine the scope of this BPG, the RNAO best practice guideline development and research team conducted the following steps:

- reviewed the previous RNAO BPG *Assessment and Management of Pain* (7);
- conducted an environmental scan of existing guidelines and standards on this topic;
- undertook a review of the literature to determine available evidence on multimodal interventions to support the prevention, assessment and management of any type of pain (e.g., acute, chronic, nociceptive, neuropathic, nociplastic) for people across the lifespan;
- led 26 key informant interviews via virtual calls with health providers, persons with lived experience, administrators, educators and researchers;
- held two discussion groups with health providers, managers, administrators and educators; and
- consulted with the expert panel.

This BPG is to be used by nurses and members of the interprofessional team across the health care continuum in all domains of practice caring for persons at risk of experiencing pain. It is also to be used by employers including health service organizations and academic institutions.

Topics outside the scope of this best practice guideline

The following conditions and topics are not covered within the scope of this BPG:

- Pain assessment and management related to specific medical conditions (e.g., cancer, musculoskeletal, cardiac or urological pain)
- Specific pharmacological management (i.e., specific medications, dosing, or prescribing recommendations)

Overview of methodology: Good practice statements and recommendations

Good practice statements and recommendations

This BPG includes both good practice statements and graded recommendations. RNAO BPGs are developed using the **Grading of Recommendations Assessment, Development and Evaluation (GRADE)**^G methods. For more information about the guideline development process, including the use of GRADE methods, refer to supplementary materials under the "methodology documents" tab on the BPG webpage.

Good practice statements

Good practice statements are actionable statements that should be done in practice (8). These are believed to be so beneficial that summarizing the evidence would be a poor use of the expert panel's time and resources (8). Moreover, researchers may no longer be conducting studies on the topic, or the alternative to the action may be unethical or studying them may go against human rights (8,9). Given the high level of certainty that the benefits derived from the good practice statement outweigh the harms, they are not based on a systematic review of the evidence and they do not receive a rating of the certainty in their evidence or a strength (i.e., a rating of conditional or strong, which is further discussed below) (10). This does not diminish certainty in the evidence: while they may be supported by indirect evidence, there is a well-documented clear and explicit rationale connecting the indirect evidence to the statement (8). As such, good practice statements should be interpreted as strong recommendations as there is an underlying assumption that there is high certainty in the benefits of implementing the action (8). It is important to note that good practice statements are not made due to a lack of evidence, nor are they based on expert opinion.

Graded recommendations

Graded recommendations are also actionable statements; however, the recommendation statements are formed based on a direct or indirect link to a body of evidence found through the systematic review process (9). Recommendations are formulated as strong or conditional by considering the certainty in evidence, values and preferences of persons who are impacted by the recommendation, and health equity (see **Interpretation of evidence and recommendation statements** on page 12). The expert panel formulates recommendations using **Evidence-to-Decision (EtD) frameworks**^G through a process of informal consensus facilitated by the RNAO BPG team. Since the recommendations are explicitly linked to the body of evidence, agreement is generally reached (11); if agreement cannot be reached, formal voting methods are used to determine the action and strength of the recommendations (11,12).

Despite the fact that good practice statements and recommendations are developed differently, both provide comprehensive guidance on an action/intervention that should (or should not) be done (9) . Therefore, both good practice statements and recommendations should follow the same process for implementation (see **Implementation strategies** on page 67).

Recommendation questions

Recommendation questions are priority areas of practice identified by the expert panel that require a systematic review of evidence to answer. These recommendation questions inform the **PICO research questions**[G] (population, intervention, comparison, outcomes) that guide the systematic reviews and subsequently inform recommendations. Potential outcomes are brainstormed and prioritized by the expert panel for each recommendation question, and an individual systematic review is conducted for each question, in alignment with GRADE methods (13).

The following are the priority recommendation questions and outcomes developed by the RNAO expert panel that informed the development of the recommendations in this BPG. The outcomes are presented in order of importance, as rated by the expert panel.

- **Recommendation question #1**: Should organizational or health system implementation of a specialized interprofessional pain care team be recommended or not?

  Outcomes: Effective management of pain (including pain intensity or prevalence of severe pain, pain frequency, pain interference), interprofessional team functioning, communication or collaboration, pain interventions delivered by health providers (including documentation), health provider completion of pain assessment (and documentation) and person or family satisfaction.

- **Recommendation question #2:** Should interactive education on pain prevention, assessment and management for students entering health professions be recommended or not?

  Outcomes: Student competency (knowledge and skills that contribute to this competency), student completion of pain assessment (including documentation), pain interventions delivered by students (including documentation) and student confidence or attitude.

- **Recommendation question #3:** Should interactive education on pain prevention, assessment and management for health providers be recommended or not?

  Outcomes: Health provider competency (knowledge and skills that contribute to this competency), pain interventions delivered by health providers (including documentation), health provider completion of pain assessment (including documentation), health provider confidence or attitude and health provider satisfaction.

Note: These priority recommendation questions are condensed versions of the more comprehensive PICO research questions developed by the RNAO expert panel to guide the systematic reviews. For more on the PICO research questions and the detailed process of how the RNAO expert panel determined the priority recommendation questions and outcomes, please refer to supplementary materials under the "methodology documents" tab on the BPG webpage.

Summary of recommendations and good practice statements

This BPG replaces the RNAO BPG *Assessment and Management of Pain* (7).

A summary of how the recommendations in this BPG compare to those in the previous edition is available under the "methodology documents" tab on the BPG webpage.

RECOMMENDATIONS AND GOOD PRACTICE STATEMENTS	STRENGTH OF THE RECOMMENDATION
Screening and assessment	
Good practice statement 1.0: It is good practice for all health providers to conduct initial and ongoing screening and assessment for pain with people in their care. Pain assessment includes a comprehensive, evidence-based assessment using a person- and family-centred care approach.	Not applicable*
Management	
Good practice statement 2.0: It is good practice to provide an integrative approach to pain prevention, assessment and management. An integrative approach (i.e., non-pharmacological and/or pharmacological strategies) includes individualized, person- and family-centred care.	Not applicable*
Interprofessional practice	
Good practice statement 3.0: It is good practice for health service organizations and health systems to implement an interprofessional practice approach to pain prevention, assessment and management.	Not applicable*
Recommendation question #1: Should organizational or health system implementation of a specialized interprofessional pain care team be recommended or not?	
Recommendation 1.0: The expert panel suggests that health service organizations provide access to a specialized interprofessional pain care team for the prevention, assessment and management of pain for people experiencing acute or chronic pain.	Conditional

Education	
Good practice statement 4.0: It is good practice for academic institutions to provide comprehensive education for students entering health professions on pain prevention, assessment and management.	Not applicable*
Recommendation question #2: Should interactive education on pain prevention, assessment and management strategies for students entering health professions be recommended or not?	
Recommendation 2.0: The expert panel suggests that academic institutions implement interactive education for all students entering health professions on pain prevention, assessment and management.	Conditional
Good practice statement 5.0: It is good practice for health service organizations to provide interprofessional and discipline-specific education for all health providers on comprehensive pain prevention, assessment and management.	Not applicable*
Recommendation question #3: Should interactive education on pain prevention, assessment and management for health providers be recommended or not?	
Recommendation 3.0: The expert panel suggests that health service organizations implement opportunities for interactive education for all health providers on pain prevention, assessment and management.	Conditional

*Good practice statements are established, robust practices. They do not have a strength associated. For more information, refer to the **Overview of methodology: Good practice statements and recommendations** on page 8.

Interpretation of evidence and recommendation statements

GRADE provides a transparent framework and a systematic approach for rating the certainty of evidence and determining the strength of recommendations (13).

Certainty of evidence

The certainty of evidence (i.e., the level of confidence we have that an estimate of effect is true) for **quantitative research**^{G} is determined using GRADE methods (13). After synthesizing the evidence for each prioritized outcome, the certainty of evidence is assessed. The overall certainty is determined by considering the certainty of evidence across all prioritized outcomes per recommendation. GRADE categorizes the overall certainty of evidence as *high*, *moderate*, *low* or *very low* (see **Table 1** for the definition of these categories).

Table 1: Certainty of evidence

CERTAINTY OF EVIDENCE	DEFINITION
High	We are very confident that the true effect lies close to that of the estimate of the effect.
Moderate	We are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low	Our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very Low	We have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

Source: Reprinted with permission from: Schünemann H, Brozek J, Guyatt G, Oxman A, editors. Handbook for grading the quality of evidence and the strength of recommendations using the GRADE approach [Internet]. [place unknown: publisher unknown]; 2013 Oct [cited 2018 Aug 31]. Table 5.1, Quality of evidence grades. Available from: https://gdt.gradepro.org/app/handbook/handbook.html#h.9rdbelsnu4iy

Note: The assigned certainty of evidence can be found directly below each recommendation statement. For more information on the process of determining the certainty of the evidence and the documented decisions made by RNAO guideline development methodologists, please refer to supplementary materials under the "methodology documents" tab on the BPG webpage.

Strength of recommendations

Recommendations are formulated as *strong* or *conditional* by considering the *certainty of evidence* and the following key criteria (see **Discussion of evidence** for definitions):

- balance of benefits and harms
- values and preferences
- health equity

According to Schünemann et al., "A strong recommendation reflects the expert panel's confidence that the desirable effects of an intervention outweigh its undesirable effects (strong recommendation *for* an intervention) or that the undesirable effects of an intervention outweigh its desirable effects (strong recommendation *against* an intervention)" (13). In contrast, "A conditional recommendation reflects the expert panel's confidence that the desirable effects probably outweigh the undesirable effects (conditional recommendation for an intervention) or undesirable effects probably outweigh desirable effects (conditional recommendation against an intervention), but some uncertainty exists" (13). **Table 2** outlines the implications of strong and conditional recommendations.

When the overall certainty of the evidence is high or moderate, expert panel members can be confident in the effects of the intervention of interest and will support a strong recommendation. In addition, expert panel members need to ensure that the benefits outweigh the harms, and that there is reasonable confidence and limited variability in the values and preferences of persons (14). However, when the overall certainty of the evidence is low or very low, there is uncertainty regarding the impact of the intervention of interest, and expert panel members should expect conditional recommendations (14).

Table 2: Implications of strong and conditional recommendations

POPULATION	STRONG RECOMMENDATION	CONDITIONAL RECOMMENDATION
For health providers	▪ The benefits of a recommended action outweigh the harms. Therefore, most persons should receive the recommended course of action. ▪ There is little variability in values and preferences among persons in this situation. ▪ There is a need to consider the person's circumstances, preferences and values	▪ The benefits of a recommended course of action probably outweigh the harms. Therefore, the majority of persons could receive the recommended course of action. ▪ There is greater variability in values and preferences, or there is uncertainty about typical values and preferences among persons in this situation. ▪ There is a need to consider the person's circumstances, preferences and values more carefully than usual.

POPULATION	STRONG RECOMMENDATION	CONDITIONAL RECOMMENDATION
For persons receiving care	▪ Most persons would want the recommended course of action and a small portion would not.	▪ The majority of persons in this situation would want the suggested course of action, but many would not.
For policy-makers	▪ The recommendation can be adapted as policy in most situations.	▪ Policy-making will require substantial debate and involvement of many others impacted by the change. Policies are also more likely to vary between regions.
For researchers	▪ The recommendation is supported by credible research or other convincing judgments that make additional research unlikely to alter the recommendation.	▪ The recommendation is likely to be strengthened by additional research. An evaluation of the conditions and criteria that determined the conditional recommendation will help to identify possible research gaps.

Source: Adapted with permission from: Schünemann H, Brozek J, Guyatt G, Oxman A, editors. Handbook for grading the quality of evidence and the strength of recommendations using the GRADE approach [Internet]. [place unknown: publisher unknown]; 2013 Oct [cited 2020 May 11]. Table 6.1, Implications of strong and weak recommendations for different users of guidelines. Available from: https://gdt.gradepro.org/app/handbook/handbook.html#h.fueh5iz0cor4

Note: The strength of each recommendation statement is detailed directly below it and in the **Summary of recommendations and good practice statements**. For more information on the process used by the expert panel to determine the strength of each recommendation, please refer to supplementary materials under the "methodology documents" tab on the BPG webpage.

Discussion of evidence

The Discussion of evidence that follows each recommendation includes the following main sections.

1. **Benefits and harms:** Identifies the potential desirable and undesirable outcomes reported in the literature when the recommended practice is used. Content in this section solely includes research from the systematic review.
2. **Values and preferences:** Denotes the relative importance or worth placed on health outcomes derived from following a particular clinical action from a person-centered perspective. Content for this section may include research from the systematic reviews and, when applicable, observations and/or considerations from the RNAO expert panel.
3. **Health equity:** Identifies the potential impact that the recommended practice could have on health across different populations, settings and/or the barriers to implementing the recommended practice in particular settings. This section may include research from the systematic reviews and, when applicable, observations and/or considerations from the RNAO expert panel.
4. **Expert panel justification of recommendation:** Provides a rationale for why the expert panel made the decision to rate a recommendation as strong or conditional.
5. **Implementation tips:** Highlights practical information for nurses and members of the interprofessional team to support implementation in practice. This section may include supporting evidence from the systematic review and/or from other sources (e.g., the RNAO expert panel).
6. **Supporting resources:** Includes a list of relevant resources (e.g., websites, books and organizations) that support the recommendations. Content listed in this section was assessed based on five criteria: relevancy, credibility, quality, accessibility and timeliness of publication (published within the last 10 years). Further details about this process and the five criteria are outlined in the supplementary materials under the "methodology documents" tab on the BPG webpage. The list is not exhaustive and the inclusion of a resource in one of these lists does not imply an endorsement from RNAO. Some recommendations may not have any identified supporting resources.

Best practice guideline evaluation

As you implement the recommendations and good practice statements in this BPG, we ask you to consider how you will monitor and evaluate their impact.

The Donabedian model, which informs the development of indicators for evaluating quality health care, includes three categories: structure, process and outcome (15).

> **Structure** describes the required attributes of the health system or health service organization to ensure quality care. It includes physical resources, human resources, and information and financial resources.
>
> **Process** examines the health-care activities being provided to, for and with persons or populations as part of the provision of quality care.
>
> **Outcome** analyzes the effect of quality care on the health status of persons and populations, health workforce, health service organizations or health systems (15).

For more details, see the **Monitor knowledge use** and **Evaluate outcomes** sections in the Leading Change Toolkit (4).

The following indicators have been developed to support evaluation and quality improvements in health service and academic organizations. Consider **Tables 3**, **4**, and **5**, which provide a list of structure, process and outcome indicators along with their operational definitions, numerators and denominators. Each table also identifies if the indicator aligns with other indicators in local, provincial, national and/or international organizations. Alignment with organizations is determined by comparing the following criteria with the developed indicators: the operational definition; if the indicator is nursing sensitive; and the inclusion/exclusion criteria. Depending upon the level of alignment, an indicator may be described to have full, partial or no alignment with external organizations. Indicators may be adopted (in their current state) or adapted (modified) from organizations.

The following indicators will support quality improvement and evaluation. Select the indicators most relevant to the changes being made in practice, education and/or policy, based on BPG recommendations and good practice statements prioritized for implementation.

Table 3 provides structure indicators associated with specific good practice statements that are related to human resources, education or other organizational factors.

Table 3: Structure indicators

GOOD PRACTICE STATEMENT	STRUCTURE INDICATORS	ALIGNMENT WITH INDICATORS IN OTHER ORGANIZATIONS
Good practice statement 5.0	Percentage of health providers who received education on comprehensive pain prevention, assessment and management ***Numerator:*** *Number of health providers who received education on comprehensive pain prevention, assessment and management* ***Denominator:*** *Total number of health providers*	New

Table 4 provides a list of process indicators that support the evaluation of practice changes during implementation and corresponding process improvements. Process indicators are derived from BPG recommendations and good practice statements.

Table 4: Process indicators

RECOMMENDATION OR GOOD PRACTICE STATEMENT	PROCESS INDICATORS	ALIGNMENT WITH INDICATORS IN OTHER ORGANIZATIONS
Good practice statement 1.0	Percentage of encounters where persons received documented screening for the presence of pain ***Numerator:*** *Number of encounters where persons received documented screening for the presence pain* ***Denominator:*** *Total number of encounters*	Adapted from Nursing Quality Indicators for Reporting and Evaluation® (NQuIRE®) Partial alignment with Partnership for Quality Measurement (PQM) and Resident Assessment Instrument Minimum Data Set (RAI MDS)

RECOMMENDATION OR GOOD PRACTICE STATEMENT	PROCESS INDICATORS	ALIGNMENT WITH INDICATORS IN OTHER ORGANIZATIONS
Good practice statement 1.0	Percentage of persons who received a documented comprehensive assessment for pain **Numerator:** *Number of persons who received a documented comprehensive assessment for pain* ***Denominator:*** *Total number of persons who screened positive for pain*	Adopted from NQuIRE Full alignment with PQM and RAI MDS Partial alignment with Institute for Clinical Evaluative Sciences (ICES)
Good practice statement 2.0	Percentage of persons with a plan of care developed through a person- and-family centred integrative approach to pain management ***Numerator:*** *Number of persons with a plan of care developed through a person- and-family centred integrative approach to pain management* ***Denominator:*** *Total number of persons who received care*	Adapted from NQuIRE Partial alignment with Better Outcomes Registry of Ontario (BORN), ICES, PQM, RAI MDS and World Health Organization (WHO)
Recommendation 1.0	Percentage of persons who received care from a specialized interprofessional pain care team ***Numerator:*** *Number of persons who received care from a specialized interprofessional pain care team* ***Denominator:*** *Total number of persons who had documented pain*	New

Table 5 provides outcome indicators to assess the impact of implementing evidence-based practice changes. Outcome indicators are associated with outcome(s) of the research question(s) and/or reflections of outcomes of all recommendations and good practice statements.

Table 5: Outcome indicators

OUTCOME INDICATORS	ALIGNMENT WITH INDICATORS IN OTHER ORGANIZATIONS
Percentage of persons who had documentation that their pain intensity was severe ***Numerator:*** *Number of persons who had documentation that their pain intensity was severe* ***Denominator:*** *Total number of persons who had documented pain*	Adopted from NQuIRE Full alignment with ICES Partial alignment with Canadian Institute for Health Information (CIHI), Ontario Health, PQM and Statistics Canada
Percentage of persons with pain, who achieved desired pain management goals ***Numerator:*** *Number of persons with pain, who achieved desired pain management goals* ***Denominator:*** *Total number of persons with a documented care plan for pain management*	Adapted from NQuIRE Partial alignment with PQM
Percentage of persons with pain, who maintained desired pain management goals ***Numerator:*** *Number of persons with pain, who maintained desired pain management goals* ***Denominator:*** *Total number of persons with a documented care plan for pain management*	Adapted from NQuIRE Partial alignment with PQM
Percentage of persons with worsened pain ***Numerator:*** *Number of persons with worsened pain* ***Denominator:*** *Total number of persons who had documented pain*	Adapted from NQuIRE Partial alignment with CIHI and ICES

OUTCOME INDICATORS	ALIGNMENT WITH INDICATORS IN OTHER ORGANIZATIONS
Percentage of persons who had documentation that they experienced effective pain relief ***Numerator:*** *Number of persons who had documentation that they experienced effective pain relief* ***Denominator:*** *Total number of persons who had documented pain*	Adapted from NQuIRE
Percentage of persons with chronic pain who had documentation that pain affected their activities of daily living (ADLs) ***Numerator:*** *Number of persons with chronic pain who had documentation that pain affected their ADLs* ***Denominator:*** *Total number of persons who had documented chronic pain*	Full alignment with ICES and Statistics Canada Partial alignment with PQM

Other RNAO resources for the evaluation and monitoring of BPGs:

- Nursing Quality Indicators for Reporting and Evaluation® (NQuIRE®), a unique international data system housed at RNAO, allows Best Practice Spotlight Organizations® (BPSOs®) to monitor and evaluate the impact of BPG implementation. The NQuIRE data system collects, compares and reports data on human resource structure indicators as well as guideline-specific, nursing-sensitive structure, process and outcome indicators. NQuIRE indicator definitions are aligned with available administrative data and existing indicators wherever possible, adhering to a "collect once, use many times" principle. By complementing other established and emerging repositories, NQuIRE strives to leverage reliable and valid measures, minimize the reporting burden and align evaluation measures to enable comparative analyses. The NQuIRE data system was launched in August 2012 to create and sustain evidence-based practice cultures, optimize the safety of persons, improve health outcomes and engage staff in identifying relationships between practice and outcomes to advance quality and advocate for resources and policy that support best practice changes (16).
- RNAO Clinical Pathways™ are digitized recommendations and good practice statements embedded into electronic medical records through a third-party software. Currently, these clinical pathways are available to all Canadian LTC homes. The ability to link structure and process measures with specific outcome measures helps determine the impact of BPG implementation on specific health outcomes.

Background context

Pain

The International Association for the Study of Pain (IASP) defines pain as: "an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage" (17). Pain is both complex and multifactorial. The IASP discusses the following six additional key notes for the definition of pain:

- "Pain is always a personal experience that is influenced to varying degrees by biological, psychological, and social factors";
- "Pain and nociception are different phenomena. Pain cannot be inferred solely from activity in sensory neurons";
- "Through their life experiences, individuals learn the concept of pain";
- "A person's report of an experience as pain should be respected";
- "Although pain usually serves an adaptive role, it may have adverse effects on function and social and psychological well-being"; and
- "Verbal description is only one of several behaviors to express pain; inability to communicate does not negate the possibility that a human or a nonhuman animal experiences pain" (17).

In 2021, Health Canada released a ground-breaking report entitled *An Action Plan for Pain in Canada* laying out Canada's goals and strategies to help address increasing pain rates across the country (18). The report recognizes that pain is a public health priority and focuses on ensuring that "health professionals have the knowledge, skills and educational supports to appropriately assess and manage pain based on population needs" (18). It is important to note these goals when understanding the importance of pain as a current issue in health systems across Canada.

Globally, it is estimated that one in five adults live with pain and that another one in ten are diagnosed with **chronic pain**^{G} annually (19–21). Bhadelia et al. explain that access to pain relief could alleviate more than 6 billion days of health-related suffering each year (22). In Canada, an estimated 7.6 million people (across the lifespan) live with chronic pain, many of whom report it adversely affecting some or most of their daily activities (18). With Canada's aging population, the number of individuals impacted by pain is expected to increase; Health Canada predicts that the number of Canadians living with chronic pain will rise by 17.5 per cent from 2019 to 2030 due to population growth (18). Pain is listed as one of the top five reason why persons visit their primary care providers in Canada (23). Effectively managing pain has been shown to decrease the number of times that health-care systems are utilized (i.e., fewer emergency department visits per year), and therefore has a significant impact on lowering our overall health-care costs (18).

Types of pain

There are several different types of pain. Pain is often categorized into acute, chronic, nociceptive, neuropathic and nociplastic pain (17):

- **Acute pain**^{G} happens suddenly, starts out as sharp or intense and serves as a warning sign of disease or threat to the body (24). Acute pain tends to be caused by injuries, illnesses, surgeries or other medical procedures or traumas (24). Acute pain lasts less than six months and usually disappears when the underlying cause is treated or healed (24).

- Chronic pain persists or recurs for longer than three months, and often becomes the sole or predominant clinical problem in some people (25). Chronic pain is multifactorial: biological, psychological and social factors contribute to the pain syndrome (25). The *International Classification of Diseases, Eleventh Revision (ICD-11)*, by the World Health Organization (WHO) breaks chronic pain into the following sub-types: chronic primary pain, chronic cancer-related pain, chronic post-surgical or post-traumatic pain, chronic secondary musculoskeletal pain, chronic secondary visceral pain, chronic neuropathic pain and chronic secondary or orofacial pain (25).
- **Nociceptive pain**G arises from actual or threatened damage to non-neural tissue and is due to the activation of nociceptors (17).
- **Neuropathic pain**G is caused by a lesion or disease of the somatosensory nervous system (17).
- **Nociplastic pain**G arises from altered nociception despite no clear evidence of actual or threatened tissue damage causing the activation of peripheral nociceptors or evidence of disease or lesion of the somatosensory system causing the pain (17).

Mixed painG is an evolving concept and is currently defined as a "complex overlap of the different known pain types, (e.g., nociceptive, neuropathic and nociplastic) in any combination, acting concurrently and/or simultaneously to cause pain in the same body area. Either mechanism may be more clinically predominant at any point in time. Mixed pain can be acute or chronic" (26).

Total painG refers to the multidimensional nature of pain that includes the physical, psychological, behavioural, social and spiritual elements of the pain experience. This is a pain concept particularly relevant to people experiencing life-limiting illnesses and their families, and requires health providers to understand that a holistic approach to pain is required to obtain optimal pain relief and that all aspects of pain need to be addressed (27).

Pain prevention

The prevention of pain focuses on evidence-based primary, secondary and tertiary pain prevention strategies and interventions.

- Primary prevention strategies focus on strategies and interventions to prevent acute pain, such as post-surgical pain (e.g., pharmacotherapy, physiotherapy, massage, relaxation and education).
- Secondary strategies focus on preventing the development of chronic pain (e.g., time-contingent exercise and medication).
- Tertiary pain prevention focuses on strategies to reduce the impact of chronic pain (e.g., interprofessional pain teams) (28).

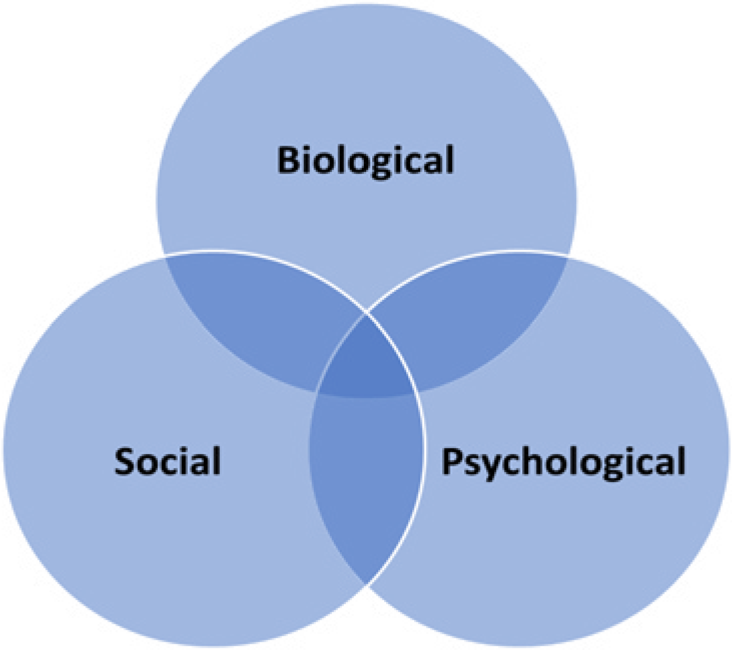
Psychological and social determinants of pain

The IASP states that pain is a multi-dimensional phenomenon with biological, psychological and social/environmental factors (see **Figure 1**) and all persons should be assessed and treated using this framework (28). The social communication model of pain provides an inclusive framework for organizing and considering these facets and their relationships (29) and recognizes that the three factors contributing to pain — biological, psychological and social — are interdependent.

- Biological factors of pain involve genetics, magnitude of nociception, tissue injury, damage or disease, physical health problems, immune function, neurobiology and neurochemistry.
- Psychological factors of pain include cognition, emotion, personality, attitude, values and personal beliefs about pain.
- Social factors include sociocultural factors that may influence pain such as a person's living situation, poverty level, educational status or socioeconomic status (30).

All nurses and health providers play a significant role in preventing, assessing and managing individual's pain across the lifespan in a variety of health-care settings. Preventing, assessing and managing pain requires a multifactorial approach which includes looking at biological, psychological and social factors and including both pharmacological and **non-pharmacological interventions (NPI)**^{G} in care plans.

Figure 1: Biopsychosocial model of pain



Source: Reprinted with permission from: What is the biopsychosocial model of pain? In: European Pain Federation (EFIC) [Internet]. Brussels (BE): EFIC; c2022 [cited 2024 Sep 9]. Available from: https://europeanpainfederation.eu/what-is-the-bio-psycho-social-model-of-pain/

Health equity considerations

Health providers should be aware of health equity considerations when preventing, assessing and managing pain across all populations, particularly those from **underserved**^{G} communities and those that identify as **Black, Indigenous and People of Colour (BIPOC)**^{G}. The history of pain involves stereotyping and racism as early as the 1800s when physicians and scientists believed that reactions to painful stimuli were linked to personality, race and gender (31). Unfortunately, many harmful attitudes still exist today due to structural racism that remains pervasive in society (32). Health providers should be aware of their personal implicit and observer biases that may contribute to discrimination within their care (32). Implicit biases involve associations outside conscious awareness that lead to a negative evaluation of a person based on irrelevant characteristics such as race or gender (33). Whereas observer biases refer to an investigator's (in the case of research) or a health provider's prior knowledge of the topic or knowledge of an individual's exposure or disease status, and how that impacts the care they provide (34).

Health providers should be cognizant that certain painful conditions are more prevalent among certain races and genders, and that prior research shows that these communities are less likely to be given proper treatment due to racism, sexism and implicit biases. For example, in those with sickle cell disease in the United States, 90 per cent are African American, 3-9 per cent are Hispanic American, and 1-7 percent are of other races (35). Yet research shows that Black people are 22 per cent less likely than white people to get pain medication, more likely to be strictly monitored for opioid misuse and less likely to be granted medical workplace accommodations for their pain (36-38,312). Additionally, women are more represented in underdiagnosed or medically controversial conditions such as fibromyalgia and are more exposed to providers' prejudices during health-care interactions (39). For example, research shows that health providers consider women with chronic pain, especially women of colour, to have exaggerated their pain levels and that health providers are more likely to diagnose psychological causes of their pain (39). Infants, both term and pre-term, are susceptible to pain and to undertreatment due to their inability to report pain and misconceptions about their ability to feel pain (40). Additional subgroups who are particularly vulnerable to pain and considerations for their care are detailed in **Good practice statement 1.0**.

When managing pain, it is important that health providers incorporate principles of equity and recognize the **social determinants of health**^{G} (41). Vast health inequities exist across the globe, and not all individuals have equal access to health services and treatment options such as pain medications (41,42). Additionally, if persons do not have access to clean water, proper nutrition and shelter, managing pain becomes extremely difficult. Persons with mental health issues, persons who use substances, and persons living with disabilities suffer discrimination with pain management (43). For example, researchers have found that persons in hospital who report illicit substance use are far more likely to be denied pain medication during their stay compared to those who do not report substance use (44).

Additionally, several health system issues impede access to specialized pain care services, including financial barriers (lack of public funding and how providers are reimbursed) and geographic barriers (most specialized pain care services are in urban centres in tertiary hospital settings); which creates additional barriers to access for people and providers in rural areas (313). As well, people face lengthy wait times to be seen by health providers while health providers face a lack of clearly defined referral pathways (i.e., referring providers may not know the most appropriate clinic) (45,313). Health providers should also remain vigilant regarding the intersectionality of pain treatment since research has found disparities in care when considering race, socioeconomic status, gender and age in combination (38,46,47). These are just some of the many health equity considerations that all health providers should be knowledgeable about when preventing, assessing and managing pain. These concepts are reiterated in the health equity sections throughout this BPG.

Cultural safety

As is stated in the IASP definition of pain, how individuals feel and interpret pain has a personal component. Different cultures and religious groups have different expectations, norms and rituals for pain management, disease and death (48,312). Some cultures and religions place a greater emphasis on spiritual and non-medical approaches to pain management (48). Nurses and other health providers must be aware of different cultural norms in clinical practice and be cognizant that they are providing culturally safe care when preventing, assessing and managing pain. As well, health providers must be open to working with persons from diverse cultural and religious backgrounds and ensure that their care plan is respectful of their belief systems. This may involve online diversity and cultural sensitivity training or the use of an interprofessional team (if available), including spiritual care providers, **Indigenous**^{G} navigators and social workers.

Conclusion

The purpose of this new edition best practice guideline is to provide updated evidence-based recommendations to inform nurses and health providers about the prevention, assessment and management of pain, as well to provide information to individuals and their families and caregivers. Pain, especially acute and chronic pain, have become increasingly more prevalent across all settings and populations. This guideline also includes specific considerations (e.g., important aspects of care for health equity seeking populations), implementation tips and resources for nurses and health providers to facilitate the prevention and management of pain.

Recommendations and good practice statements

SCREENING AND ASSESSMENT

GOOD PRACTICE STATEMENT 1.0:

It is good practice for all health providers to conduct initial and ongoing screening and assessment for pain with people in their care. Pain assessment includes a comprehensive, evidence-based assessment using a person- and family-centred care approach.

Pain screening[G] (to identify the presence of pain) and assessment (to evaluate the nature of pain) are both essential skills for health providers working in any clinical setting. Regular screening, assessment and reassessment of pain are considered part of ongoing health provider practice, but their consistent implementation into practice can be challenging and may not always occur on a regular basis. According to the IASP, pain assessment and measurement is one of four pain education core competencies for health providers (49). Conducting an initial and/or ongoing screening and assessment of pain before developing a plan of care or implementing any pain interventions, is a standard of professional practice (50). This good practice statement did not require a review of the evidence, but it is important to communicate it to nurses and health providers.

People can experience pain differently across the lifespan. As there are large benefits and very few harms associated with regular pain screening and assessment, nurses and members of the interprofessional team have an obligation to appropriately assess and effectively manage pain for all individuals in their care (see **Table 6**). Health providers require the knowledge, skills and educational support to appropriately assess (and manage) pain across populations (18).

Specific populations who are unable to self-report pain include the following:

- infants, young children (toddlers);
- people living with intellectual and developmental disabilities (IDD);
- people who are critically ill/unconscious;
- people with acute traumatic brain injury or stroke;
- older adults living with advanced dementia; and
- people at the end of life (51).

Pain experienced by infants and young children during hospital care is often under-recognized and undertreated (52). For pediatric pain screening and assessment, consider the following factors: age, development, cognitive and communication abilities, cultural identity, preferences and/or pain characteristics (53). Previous trauma and pain experiences can impact how children experience pain (53).

Pain experienced by adults living with IDD is often difficult to identify, assess and measure and their pain is also underrecognized and undertreated (54). In a critical care setting, many factors can alter verbal communication including tracheal intubation, reduced/altered level of consciousness, sedation, neurological conditions such as tetraplegia and/or the administration of neuromuscular-blocking agents (55). In addition, individuals with acute traumatic brain injury or stroke are another population that requires specific training to appropriately assess and manage their pain, as fatigue or cognitive injury can impair their ability to self-report (51).

Chronic pain is highly prevalent in older adults in Canada and occurs in 1 of every 3 people over the age of 65 years, increasing with age; chronic pain prevalence is highest in adults 85 years of age and older (18,51,56). Older adults residing in LTC homes are frequently underassessed and undertreated for pain, particularly those living with dementia (57). Inadequate pain screening and assessment can result in unnecessary suffering and missed opportunities to provide early integrated pain prevention and management interventions and improve the quality of life of older adults (57).

Once screening has identified the presence of pain, there are several factors to consider when conducting a comprehensive, evidence-based and **person- and family-centred**[G] pain assessment. Assessment of pain is ongoing, tailored to the person receiving health-care services and should be documented regularly in the person's health record according to organizational policy (53). The tools and scales used to measure various pain outcomes most commonly measure pain intensity and are considered unidimensional as they measure one aspect of the pain experience. However, further exploration of the characteristics and instigating and alleviating factors of pain can be explored through **comprehensive pain assessment**[G] mnemonics such as the OPQRSTUV mnemonic for pain assessment (58) (see **Appendix C**). For chronic pain, assessment tools often use a multidimensional approach — where the assessment tool considers not only pain intensity but also other important factors such as the impact of pain on activities of daily living, functional abilities and quality of life.

When the individual being screened and assessed for pain is able to communicate, validated, self-reporting tools are appropriate to use since self-reporting is the reference standard measure for pain assessment (51,56,59). When an individual is unable to communicate, other appropriate, validated observational (behavioural) pain assessment tools are required to screen and assess for pain (57). The pain assessment tool used should be developmentally and cognitively appropriate for the person being screened and assessed (49). Refer to **Table 6** for further information on pain assessment in specific populations and contexts. See **Appendix D** for pain screening and assessment tools.

Screening and assessment for other types of pain such as neuropathic, nociplastic or mixed pain can be more complex (60). Early screening and identification are vital since additional diagnostic tests, tools and imaging are often required to identify the cause of the pain experience and then facilitate an evidence-based approach to pain management (61).

Implementation tips

Table 6: Pain screening and assessment by population and context

POPULATION	DETAILS OF PAIN SCREENING AND ASSESSMENT
Adults	▪ Frequency of pain assessments and ongoing reassessments in an acute care hospital setting are to be guided by the type of pain experienced, the medical or surgical procedure performed, whether a change in the medical or clinical condition has occurred, and whether there are other health conditions experienced by the hospitalized individual (see the **When to screen and assess for pain?** section below) (62). ▪ In critical care settings: ▫ Conduct adult pain assessments and reassessments regularly; every 2 to 4 hours at a minimum. More frequent reassessment may be required depending on the clinical condition (51,63). ▫ Attempt self-report assessment of pain (yes/no response by head nod, hand grasp or eye blink) (51). ▫ Solicit proxy reporting of pain (from family, parents or caregivers) and behavioural/activity changes (51). ▫ Observe the behaviour of the person. If they are unable to self-report, assess for pain using an appropriate, validated observational (behavioural) assessment tool (51). ▫ Minimize emphasis on changes in vital signs alone (e.g., respiratory rate, blood pressure, heart rate) as an indication of pain (51,64).

POPULATION	DETAILS OF PAIN SCREENING AND ASSESSMENT
Pre-term infants, term infants and children	▪ The frequency of pain assessment and ongoing reassessment in pediatric acute care settings can be guided by the child's health condition and the reason for their visit (diagnostic imaging, medical or surgical procedures or treatments) (65,314). ▪ When considering assessment tools for infants and children, ensure the use of an age-appropriate validated tool and follow organizational policy (53). ▪ For pediatric pain screening and assessment, consider the following factors: age, development, cognitive and communication abilities, cultural identity, preferences and pain characteristics (53). ▪ Self-report tools can be utilized to measure a child's self-reported pain experience (pain intensity) (53). For young children, strategies to facilitate pain assessment and accurate measurement of pain include: ▪ Being aware that some children aged 3-4 years of age or older, can self-report their pain (53). ▪ Asking most children aged 6 and older (if able) to verbally report their pain intensity using a validated numerical or faces rating scale. ▪ Using terminology such as "hurt" rather than "pain" and asking questions related to pain intensity that have yes/no responses for children aged 3 to 4 years and older. Where feasible, assess pain intensity using terminology such as "little, medium or big". ▪ Using augmentative and assistive communication technologies to assess pain scales with children who are unable to communicate verbally (53). For pre-term infants, term infants and young children unable to self-report, consider the following: ▪ Be aware of potential sources of pain. ▪ Attempt self-report assessment of pain (by 3 years of age, some children can report the experience [ow, ouch, ache]). ▪ Observe behaviour of the neonate, infant or child (facial expression, body activity/motor movement, and crying/verbalization). ▪ Use a validated observational (behavioural) pain assessment tool, appropriate for the age, type of pain and clinical condition of the neonate, infant or child. ▪ Solicit proxy reporting of pain (from parents or caregivers); and observe parental efforts to console the child (rocking, touch, music, and verbal reassurance) (51,314). ▪ For additional guidance on assessment and documentation of pediatric pain, refer to the pediatric pain management standard from the Health Standards Organization (53).

POPULATION	DETAILS OF PAIN SCREENING AND ASSESSMENT
People living with intellectual and developmental disability (IDD)	▪ Be aware of potential sources of pain as people living with IDD experience a higher pain burden (51). ▪ Attempt self-reporting using a developmentally appropriate, self-reporting pain assessment tool (51). ▪ Observe the behaviour of the person being assessed for pain, as behaviours can vary (increase, dampen or decrease) by individual and health condition. Sensory function is intact for most people living with IDD. Variations in pain expression can be related to motor and communication capabilities (51). ▪ Use a developmentally appropriate observational (behavioural) tool to assess pain. ▪ Solicit proxy reporting of pain (from parents, children, caregivers), being mindful that proxy reporting can underestimate the pain experience (51). ▪ Work closely with caregivers to identify changes in behaviour and other indicators of distress (54).

Older adults	▪ Older adults living with dementia can experience an increase in behavioural and psychological symptoms of dementia when they experience new pain or worsening chronic pain (57).
	▪ Health providers can ask people living with dementia if they are experiencing any pain, aching or soreness. However, many residents living with dementia may not be able to self-report or verbally describe their pain (56).
	▪ Health providers can solicit proxy reporting of pain (from parents, children, caregivers), being mindful that proxy reporting can underestimate or overestimate the pain experience (51)
	▪ Consideration should be given when assessing people living with any form of aphasia (e.g., expressive aphasia), Parkinson's disease, depression or other health conditions that may influence their ability to communicate.
	▪ An observational (behavioural) tool is required to assess residents living with dementia who experience a sudden change in behaviour or clinical condition (57).
	▪ All residents in LTC homes in Ontario must be formally assessed for pain on admission and at least weekly thereafter. Many residents will often require more frequent pain screening, assessment and reassessment.
	  ▫ Document the treatment plan within 24 hours of identification of the pain problem.
	  ▫ Use a validated pain assessment tool appropriate to the individual's capacity to communicate such as a self-report or an observational (behavioural) tool.
	  ▫ All members of the health-care team (regulated and unregulated) can assess residents in LTC for pain (57).

POPULATION	DETAILS OF PAIN SCREENING AND ASSESSMENT
Health-equity deserving populations	▪ Health providers must remain vigilant of and reflect on their own implicit and explicit biases when working with underserved persons and/or BIPOC populations (66). ▪ Health providers are to provide culturally-specific care by collaborating with the person to understand their preferred communication style, coping strategies and approach to health care (66). ▪ Equity-focused care needs to be a priority for all pain assessments. Equity-focused care is characterized as culturally safe, trauma and violence informed, and has a harm reduction focus (see EQUIP resource in **Appendix B**) (67). ▪ Indigenous Peoples in Canada have a different perspective of pain from the Western lens of pain as solely a physical ailment. Health providers are to collaborate with Indigenous communities, learn and listen to ensure that their care is culturally safe, appropriate to their traditions and beliefs, and addresses any barriers to equitable treatment of pain (see LISTEN resource in **Supporting resources**) (68,69). ▪ Health service organizations are to provide health providers with access to reliable and secure translation services for non-English-speaking individuals (70).
Considerations for pain assessment in primary care	▪ Be aware of potential sources of pain for the population being assessed (51). ▪ Many people experience chronic pain from a range of health conditions. Health providers are to consider additional pain assessment tools that measure relevant pain outcomes important to people living with chronic pain. ▪ Be aware of baseline medication people may be taking for pre-existing pain conditions (e.g., chronic pain). ▪ Assessing post-operative pain is unique due to the use of analgesia (e.g., nerve blocks, epidurals, patient-controlled analgesia (PCA) pumps). Patients have also reported that the numerical rating scale of pain does not fully encompass the magnitude and quality of their pain after surgery (71). While a validated tool has not yet been developed, it is suggested that health providers use a combination of pain assessment tools to assess post-operative pain (71).

POPULATION	DETAILS OF PAIN SCREENING AND ASSESSMENT
General tips from the expert panel	▪ Use validated pain assessment tools that are appropriate to the person's stage of development and/or communication capacity. ▪ Self-reporting tools are the reference standard measure of pain and are favoured whenever possible. ▪ Ensure consistent use of appropriate validated tool(s) among interprofessional health providers. ▪ Encourage families to be part of the pain assessment process. ▪ Health providers are to educate themselves regarding special considerations for underserved populations. ▪ Involve family and/or caregivers to identify pain when someone cannot self-report. In LTC for example, family is often the only consistent team member based on their intimate knowledge of the person. ▪ Further development of specialized pain assessment tools for populations unable to self-report, such as neonates, infants and young children, people living with IDDs, those who are critically ill/unconscious, people with acute traumatic brain injury or stroke, older adults living with advanced dementia and people nearing the end of life. ▪ Assess pain interference (i.e., pain related disability) and other outcomes important to people living with chronic pain. Consider assessment of the following measures: pain, physical functioning, emotional functioning, participant ratings of improvement and satisfaction with treatment, symptoms and adverse events, and participant disposition. ▪ Ensure standardized documentation of pain assessment and re-assessment in the electronic medical record (EMR) or hybrid format. ▪ Health service organizations are to embed standardized pain assessment and documentation tools appropriate to the population being assessed into EMR systems. ▪ Where possible, health service organizations are to embed prompts within EMRs for health providers to conduct pain assessments, re-assessments and escalation of worsening pain score reporting.

When to screen and assess for pain?

At a minimum, screening for pain is to occur during an initial nursing or health provider assessment. In addition, screening for pain is to occur:

- on admission to any health service organization;
- during all new encounters with a health provider (e.g., out-patient, clinic appointments);
- once per shift for in-patients or residents;
- after a change in medical status;
- before and after any medical or surgical procedure (consider pre-procedure analgesia);
- after initiation of any pharmacological or non-pharmacological treatment;
- before discharge or a transition in care;
- in accordance with jurisdictional requirements (provincial legislation), organizational policies and other reporting requirements (e.g., quarterly reporting or health service organizational policy) (51,53,63).

Factors to consider when screening and assessing pain:

- biological, psychological, social and cultural aspects relevant to the person being assessed;
- data such as demographic information (age, gender identity, cultural identity), information about family and/or caregivers, the person's developmental and cognitive abilities, the person's ability to communicate, their current health condition(s) and the setting where screening and assessment of pain is occurring;
- the types of pain an individual can experience (e.g., acute, chronic, nociceptive, neuropathic, nociplastic or mixed), as people can experience more than one type of pain at the same time;
- include the person's family and/or caregiver to identify the person's wishes, preferences and needs where appropriate;
- a person's individual goals, wishes and preferences for their pain management plan of care; and
- the frequency of pain screening, assessment and reassessment, as it is to be tailored to the person's goals of care, their response to pain management interventions and the practice context and setting.

How is pain to be assessed, measured and communicated?

- Baseline screening, assessment and reassessment of pain is important to identify and document (and communicate, if needed) to provide a comparison across time and to evaluate the effectiveness of **integrative approaches to pain**^{G} management.
- During the pain assessment, health providers are to demonstrate empathy and compassion (49).
- An appropriate and validated assessment tool is to be used consistently over time to allow for standardized communication among the interprofessional team (53).
- Comprehensive pain assessment using a mnemonic tool is to be completed during the initial admission to a health service organization or if new pain symptoms are self-reported or suspected (58).
- To measure pain outcomes (and associated symptoms), use validated tools to assess and reassess pain outcomes as appropriate for the population and the clinical context. Use a developmentally and cognitively appropriate tool (56,74).
- Document pain assessment tool scores in EMRs according to organizational and/or health sector policies (57).
- Reassess and document pain following the use of an integrated approach to pain management (that involves appropriate non-pharmacological and pharmacological pain management strategies) to evaluate the effectiveness of the pain management strategies.
- Communicate with the interprofessional team if pain scores have not improved and ongoing pain continues following an integrated approach to pain management.

Supporting resources

RESOURCE	DESCRIPTION
Health Canada. An action plan for pain in Canada [Internet]. Ottawa (ON): Health Canada; 2021. Available from: https://www.canada.ca/content/dam/hc-sc/documents/corporate/about-health-canada/public-engagement/external-advisory-bodies/canadian-pain-task-force/report-2021-rapport/report-rapport-2021-eng.pdf	▪ Document detailing Canada's 2021 Action Plan for Pain — focus on chronic pain
Herr K, Anderson AR, Arbour C, et al. Pain assessment in the patient unable to self-report: clinical practice recommendations in support of the ASPMN 2024 position statement. Pain Manag Nurs. In Press. https://doi.org/10.1016/j.pmn.2024.09.010	▪ American Society for Pain Management in Nursing (ASPMN) position statement for people unable to self-report pain
Campbell-Yeo M, Eriksson M, Benoit B. Assessment and management of pain in preterm infants: a practice update. Children. 2022;9:244. Available from: https://doi.org/10.3390/children9020244	▪ Tips for assessment of pain in pre-term infants
Devlin JW, Skrobik Y, Gélinas C, et al. Clinical practice guidelines for the prevention and management of pain, agitation/sedation, delirium, immobility, and sleep disruption in adult patients in the ICU. Crit Care Med. 2018 Sep;46(9):e825-73. Available from: https://doi.org/10.1097/CCM.0000000000003299	▪ Guidance for preventing and managing pain in the intensive care unit
Gai N, Naser B, Hanley J, et al. A practical guide to acute pain management in children. J Anesth. 2020 Jun;34(3):421-33. Available from: https://doi.org/10.1007/s00540-020-02767-x	▪ Resource on acute pain assessment and management in children
Gewandter JS, Dworkin RH, Turk DC, et al. Research design considerations for chronic pain prevention clinical trials: IMMPACT recommendations. Pain. 2015 Jul;156(7):1184-97. Available from: https://doi.org/10.1097/j.pain.0000000000000191	▪ Initiative on Methods, Measurement, and Pain Assessment in Clinical Trials (IMMPACT) guidance

RESOURCE	DESCRIPTION
Health Service Organization (HSO). HSO pediatric pain management. Ottawa (ON): HSO; 2023 Mar. Available from: https://healthstandards.org/standard/pediatric-pain-management-can-hso-13200-2023-e/	▪ Pediatric pain standards for Canada ▪ Detailed standards on pain assessment and ongoing reassessment
Noyek S, Jessa JS, Faulkner V, et al. A systematic review of self and observer assessment of pain and related functioning in youth with brain-based developmental disabilities. Pain. 2024 Mar 1;165(3):523-36. Available from: https://doi.org/10.1097/j.pain.0000000000003066	▪ Self and observer assessment of pain and related functioning in youth with brain-based developmental disabilities
Palermo TM, Walco GA, Paladhi UR, et al. Core outcome set for pediatric chronic pain clinical trials: results from a Delphi poll and consensus meeting. Pain. 2021 Oct;162(10):2539-2547. Available from: https://doi.org/10.1097/j.pain.0000000000002241	▪ IMMPACT guidance on pediatric outcomes for chronic pain
Raja SN, Carr DB, Cohen M, et al. The revised International Association for the Study of Pain definition of pain: concepts, challenges, and compromises. Pain. 2020 Sep;161(9):1976-1982. Available from: https://doi.org/10.1097/j.pain.0000000000001939	▪ Pain concepts, definitions and terminologies from the IASP
Shahiri S, Gélinas C. The validity of vital signs for pain assessment in critically ill adults: a narrative review. Pain Manag Nurs. 2023 Jun;24(3):318-28. Available from: https://doi.org/10.1016/j.pmn.2023.01.004	▪ Pain assessment in adult intensive care
PQRSTU mnemonic. In: Toronto Metropolitan University Pressbooks [Internet]. Toronto (ON): Toronto Metropolitan University; c2023. Available from: https://pressbooks.library.torontomu.ca/assessmentnursing2/chapter/pqrstu-mnemonic/	▪ How to use the PQRSTU mnemonic comprehensive pain assessment tool

RESOURCE	DESCRIPTION
Trottier ED, Ali A, Doré-Bergeron MJ, Chauvin-Kimoff L. Best practices in pain assessment and management for children. Paediatr Child Health. 2022 Dec;27(7):429-37. Available from: https://doi.org/10.1093/pch/pxac048	▪ Pain assessment and management for children
Trottier ED, Doré-Bergeron MJ, Chauvin-Kimoff L, et al. Managing pain and distress in children undergoing brief diagnostic and therapeutic procedures. Paediatr Child Health. 2019;24(8):509-35. Available from: https://doi.org/10.1093/pch/pxz026	▪ Pain prevention and management strategies for infants, children and youth who are undergoing common, minor but painful medical procedures
VanEvery R, Latimer M, Naveau, A. Clinical strategies to develop connections, promote health and address pain from the perspective of Indigenous youth, elders and clinicians. Front Pain Res. 2022;13(3):857624. Available from: https://doi.org/10.3389/fpain.2022.857624	▪ How to use the LISTEN framework for assessing and managing pain among Indigenous communities

MANAGEMENT

GOOD PRACTICE STATEMENT 2.0:

It is good practice for health providers to provide an integrative approach to pain prevention, assessment and management. An integrative approach (i.e., non-pharmacological and/or pharmacological strategies) includes individualized, person- and family-centred care.

Experiencing pain can be a complex phenomenon. Pain can be experienced through a range of biological, psychological and social/environmental interactions that can include the sensation of pain, fear, anxiety, sleep disturbances, fatigue, depression and interfere with the physical, cognitive, sexual, domestic, occupational and social functioning of everyday life for people (73). As a result, any single pain intervention may not address the complex needs of people experiencing pain and facilitate a recovery of function, overall health and wellness, and quality of life. In particular, chronic pain conditions affect 7.6 million Canadians and an individualized, person- and family-centred integrative approach to chronic pain management is required (18).

An integrative approach to pain prevention, assessment and management acknowledges the complexity and biopsychosocial nature of the pain experience and involves health providers creating an individualized person- and family-centred plan of care that combines treatment strategies to include both pharmacological and non-pharmacological pain interventions (73,74). This good practice statement did not require a review of the evidence but is important to communicate to nurses and health providers.

The important role of NPIs for managing any type of pain has been recognized in the last decade due to the increasing burden of chronic pain and the opioid epidemic (75). Across Canada, the opioid crisis is growing, driven by the use of illegal and prescription opioid medications, and 2016 data reveals that Canada was the second largest consumer of prescription opioids globally (76). In addition, the burden of chronic pain in Canada is substantial. Canada has identified chronic pain as a public health emergency (18). Canada's Action Plan for Pain (77) highlights the understanding of chronic pain through a biopsychosocial lens and the treatment offered to address chronic pain should integrate pharmacological and non-pharmacological strategies. For further details on NPIs refer to the **Scoping review: Non-pharmacological approaches to pain management** findings in the next section.

An integrative approach (combination of pharmacological and non-pharmacological strategies) to pain prevention, assessment and management has several essential elements that include the following:

- interprofessional health providers from at least two health disciplines in (e.g., nurses, physicians, physical therapists, occupational therapists, social workers, psychologists, pharmacists, respiratory therapists);
- collaboration;
- consultation; and
- coordination of care (73).

Using a person- and family-centred integrative approach to pain management that involves two or more person-centred strategies acting via different mechanisms (biological, psychological, social) provides an additive or synergistic treatment interaction to address the person's pain experience (73). For example, for an adult living with chronic back pain, two approaches — such as physical exercise and cognitive behavioural therapy — can be offered together. Alternatively, the option of offering a person living with chronic back pain a pharmacological intervention such as an epidural steroid injection first, followed by physical therapy such as supervised back exercises, could be considered (73).

When an integrative approach to pain care includes the person experiencing pain and/or their family, a person- and family-centred approach is possible. Recent evidence has found that patients prefer, value and respond more favourably to treatment when their pain management plan involves shared-decision making (315). The needs, preferences and values of the individual experiencing pain are shared with relevant health providers and a shared decision-making process occurs where options for evidence-based pain strategies and the person's preferences are both considered, resulting in an individualized, person-centred integrative plan of care (78).

Implementation tips

From the literature

- Health providers working in multidisciplinary teams are to reflect on their collective biases, the persons' cultural needs and preferences, available resources in the community, and any barriers to care that can be addressed (79).
- When taking a person and family-centred approach to care, health providers are to consider addressing the relevant social and cultural contexts, and adapt care based on the needs of the person (79).
- Health providers are to ensure that pain management includes a combination of pharmacological and non-pharmacological options when working with Indigenous communities since their view of pain is more holistic than solely a physical ailment (68).
- Health providers are to consider safe environments when communicating with persons, which can vary depending on culture, race, age, physical ability and gender. Conversations about what is considered a safe space are essential when delivering person and family-centred care (80).

From the expert panel

- People who experience total pain require a holistic, comprehensive pain assessment followed by a plan of care that includes an integrative approach to pain management (pharmacological and non-pharmacological approaches).
- Be aware that total pain can exist in people who are not approaching the end of life as well as for those who are dying.
- Health providers are to be **culturally sensitive**^{G} and respectful of important cultural values when providing an integrated approach to pain prevention, assessment and management to persons and their families.

Supporting resources

RESOURCE	DESCRIPTION
Becker S, Blyth F, Gilron I, Zinboonyahgoon N. Fact sheet: What do we mean by integrative pain care? Washington (DC): International Association for the Study of Pain (IASP); 2023 Apr 6. Available from: https://www.iasp-pain.org/wp-content/uploads/2023/04/defining-integrative-care-fact-sheet_R4-1.pdf	▪ Integrative pain care summary by the IASP outlining integrative strategies for pain management ▪ Fact sheet featuring an overview of integrative pain care
Health Canada. An action plan for pain in Canada [Internet]. Ottawa (ON): Health Canada; 2021. Available from: https://www.canada.ca/content/dam/hc-sc/documents/corporate/about-health-canada/public-engagement/external-advisory-bodies/canadian-pain-task-force/report-2021-rapport/report-rapport-2021-eng.pdf	▪ Health Canada report on a federal action plan for pain prevention, assessment and management in Canada
Lin YC, Wan L, Jamison RN. Using integrative medicine in pain management: an evaluation of current evidence. Anesth Analg. 2017 Dec;125(6):2081-93. Available from: https://doi.org/10.1213/ANE.0000000000002579	▪ Peer-reviewed article on the use of an integrative approach to pain management
Health Service Organization (HSO). HSO pediatric pain management. Ottawa (ON): HSO; 2023 Mar. Available from: https://healthstandards.org/standard/pediatric-pain-management-can-hso-13200-2023-e/	▪ National standards of Canada — 2023 pediatric pain management standards

INTERPROFESSIONAL PRACTICE

GOOD PRACTICE STATEMENT 3.0:

It is good practice for health service organizations and health systems to implement an interprofessional practice approach to pain prevention, assessment and management.

The literature uses different terms interchangeably to describe health providers working in teams to provide integrated pain prevention, assessment and management. Terms to describe health providers working in teams include interdisciplinary, multidisciplinary and interprofessional and each term has a slightly different meaning and context. For consistency, the term interprofessional is used throughout this BPG. An interprofessional team is comprised of multiple health providers (regulated and unregulated) who work collaboratively to deliver comprehensive and quality health services to persons within, between and across health-care settings (7). Key interprofessional team members supporting persons experiencing pain may include nurses, physicians, physical therapists, psychologists, occupational therapists, respiratory therapists, dietitians, pharmacists, and social workers. It is important to emphasize that persons and their family are at the centre of the interprofessional team as active participants.

In 2010, the Canadian Interprofessional Health Collaborative (CIHC) developed six interprofessional practice competencies that guide the collaborative practice of all health professions in all contexts (81). CIHC defines interprofessional collaboration as a process that includes the development and maintenance of "effective interprofessional working relationships with learners, practitioners, patients/clients/families and communities to enable optimal health outcomes" (81). The elements of interprofessional collaboration consist of respect, trust, shared decision making and partnerships (81). To improve outcomes for people experiencing pain, more recent policy and guidance on **specialized interprofessional pain care teams**^{G} have highlighted the importance of bringing together the unique team skill sets across health disciplines to deliver an integrated, collaborative interprofessional practice approach to pain management care (see **Recommendation 1.0**) (82–84). This good practice statement did not require a review of the evidence but is important to communicate to health service organizations and health systems.

An interprofessional practice approach requires the composition and expertise of an interprofessional team of health providers who can provide diverse expertise as a team and can be provided in various settings (e.g., hospitals and clinics, rehabilitation facilities or primary care teams) (84,85). Health provider disciplines on interprofessional specialized pain teams can differ across practice settings, can be tailored to the needs of the specific population receiving care and may include a range of health providers (84,86,87).

People experiencing any type of pain require the appropriate treatment and management. Historically, a mono-disciplinary approach (i.e., delivered by one health provider) for all types of pain management was prevalent across many health-care settings. Referrals to other health providers were often made, but an integrative approach to pain care was absent. As a result, pain management was often fragmented, health providers did not work collaboratively, and this resulted in disjointed treatments and poor outcomes for people experiencing pain, especially for people who live with chronic pain (88).

The needs of people accessing specialized interprofessional pain care teams will vary depending on their age, the type(s) of pain they experience and the contexts in which they experience this pain. Interprofessional pain teams bring their skills together, to plan and combine various pain interventions (e.g., behavioural, exercise, medical treatment and educational approaches) that meet the specific needs of the person accessing these services (84). An interprofessional practice approach to pain features a collaborative team where each health provider discipline holds a shared understanding of pain mechanisms, utilizes a common language and possesses a clear understanding of their team roles and responsibilities (73,82). More recent pain literature emphasizes the importance of interprofessional health providers using a biopsychosocial practice approach to pain management because of the broad scope of practice skills available from a range of health-care disciplines in communicating, collaborating and coordinating care for people living with chronic pain in particular (87–89).

One of the goals outlined in Canada's Action Plan for Pain (18) states that people experiencing pain in Canada should have access to equitable, timely, evidence-based, person-centred pain care services and supports across jurisdictions. Access to specialty services and/or interprofessional pain care teams in primary care is inconsistent and insufficient and people frequently have extended wait times for referral to these services (18,45,89). In Canada, primary care providers who serve as the entry point for many health-care services most frequently assess people experiencing some type(s) of non-cancer pain (90). To facilitate access to specialized pain care teams, new models of care have emerged, such as single-entry (centralized intake) and supporting primary care providers remotely (online or digital platform access to pain team specialists), as well as mentorship and communities of practice (45,89).

Implementation tips

From the expert panel

- Adapt EMRs at an organizational level to include an interprofessional approach in the development of this EMR documentation, to ensure a common template possesses the key elements of pain assessment and management inclusive of all health providers.
    - The integration of pain tools in EMRs should be simplified and seamless, since an onerous process can create more barriers for completion.
    - Ensure pain assessments populate into the electronic medication administration record.
    - Include pre and post cueing for pain assessment when medications are given to measure efficacy.
    - Include pain documentation as a learning exercise during staff orientation to EMRs.
- Organizations can support interprofessional practice by:
    - clarifying health provider roles in interprofessional pain management practices;
    - having managers oversee interprofessional teams to facilitate effective communication;
    - integrating pain management into interprofessional rounds so that care planning and follow-ups for people receiving care can be discussed as a team; and
    - emphasizing the importance of effective communication and collaboration among all health providers in preventing, assessing and/or managing pain if implementing a specialized interprofessional pain team is not feasible for the health service organization.

Supporting resources

RESOURCE	DESCRIPTION
Publications. In: Canadian Interprofessional Health Collaborative (CIHC). [place unknown]: CIHC; [date unknown]. Available from: https://cihc-cpis.com/resources/publications/	▪ CIHC competency framework ▪ Additional CIHC resources
Project ECHO Chronic Pain & Opioid Stewardship Canada [Internet]. [place unknown]: Project ECHO Chronic Pain & Opioid Stewardship Canada; c2024. Available from: https://echopaincanada.ca/	▪ Extension of Community Care Outcomes (ECHO) connects health providers with an interprofessional specialist team through a virtual learning community to enhance skills and confidence via sharing of best practices and practice advice using case examples
Hassan S, Carlin L, Zhao J, et al. Promoting an interprofessional approach to chronic pain management in primary care using Project ECHO. J Interprof Care. 2021;35(3):464-7. Available from: https://doi.org/10.1080/13561820.2020.1733502 Gordon DB, Watt-Watson J, Hogans BB. Interprofessional pain education—with, from, and about competent, collaborative practice teams to transform pain care. Pain Rep. 2018 May/Jun;3(3):e663. Available from: https://doi.org/10.1097/PR9.0000000000000663	▪ IASP publications relevant to interprofessional specialized pain teams
Gewandter JS, Dworkin RH, Turk DC, et al. Research design considerations for chronic pain prevention clinical trials: IMMPACT recommendations. Pain. 2015 Jul;156(7):1184-97. Available from: https:doi.org/10.1097/j.pain.0000000000000191	▪ Summary of IMMPACT recommendations: 2003 seminal work on core outcomes for chronic pain
PedIMMPACT guidelines Palermo TM, Walco GA, Paladhi UR, et al. Core outcome set for pediatric chronic pain clinical trials: results from a Delphi poll and consensus meeting. Pain. 2021;162(10):2539-47. Available from: https://doi.org/10.1097/j.pain.0000000000002241	▪ IMMPACT guidance on pediatric outcomes for chronic pain

RECOMMENDATION 1.0:

The expert panel suggests that health service organizations provide access to a specialized interprofessional pain care team for the prevention, assessment and management of pain for people experiencing acute or chronic pain.

Strength of the recommendation: Conditional

Certainty of the evidence of effects: Very low

Discussion of evidence

Benefits and harms

For this recommendation, the intervention of interest was the delivery of pain prevention, assessment and management services from a specialized interprofessional pain care team care team compared to usual care (i.e., pain management delivered by one health provider). Interprofessional care was defined broadly in **Good practice statement 2.0**. More specifically, a specialized interprofessional pain care team refers to an integrated approach provided by a team of health providers collaborating on the prevention, assessment and management of pain using a biopsychosocial model and treatment goals (28).

There were two SRs (84,87), one **randomized controlled trial (RCT)**^{G} (91) and four **non-randomized studies (NRS)**^{G} (92–95) of specialized interprofessional pain care teams identified in the systematic review. The studies mostly focused on specialized interprofessional pain care teams for the management of chronic pain compared to usual care where one health provider provided pain management. The persons receiving care included children and adolescents living with chronic pain, adults with chronic musculoskeletal pain and older adults living with chronic pain and dementia in a residential care setting. Although the evidence spoke mostly to chronic pain, it was deemed appropriate by the expert panel to generalize this recommendation to encompass acute pain as well. For further details of the intervention noted in the literature, please refer to the **Implementation tips** below.

Two SRs (84,87) and one RCT (91) reported on the outcome of effective management of pain (measured as pain intensity). One SR examined the effectiveness of specialized interprofessional pain care teams for children and adolescents experiencing non-cancer chronic pain. A moderate effect size (Hedge's g: -0.50, 95% CI: -0.87 to -0.14) was reported in favour of interprofessional specialized interprofessional pain care teams, although there was significant heterogeneity noted across the studies in the systematic review (87). In another SR (84), 38 participant cohorts (58 RCTs and NRS) reported on this outcome. Specialized interprofessional pain care teams for chronic musculoskeletal (MSK) pain in adults may improve the effective management of MSK pain in adults. Authors reported a median effect size (range) of 0.63 (-0.08 to 4.39) across the included cohorts/studies favouring the specialized interprofessional pain care teams, although there was significant heterogeneity noted across the cohorts/studies (84). One additional primary RCT examined the effect of an specialized interprofessional pain care team for residents living with advanced dementia (91) in a LTC setting for this outcome. Two SRs and one RCT found that receiving specialized interprofessional pain care team services may reduce pain intensity scores; however, the evidence is very uncertain (84,87,91).

One NRS (92) reported on the outcome of interprofessional team functioning, communication or collaboration and found that a specialized interprofessional pain care team may improve team collaboration scores but the evidence is very uncertain.

Four NRSs (92-95) reported on person or family satisfaction with specialized interprofessional pain care teams and found that people and/or families who received specialized interprofessional pain care reported high levels of satisfaction; however comparative data was not available.

The expert panel noted the outcomes of "provider completion of pain assessments" and "pain interventions delivered by health providers (including documentation of pain interventions)" as critical outcomes; however, they were not measured in the literature.

There were no harms reported in the studies.

The overall certainty of the evidence for these outcomes was very low due to concerns about study methodology (extremely serious risk of bias), inconsistency and imprecision in some studies. More high-quality research studies are needed to understand the effect of specialized interprofessional pain care teams.

For more detailed information on the impact of a specialized interprofessional pain care team on the prioritized outcomes (effective management of pain, interprofessional team functioning, provider completion of pain assessment and person/family satisfaction), refer to the evidence profiles under the "methodology documents" tab on the BPG webpage.

Values and preferences

From the systematic review evidence

- Participants who received an interprofessional chronic pain intervention in a primary care setting found the role of the pharmacist helpful (96).
- Participants seeking interprofessional specialist facial pain management valued access to the specialist services offered by this interprofessional team as they were able to meet other people living with the same condition who were there for the same services (97).
- Many parents with hospitalized neonates preferred to be involved in working with the interprofessional team to assist in the management of their child's pain during medical procedures (92).
- Parents of neonates receiving interprofessional pain management interventions during painful procedures are often unsure what they should do to help. They would like health providers to keep them informed about how they can help mitigate their child's pain during medical procedures and provide the information that they need to know in a calm environment (92).

Health equity

From the systematic review evidence

- A specialized interprofessional pain care team approach can eliminate the need for patient referrals to a series of specialists, reducing stress related to long wait lists and travelling long distances for appointments (93).
- Specialized interprofessional pain care teams facilitate communication and collaboration for team members to conduct assessments together and create a unified plan of care (95).

From the expert panel

- Specialized interprofessional pain care teams should strive to promote **cultural safety**^{G} and considerations for special populations (e.g., individuals who use substances and who also experience pain).
- Specialized interprofessional pain care teams can make efforts to provide culturally safe prevention, assessment and management of pain.
- Specialized interprofessional pain care teams can integrate harm reduction and trauma-informed approaches when providing care for people experiencing pain.

Expert panel justification of recommendation

The expert panel noted that there may be benefits for people when they are able to access specialized interprofessional pain care teams and no harms were reported in the literature. However, the certainty of the evidence is very low. Therefore, the expert panel determined the strength of the recommendation to be conditional.

Implementation tips

Health-equity deserving populations

- Specialized interprofessional pain care teams can hold regular conferences (e.g., weekly) to ensure care decisions are effective, safe and equitable (98).
- Health providers can use telehealth and video conferencing to ensure specialized interprofessional pain care teams are present in rural communities; robot technology is currently being used in remote Indigenous communities in Alberta with success (99).
- Specialized interprofessional pain care teams are to ensure accurate and secure collection and sharing of personal health data to avoid misuse and exploitation, specifically with Indigenous and Black communities (98).
- When working in pediatrics, specialized interprofessional pain care teams can have conversations about the personalities, emotions/anxieties and expectations of the child and their family to ensure safe and effective treatment of pain (100).

From the expert panel

- Acute pain teams are to be involved in the delivery of staff orientation, if the team exists within the health service organization.
- Health providers may share common knowledge of pain prevention, assessment and management; therefore, organizations are to develop standardized documentation templates to be used by each profession for clinical documentation, allowing for customization based on client needs.
- Health service organizations are to offer credible, specialized resources for interprofessional team members and indicate if additional costs are associated with them.

Table 7: Implementation context and details from the evidence

ASPECTS OF INTERPROFESSIONAL TEAM APPROACHES TO PAIN PREVENTION, ASSESSMENT AND MANAGEMENT	DETAILS FROM THE EVIDENCE
Composition of the specialized interprofessional pain care team	The composition of the specialized interprofessional pain care team varied and was tailored to the needs of the population and clinical condition. The following health provider disciplines were most frequently identified as members of interprofessional teams (84,87,91–95): ▪ nurses ▪ physicians ▪ physical therapists ▪ occupational therapists ▪ psychologists ▪ pharmacists ▪ social workers Less commonly reported team members or disciplines were: ▪ nutritionists and massage therapists (84) ▪ parents of neonates (92) ▪ other medical specialists (e.g., radiology, nuclear medicine, dentistry) (93)
Characteristics of specialized interprofessional pain care team services	The following core elements were identified: ▪ use a biopsychosocial framework to address biological, psychological and social factors (84,87,91,92,94); ▪ in-patient or out-patient clinic treatment ranging from 3 to 5 weeks in tertiary hospitals, pain clinics, rehabilitation centres or primary care (87); ▪ involvement of the child and the family as part of the pain team (84,91,94); ▪ monthly out-patient clinic visits with a focus on diagnosis, prognosis and a tailored pain management strategy with the interprofessional team "at one sitting" (94); ▪ follow-up visits after completion of the initial treatment program (84,87,91); ▪ individual or group treatment (for adults with chronic MSK pain) (84).

ASPECTS OF INTERPROFESSIONAL TEAM APPROACHES TO PAIN PREVENTION, ASSESSMENT AND MANAGEMENT	DETAILS FROM THE EVIDENCE
Approaches used to address pain	A range of pain management implementation approaches were used by specialized interprofessional teams to address pain: ▪ physical therapy (exercise, rehabilitation, education) (84,87); ▪ psychotherapy (cognitive behavioural therapy, acceptance and commitment therapy), as well as relaxation and stress management (84,87); ▪ psychosocial interventions with adults (the role of thoughts and emotions, sleep hygiene, pain acceptance and goals for pain **self-management**^{G} skills training (84)); ▪ psychosocial interventions with children, adolescents and their families (in addition to psychotherapy, counselling sessions, family sessions, parent-only sessions, patient group sessions and school reintegration) (87); ▪ other treatment approaches included sleep hygiene training, art and music therapy, assertiveness training, spinal mobilizations, group discussions and assistance with withdrawal from pain medication (84,87); ▪ one study conducted in a LTC setting implemented a step-wise approach (beginning with the recognition of a behavioural change) to assess pain in adults living with advanced dementia (91); ▪ one study included parents of neonates within the interprofessional team if they wish to be involved in their child's care; parents were provided with information and education about painful procedures in a calm environment (92).

Supporting resources

RESOURCE	DESCRIPTION
Publications. In: Canadian Interprofessional Health Collaborative (CIHC). [place unknown]: CIHC; [date unknown]. Available from: https://cihc-cpis.com/resources/publications/	▪ CIHC national competency framework (2010) ▪ CIHC quick reference guide (2010)
Stollings JL, Devlin JW, Lin JC, et al. Best practices for conducting interprofessional team rounds to facilitate performance of the ICU liberation (ABCDEF) bundle. Crit Care Med. 2020 Apr;48(4):562-70. Available from: https://doi.org/10.1097/CCM.0000000000004197 S Battin G, Romsland GI, Christiansen B. Diminishing pain stigma: patient perceptions of encounters with interprofessional teams in biopsychosocial pain rehabilitation. Ann Med. 2022;54(1):2561-72. https://doi.org/10.1080/07853890.2022.2124447	▪ IASP featured publications on interprofessional pain teams
Katz J, Weinrib A, Fashler SR, et al. The Toronto General Hospital Transitional Pain Service: development and implementation of a multidisciplinary program to prevent chronic postsurgical pain. J Pain Res. 2015 Oct;8:695-702. https://doi.org/10.2147/JPR.S91924	▪ Article on the development and implementation of the Transitional Pain Service program to prevent chronic postsurgical pain
Katz J, Weinrib AZ, Clarke H. Chronic postsurgical pain: from risk factor identification to multidisciplinary management at the Toronto General Hospital Transitional Pain Service. Can J Pain. 2019 Jul;3(2):49-58. https://doi.org/10.1080/24740527.2019.1574537	▪ Article on risk factor identification and management of chronic postsurgical pain from the Transitional Pain Service at the University Health Network

EDUCATION

GOOD PRACTICE STATEMENT 4.0:

It is good practice for academic institutions to provide comprehensive education for students entering health professions on pain prevention, assessment and management.

Both acute and chronic pain are prevalent and impact a variety of populations across the lifespan. Globally, pain impacts billions of people daily (101). In Canada, an estimated 7.6 million, or one in five people (across the lifespan), live with chronic pain (18). Therefore, there is an urgent need for all nurses and health providers entering the workforce to be educated and competent about pain prevention, assessment and management so that they are prepared to assist all people with pain across diverse health-care settings. This good practice statement did not require a review of the evidence, but it is important to communicate this information to academic institutions, nurses and health providers.

Prior research indicates that inadequate pain education contributes to poor pain management and worse patient outcomes. However, there are currently no standard requirements for pre-licensure education on pain prevention, assessment and management (77).

A few Canadian academic institutions have already committed to pain education and specialized pain programs (102,103), but there remains a gap since many programs are unable to designate learning hours specific to pain education (18,77). There has been positive feedback from a Canadian interprofessional pain conference, interactive education seminar on the interprofessional prevention, assessment and management of pain, and an in-depth interprofessional pain curriculum for students (104,105). With further implementation of these specialized pain education programs, focusing on the interprofessional component, it may lead to more collaboration among health provider students, as well as a significant increase in their knowledge of pain.

Due to the large burden of chronic pain on our health-care system (101) and the need for proper assessment and management of pain, it is suggested that all academic institutions work to implement a pain curriculum so that nurses and health providers are prepared in their clinical work to prevent, assess and manage pain across all settings.

Implementation tips

From the expert panel

- Teach health provider students about standardized, validated tools for pain assessment in persons both able and not able to self-report.
- Utilize multimodal education techniques to integrate pain prevention, assessment and management. For example, incorporate case studies, simulations, hands-on learning and worksheets through virtual, in-person or lecture modes of delivery.
- Involve persons with lived experience of pain in planning of education programs.
- Engage learners through simulation by developing pain management cases using trained standardized patients.

Supporting resources

RESOURCE	DESCRIPTION
Publications. In: Canadian Interprofessional Health Collaborative (CIHC). [place unknown]: CIHC; [date unknown]. Available from: https://cihc-cpis.com/resources/publications/	▪ CIHC national competency framework (2010) ▪ CIHC quick reference guide (2010)
Stollings JL, Devlin JW, Lin JC, et al. Best practices for conducting interprofessional team rounds to facilitate performance of the ICU liberation (ABCDEF) bundle. Crit Care Med. 2020 Apr;48(4):562-70. Available from: https://doi.org/10.1097/CCM.0000000000004197 Battin GS, Romsland GI, Christiansen B. Diminishing pain stigma: patient perceptions of encounters with interprofessional teams in biopsychosocial pain rehabilitation. Ann Med. 2022;54(1):2561-72. https://doi.org/10.1080/07853890.2022.2124447	▪ IASP featured publications on interprofessional pain teams
Katz J, Weinrib A, Fashler SR, et al. The Toronto General Hospital Transitional Pain Service: development and implementation of a multidisciplinary program to prevent chronic postsurgical pain. J Pain Res. 2015 Oct;8:695-702. https://doi.org/10.2147/JPR.S91924	▪ Article on the development and implementation of the Transitional Pain Service program to prevent chronic postsurgical pain
Katz J, Weinrib AZ, Clarke H. Chronic postsurgical pain: from risk factor identification to multidisciplinary management at the Toronto General Hospital Transitional Pain Service. Can J Pain. 2019 Jul;3(2):49-58. https://doi.org/10.1080/24740527.2019.1574537	▪ Article on risk factor identification and management of chronic postsurgical pain from the Transitional Pain Service at the University Health Network

RECOMMENDATION 2.0:

The expert panel suggests that academic institutions implement interactive education for all students entering health professions on pain prevention, assessment and management.

Strength of the recommendation: Conditional

Certainty of the evidence of effects: Low

Discussion of evidence

Benefits and harms

The intervention of interest was interactive education on pain assessment, prevention and management, compared to standard education on pain assessment, prevention and management (e.g., didactic learning). The following definitions are relevant to this recommendation:

- **Interactive education:** refers to a dynamic approach that fosters active participation and exchange of ideas among educators, students and the lecture content. It emphasizes increased discussion and engagement among participants. This method recognizes student needs and encourages them to take an active role in their learning process (106). For the purposes of this BPG, interactive education refers to various formats and modes of delivery such as e-learning/web-based learning, virtual reality, simulation, practical/hands-on learning, case studies or discussion groups.
- **Standard education:** refers to traditional teaching methods, such as a didactic lecture.
- **Multi-modal:** "learning environments [that] allow instructional elements to be presented in more than one sensory mode (visual, aural, written)" (107). Multimodality looks at the many different modes that people use to communicate with each other and to express themselves. Multimodal learning is relevant as the increase in technological tools and associated access to multimedia composing software have led to the ease of use of many modes in presenting, representing and responding to information (108).

There was one SR (109) and three additional RCTs (110–112) that examined the effects of interactive pain education on student competency (measured as knowledge or skills that contribute to competence). The studies included students entering or enrolled in a health provider program (i.e., pre-registration or pre-licensure) representing nursing, dentistry, pharmacy, medicine, physical therapy, occupational therapy and physician assistant.

One SR (109) pooled the results of three RCTs that examined the effect of interactive education about pain management versus didactic education on student competency (knowledge). A large effect size was reported as standardized mean difference (SMD: 1.28, 95% CI: 0.31 to 2.24) in favour of interactive education. Three additional RCTs (110–112) also reported an improvement in student knowledge after they received interactive education on pain assessment and/or management. Interactive pain assessment and management education may improve the outcome of health student knowledge. For further details of the intervention noted in the literature, please refer to the **Implementation tips** below.

Three RCTs examined the outcome of student attitude and/or confidence (110–112). All three reported greater student confidence with interactive education compared to standard or no education. Two out of the three studies showed an improvement in attitudes towards pain. Interactive pain assessment and management education may improve student attitude/confidence; however, the evidence is uncertain.

The expert panel prioritized "student completion of pain assessment" and "student delivery of pain intervention" as critical outcomes for the systematic reviews; however, these outcomes were not measured in the literature.

There were no harms reported in the studies.

The overall certainty of evidence was rated as low due to a serious or very serious risk of bias for some individual studies. There was serious imprecision related to the low number of events for some outcomes. There is a need for further high-quality research to increase our certainty in the evidence.

For more detailed information on the impact of interactive education about pain prevention, assessment and management on the outcomes discussed above, refer to the evidence profiles under the "methodology documents" tab on the BPG webpage.

Values and preferences

From the systematic review evidence

- Nursing students valued the opportunity to develop their skills via an interactive education simulation that focused on learning to assess people experiencing pain from diverse cultures (113).
- Nursing students identified that the opportunity for simulated practice experiences facilitates the development of nursing skills in empathetic communication. One student stated: "Exposing myself to emotionally charged conversations that elicit the need for empathy is the best way to strengthen this skill. In time and with experience I hope to learn to read and deal with these situations better" (114).
- Trainees from the faculties of dentistry, nursing, pharmacy, and medicine (also including the departments of physical therapy, occupational therapy and physician assistant) who received interactive pain education (e.g., facilitated, small group-based, case-based, online module learning) highly valued participating in an interprofessional education opportunity (115).

From the expert panel

- Curriculum development should consider student learning needs and preferences.
- Persons with lived experiences of pain are to be involved in the design and development of education for health profession students.

Health equity

From the expert panel

- Organizations are to offer equitable and easily accessible educational resources for all students.
- Interactive education can include content about diverse populations and the psychosocial and spiritual context of pain. Pain may not be spoken about or be a cultural norm in all cultures.
- Consider the learning needs of internationally trained health providers including the local context, climate and legislation. Ensuring individuals have opportunities to engage in learning from various perspectives helps to embed Canadian expectations for practice. Developing online modules, case studies and simulations can be useful.

Expert panel justification of recommendation

The expert panel noted that there may be benefits to interactive education on pain assessment, prevention and management for all students entering health professions. No harms were reported in the literature. However, the certainty of the evidence is low. Therefore, the expert panel determined the strength of the recommendation to be conditional.

Implementation tips

Health-equity deserving populations

- Education curriculums are to include content on health disparities in pain and pain management (116).
- Education is to include content about recognizing and addressing implicit and explicit biases (66,116).
- Academic training programs are to engage diverse communities (66).
- Education programs are to involve multiracial and multidisciplinary educators to ensure diverse representation (117).
- Academic training programs can encourage students to seek future careers that promote care for equity deserving populations (117).

From the expert panel

- Involve people with lived experience of pain in planning interactive health profession education.
- Develop and validate pain knowledge assessment tools to allow for comparison across various health profession programs.
- Implement early interactive pain education for students entering health profession programs. Recommended that this education begin in the first year of the program and be continued on an annual basis.
- Curriculums are to consider including interactive educational resources from various health disciplines, information about how to document and report pain, and continuous quality measurement and improvement for pain prevention, assessment and management.

Table 8: Implementation context and details from the evidence

ASPECTS OF PAIN PREVENTION, ASSESSMENT AND MANAGEMENT EDUCATION	DETAILS FROM THE EVIDENCE
Interactive pain education learning modes and methods	A variety of educational/pedagogical approaches were used to develop and deliver pain assessment and/or management education for students. Individual studies delivered pain assessment education for: ▪ medical students (110,112) ▪ physiotherapy students (111) ▪ medical and nursing students (109) The length of the pain education varied from 70 minutes to 1 week. Studies included the following learning modes: ▪ **online learning (asynchronous)** such as an online module containing didactic information and a clinical vignette (110); ▪ **an interactive case-based e-learning program** including four patient cases with questions and in-depth answers (112); ▪ **interactive group learning** (110); ▪ **a group lecture** including free-hand drawings, stories and metaphors used to convey messages about pain physiology and theory (111); ▪ **experiential learning** including interaction with older adults, skills practice and a field trip (110); and ▪ **simulation** (112).
Education curriculum content	Education topics covered included the following: ▪ evaluation and management of pain in communicative older adults with dementia (110) ▪ Pain Neurophysiology Education (PNE) (111) ▪ managing acute pain (112)

Supporting resources

RESOURCE	DESCRIPTION
IASP Interprofessional Pain Curriculum Outline. In: International Association for the Study of Pain [Internet]. Washington (DC): IASP; c2018. Available from: https://www.iasp-pain.org/education/curricula/iasp-interprofessional-pain-curriculum-outline/	▪ Detailed information on what pain curriculums should be included in interprofessional education programs
Wideman TH, Bostick G, Miller J, et al. The development of a stakeholder-endorsed national strategic plan for advancing pain education across Canadian physiotherapy programs. Can J Pain. 2022;6(1):21-32. Available from: https://doi.org/10.1080/24740527.2022.2056006	▪ Academic article about advancing pain education in physiotherapy programs
Pain Education Resources. In: University of Toronto Centre for the Study of Pain [Internet]. Toronto (ON): University of Toronto; c2023. Available from: https://utcsp.utoronto.ca/pain-education-resources/	▪ Website with engaging and interactive pain management resources for health providers

GOOD PRACTICE STATEMENT 5.0:

It is good practice for health service organizations to provide interprofessional and discipline-specific education for all health providers on comprehensive pain prevention, assessment and management.

It is imperative that pain education extends beyond the pre-licensure phase and is a key component of professional development education across all health professions. Research shows that organizations are inconsistent in their requirements and opportunities for continuing education focused on pain (77). For instance, a recent study found that only 17 per cent of surveyed health providers had completed any pain education training in the last year (118). With the rates of pain growing (18) and the increased focus on interprofessional health care, health service organizations should work towards ensuring that all health providers have access to regular interprofessional development opportunities on pain, prevention, assessment and management to ensure that staff feel prepared to treat persons experiencing pain across various clinical settings (119). This good practice statement did not require a review of the evidence, but is important to communicate to academic institutions, nurses and health providers.

The move towards collaborative interprofessional health education has been acknowledged by various accrediting health organizations (18,81,120,121). The World Health Organization defines interprofessional education (IPE) as two or more professions learning with, from, and about each other to improve collaboration and the quality of care (121). The IASP also highlights the importance of interprofessional pain education in their pain curriculums, but adds the inclusion of discipline-specific training (122). Discipline-specific education refers to continuing education activities that are tailored specifically for certain health professions. For example, many health service organizations routinely require in-person and e-learning trainings that are only required for nursing staff, such as training on blood sugar routines and giving blood transfusions. These trainings will be different than what is required for other disciplines such as physiotherapists, physicians or social workers. This is important so that nurses and other health providers are knowledgeable about team-based interprofessional work that is person and family-centred, but also so that they may be competent in their specific disciplines.

The IASP's pain curriculums are comprehensive, and all health programs are encouraged to use and apply them (122). The curriculum focuses on developing the knowledge and skills to prevent, assess and manage pain from an interprofessional focus (122). The IASP's interprofessional pain curriculum is based on four components that focus on the following categories: 1) the multi-dimensional nature of pain; 2) assessment and measurement of pain; 3) management of pain; 4) clinical conditions (122).

Implementation tips

- Pain prevention, assessment and management policies are to be included in corporate orientation at organizations and as part of competency assessment in orientation.
- Pain prevention, assessment and management is to be part of interprofessional rounds.
- It is suggested that pain prevention, assessment and management policies are included in standard operational procedures for all units and in organizational policies.
- Managers and unit councils are to be involved in needs assessments to implement new pain recommendations and practice statements across organizations.
- Interprofessional education programs are to consider including content on pharmacological and non-pharmacological interventions (91).
- Organizations can provide context specific interprofessional pain education (e.g., an interprofessional approach to the management of pain in neonates) (91,92).

Supporting resources

RESOURCE	DESCRIPTION
Health Canada. An action plan for pain in Canada [Internet]. Ottawa (ON): Health Canada; 2021 May. Available from: https://www.canada.ca/content/dam/hc-sc/documents/corporate/about-health-canada/public-engagement/external-advisory-bodies/canadian-pain-task-force/report-2021-rapport/report-rapport-2021-eng.pdf	▪ Document detailing Canada's 2021 Action Plan for Pain — focus on chronic pain ▪ Part of this document discusses the need for health service organizations to ensure that pain education is interprofessional.
Resources for professionals. In: Pain Canada [Internet]. [place unknown]: Pain Canada; c2024. Available from: https://www.paincanada.ca/resources/resources-for-professionals	▪ Variety of resources about pain education
Pain Management Nursing Certification (PMGT-BC™). In: American Nurses Credentialing Center [Internet]. Silver Spring (MD): American Nurses Association; [date unknown]. Available from: https://www.nursingworld.org/our-certifications/pain-management/	▪ Information for nurses to acquire a certification in pain management. The website has information about the exam, including content and study guides and sample questions.
Pain Management for Nursing Professionals: CERTIFICATE OF ACHIEVEMENT. In: Saskatchewan Polytechnic. [place unknown]: Saskatchewan Polytechnic; c2024. Available from: https://saskpolytech.ca/programs-and-courses/programs/Pain-Management-for-Nursing-Professionals.aspx	▪ Information about a continuing education course on pain management for nurses
Graduate Certificate in Pain Management. In: University of Alberta Faculty of Rehabilitation Medicine [Internet]. Edmonton (AB): University of Alberta; c2024. Available from: https://www.ualberta.ca/rehabilitation/programs/certificate-programs/certificate-in-pain-management.html	▪ A distance- and tuition- based program that provides advanced education in collaborative pain management for health-care professionals. ▪ This certificate provides an opportunity for practicing clinicians to learn about each other to address the multi-dimensional nature of acute and chronic pain, emphasizing complex/chronic pain.
Wideman TH, Bostick G, Miller J, et al. The development of a stakeholder-endorsed national strategic plan for advancing pain education across Canadian physiotherapy programs. Can J Pain. 2022:6(1);21-32. Available from: https://doi.org/10.1080/24740527.2022.2056006	▪ Academic article about advancing pain education in physiotherapy programs

RECOMMENDATION 3.0:

The expert panel suggests that health service organizations implement opportunities for interactive education for all health providers on pain prevention, assessment and management.

Strength of the recommendation: Conditional

Certainty of the evidence of effects: Low

Discussion of evidence:

Benefits and harms

For this recommendation, the intervention of interest was interactive education (i.e., a dynamic approach that fosters active participation and exchange of ideas among educators, learners, and the lecture content (106)) on pain prevention, assessment and management, compared to standard education on pain prevention, assessment and management (e.g., didactic learning).

There was one SR (109), which identified six RCTs (115,123–127) and eight NRSs (128–135) that examined the effects of implementing interactive pain prevention, assessment, and/or management education for health providers. The types of interventions included e-learning/web-based learning, virtual reality, simulation, practical/hands-on learning, case studies or discussion groups. The population of interest was interprofessional health providers. For further details of the intervention noted in the literature, please refer to the **Implementation tips** below.

For the outcome of health provider competency (knowledge), one SR (109) conducted a **meta-analysis**^{G}, pooling the results of six RCTs that examined the effect of pain management interactive education versus didactic education on health provider competency (knowledge). A large magnitude of effect was reported (SMD: 0.80, 95% CI: 0.12 to 1.49) in favour of interactive education, although there was heterogeneity in the results across the included studies. Five of six additional RCT studies (115,124–127) also reported an improvement in health provider knowledge after receiving interactive education on pain assessment and/or management. Interactive pain assessment and management education may improve provider knowledge; however, the evidence is uncertain. Due to heterogeneity of the tools used to measure the knowledge outcome across these RCTs, a pooled statistical analysis was not possible.

For health provider confidence and/or attitude outcome, one SR (109) pooled the results of two RCTs that examined the effect of interactive pain management education versus didactic or other education on health provider confidence and attitude. No effect size was reported in favour of interactive education (SMD: 0.02, 95% CI: -0.79 to 0.84) for health provider confidence and a very small effect size (SMD: 0.16, 95% CI: -0.48 to 0.79) for attitude. Two additional RCTs (115,125) reported greater confidence in health providers following interactive education. Overall, interactive pain assessment and management education may result in little to no effect on health provider confidence and attitude; however, the evidence is uncertain.

For the outcome of health provider completion of pain assessment, two NRSs (131,132) reported that interactive education on pain assessment and management may increase the number of completed pain assessments conducted by health providers, however the evidence is uncertain, and whether or not this reflects an important change is unclear.

Lastly, for the outcome of health provider satisfaction, three NRSs (130,133,135) noted that health providers reported high rates of satisfaction with the interactive pain education intervention after receiving interactive pain assessment and/or management education, however comparative data was not available.

There were no harms reported in the studies.

The certainty of evidence was rated as low due to serious or very serious risk of bias for some individual studies. There was also imprecision related to the low number of events or participants for some outcomes. There is a need for further high-quality research on interactive education on pain prevention, assessment and management to increase our certainty in the evidence.

For more detailed information on the impact of interactive education methods for interprofessional health providers on the prioritized outcomes, refer to the evidence profiles under the "methodology documents" on the BPG webpage.

Values and preferences

From the systematic review evidence

- Health providers preferred interactive education (130,136,137). Specific aspects preferred by health providers participating in education included the following:
  - health providers working in rural settings valued the interactive pain management education program for the access to a "community of practice" that offered new learning and support (136);
  - time allotted to discussing challenging cases (130); and
  - an interprofessional approach to education including interaction with other specialists (137).

Health equity

From the systematic review evidence

- Interactive pain management education facilitates access to pain assessment and management education and "communities of practice" for health providers working in rural and remote communities (136).

From the expert panel:

- Organizations can deliver interactive pain education in house or outsource from credible programs.
- Funding for pain education is to be incorporated into health service organization budgets.
- Organizations should consider reaching out to credible resources to access interactive pain education curriculums.
- Organizations are to designate a specific number of staff responsible for planning interactive pain education initiatives for in-house education.

Expert panel justification of recommendation

The expert panel noted that there may be benefits to interactive education on pain assessment, prevention and management for interprofessional health providers. No harms were reported in the literature. However, the certainty of the evidence is low. Therefore, the expert panel determined the strength of the recommendation to be conditional.

Implementation tips

Health-equity deserving populations

- Interactive pain education can incorporate case studies/vignettes with equity deserving populations to prepare health providers to work with diverse communities (117,138).
- Interactive pain education can incorporate training on culturally safe approaches to care and collaborate with Indigenous communities (e.g., LISTEN framework) (69).
- Interactive training opportunities specifically available in rural areas can help ensure that health providers in remote communities have access to education (139).

- Health service organizations can tailor interactive pain education to the needs of specific age groups (e.g., pediatrics versus adults) (140,314).

From the expert panel

- When possible, organizations are to consider involving persons and families in the design and planning of pain education programs.
- Health providers are to be consulted regarding their preferences for pain education.
- Organizations are to consider accessibility issues such as costs and access for pain education offerings.
- Organizations are to consider giving staff annual paid days for continuing education.
- Managers are to empower staff who have attended pain education learning opportunities to share their learning with their team.
- Organizations can implement a staff peer champion model for pain prevention, assessment and management.

Table 9: Implementation context and details from the evidence

COMPONENT OF EDUCATION	DETAILS FROM THE EVIDENCE
Interactive pain education learning modes and methods	A variety of educational/pedagogical approaches were used to develop and deliver a range of pain assessment and/or management education for health providers. Individual studies delivered pain assessment learning for: ▪ nurses providing care to neonates (115,123,125,127,128,130,132,133,135); ▪ primary care providers (124,134); ▪ medical specialist residents/fellows (126,131); and ▪ interprofessional health providers (109,129). The length of the pain education varied from 60 to 480 minutes. Studies included the following learning modes: ▪ **online learning** (asynchronous) such as web-based modules, interactive web-based learning and case studies or vignettes (115,123,125,130–132); ▪ **skills-based group learning** such as group discussion, role playing and group-based work on cases (127,128); ▪ **telementoring** such as education sessions facilitated by multidisciplinary pain experts (124,134); ▪ **interprofessional education** including live group-based sessions delivered to a multidisciplinary team (129); ▪ **case studies/presentations** (130,133–135); and ▪ **community of practice (CoP)** including access to communities of practice that support interactive pain education learning and networking with specialist pain experts (124,130).
Education curriculum content	Topics covered in pain education included: ▪ pain assessment in neonates (123,128) ▪ pain management and painful procedures in neonates (128) ▪ acute pain management (125,126) ▪ complementary therapies (125) ▪ safe opioid prescribing (129) ▪ cancer pain (130) ▪ pain assessment and treatment (133) ▪ post-operative pain assessment and interventions (132) ▪ chronic lower back pain (131)

Supporting resources

RESOURCE	DESCRIPTION
Credentialing. In: Canadian Academy of Pain Management [Internet]. Oshawa (ON): The Canadian Academy of Pain Management; [date unknown]. Available from: https://www.canadianapm.com/credentialing	▪ Canadian Academy of Pain Management's list of accredited pain management programs in Canada
Dale CM, Cioffi I, Novak CB, et al. Continuing professional development needs in pain management for Canadian health care professionals: a cross-sectional survey. Can J Pain. 2023;7(1):2150156. Available from: https://doi.org/10.1080/24740527.2022.2150156	▪ Academic article about continuing professional development as an important means of improving access to effective care.
Our courses and programs. In: Pain Canada [Internet]. [place unknown]: Pain Canada; c2024. Available from: https://www.paincanada.ca/courses	▪ Free, online educational resources and courses on pain for health providers and people living with pain.
Universities in Canada offering tuition-based post-graduate courses/programs in pain management: ▪ Interdisciplinary Pain Management. In: Western University [Internet]. London (ON): Western University; c1878-2024. Available from: https://uwo.ca/fhs/programs/ahcp/pain/index.html ▪ Graduate Certificate in Chronic Pain Management (online learning). In: McGill University [Internet]. Montréal (QC): McGill University; c2024. Available from: https://www.mcgill.ca/spot/programs/online-graduate-certificates/chronic-pain-management ▪ Graduate Certificate in Pain Management. In: University of Alberta [Internet]. Edmonton (AB): University of Alberta; c2024. Available from: https://www.ualberta.ca/rehabilitation/programs/certificate-programs/certificate-in-pain-management.html	▪ Information about post-graduate certificates in pain management at three universities in Canada.

Scoping review: Non-pharmacological approaches to pain management

Background

A scoping review was conducted to identify types of non-pharmacological pain management strategies (NPI) used by nurses and members of the interprofessional team within health-care settings.

Introduction

The widespread acceptance of NPIs by health providers is challenging since the preferred practice approach to pain management is based on the medical model which often includes prescription pain medication and/or surgery to manage pain (141). The significant growth in prescribing opioids for pain management over the last several decades has contributed to the current opioid crisis in Canada (76). An integrative approach to pain management that includes NPIs is very timely as NPIs are additional strategies that health providers can consider when caring for people experiencing pain.

A significant gap exists between the current literature, pain management in clinical practice and the decisions people make about how to manage their pain (75). Multiple terms are used to describe NPIs for the management of pain including the terms "alternative" or "complementary" (142). Historically, these terms implied that although the goal of NPIs was therapeutic, they lacked peer-reviewed evidence regarding their effectiveness to support their use (142). Additionally, the biological mechanisms of many NPIs were not well understood. Recently, pain science researchers have been working diligently to conduct clinical studies of NPIs that evaluate their effectiveness and safety to support further understanding of their underlying biological mechanisms (142). NPIs consist of a range of strategies that include but are not limited to physical therapies, occupational therapy, massage, acupuncture, psychological interventions such as cognitive behavioural therapy and other strategies such as distraction techniques, virtual reality, music interventions and other comforting strategies. These can either be employed alone, in combination with pharmacological approaches or combining more than one NPI strategy into a plan of care. Several NPIs require minimal resources and are feasible for health providers to implement across health-care settings.

Barriers to widespread implementation of NPIs include the availability of and access to NPIs (141,142). The availability of NPIs for health providers and people living with chronic pain is dependent on where one resides and how they access health-care services. Some jurisdictions and health-care services do not provide resources such as NPIs as an option for the treatment of chronic pain (141). Access issues related to NPIs, depending on the jurisdiction, can include the following:

- timeliness (i.e., wait time to access NPIs);
- geographic barriers (i.e., rural areas often require people to travel longer distance);
- the cost of accessing NPIs (i.e., people often have limited or no resources to pay for access to NPIs such as physiotherapy, psychological therapy, pool therapy, massage therapy);
- cultural barriers (e.g., provider attitude, provider workload, provider perception of NPI acceptance, provider confrontation avoidance); and
- the ability of people living with chronic pain to access technology (e.g., the internet and/or secure mobile phone messaging) (141,143).

Additional barriers can include a knowledge gap in health providers and people living with pain about what NPIs to use as well as skepticism regarding NPI effectiveness and the rationale for their use (143).

A growing body of peer-reviewed evidence demonstrates that a broad range of NPIs have been examined for treating the pain experience (alone or in combination with pharmacological interventions) with minimal harms. The shift now moves to promoting evidence-based implementation of NPIs, policy development to facilitate their integration into health-care practice, and addressing the barriers to their implementation. To provide an overview of the body of evidence, a scoping review was conducted to summarize the extent, range and nature of research on NPIs.

Methods

The Arksey & O'Malley scoping review framework guided this work (144). RNAO's best practice guideline development and research team and a health sciences librarian developed the search strategy. A search for relevant articles published in English between 2018 and 2023 was applied to Medline and Embase databases. The search was limited to the last five years to capture the most recent evidence. The search was limited to systematic review study design only, due to the significant yield of literature on literature on NPIs. The scoping review was also registered in Open Science Framework (available from: osf.io/vhbu5).

Further details on the scoping review methodology can be found in **Appendix E**.

For a detailed summary of the methodology, refer to the "methodology documents" tab of the BPG webpage.

Results

A high-level summary of the results is available in **Table 10**. For the complete results of this scoping review, please refer to **Appendix E**.

Please note that the scoping review results do not identify the effectiveness of the non-pharmacological approaches to pain prevention, assessment and management in the included literature. The use of NPIs for pain management will vary by the persons experiencing pain (across the lifespan) and their personal preferences, the context in which they are experiencing this pain (post-operatively, acute, chronic, nociceptive, neuropathic etc.) and the setting (community, LTC, rehab, acute care etc.).

Table 10: Summary of non-pharmacological interventions identified in the scoping review

NON-PHARMACOLOGICAL INTERVENTIONS	
Physical therapies	Exercise, aerobic conditioning, strength and balance training, massage therapy, aqua therapy, breathing exercises, acupuncture, dry needling, acupressure, therapeutic ultrasound, transcutaneous electrical nerve stimulation (TENS), percutaneous electrical nerve stimulation (PNS), heat or cold application or a combination of physical therapies/strategies. *Some of these strategies include person education and self-management
Occupational therapy	Pacing (chronic pain)
Psychological strategies	Cognitive behavioural training, acceptance and commitment therapy, mindfulness, meditation and distraction techniques (including virtual reality, gamification, vibratory devices, guided imagery, clown therapy) and music interventions.
Other strategies	Comforting strategies such as animal-assisted therapy, facilitated tucking, kangaroo care, breast feeding, sucrose feeding, therapeutic play and social support.

Research gaps and future implications

The RNAO best practice guideline development and research team and the expert panel identified priority areas for future research (outlined in **Table 11**). The left-hand column of the table outlines the recommendation questions and outcomes, and the right-hand column outlines priority research areas identified by the expert panel based on the systematic reviews conducted for each question. Studies conducted in these areas would provide further evidence to support high-quality, equitable support for people experiencing pain. The list is not exhaustive; other areas of research may be required.

Table 11: Priority research areas per recommendation question

RECOMMENDATION QUESTION	PRIORITY RESEARCH AREA
RECOMMENDATION QUESTION #1: **Should organizational or health system implementation of a specialized interprofessional pain care team be recommended or not?** **Outcomes:** Effective management of pain (including pain intensity or prevalence of severe pain, pain frequency, pain interference); interprofessional team functioning, communication or collaboration; practice behaviour: pain interventions delivered by health providers (including documentation of pain interventions delivered); practice behaviour: health provider completion of pain assessment (including documentation of pain assessment); person or family satisfaction	▪ The impact of a specialized interprofessional pain care team on patient satisfaction. ▪ The impact of a specialized interprofessional pain care team on health provider practice behaviours (delivery of an integrative approach to pain and documentation of pain services provided). ▪ The impact of using standardized core outcomes to measure the impact of specialized interprofessional pain care teams. ▪ The impact of using person- and family-centred care outcomes to evaluate the impact of specialized interprofessional pain care teams. ▪ The use of standardized tools to measure the impact of specialized interprofessional pain care teams. ▪ The development and use of tools to measure specialized interprofessional pain care team functioning, communication or collaboration.

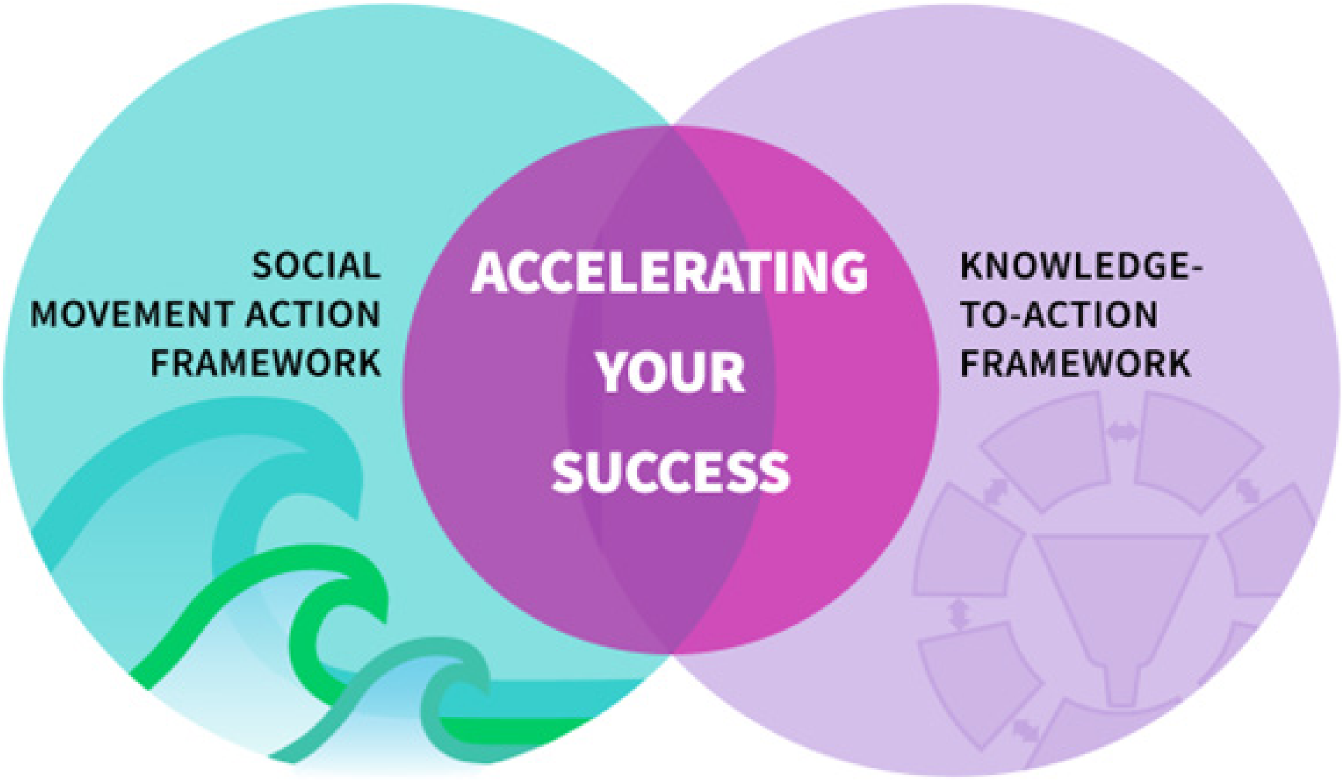
RECOMMENDATION QUESTION	PRIORITY RESEARCH AREA
RECOMMENDATION QUESTION #2: **Should interactive education on pain prevention, assessment and management for students entering health professions be recommended or not?** **Outcomes:** Student competency (or the knowledge and skills that contribute to those competencies); student confidence or attitude; practice behaviour: pain interventions delivered by students (including documentation of pain interventions delivered); practice behaviour: student completion of pain assessment (including documentation of pain assessment)	▪ The impact of interactive education on knowledge outcomes by discipline. ▪ The impact of interactive education on knowledge scores for comprehensive undergraduate pain education. ▪ The identification of reliable student knowledge measurement outcomes and other core outcomes. ▪ Further research to identify reliable knowledge measurement outcomes.
RECOMMENDATION QUESTION #3: **Should interactive education on pain prevention, assessment and management for health providers be recommended or not?** **Outcomes:** health provider competency (or the knowledge and skills that contribute to those competencies); practice behaviour: pain interventions delivered by health providers (including documentation of pain interventions delivered); practice behaviour: health provider completion of pain assessment (including documentation of pain assessment); health provider confidence or attitude; health provider satisfaction	▪ The impact of provider interactive education on patient-reported outcomes such as patient satisfaction. ▪ Pain knowledge among different members of the interprofessional team.

Implementation strategies

Implementing guidelines at the point of care is multi-faceted and challenging. It takes more than awareness and access to BPGs for practice to change. BPGs must be adapted for each practice setting in a systematic and participatory way to ensure that recommendations fit the local context (145). The Leading Change Toolkit (developed by RNAO in partnership with Healthcare Excellence Canada), provides evidence-based processes for this (see **Appendix G**) (4).

The Leading Change Toolkit uses two complementary frameworks to guide evidence uptake and sustainability (see **Figure 2**). They can be used together to maximize and accelerate change.

Figure 2: The Leading Change Toolkit: Two complementary frameworks to accelerate your success



Source: Reprinted with permission from: Registered Nurses' Association of Ontario (RNAO), Healthcare Excellence Canada (HEC). Leading change toolkit [Internet]. 4th ed. Toronto (ON): RNAO; 2024. Available from: RNAO.ca/leading-change-toolkit

The Social Movement Action Framework (1,2) is descriptive and identifies the defining elements of a social movement for knowledge uptake and sustainability. It integrates a bottom-up, people-led approach to change for a shared concern (or common cause) in which change agents and change teams mobilize individual and collective action to achieve goals. The framework's elements — categorized as preconditions, key characteristics and outcomes — are dynamic, inter-related and develop spontaneously as the social movement evolves.

The Knowledge-to-Action Framework uses a process model of action cycle phases to systematically guide the adaptation of the new knowledge (e.g., a BPG) to the local context and implementation. This framework suggests identifying and using knowledge tools/products (such as guidelines) to determine gaps and begin the process of tailoring the new knowledge to local settings.

The Leading Change Toolkit is based on emerging evidence in health and social sciences that successful uptake and sustainability of best practice in health care is more likely when the following occur:

1. BPGs are selected for implementation through a participatory process led by change agents and change teams.
2. The selected BPGs reflect priority areas for a shared concern that are credible, valued and meaningful, or for an urgency for action.
3. Others impacted by the change are identified and engaged throughout implementation to engage in individual and collective action.
4. Receptivity for implementing BPGs, including environmental readiness, is assessed.
5. Implementation strategies are tailored to the local context and designed to address barriers.
6. Use of the BPG is monitored and sustained.
7. Evaluation of the BPG's impact is embedded in the process to determine if the goals and outcomes have been met.
8. There are adequate resources to complete all aspects of the uptake and sustainability of the BPG.
9. The BPG is scaled up, out or deep, where possible, to widen its influence and create lasting health improvements.

RNAO is committed to the widespread dissemination, implementation and sustainability of our BPGs. We use a systematic approach deploying various strategies, including the following:

1. The RNAO Best Practice Champion Network®, which powers the capacity of change agents to foster awareness, engagement, adoption and sustainability of BPGs. RNAO best practice champions are persons and organizations who are passionate about implementing evidence-based practices and mobilizing others. Together they can improve care and health through the integration of competencies as defined by RNAO's Best Practice Champions Competency Framework. Champions include nurses and other health professionals from all roles and health sectors, students, advocates, persons with lived experience and caregivers.
2. RNAO Clinical Pathways™ are digitized recommendations and good practice statements embedded into electronic medical records through a third-party software. Currently, these clinical pathways are available to all Canadian Long-Term Care homes.
3. The Best Practice Spotlight Organization® (BPSO®) designation supports implementation at the organization and system levels. BPSOs focus on developing evidence-based cultures with the specific mandate to implement, evaluate and sustain multiple RNAO BPGs.

In addition, we offer annual capacity-building learning institutes on the implementation of practice change.

Information about our implementation strategies can be found at the following websites:

- RNAO Best Practice Champions Network®: RNAO.ca/bpg/get-involved/champions
- RNAO Clinical Pathways™: RNAO.ca/bpg/implementation/clinicalpathways
- RNAO BPSO®: RNAO.ca/bpg/bpso
- RNAO capacity-building learning institutes and other professional development opportunities: RNAO.ca/events

Appendix A: Glossary of terms

Acute pain: Pain that occurs suddenly, starts out as sharp or intense, and serves as a warning sign of disease or threat to the body. Acute pain tends to be caused by injuries, illness, surgeries or other painful medical procedures or traumas. Acute pain lasts less than six months, and usually disappears when the underlying cause is treated or healed (24).

Best practice guidelines (BPG): “Best practice guidelines are systematically developed, evidence-based documents that include recommendations for nurses and the interprofessional team, educators, leaders and policy makers, persons and their families on specific clinical and healthy work environment topics. BPGs promote consistency and excellence in clinical care, health policies and health education, ultimately leading to optimal health outcomes for people and communities and the health system” (146).

Best Practice Spotlight Organization® (BPSO®): A health service or academic organization that has formally partnered with RNAO over a three-year period to create evidence-based practice cultures through the systematic implementation and outcome evaluation of multiple best practice guidelines (BPGs) (147).

Caregivers: An individual that provides physical, psychological and emotional support, as deemed important by the person receiving care. This care can include support in decision making, care coordination and continuity of care. Caregivers can include family members, close friends or other individuals and they are identified by the person receiving care or substitute decision maker (148).

*The term care partner may also be used commonly in practice

Chronic pain: Pain that persists or recurs for longer than three months, and often becomes the sole or predominant clinical problem in some people (25). Chronic pain is multifactorial: biological, psychological and social factors contribute to the pain syndrome (25). The *International Classification of Diseases, Eleventh Revision (ICD-11)*, by the World Health Organization (WHO) breaks chronic pain into the following sub-types of chronic pain: chronic primary pain, chronic cancer related pain, chronic post-surgical or post traumatic pain, chronic secondary musculoskeletal pain, chronic secondary visceral pain, chronic neuropathic pain and chronic secondary or orofacial pain (25).

Comprehensive pain assessment: A comprehensive pain assessment is completed with anyone having the presence, or risk of, any type of pain. The comprehensive pain assessment permits the health provider to elicit the person’s subjective report of pain, including the sensory, psychologic, cultural, and emotional aspects of their pain experience and understand the impact this has on the person’s life. A mnemonic is often used to articulate the components of a comprehensive pain assessment such as the PQRSTU or OPQRSTUV tools (58).

Cultural safety: “Cultural safety is about the experience of the patient. It is an outcome based on respectful engagement that recognizes and strives to address power imbalances inherent in the health-care system. It results in an environment free of racism and discrimination, where people feel safe when receiving health care” (149).

Evidence-based practice: The integration of research evidence with clinical expertise and patient values. It unifies research evidence with clinical expertise and encourages the inclusion of patient preferences (150).

Evidence-to-Decision (EtD) frameworks: A table that helps guideline panels make decisions when moving from evidence to recommendations. The purpose of the Evidence-to-Decision framework (EtD) is to summarize the research evidence, outline important factors that can determine the recommendation, inform panel members about the benefits and harms of each intervention considered, and increase transparency about the decision-making process in the development of recommendations (13).

External reviewer: Individuals or groups who commit to reviewing and providing feedback on the draft RNAO best practice guideline prior to publication. External reviewers often include individuals or groups directly impacted by the guideline topic and recommendations (e.g., people accessing health services, people working in health service organizations or people with subject-matter expertise).

Families/Family: A term used to refer to individuals who are related to (biologically, emotionally or legally) and/or have close bonds (friendships, commitments, shared households and child rearing responsibilities, and romantic attachments) with the person receiving health care. A person's family includes all those whom the person identifies as significant in his or her life (e.g., parents, caregivers, friends, substitute decision-makers, groups, communities and populations). The person receiving care determines the importance and level of involvement of any of these individuals in their care based on his or her capacity" (151).

Good practice statement: Good practice statements are directed primarily to nurses and the interprofessional teams that provide care to persons and their families across the continuum of care, including (but not limited to) primary care, home and community care, acute care and long-term care.

Good practice statements are actionable statements that should be done in practice (8). These are believed to be so beneficial that summarizing the evidence would be a poor use of the expert panel's time and resources (8). Moreover, researchers may no longer be conducting studies on the topic, or the alternative to the action may be unethical or studying them may go against human rights (8,9). Given the high level of certainty that the benefits derived from the good practice statement outweigh the harms, they are not based on a systematic review of the evidence and do not receive a rating of the certainty in their evidence or a strength (i.e., a rating of conditional or strong, which is further discussed below) (10). This does not diminish certainty in the evidence. While they are often supported by indirect evidence, there is a well-documented, clear and explicit rationale connecting the indirect evidence to the statement (8). As such, good practice statements should be interpreted as strong recommendations as there is an underlying assumption that there is high certainty in the benefits of implementing the action (8).

Grading of Recommendations Assessment, Development and Evaluation (GRADE): A methodological approach to assess the certainty of a body of evidence in a consistent and transparent way and to develop recommendations systematically. The body of evidence across identified important and/or critical outcomes is evaluated based on the risk of bias, consistency of results, relevance of studies, precision of estimates, publication bias, large effect, dose-response and opposing confounding (13).

When using GRADE, five components contribute to the assessment of confidence in the evidence for each outcome. These components are as follows:

1. Risk of bias: Focuses on flaws in the design of a study or problems in its execution.
2. Inconsistency: Examines a body of evidence and assesses whether the results point in the same direction or are different.
3. Imprecision: Refers to the accuracy of results based on the number of participants and/or events included, and the width of the confidence intervals across a body of evidence.
4. Indirectness: Each primary study that supports an outcome is assessed and a decision is made regarding the applicability of the findings to the population, intervention and outcome outlined in the research question.
5. Publication bias: A decision about whether the body of published literature for an outcome potentially includes only positive or statistically significant results (13).

Health equity: Equity is the absence of unfair, avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically, or by other dimensions of inequality (e.g., sex, gender, ethnicity, disability or sexual orientation). Health equity is achieved when everyone can attain their full potential for health and well-being (152).

Health provider: Refers to regulated (e.g., nurses, physicians, dietitians, social workers) and unregulated (e.g., personal support workers) workers who are part of the interprofessional team.

Regulated health provider: In Ontario, the *Regulated Health Professional Act, 1991* (RHPA) provides a framework for regulating 26 health professions, outlining the scope of practice and the profession-specific controlled or authorized acts that each regulated professional is authorized to perform when providing health care and services (153).

Unregulated health provider: Unregulated health providers fulfill a variety of roles in areas that are not subject to the RHPA. They are accountable to their employers but not to an external regulating professional body (such as the College of Nurses of Ontario). Unregulated health providers fulfill their roles and tasks determined by their employers. They are referred to as unregulated care providers (UCPs), depending on the practice setting (e.g., long-term care). Unregulated health providers only have the authority to perform a controlled act as set out in the RHPA if the procedure falls under one of the exemptions set out in the Act (154).

Health service organizations: Organizations delivering health-care services to defined communities or populations. This includes, but is not limited to, family health teams, community health centres, home care organizations and hospitals.

Implementation science: "The scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services and care" (155).

Indigenous: Introduced and used in a global context following the international efforts of Aboriginal peoples to achieve a greater presence in the United Nations (UN). The UN broadly defines Indigenous persons as peoples of long settlement and connection to specific lands who practise unique traditions and retain social, cultural, economic and political characteristics distinct from those of the dominant societies in which they reside (156). Under the UN definition, Indigenous is generally understood to include the following: self-identification at the individual level and acceptance by an Indigenous community as a member; historical continuity with pre-colonial or pre-settler societies; strong links to territories and surrounding natural resources; distinct social, economic or political systems; and distinct language, culture and beliefs. Indigenous peoples form non-dominant groups within society and resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities (156).

The Canadian Constitution recognizes three groups of Indigenous peoples: First Nations, Inuit and Métis. These are three distinct peoples with unique histories, languages, cultural practices and spiritual beliefs (157).

Integrative approach to pain: An integrative approach to pain prevention, assessment and management acknowledges the complexity and biopsychosocial nature of the pain experience and involves health providers creating an individualized, person- and family-centred plan of care that combines treatment strategies to include both pharmacological and non-pharmacological pain interventions (NPI) (73).

Interprofessional team: A team comprised of multiple health providers (regulated and unregulated) who work collaboratively to deliver comprehensive and quality health services to persons within, between and across health-care setttings (7). Key interprofessional team members supporting people experiencing pain may include nurses, general practitioners, physicians, dieticians and pharmacists. It is important to emphasize that persons and their family are at the centre of the interprofessional team as active participants.

Meta-analysis: A systematic review that uses statistical methods to analyze and summarize the results of the included studies (158).

See systematic review

Mixed pain: An evolving concept currently defined as a "complex overlap of the different known pain types (e.g., nociceptive, neuropathic and nociplastic) in any combination, acting concurrently and/or simultaneously to cause pain in the same body area. Either mechanism may be more clinically predominant at any point in time. Mixed pain can be acute or chronic" (26).

Neuropathic pain: Pain that is caused by a lesion or disease of the somatosensory nervous system (17).

Nociceptive pain: Pain that arises from actual or threatened damage to non-neural tissue and is due to the activation of nociceptors (17).

Nociplastic pain: Pain that arises from altered nociception despite no clear evidence of actual or threatened tissue damage causing the activation of peripheral nociceptors or evidence for disease or lesion of the somatosensory system causing the pain (17).

Non-pharmacological interventions for pain management (NPI): Interventions to prevent and/or manage any type of pain that do not involve using pharmacological medication.

Non-randomized study (NRS): A quantitative study that estimates an intervention's effectiveness. Participants are allocated to different interventions using methods that are not random (158).

Nurse: Refers to registered nurses, licensed practical nurses (referred to as "registered practical nurses" in Ontario), registered psychiatric nurses and nurses in advanced practice roles, such as nurse practitioners and clinical nurse specialists (153).

Outcomes: A dependent variable, or the clinical and/or functional status of a patient or population, used to assess if an intervention is successful. In GRADE, outcomes are prioritized based on whether they are (a) critical for decision making, (b) important but not critical for decision making, or (c) not important. The use of these outcomes helps make literature searches and systematic reviews more focused (13).

Pain: "An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage". Pain is both complex and multifactorial (86).

Pain assessment: "The systematic process of evaluating and quantifying a person's experience of pain. Gathering information from patients about their pain experience is essential to better understand and manage it. This process relies on self-reported information, standardized scales and tools, non-verbal cues, and consideration of various dimensions of pain, including its impact on the patient's life. Accurate pain assessment also considers pain's location, impact, and cultural factors, ultimately guiding tailored treatments for improved pain management and overall patient care" (28). There are a variety of tools that providers use to assess pain (159).

Pain management: The use of pharmacological and non-pharmacological interventions to control the person's identified pain. Pain management includes the interprofessional health team and extends beyond pain relief, encompassing the person's quality of life, ability to work productively, enjoy recreation, function normally in the family and society, and die with dignity (160).

Pain prevention: Focuses on evidence-based primary, secondary and tertiary pain prevention strategies and interventions.

- Primary prevention focuses on strategies and interventions to prevent acute pain, such as post-surgical pain (e.g., pharmacotherapy, physiotherapy, massage, relaxation and education).
- Secondary strategies focus on preventing the development of chronic pain (e.g., time-contingent exercise and medication).
- Tertiary pain prevention focuses on strategies to reduce the impact of chronic pain (e.g., interprofessional pain teams) (28).

Pain screening: A process of determining the presence or absence of any type of pain. If screening for pain identifies the presence of pain, then a more detailed and comprehensive pain assessment of this pain reporting is required (161).

Person: An individual with whom a health or social service provider has established a therapeutic relationship for the purpose of partnering for health. Replaces the terms "patient," "client" and "resident" used across health and social service organizations (151).

Person- and family-centred care: An "approach to care [demonstrating] certain practices that put the person and their family members at the centre of health care and services. Person- and family-centred care respects and empowers individuals to be genuine partners with health-care providers for their health" (151).

Persons with lived experience: Members of the community who have first-hand experience and knowledge of the topic of interest either as a person, unpaid caregiver or advocate. Persons with lived experience are a diverse group with various backgrounds and experiences (162).

PICO research question: A framework to outline a focused question. It specifies four components:

- Patient or population that is being studied.
- Intervention to be investigated.
- Comparison or alternative intervention.
- Outcome of interest (13).

Quantitative research: A research approach that investigates phenomena with tools that produce statistical measurements/numerical data (163).

Randomized controlled trial (RCT): An experiment in which the investigator assigns one or more interventions to participants who are randomly allocated to either the experimental group (receives intervention) and the comparison (conventional treatment) or control group (no intervention or placebo) (158).

Recommendation: A course of action(s) that directly answers a recommendation question (also known as a “PICO research question”). A recommendation is based on a systematic review of the literature and is made in consideration of its (a) benefits and harms (b) values and preferences and (c) health equity. All recommendations are given a strength, either *strong* or *conditional*, through panel consensus.

It is important to note that recommendations should not be viewed as dictates, because they cannot take into account all of the unique features of individual, organizational and clinical circumstances (13).

Recommendation question: A priority research area of practice, policy or education identified by expert panel members that requires evidence to answer. The recommendation question may also aim to answer a topic area around which there is ambiguity or controversy. The recommendation question informs the research question, which guides the systematic review.

Self-management: Often associated with self-care and includes various activities that persons undertake to live well with one or more chronic conditions (164).

Systematic review (SR): A comprehensive review of the literature that uses clearly formulated questions and systematic and explicit methods to identify, select and critically appraise relevant research. A systematic review collects and analyzes data from the included studies and presents them, sometimes using statistical methods (158).

See meta-analysis

Appendix B: RNAO guidelines and resources that align with this guideline

The following are some topics and suggested RNAO guidelines and resources from other organizations that align with this BPG.

TOPIC	RESOURCE(S)
Cultural safety and anti-racism	▪ Booker SQ, Bartley EJ, Powell-Roach K, et al. The imperative for racial equality in pain science: a way forward. J Pain. 2021;22(12):1578-85. Available from: https://doi.org/10.1016/j.jpain.2021.06.008 ▪ Morales, ME, Yong RJ. Racial and ethnic disparities in the treatment of chronic pain. Pain Med. 2021 Jan;22(1):75-90. Available from: https://doi.org/10.1093/pm/pnaa427
Harm reduction	▪ Registered Nurses' Association of Ontario (RNAO). Engaging clients who use substances [Internet]. Toronto (ON): RNAO; 2015 Mar. Available from: https://rnao.ca/bpg/guidelines/engaging-clients-who-use-substances
Health equity	▪ Health Equity. In: EQUIP Health Care. Vancouver (BC): The University of British Columbia; [date unknown]. Available from: https://equiphealthcare.ca/resources/about-health-equity-and-health-equity-interventions/
Implementation science, implementation frameworks and resources	▪ Registered Nurses' Association of Ontario (RNAO), Healthcare Excellence Canada (HEC). Leading change toolkit [Internet]. 4th ed. Toronto (ON): RNAO; 2024. Available from: https://www.RNAO.ca/leading-change-toolkit
Interprofessional collaboration	▪ Registered Nurses' Association of Ontario (RNAO). Developing and sustaining interprofessional health care: optimizing patient, organizational and system outcomes [Internet]. Toronto (ON): RNAO; 2013 Dec. Available from: https://rnao.ca/bpg/guidelines/interprofessional-team-work-healthcare
Person- and family-centred care	▪ Registered Nurses' Association of Ontario (RNAO). Person- and family-centred care [Internet]. Toronto (ON): RNAO; 2015 May. Available from: https://rnao.ca/bpg/guidelines/person-and-family-centred-care **Note:** This BPG is currently under revision.

TOPIC	RESOURCE(S)
Pain management	▪ Busse JW, Craigie S, Juurlink DN. Guideline for opioid therapy and chronic noncancer pain. CMAJ [Internet]. 2017 May 8;189(18):E659-66. Available from: https://doi.org/10.1503/cmaj.170363 ▪ Manchikanti L, Kaye AM, Knezevic NN, et al. Responsible, safe, and effective prescription of opioids for chronic non-cancer pain: American Society of Interventional Pain Physicians (ASIPP) Guidelines. Pain Physician [Internet]. 2017;20(2S):S3-92. Available from: https://www.painphysicianjournal.com/current/pdf?article=NDIwMg%3D%3D&journal=103 ▪ Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016. MMWR Recomm Rep [Internet]. 2016;65(No. RR-1):1-49. Available from: http://dx.doi.org/10.15585/mmwr.rr6501e1 ▪ Health Quality Ontario (HQO). Chronic pain: care for adults, adolescents, and children [Internet]. Toronto (ON): HQO; 2020. Available from: https://www.hqontario.ca/Portals/0/documents/evidence/quality-standards/qs-chronic-pain-quality-standard-en.pdf ▪ Health Quality Ontario (HQO). Opioid prescribing for acute pain: care for people 15 years of age and older [Internet]. Toronto (ON): HQO; 2018. Available from: https://www.hqontario.ca/portals/0/documents/evidence/quality-standards/qs-opioid-acute-pain-clinician-guide-en.pdf ▪ Institute of Clinical Systems Improvement (ICSI). Pain: assessment, non-opioid treatments approaches and opioid management [Internet]. 8th ed. Version 2. Bloomington (MN): ICSI; [revised 2017 Aug]. Available from: https://www.icsi.org/guideline/pain/ ▪ National Institute for Health and Care Excellence (NICE). Chronic pain (primary and secondary) in over 16s: assessment of all chronic pain and management of chronic primary pain [Internet]. Manchester (UK): NICE; 2021 Apr 7. Available from: https://www.nice.org.uk/guidance/ng193/resources/chronic-pain-primary-and-secondary-in-over-16s-assessment-of-all-chronic-pain-and-management-of-chronic-primary-pain-pdf-66142080468421 ▪ Scottish Intercollegiate Guidelines Network (SIGN). Management of chronic pain: a national clinical guideline [Internet]. Edinburgh (UK): SIGN; 2013 Dec [revised 2019 Aug]. Available from: https://www.sign.ac.uk/media/2097/sign136_2019.pdf ▪ U.S. Department of Veterans Affairs. Clinical practice guideline for the use of opioids in the management of chronic pain [Internet]. Version 4.0. Washington (DC): U.S. Department of Veterans Affairs; 2022 May. Available from: www.healthquality.va.gov/guidelines/pain/cot/ ▪ World Health Organization (WHO). Guidelines on the management of chronic pain in children [Internet]. Geneva (CH): WHO; 2020. Available from: https://www.who.int/publications/i/item/9789240017870

TOPIC	RESOURCE(S)
Pain management cont.	▪ Pain Treatment Services. In: International Association for the Study of Pain (IASP) [Internet]. Washington (DC): IASP; c2021. Available from: https://www.iasp-pain.org/resources/guidelines/pain-treatment-services/ ▪ Health Service Organization (HSO). HSO pediatric pain management. Ottawa (ON): HSO; 2023 Mar. Available from: https://healthstandards.org/standards/pediatric-pain-management-can-hso-13200-2023-e/
Palliative and end-of-life care	▪ Registered Nurses' Association of Ontario (RNAO). A palliative approach to care in the last 12 months of life [Internet]. Toronto (ON): RNAO; 2020 Mar. Available from: https://rnao.ca/bpg/guidelines/palliative-approach-care-last-12-months-life ▪ Registered Nurses' Association of Ontario (RNAO). End-of-life care during the last days and hours [Internet]. Toronto (ON): RNAO; 2011 Sep. Available from: https://rnao.ca/bpg/guidelines/endoflife-care-during-last-days-and-hours
Trauma-informed practices	▪ Registered Nurses' Association of Ontario (RNAO). Crisis intervention for adults using a trauma-informed approach: initial four weeks of management [Internet]. Toronto (ON) RNAO; 2017 Dec. Available from: https://rnao.ca/bpg/guidelines/crisis-intervention

Appendix C: Comprehensive pain assessment mnemonic (OPQRSTUV)

The following mnemonic can be used to conduct a comprehensive pain assessment. Note that this assessment may not be the most appropriate tool for all presentations of pain.

Onset	When did the pain begin? How long does it last? How often does the pain occur?
Provoking/Palliating	What brings on the pain? What makes it better? What makes it worse?
Quality	What does the pain feel like? Can you describe it?
Region/Radiation	Where is the pain located? Does it spread anywhere?
Severity	What is the intensity of the pain? Rate your pain on a scale of 0 to 10 with 0 being no pain and 10 being the worst possible pain.
Timing/Treatment	Is the pain constant? Does it come and go? Is it worse at any particular time? What medication and treatments are you currently using? How effective are these? Do you have any side effects from the medication and treatments?
Understanding/ Impact on you	What do you believe is causing the pain? Are there any other symptoms with the pain? How is this pain impacting you and your family?
Values	What is your goal for this pain? What is your comfort goal or acceptable level for this pain? Rate your goal on a scale of 0 to 10 with 0 being no pain and 10 being the worst possible pain. Are there any other views or feelings about this pain that are important to you and your family? Is there anything else you would like to say about your pain that has not already been discussed or asked?

Source: Adapted from: Fraser Health. Hospice palliative care program: symptom guidelines [Internet]. Surrey (BC): Fraser Health; 2019. Available from: https://www.fraserhealth.ca/-/media/Project/FraserHealth/FraserHealth/Health-Professionals/Professionals-Resources/Hospice-palliative-care/Sections-PDFs-for-FH-Aug31/9524-01-05-FH---Sym_Guide-Intro-v05FINAL.pdf

Appendix D: Pain screening and assessment tools

Pain screening and assessment tools can be self-reported (by the individual experiencing pain and/or their family) or observational (behaviours observed by a health provider in an individual who is unable to communicate or is unconscious). The section below describes validated tools that can be used to assess pain in various populations and contexts. However, this is not an exhaustive list. Please follow organizational policies for pain tool usage. Not all tools are validated for all populations and settings. RNAO does not endorse the use of any one specific pain screening and assessment tool.

Table 12: Self-report pain scales or tools (by population and context)

POPULATION AND CONTEXT	SELF-REPORT TOOLS	TOOL RESOURCE
Acute pain in children	▪ Wong-Baker FACES Pain Rating Scale (3-18 years)	Wong-Baker FACES Foundation [Internet]. Oklahoma City (OK): Wong-Baker FACES Foundation; c2016. Available from: https://wongbakerfaces.org/
	▪ Visual Analogue Scale (VAS) ages 8 and older)	McGill University Health Centre, The Montreal Children's Hospital. Pain assessment & measurement guidelines [Internet]. Montréal (QC): McGill University; 2008. Available from: https://www.mcgill.ca/anesthesia/files/anesthesia/mch_pain_guidelines.pdf
	▪ Faces Pain Scale Revised (FPS-R): A self-report pain intensity measure developed for use with children	Faces Pain Scale – Revised. In: International Association for the Study of Pain (OASP) [Internet]. Washington (DC): IASP; c2021. Available from: https://www.iasp-pain.org/resources/faces-pain-scale-revised/ *Requires permission to publish tool itself
	▪ Numerical Rating Scale (NRS)-11 (ages 6 and older)	Trottier ED, Ali S, Doré-Bergeron, MJ, Chauvin-Kimoff L. Position statement: best practices in pain assessment and management for children. Paediatr Child Health. 2022;27(7):429-37. Available from: https://doi.org/10.1093/pch/pxac048

POPULATION AND CONTEXT	SELF-REPORT TOOLS	TOOL RESOURCE
Acute pain in adolescents	▪ Wong-Baker FACES pain scale (3-18 years)	See above
	▪ Visual Analogue Scale (VAS)	See above
	▪ Numerical rating scale (NRS)-11	See above
Acute pain in adults (including cognitively intact older adults)	▪ Brief Pain Inventory (BPI)	The Brief Pain Inventory. In: The University of Texas MD Anderson Cancer Center [Internet]. [place unknown]: MD Anderson Cancer Center; c2024. Available from: https://www.mdanderson.org/research/departments-labs-institutes/departments-divisions/symptom-research/symptom-assessment-tools/brief-pain-inventory.html
	▪ Visual Analogue Scale (VAS)	See above
	▪ Numerical Rating Scale (NRS)-11	See above
	▪ Summary of self-report pain assessment tools in cognitively intact older adults	Kang Y, Demiris G. Self-report pain assessment tools for cognitively intact older adults: integrative review. Int J Older People Nurs. 2018 Jun;13(2):e12170. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC5886828/pdf/nihms902431.pdf

POPULATION AND CONTEXT	SELF-REPORT TOOLS	TOOL RESOURCE
Ambulatory and adult in-patient settings and assessment of chronic pain	▪ Brief Pain Inventory (BPI) [short form] ▪ The Clinically Aligned Pain Assessment Measure (CAPA) ▪ Defense and Veterans Pain Rating Scale ▪ The Geriatric Pain Measure ▪ The PEG ▪ The Short Form 36 (QoL tool) ▪ Bodily Pain Scale ▪ Pain Monitor	Scher, C. Petti E, Meador L, et al. Multidimensional pain assessment tools for ambulatory and inpatient nursing practice. Pain Manag Nurs. 2020 Oct;21(5):416-22. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC7554114/pdf/nihms-1579700.pdf

Table 13: Observational (behavioural) tools (by population and context)

POPULATION AND CONTEXT	OBSERVATIONAL (BEHAVIOURAL) TOOLS	TOOL RESOURCE
Pre-term and term infants	For acute procedural pain: ▪ Neonatal Infant Pain Scale (NIPS) (facial expression, cry, breathing patterns, arms, legs, state of arousal) ▪ Premature Infant Pain Profile (PIPP) ▪ Premature Infant Pain Profile-Revised (PIPP-R) (includes additional behavioural indicators) ▪ Face, Legs, Activity, Cry, Consolability Scale (FLACC or r-FLACC) (validated for birth to adolescence)	UW Health Kids. Neonatal Infant Pain Scales [Internet]. Madison (WI): University of Wisconsin; [updated 2021 Jul]. Available from: https://patient.uwhealth.org/healthfacts/7711 Stevens BJ, Gibbins S, Yamada J, et al. The premature Infant Pain Profile-Revised (PIPP-R): initial validation and feasibility. Clin J Pain. 2014 Mar;30(3):238-43. Available from: https://efisiopediatric.com/wp-content/uploads/2017/08/The-Premature-Infant-Pain-Profile-Revised-PIPP-R.pdf Trottier ED, Ali S, Doré-Bergeron, MJ, Chauvin-Kimoff L. Position statement: best practices in pain assessment and management for children. Paediatr Child Health. 2022;27(7):429-37. Available from: https://doi.org/10.1093/pch/pxac048

POPULATION AND CONTEXT	OBSERVATIONAL (BEHAVIOURAL) TOOLS	TOOL RESOURCE
Pre-term and term infants cont.	For post-operative pain: ▪ Neonatal Pain, Agitation and Sedation Scale (N-PASS) (some validation for acute procedural pain) (crying/irritability, behaviour state, facial expression, extremities tone, vital signs) ▪ Pain Assessment Tool (PAT) (Posture/tone, sleep pattern, expression, colour, cry, respirations, heart rate, oxygen saturation, blood pressure, nurse's perception)	Hillman BA, Tabrizi MN, Gauda EB, et al. The Neonatal Pain, Agitation and Sedation scale and the bedside nurse's assessment of neonates. J Perinatol. 2015;35(2):128-31. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC5526063/ Spence K, Gillies D, Harrison D, et al. A reliable pain assessment tool for clinical assessment in the neonatal intensive care unit. JOGNN. 2005 Jan;34(1):80-6. Available from: https://doi.org/10.1177/0884217504272810
	For prolonged pain: ▪ COMFORTneo Scale	Meesters NJ, Dilles T, van Rosmalen J. COMFORTneo scale: a reliable and valid instrument to measure prolonged pain in neonates? J Perinatol. 2023;43:595-600. Available from: https://doi.org/10.1038/s41372-023-01628-1
	▪ Summary of validated neonatal pain scales	Olsson E, Ahl H, Bengtsson K. The use and reporting of neonatal pain scales: a systematic review of randomized trials. Pain. 2021;162(2):353-360. Available from: https://doi.org/10.1097/j.pain.0000000000002046
	▪ Practice update for the assessment and management of pain in preterm infants	Campbell-Yeo M, Eriksson M, Benoit B. Assessment and management of pain in preterm infants: a practice update. Children. 2022;9(2):244. Available from: https://doi.org/10.3390/children9020244
Children in acute pain with developmental disability	▪ Revised Face, Legs, Activity, Cry, and Consolability Scale (r-FLACC) ▪ Non-Communicating Children's Pain Checklist – Post-operative Version (NCCPC-PV) ▪ Individualized Numeric Rating Scale (INRS) ▪ Pediatric Pain Profile (PPP)	Crosta QR, Ward TM, Walker AJ, Peters LM. A review of pain measures for hospitalized children with cognitive impairment. J Spec Pediatr Nurs. 2014 Apr;19(2):109-18. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC4100776/pdf/nihms-573204.pdf

POPULATION AND CONTEXT	OBSERVATIONAL (BEHAVIOURAL) TOOLS	TOOL RESOURCE
Children with pain in critical care	▪ COMFORT Behaviour Scale (COMFORT-B) (intubated and ventilated, 0-18 years)	Boerlage AA, Ista E, Duivenvoorden HJ. The COMFORT behaviour scale detects clinically meaningful effects of analgesic and sedative treatment. Eur J Pain. 2015:19(4);473-79. Available from: https://doi.org/10.1002/ejp.569 Sedation and Weaning in Children (SANDWICH). COMFORT B teaching posters. Belfast (UK): Queen's University Belfast; 2018-2019. Available from: https://www.qub.ac.uk/sites/sandwich/filestore/champion-pack/Filetoupload,909564,en.pdf
Adolescents experiencing chronic pain	▪ Bath Adolescent Pain Questionnaire (BAPQ) ▪ PROMIS Pediatric Pain Interference Scale (PII) ▪ Child Activity Limitations Questionnaire (CALQ) ▪ Pain Interference Index (PII) ▪ Pain Experience Questionnaire (PEQ) ▪ Pain-Related Problem List for Adolescents (PRBL-A)	Greenough MJ, Jibb L, Lewis KB, et al. A systematic review of the biopsychosocial dimensions affected by chronic pain in children and adolescents: identifying reliable and valid pediatric multidimensional chronic pain assessment tools. Pain Rep. 2023;8(6):e1099. Available from: https://doi.org/10.1097/PR9.0000000000001099
Pain in adults with intellectual and developmental disabilities	▪ HELP tool (health, environmental support, lived experience, psychiatric conditions)	Surrey Place. HELP with emotional and behavioural concerns in adults with intellectual and developmental disabilities [Internet]. Toronto (ON): Surrey Place; [updated 2019 Jul]. Available from: https://oen.echoontario.ca/media/HELP-4-BTC-in-IDD.pdf
	▪ Chronic Pain Scale for Nonverbal Adults with Intellectual Disabilities (CPS-NAID)	Centre for Pediatric Pain Research. Chronic pain scale for nonverbal adults with intellectual disabilities (CPS-NAID) [Internet]. Halifax (NS): Centre for Pediatric Pain Research; 2013. Available from: https://www.pediatric-pain.ca/wp-content/uploads/2013/04/CPSNAID.pdf

POPULATION AND CONTEXT	OBSERVATIONAL (BEHAVIOURAL) TOOLS	TOOL RESOURCE
Pain in adults with intellectual and developmental disabilities cont.	▪ Disability Distress Assessment Tool (DisDAT)	How to use DisDAT. In: St Oswald's Hospice. Newcastle upon Tyne (UK): St Oswald's Hospice; [date unknown]. Available from: https://www.stoswaldsuk.org/how-we-help/we-educate/education/resources/how-to-use-disdat/ St Oswald's Hospice. DisDAT: distress and discomfort assessment tool [Internet]. Version 22. Newcastle upon Tyne (UK): St Oswald's Hospice; 2022. Available from: https://www.stoswaldsuk.org/wp-con-tent/uploads/2022/11/disdat-22.pdf
Adults in critical care (intubated and ventilated)	▪ Behavioral Pain Scale (BPS or BPS-NI)	Gélinas C, Joffe AM, Szumita PM, et al. A psychometric analysis update of behavioural pain assessment tools for non-communicative, critically ill adults. AACN Adv Crit Care. 2019;30(4):365-87. Available from: https://doi.org/10.4037/aacnacc2019952
	▪ Critical-Care Pain Observation Tool (CPOT or CPOT-Neuro)	Gélinas C, Bérubé M, Puntillo KA, et al. Validation of the Critical-Care Pain Observation Tool-Neuro in brain-injured adults in the intensive care unit: a prospective cohort study. Crit Care. 2021;25(1):142. Available from: https://doi.org/10.1186/s13054-021-03561-1

POPULATION AND CONTEXT	OBSERVATIONAL (BEHAVIOURAL) TOOLS	TOOL RESOURCE
Older adults living with dementia (acute and/or chronic pain)* *Health providers should also ask the resident to self-report pain (do you have any pain, aching or soreness?) and they should observe the resident during movement if able, not just at rest.	- Pain Assessment in Advanced Dementia Tool (PAINAD)	Geriatric Pain. Pain assessment in advanced dementia (PAINAD) [Internet]. Iowa City (IA): The University of Iowa; [date unknown]. Available from: https://geriatricpain.org/sites/geriatricpain.org/files/2020-06/PAINAD.pdf Nathan K. The Highly Accurate PAINAD Scale: Pain Assessment in Advanced Dementia Scale. In: Geriatric Academy [Internet]. [place unknown]: Geriatric Academy; 2023 Jun 30. Available from: https://geriatricacademy.com/painad-scale/
	- Pain Assessment Checklist for Seniors with Limited Ability to Communicate Tool (PACSLAC and PASSLAC II)	Geriatric Pain. The pain assessment scale for seniors with severe dementia (PACSLAC). Iowa City (IA): The University of Iowa; [revised 2019 Mar]. Available from: https://geriatricpain.org/sites/geriatricpain.org/files/2023-06/PACSLAC_Final%20with%20logo2.pdf Geriatric Pain. Pain assessment checklist for seniors with limited ability to communicate-II (PACSLAC-II). Iowa City (IA): The University of Iowa; [reviewed 2023 Nov]. Available from: https://geriatricpain.org/sites/geriatricpain.org/files/2023-12/Clinicians%20PASLAC%20II%20Instructions%20and%20Tool%20%282023%29.pdf Geriatric Pain. Pain assessment checklist for seniors with limited ability to communicate (PACSLAC). Iowa City (IA): The University of Iowa; [date unknown]. Available from: https://geriatricpain.org/sites/geriatricpain.org/files/2020-06/PACSLAC.pdf
	- Pain Assessment in Impaired Cognition (PAIC15)	Kunz M, de Waal MWM, Achterberg WP, et al. The pain assessment in impaired cognition scale (PAIC15): a multi-disciplinary and international approach to develop and test a meta-tool for pain assessment in impaired cognition, especially dementia. Eur J Pain. 2020 Jan;24(1):192-208. Available from: https://doi.org/10.1002/ejp.1477

POPULATION AND CONTEXT	OBSERVATIONAL (BEHAVIOURAL) TOOLS	TOOL RESOURCE
Older adults living with dementia (acute and/or chronic pain)* cont.	- MOBID-2 Pain Scale	Husebo BS, Ostelo R, Strand LI. The MOBID-2 pain scale: reliability and responsiveness to pain in patients with dementia. Eur J Pain. 2014 Nov;18(10):1419-30. Available from: https://doi.org/10.1002/ejp.507
	- Fact sheet for assessing pain in older adults with dementia	Pain Assessment in Dementia. In: International Association for the Study of Pain (IASP) [Internet]. Washington (DC): IASP; 2021 Jul 9. Available from: https://www.iasp-pain.org/resources/fact-sheets/pain-assessment-in-dementia/
Palliative pain in adults	- Edmonton Symptom Assessment Scale-revised (ESAS-r)	Alberta Health Services. Edmonton symptom assessment system revised (ESAS-r). Edmonton (AB): Alberta Health Services; [revised 2015 Aug]. Available from: https://www.albertahealthservices.ca/frm-07903.pdf
	- Fraser Health Hospice Palliative Care Program Symptom Assessment Acronym (OPQRSTUV mnemonic)	Fraser Health. Symptom assessment acronym [Internet]. Surrey (BC): Fraser Health; c2006-2019. Available from: https://www.fraserhealth.ca/-/media/Project/FraserHealth/FraserHealth/Health-Professionals/Professionals-Resources/Hospice-palliative-care/SymptomAssessmentRevised_Sept09.pdf

Table 14: Additional tools by pain type

The following pain tools can be considered for use by interprofessional team members, in particular those working in specialty areas such as pain clinics and interprofessional pain teams or in primary care settings.

CLINICAL CONDITION	VALIDATED TOOL	SOURCE
Diabetic peripheral neuropathy	BPI (diabetes neuropathy)	The Brief Pain Inventory. In: The University of Texas MD Anderson Cancer Center [Internet]. [place unknown]: MD Anderson Cancer Center; c2024. Available from: https://www.mdanderson.org/research/departments-labs-institutes/departments-divisions/symptom-research/symptom-assessment-tools/brief-pain-inventory.html
Neuropathic pain from herpes zoster (shingles)	BPI (zoster)	The Brief Pain Inventory. In: The University of Texas MD Anderson Cancer Center [Internet]. [place unknown]: MD Anderson Cancer Center; c2024. Available from: https://www.mdanderson.org/research/departments-labs-institutes/departments-divisions/symptom-research/symptom-assessment-tools/brief-pain-inventory.html
Complex regional pain syndrome (CRPS)	Budapest criteria	Mesaroli G, Hundert A, Birnie KA et al. Screening and diagnostic tools for complex regional pain syndrome: a systematic review. Pain. 2021 May;162(5):1295-1304. Available from: https://doi.org/10.1097/j.pain.0000000000002146

Appendix E: Scoping review results: Non-pharmacological approaches to pain management

A total of 146 SRs were included in the scoping review (165–310). The SRs included study designs that were predominantly RCTs and some NRSs. The SRs each included between 3 to 2,115 primary studies conducted globally, most commonly in North America and Western Europe. The NPIs were delivered in hospital settings (in-patient units or clinics) and in the community (primary care, home or long-term care). Twenty-six reviews focused on the pediatric population (i.e., 0-18 years of age) (175,177,178,181,191,193–195,197,201,205,211,213,230,231,236,244,245,261,276,277,281,287,293,295,310), 116 reviews were focused on adults (i.e., 18-64 years) (165–172,174,176,179,180,182–184,186–190,192,196,198–200,202–204,206–210,212,214–218,220–229,232–235,237–243,246–252,254–260,262–275,278–280,282–286,288–292,294,296–309) and only four reviews focused on older adults living in congregate settings (i.e., >60 years of age) (173,185,219,253). Some reviews that included children and adolescents also included studies conducted in adult populations, depending on the context of the review (168,179,271,275,279). Across the included reviews, NPIs were delivered for a variety of pain experiences including acute pain (i.e., pain associated with specific medical conditions, surgical post-operative pain and pain associated with medical tests and procedures), chronic pain, neuropathic pain and nociceptive pain.

A range of physical NPIs (165–167,170,171,174,179,180,182,183,185–187,190,196,200,202–204,207,214,215,218,220,222,223,225,226,229,232–235,239,241–243,246,248–250,254,256,258–260,262,266–268,272,274,278,282,285,286,288,289,291,292,294,296,298,299,302,304,308), two occupational therapy interventions (210,247) and a wide range of psychological non-pharmacologic interventions (168,178,181,191,192,195,197–199,201,205,206,208,212,216,224,227,230,231,236,237,244,245,261,270,271,277,280,281,283,287,293,295,309,310) were delivered across the 146 SRs. Physical NPI strategies included exercise, aerobic conditions, strength and balance training, aqua therapy and breathing exercises (165,171,174,179,180,183,186,187,196,200,202,204,214,215,220,225,229,239,241,242,246,248,249,256,260,266–268,278,282,285,288,290–292,294,297,302) and some included an element of education and self-management. Physical NPIs were delivered alone or in conjunction with pharmacologic pain management strategies. Psychological strategies included the use of cognitive behavioural therapy, acceptance and commitment therapy and various approaches that featured distraction techniques and other psychological interventions (168,178,181,191,192,195,197–199,201,205,206,208,212,216,224,227,230,231,236,237,244,245,261,270,271,277,280,281,283,287,293,295,309,310). Additional psychological interventions included comforting interventions such as music therapy, breastfeeding, kangaroo care or animal-assisted interventions (175,181,193,194,211,213,219,224,227,238,240,251,269,273,275,279,300,305). Refer to **Table 15** for further details.

Table 15: Number of systematic reviews focused on non-pharmacological approaches (NPI) to pain management: Type of NPI and population

	POPULATION			
Non-pharmacological intervention	Children & adolescents	Adults	Older adults	Total number of systematic reviews
Physical therapy		66	1	**67**
Occupational therapy		2		**2**
Psychological	18	17		**35**
Other psychological NPIs (e.g., music, music therapy/music medicine, animal-assisted therapy, comfort [breastfeeding, sucrose feeding, kangaroo care, facilitated tucking], therapeutic play)	7	10	1	**18**
Self-management/education*		2		**2**
Mixed (physical + psychological)	1	19	2	**22**
Total number of systematic reviews	**26**	**116**	**4**	**146**

*Ten systematic reviews reported education as a supplementary strategy to the primary NPI

Across the included reviews, the NPIs were delivered for a variety of pain experiences. 54 reviews examined NPIs to manage acute pain (pain associated with specific medical conditions, post operative surgical pain and pain anticipated and/or associated with medical tests and procedures) (168,171,172,175,177,178,180,181,188,191,193,197,201,211,213,216,218,221,223–226,230,231,236,238,240,243–245,248,250–252,258,261,263,269,271–273,277,279–281,284,287,293,295,297,300,303–305), 66 reviews examined the use of NPIs for chronic pain management (this included studies examining NPIs for neuropathic pain and nociceptive pain) (165–167,169,170,173,176,179,184–187,189,190,192,195,198,199,202–208,210,214,215,217,219,220,228,229,232–235,237,239,241,246,249,256,257,259,260,264, 267, 268,270,275,276,278,282,283,288–291,298,302,306–310) and 26 reviews examined the use of NPIs for medical conditions or experiences that included both acute and chronic pain (174,182,183,194,196,200,209,212,222,227,242,247,253–255,262,265,266,274,285,286,292,294,296,299,301). Five reviews looked at studies examining acute or chronic pain conditions in both adults and children (168,179,271,275,279). See **Table 16** for further details.

Table 16: Number of systematic reviews focused on non-pharmacological approaches: Type of pain and population

	TYPE OF PAIN			
Population	**Acute pain**	**Chronic pain**	**Acute and chronic pain**	**Total number of systematic reviews**
Infants, children (including adolescents)	21	4	1	**26**
Adults	30	57	24	**111**
Older adults		3	1	**4**
Both children and adults	3	2		**5**
Total number of systematic reviews	**54**	**66**	**26**	**146**

The NPIs were further classified by pain etiology (e.g., musculoskeletal pain) or the context in which the NPI was delivered (e.g., before and during painful medical procedures). 65 of the included reviews delivered a range of interventions to address pain experienced by people living with MSK pain (165,169,171,172,174,176,179,180,182–184,186,190,196,200,202,204,206,207,209,212,214,215,217,220,222,225,226,229,232,234,241,242,246–250,252–254,256,257,259,260,262,264,266–268,270,274,278,282,283,285,286,288–291,294,296,306,308).
50 reviews specifically examined physical or physiotherapy discipline-based interventions (e.g., supervised exercise) for a variety of health conditions that cause MSK pain (e.g., arthritis) (165,171,179,180,182–184,186,190,196,200,202,204,207,214,215,220,222,225,226,229,232,234,241,242,246–250,254,256,259,260,262,266–268,274,278,282,285,286,288–291,294,296,308), four reviews examined the delivery of psychological NPIs for MSK pain (206,212,270,283), one review looked at the use of self-management NPIs for MSK pain (306) and ten reviews examined a combination of both physical and psychological NPIs to address MSK pain (169,172,176,179,184,217,252,253,257,306).

Five reviews examined NPIs to address neuropathic pain (166,192,235,239,302), wherein three addressed physical interventions (235,239,302), one examined a psychological intervention (192) and one review examined a mixed approach (166). Ten reviews examined NPIs for people living with cancer (167,170,189,227,228,238,245,255,279,300), and four reviews looked at the use of both physical and psychological approaches to address this type of pain (167,189,228,255). Thirty of the reviews examined a range of NPIs to address pain anticipated and/or experienced during health care procedures (168,175,177,178,181,191,193,194,197,201,211,213,216,218,221,230,231,236,244,250,251,261,263,271,273,277,281,287,293,295).

Ten reviews examined the use of NPIs in the pre-or post-operative setting (172,224,240,243,269,280,284,297,301, 304). These interventions were psychological, physical, delivered in combination or used music therapy. Fifteen of the reviews looked at NPIs for people living with generalized or chronic pain conditions (e.g., fibromyalgia) (187,194, 195,198,203,210,219,270,275,276,283,288,299,307,309). These included ten reviews looking at physical or psychological interventions or both in combination (187,198,203,270,276,283,288,299,307,309); two reviews examined occupational therapy-based interventions, specifically examining the use of pacing (195,210); and the remaining reviews examined other strategies such as music therapy or animal-assisted therapy, to address generalized or chronic pain conditions (194,219,275). Finally, six reviews examined physical interventions for a variety of other conditions such as endometriosis, acute headaches and postpartum pain (208,226,258,272,298,303) and one review used a psychological approach to address chronic pain from a brain injury (237). Please refer to **Table 17** for the full details.

Table 17: Number of systematic reviews focused on non-pharmacological approaches (NPI): Type of NPI and pain etiology/context

	PAIN ETIOLOGY/CONTEXT							
TYPE OF NPI	**MUSCULO-SKELETAL PAIN**	**NEURO-PATHIC PAIN**	**ONCO-LOGICAL PAIN**	**PROCEDURE-RELATED PAIN**	**PRE/POST-OPERATIVE PAIN**	**GENERAL CHRONIC PAIN**	**OTHER EXPERIENCES OF PAIN**	**TOTAL NUMBER OF SYSTEMATIC REVIEWS**
Physical	50	3	1	1	2	4	6	**67**
Occupational therapy						2		**2**
Psychological	4	1	3	20	3	5	3	**39**
Other psychological NPIs:								
Music therapy			1	4	2	1		**8**
Comfort				3				**3**
Animal-assisted therapy						2		**2**
Therapeutic play				1				**1**
Psychological and other NPIs			1					**1**
Mixed (physical and psychological)	10	1	4	1	3	1	1	**21**
Self-management	1						1	**2**
Total number of systematic reviews	**65**	**5**	**10**	**30**	**10**	**15**	**10**	**146**

Table 18 delves further into the specific NPIs for pain management by population across the 146 reviews. Physical interventions were predominantly delivered for the adult population (however there was one pediatric review) and included a range of approaches delivered by physical therapists or other health providers including nurses. Active interventions included structured sessions that involved walking, exercises, aerobic conditioning, strength and balance training and various other interventions such as myofascial release, aqua therapy and breathing exercises (165,171,174,179,180,183,186,187,196,200,202,204,214,215,220,225,229,239,241,242,246,248,249,256,260,266–268,278,282,285,288,290–292,294,297,302). Some interventions included an educational component in the intervention delivered by the health provider. Passive physical NPIs included acupuncture (170,223,232–235,254,286,298,299), dry needling (207,258,262,289), acupressure (301), therapeutic ultrasound (190,296), transcutaneous electrical nerve stimulation (TENS) (203,222,259,274), percutaneous electrical nerve stimulation (PNS) (259), heat or cold application (182,226,250,272) or a combination of active and/or passive interventions used together (185). One physical intervention was examined in a review that included the pediatric population (179) and one review looked at a combination of physical interventions in older adults (185). It should be noted that massage was examined in one systematic review in the post-operative adult intensive care setting (243), and was also a NPI that was captured in thirteen reviews where passive and active physical interventions were used in combination or in reviews where a number of physical approaches to non-pharmacological pain management were included in the context of each review (173,185,188,189,243,252,255,265,278,284,288,301,303,304).

Psychological NPIs to address pain were the focus of ten reviews that specifically examined cognitive behavioural therapy or acceptance and commitment therapy in adult and pediatric populations (178,195,198,208,212,237,270,280,283,309). The bulk of psychological approaches were conducted in pediatric settings and included the use of distraction methods to address pain management experienced by children (168,191,197,201,216,230,231,236,244,245,261,271,277,281,287,293). Distraction methods included the use of virtual reality technologies including gamification (191,192,199,201,206,216,230,231,236,244,245,271,277,281,293), guided imagery (168), interactive video games (261), vibratory devices (287), clown therapy (197) and the use of the Valsalva maneuver (218). Distraction interventions also included other important intervention elements such as relaxation (224) and social support (parents or caregivers) (175,181,193,211,213).

Table 18 outlines other NPIs for pain management including the use of music therapy in adults (221,238,240,251,269,273,279,300) and music therapy in older adults to address pain experiences (219). Other interventions involved strategies that provided comfort and were conducted in pediatric settings included breastfeeding (175,193), feeding sucrose (193,213), kangaroo care or facilitated tucking (213) to address the experience or anticipated experience of pain. In addition, in the pediatric setting one review examined the use of therapeutic play to address pain (211). Two reviews in the adult setting looked at NPIs to address pain using relaxation or art therapy (224,227).

Table 18: Number of systematic reviews focused on non-pharmacological approaches (NPI): NPI subtype and population

		POPULATION			
TYPE OF NPI		**CHILDREN AND ADOLESCENTS**	**ADULTS**	**OLDER ADULTS**	**TOTAL NUMBER OF SYSTEMATIC REVIEWS**
Physical Therapy					
Active	Exercise (walking, aerobic, strengthening and balancing, myofascial release, breathing, etc.)	1	36		**37**
	Aqua therapy (exercise)		2		**2**
Passive	Acupuncture		10		**10**
	Dry needling		4		**4**
	Acupressure (auricular)		1		**1**
	Massage		1		**1**
	Therapeutic ultrasound		2		**2**
	TENS/PNS		4		**4**
	Cold/Heat application		4		**4**
	Multiple passive interventions		1		**1**
	Active and passive interventions			1	**1**
Multiple physical interventions			3		**3**
Occupational Therapy					
	Pacing, exercise, range of motion, ADLs, assistive devices		2		**2**
Psychological approaches					
	Cognitive behavioural therapy/acceptance and commitment therapy/mindfulness, meditation	2	8		**10**
Distraction approaches (this intervention also includes relaxation, social support and may include parent or caregiver)	Virtual reality, gamification	12	3		**15**
	Guided imagery	1			**1**
	Interactive video games	1			**1**
	Vibratory devices	1			**1**
	Clown therapy	1			**1**
	Valsalva maneuver		1		**1**
	Animal-assisted therapy	2			**2**

		POPULATION			
TYPE OF NPI		**CHILDREN AND ADOLESCENTS**	**ADULTS**	**OLDER ADULTS**	**TOTAL NUMBER OF SYSTEMATIC REVIEWS**
Comfort	Breastfeeding, sucrose feeding, kangaroo care, facilitated tucking	3			**3**
	Touch/visual distraction	1			**1**
	Therapeutic play	1			**1**
	Relaxation		1		**1**
	Art therapy		1		**1**
Multiple psychological methods		4			**4**
Mixed (physical and psychological)		1	16	2	**19**
Other NPIs					
Music therapy			8	1	**9**
Self-management			2		**2**
Music, psychological		1			**1**
Total number of systematic reviews		**32**	**110**	**4**	**146**

Appendix F: Additional resources for pain prevention, assessment and management across the lifespan

ORGANIZATION	RESOURCE(S)
Cancer Care Ontario	Provides a comprehensive symptom management algorithm* for the assessment of pain in adults with cancer. *Please note this algorithm is currently under review. Cancer Care Ontario (CCO). Symptom management algorithm: pain in adults with cancer [Internet]. Toronto (ON): CCO; [date unknown]. Available from: https://www.cancercareontario.ca/en/symptom-management/3121
Hospital for Sick Children	Information for parents about how to manage their child's pain in hospital and at home. SickKids staff. Pain relief: Comfort kit. In: SickKids [Internet]. Toronto (ON): SickKids; [updated 2018 Dec 18]. Available from: https://www.aboutkidshealth.ca/pain-relief-comfort-kit?language=en
Ontario Centres for Learning, Research and Innovation in Long-term Care (CLRI)	Free online courses for regulated and unregulated care providers on pain in the long-term care setting. LTCO. Managing Pain and Distress in Long-Term Care (Clinical Team Members). In: Ontario Centres for Learning, Research and Innovation in Long-term Care (CLRI) [Internet]. [place unknown]: CLRI; c2024. Available from: https://learn.clri-ltc.ca/courses/ltco-managing-pain-and-distress-in-long-term-care-clinical-team-members/

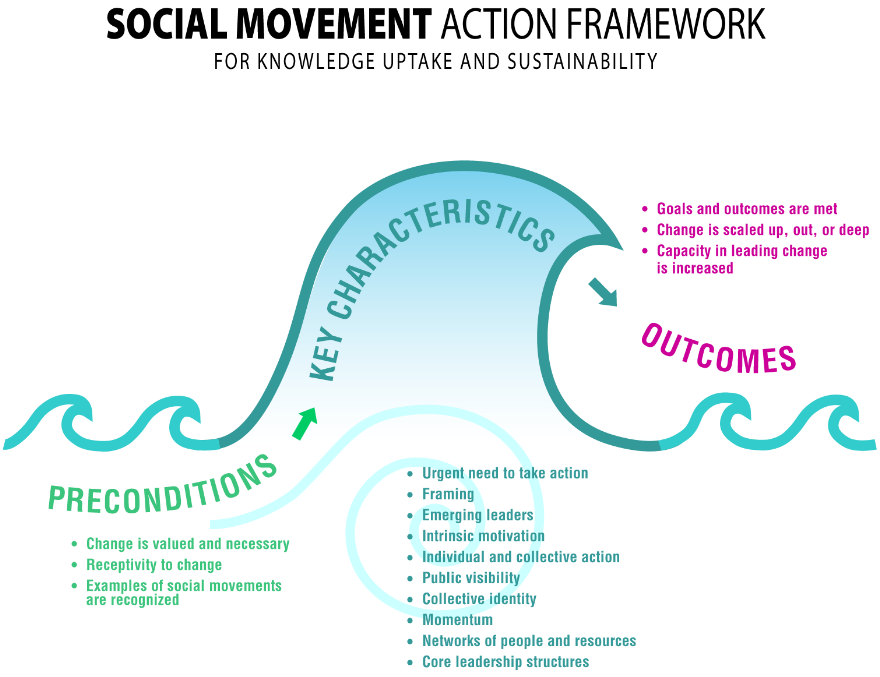
Appendix G: Description of the Leading Change Toolkit

BPGs can only be successfully implemented and sustained if planning, resources, organizational and administrative supports are adequate and there is appropriate facilitation. Active engagement and involvement of formal and informal leaders (e.g., change agents and peer champions) are also essential. To encourage successful implementation and sustainability, an international expert panel of nurses, researchers, patient/person advocates, social movement activists and administrators has developed the Leading Change Toolkit (4). The toolkit is based on available evidence, theoretical perspectives and consensus. We recommend the Leading Change Toolkit for guiding the implementation of any BPG in health care or social service organizations, including academic centres.

The Leading Change Toolkit includes two frameworks – the Social Movement Action (SMA) Framework (1,2) and the Knowledge-to-Action (KTA) Framework (3) – for change agents and change teams leading the implementation and sustainability of BPGs. Both frameworks outline the concept of implementation and its inter-related components. As such, either framework – the SMA or the KTA – can be used to guide change initiatives, including the implementation of BPGs. Using both frameworks serves to enhance and accelerate change (1).

The SMA Framework includes elements of social movements for knowledge uptake and sustainability that have demonstrated powerful impact and long-term effects. Based upon the results of a concept analysis, the framework includes 16 elements categorized as preconditions (i.e., what must be in place prior to the occurrence of the social movement), key characteristics (i.e., what must be present for the social movement to occur) and outcomes (i.e., what will likely happen as a result of the social movement) (1,311). The three categories and elements of the SMA Framework are shown in **Figure 3**.

Figure 3: Social movement action framework

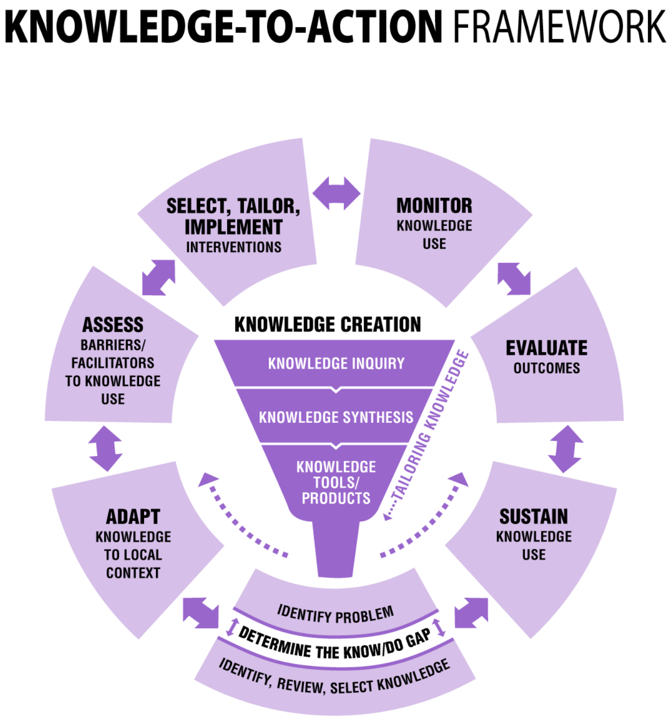


Source: Reprinted with permission from: Grinspun D, Wallace K, Li SA, et al. Exploring social movement concepts and actions in a knowledge uptake and sustainability context: a concept analysis. Int J Nurs Sci. 2022 Oct;9(4):411-21.

Grinspun D, Wallace K, Li SA, et al. Leading change through social movement. RNJ. 2020. 32(1): 15.

The KTA Framework is a planned cyclical approach to change that integrates two related components: the knowledge creation and the action cycle. The knowledge creation process is what researchers and guideline developers use to identify critical evidence results to create a knowledge product, like an RNAO BPG. The action cycle is comprised of seven phases in which the knowledge created is implemented, evaluated and sustained (3). Many of the action cycle phases may occur or need to be considered simultaneously. The KTA Framework is depicted in **Figure 4** (4).

Figure 4: Knowledge-to-action framework



Source: Adapted with permission from: Graham ID, Logan J, Harrison MB, et al. Lost in translation: time for a map? J Contin Educ Health Prof [Internet]. 2006;26(1):13-24. Available from: https://journals.lww.com/jcehp/Abstract/2006/26010/Lost_in_knowledge_translation__Time_for_a_map_.3.aspx

Implementing and sustaining BPGs to effect successful practice changes and positive health outcomes for patients/ persons and their families, providers, organizations and systems is a complex undertaking. The Leading Change Toolkit is a foundational implementation resource for leading this process.

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References

1. Grinspun D, Wallace K, Li SA, et al. Leading change through social movement. RNJ. 2020;32(1):15.
2. Grinspun D, Wallace K, Li SA, et al. Exploring social movement concepts and actions in a knowledge uptake and sustainability context: A concept analysis. Int J Nurs Sci. 2022 Oct;9(4):411–21.
3. Graham ID, Logan J, Harrison MB, et al. Lost in knowledge translation: time for a map? J Contin Educ Health Prof. 2006;26(1):13–24.
4. Registered Nurses' Association of Ontario (RNAO), Healthcare Excellence Canada (HEC). The Leading Change Toolkit (Fourth edition) [Internet]. Toronto (ON): RNAO; 2024. Available from: RNAO.ca/leading-change-toolkit
5. Brouwers MC, Kho ME, Browman GP, et al. AGREE II: advancing guideline development, reporting and evaluation in health care. CMAJ. 2010 Dec 14;182(18):E839–42.
6. Chen Y, Yang K, Marušic A, et al. A Reporting Tool for Practice Guidelines in Health Care: The RIGHT Statement. Ann Intern Med. 2017 Jan 17;166(2):128-32.
7. Registered Nurses' Association of Ontario (RNAO). Assessment and Management of Pain. 3rd ed. Toronto (ON): RNAO; 2013.
8. Dewidar O, Lotfi T, Langendam MW, et al. Good or best practice statements: proposal for the operationalisation and implementation of GRADE guidance. BMJ Evid Based Med. 2023;28(3):189-96.
9. Lotfi T, Hajizadeh A, Moja L, et al. A taxonomy and framework for identifying and developing actionable statements in guidelines suggests avoiding informal recommendations. J Clin Epi-demiol. 2022 Jan;141:161–71.
10. Guyatt GH, Schünemann HJ, Djulbegovic B, Akl EA. Guideline panels should not GRADE good practice statements. J Clin Epidemiol. 2015 May;68(5):597-600.
11. Scottish Intercollegiate Guidelines Network (SIGN). A guideline developer's handbook [Internet]. Edinburgh (UK): SIGN; 2019 Nov. Available from: https://www.sign.ac.uk/our-guidelines/sign-50-a-guideline-developers-handbook/
12. McMaster GRADE Centre. GIN-McMaster guideline development checklist (GDC) [Internet]. Hamilton (ON): McMaster University; 2014 Jun 2. Available from: https://macgrade.mcmaster.ca/wp-content/uploads/2023/09/guidelinechecklistprintable.pdf
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14. Neumann I, Santesso N, Akl EA, et al. A guide for health professionals to interpret and use recommendations in guidelines developed with the GRADE approach. J Clin Epidemiol. 2016 Apr;72:45-55.
15. Donabedian A. Evaluating the quality of medical care. Milbank Q. 2005 Dec;83(4):691-729.
16. VanDeVelde-Coke S, Doran D, Grinspun D, et al. Measuring outcomes of nursing care, improving the health of Canadians: NNQR (C), C-HOBIC and NQuiRE. Nurs Leadersh (Tor Ont). 2012;25(2):26-37.

17. Terminology. In: International Association for the Study of Pain (IASP) [Internet]. Washington (DC): IASP; 2020 [cited 2024 Sep 10]. Available from: https://www.iasp-pain.org/resources/terminology/

18. Health Canada. An action plan for pain in Canada [Internet]. Ottawa (ON): Health Canada; 2021 May. Available from: https://www.canada.ca/content/dam/hc-sc/documents/corporate/about-health-canada/public-engagement/external-advisory-bodies/canadian-pain-task-force/report-2021-rapport/report-rapport-2021-eng.pdf

19. Zimmer Z, Fraser K, Grol-Prokopczyk H, Zajacova A. A global study of pain prevalence across 52 countries: examining the role of country-level contextual factors. Pain. 2022 Sep;163(9):1740-50.

20. Blyth FM, Schneider CH. Global burden of pain and global pain policy-creating a purposeful body of evidence. Pain. 2018 Sep;159:S43-8.

21. Goldberg DS, McGee SJ. Pain as a global public health priority. BMC Public Health. 2011;11(1):770.

22. Bhadelia A, De Lima L, Arreola-Ornelas H, et al. Solving the global crisis in access to pain relief: lessons from country actions. Am J Public Health. 2019 Jan;109(1):58-60.

23. Finley CR, Chan DS, Garrison S, et al. What are the most common conditions in primary care? Systematic review. Can Fam Physician. 2018 Nov;64(11):832-40.

24. Acute Pain. In: International Association for the Study of Pain (IASP) [Internet]. Washington (DC): IASP; c2021 [cited 2024 Sep 9]. Available from: https://www.iasp-pain.org/resources/topics/acute-pain/

25. Definitions of Chronic Pain Syndromes. In: International Association for the Study of Pain (IASP) [Internet]. Washington (DC): IASP; c2021 [cited 2024 Sep 9]. Available from: https://www.iasp-pain.org/advocacy/definitions-of-chronic-pain-syndromes/

26. Freynhagen R, Parada HA, Calderon-Ospina CA, et al. Current understanding of the mixed pain concept: a brief narrative review. Curr Med Res Opin. 2019;35(6):1011-8.

27. Mehta A, Chan LS. Understanding of the concept of “total pain”: a prerequisite for pain control. J Hosp Palliat Nurs. 2008;10(1):26–32.

28. International Association for the Study of Pain (IASP). IASP multidisciplinary pain center development manual [Internet]. Washington (DC): IASP; 2021 [cited 2024 Sep 9]. Available from: https://www.iasp-pain.org/resources/toolkits/pain-management-center/

29. Craig KD. Social communication model of pain. Pain. 2015;156(7):1198–9.

30. What is the biopsychosocial model of pain? In: European Pain Federation (EFIC) [Internet]. Brussels (BE): EFIC; c2022 [cited 2024 Sep 9]. Available from: https://europeanpainfederation.eu/what-is-the-bio-psycho-social-model-of-pain/

31. Palermo TM, Davis KD, Bouhassira D, et al. Promoting inclusion, diversity, and equity in pain science. Can J Pain. 2023;7(1):2161272.

32. Booker SQ, Bartley EJ, Powell-Roach K, et al. The imperative for racial equality in pain science: a way forward. J Pain. 2021 Dec;22(12):1578-85.

33. FitzGerald C, Hurst S. Implicit bias in healthcare professionals: a systematic review. BMC Med Ethics. 2017 Mar 1;18(1):19.

34. Biases and Confounding. Faculty of Public Health (FPH) [Internet]. London (UK): FPH; c2009, 2018 [cited 2024 Sep 10]. Available from: https://www.healthknowledge.org.uk/public-health-textbook/research-methods/1a-epidemiology/biases

35. Sickle Cell Disease (SCD). In: U.S. Centers for Disease Control and Prevention (CDC) [Internet]. Atlanta (GA): CDC; 2024 Sep 19. Available from: https://www.cdc.gov/sickle-cell/about/index.html

36. Sabin JA. How we fail black patients in pain. In: Association of American Medical Colleges (AAMC). Washington (DC): AAMC; 2020 Jan 6 [cited 2024 Sep 9]. Available from: https://www.aamc.org/news/how-we-fail-black-patients-pain

37. Morales ME, Yong RJ. Racial and ethnic disparities in the treatment of chronic pain. Pain Medecine [Internet]. 2021;22(1):75-90. Available from: https://doi.org/10.1093/pm/pnaa427

38. Anastas TM, Miller MM, Hollingshead NA, et al. The unique and interactive effects of patient race, patient socioeconomic status, and provider attitudes on chronic pain care decisions. Ann Behav Med. 2020 Oct;54(10):771-82.

39. Wang ML, Jacobs O. From awareness to action: pathways to equity in pain management. Health Equity. 2023;7(1):416-8.

40. Perry M, Tan Z, Chen J, et al. Neonatal pain: perceptions and current practice. Crit Care Nurs Clin North Am. 2018 Dec;30(4):549-61.

41. Macgregor C, Walumbe J, Tulle E, et al. Intersectionality as a theoretical framework for researching health inequities in chronic pain. Br J Pain. 2023 Oct;17(5):479-90.

42. World Health Organization (WHO). Left behind in pain: extent and causes of global variations in access to morphine for medical use and actions to improve safe access [Internet]. Geneva (CH): WHO; 2023 [cited 2024 Sep 9]. Available from: https://iris.who.int/bitstream/handle/10665/369294/9789240075269-eng.pdf

43. Onwumere J, Stubbs B, Stirling M, et al. Pain management in people with severe mental illness: an agenda for progress. Pain. 2022 Sep;163(9):1653-60.

44. Ti L, Voon P, Dobrer S, et al. Denial of pain medication by health care providers predicts in-hospital illicit drug use among individuals who use illicit drugs. Pain Res Manag. 2015;20(2):84-8.

45. Di Renna T, Burke E, Bhatia A, et al. Improving access to chronic pain care with central referral and triage: The 6-year findings from a single-entry model. Can J Pain. 2024;8(1):2297561.

46. Wiklund M, Fjellman-Wiklund A, Stålnacke BM, et al. Access to rehabilitation: patient perceptions of inequalities in access to specialty pain rehabilitation from a gender and intersectional perspective. Glob Health Action. 2016;9(1):31542.

47. Quiton RL, Leibel DK, Boyd EL, et al. Sociodemographic patterns of pain in an urban community sample: an examination of intersectional effects of sex, race, age, and poverty status. Pain. 2020 May;161(5):1044-51.

48. Givler A, Bhatt H, Maani-Fogelman PA. The Importance of Cultural Competence in Pain and Palliative Care. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan [cited 2024 Sep 9]. Available from: http://www.ncbi.nlm.nih.gov/books/NBK493154/

49. Fishman SM, Young HM, Lucas Arwood E, et al. Core competencies for pain management: results of an interprofessional consensus summit. Pain Med. 2013 Jul;14(7):971-81.

50. College of Nurses of Ontario (CNO). Practice standard: scope of practice [Internet]. Toronto (ON): CNO; 2023. Available from: https://cno.org/globalassets/docs/prac/49041-scope-of-practice.pdf

51. Herr K, Anderson AR, Arbour C, et al. Pain assessment in the patient unable to self-report: clinical practice recommendations in support of the ASPMN 2024 position statement. Pain Manag Nurs. In Press.

52. Gai N, Naser B, Hanley J, et al. A practical guide to acute pain management in children. J Anesth. 2020 Jun;34(3):421-33.

53. Health Standards Organization (HSO). Pediatric pain management [Internet]. Ottawa (ON): HSO; Mar 2023 [cited 2024 Sep 9]. Available from: https://healthstandards.org/standard/pediatric-pain-management-can-hso-13200-2023-e/

54. Sue K, Mazzotta P, Grier E. Palliative care for patients with communication and cognitive difficulties. Can Fam Physician. 2019 Apr;65(Suppl 1):S19-24.

55. Arif-Rahu M, Grap MJ. Facial expression and pain in the critically ill non-communicative patient: state of science review. Intensive Crit Care Nurs. 2010 Dec;26(6):343-52.

56. Hadjistavropoulos T, Herr K, Prkachin KM, et al. Pain assessment in elderly adults with dementia. Lancet Neurol. 2014 Dec;13(12):1216-27.

57. Gallant NL, Peckham A, Marchildon G, et al. Provincial legislative and regulatory standards for pain assessment and management in long-term care homes: a scoping review and in-depth case analysis. BMC Geriatr. 2020;20(1):458.

58. Fraser Health. Hospice palliative care program: symptom guidelines [Internet]. Surrey (BC): Fraser Health; 2019. Available from: https://www.fraserhealth.ca/-/media/Project/FraserHealth/FraserHealth/Health-Professionals/Professionals-Resources/Hospice-palliative-care/Sections-PDFs-for-FH-Aug31/9524-01-05-FH---Sym_Guide-Intro-v05FINAL.pdf

59. Raja SN, Carr DB, Cohen M, et al. The revised International Association for the Study of Pain definition of pain: concepts, challenges, and compromises. Pain. 2020;161(9):1976-82.

60. Bonezzi C, Fornasari D, Cricelli C, et al. Not all pain is created equal: basic definitions and diagnostic work-up. Pain Ther. 2020 Dec;9(Suppl 1):1-15.

61. Hamdan A, Galvez R, Katati M. Shedding light on neuropathic pain: current and emerging tools for diagnosis, screening, and quantification. SAGE Open Med. 2024;12:20503121231218985.

62. Prempeh ABA, Duys R, de Vaal A, Parker R. Pain assessment and management: an audit of practice at a tertiary hospital. Health SA. 2020;25:1281.

63. Devlin JW, Skrobik Y, Rochwerg B, et al. Methodologic innovation in creating clinical practice guidelines: insights from the 2018 Society of Critical Care Medicine pain, agitation/sedation, delirium, immobility, and sleep disruption guideline effort. Crit Care Med. 2018 Sep;46(9):1457-63.

64. Shahiri T S, Gélinas C. The validity of vital signs for pain assessment in critically ill adults: a narrative review. Pain Manag Nurs. 2023 Jun;24(3):318-28.

65. Stevens BJ, Harrison D, Rashotte J, et al. Pain assessment and intensity in hospitalized children in Canada. J Pain. 2012 Sep;13(9):857-65.

66. Telusca N, Gaisey JN, Woods C, et al. Strategies to promote racial healthcare equity in pain medicine: a call to action. Pain Med. 2022 Jul;23(7):1225-30.

67. Wallace B, Varcoe C, Holmes C, et al. Towards health equity for people experiencing chronic pain and social marginalization. Int J Equity Health. 2021 Feb 2;20(1):53.

68. Bailey NGN, Knott R, Grenier G, et al. Physical pain among Indigenous Peoples in Canada: a scoping review. Can J Anesth. 2023 Jun 21;70(6):1047-63.

69. VanEvery R, Latimer M, Naveau A. Clinical strategies to develop connections, promote health and address pain from the perspectives of Indigenous youth, elders, and clinicians. Front Pain Res [Internet]. 2022 May 12;3:857624. Available from: https://www.frontiersin.org/journals/pain-research/articles/10.3389/fpain.2022.857624/full

70. Joo H, Fernández A, Wick EC, et al. Association of language barriers with perioperative and surgical outcomes: a systematic review. JAMA Netw Open. 2023 Jul 11;6(7):e2322743.

71. Making Sense of Pain Assessment After Surgery. In: International Association for the Study of Pain (IASP) [Internet]. Washington (DC): IASP; c2021 [cited 2024 Sep 18]. Available from: https://www.iasp-pain.org/publications/relief-news/article/making-sense-of-pain-assessment-after-surgery/

72. Streiner DL, Norman GR, Cairney J. Health measurement scales: a practical guide to their development and use [Internet]. 6th ed. Oxford (UK): Oxford University Press; 2024. Available from: https://books.google.com/books?hl=en&lr=&id=pb30EAAAQBAJ&oi=fnd&pg=PP1&dq=Health+Measure-ment+Scales:+A+Practical+Guide+to+their+Development+and+Use+(6th+edition)&ots=TOLIApfBMP&sig=djQiRnc24RWqGDdUHuVGn7HWh90

73. Becker S, Blyth F, Gilron I, Zinboonyahgoon N. What do we mean by integrative pain care? [Internet]. Washington (DC): International Association for the Study of Pain; 2023 Apr 6 [cited 2024 Sep 9]. Available from: https://www.iasp-pain.org/resources/fact-sheets/what-do-we-mean-by-integrative-pain-care/

74. College of Nurses of Ontario (CNO). Therapeutic nurse-client relationship, revised 2006 [Internet]. Toronto (ON): CNO; [updated 2019 Apr]. Available from: https://www.cno.org/globalassets/docs/prac/41033_therapeutic.pdf

75. National Academies of Science, Engineering, and Medicine. The role of nonpharmacological approaches to pain management: proceedings of a workshop. Washington (DC): The National Academies Press; 2019. Available from: https://books.google.com/books?hl=en&lr=&id=TNmaDwAAQBAJ&oi=fnd&pg=PR1&dq=The+Role+of+Nonpharmacological+Approaches+to+Pain+Management:+Proceedings+of+a+Workshop.&ots=NQdUxHY971&sig=xdGPN22ZccV0UFWdqNxYNIPRWNU

76. Belzak L, Halverson J. Evidence synthesis: the opioid crisis in Canada: a national perspective. Health Promot Chronic Dis Prev Can. 2018 Jun;38(6):224-33.

77. Health Canada. Chronic pain in Canada: laying a foundation for action: a report by the Canadian Pain Task Force, June 2019 [Internet]. Ottawa (ON): Health Canada; 2019 Aug. Available from: https://publications.gc.ca/site/eng/9.875857/publication.html

78. Bonakdar RA. Integrative pain management. Med Clin North Am. 2017 Sep;101(5):987-1004.

79. Baker TA, Booker SQ, Janevic MR. A progressive agenda toward equity in pain care. Health Psychol Behav Med. 2023;11(1):2266221.

80. Browne AJ, Varcoe CM, Wong ST, et al. Closing the health equity gap: evidence-based strategies for primary health care organizations. Int J Equity Health. 2012 Oct 13;11:59.

81. Canadian Interprofessional Health Collaborative (CIHC). A national interprofessional competency framework [Internet]. Vancouver (BC): CIHC; 2010 Feb. Available from: https://phabc.org/wp-content/uploads/2015/07/CIHC-National-Interprofessional-Competency-Framework.pdf

82. Gordon DB, Watt-Watson J, Hogans BB. Interprofessional pain education—with, from, and about competent, collaborative practice teams to transform pain care. Pain Rep. 2018 May/Jun;3(3):e663.

83. Hassan S, Carlin L, Zhao J, et al. Promoting an interprofessional approach to chronic pain management in primary care using Project ECHO. J Interprof Care. 2021;35(3):464-7.

84. Elbers S, Wittink H, Konings S, et al. Longitudinal outcome evaluations of Interdisciplinary Multimodal Pain Treatment programmes for patients with chronic primary musculoskeletal pain: a systematic review and meta-analysis. Eur J Pain. 2022 Feb;26(2):310-35.

85. Vader K, Donnelly C, Lane T, et al. Delivering team-based primary care for the management of chronic low back pain: an interpretive description qualitative study of healthcare provider perspectives. Can J Pain. 2023;7(1):2226719.

86. IASP Announces Revised Definition of Pain. In: International Association for the Study of Pain (IASP) [Internet]. Washington (DC): IASP; 2020 Jul 16 [cited 2024 Sep 9]. Available from: https://www.iasp-pain.org/publications/iasp-news/iasp-announces-revised-definition-of-pain/

87. Claus BB, Stahlschmidt L, Dunford E, et al. Intensive interdisciplinary pain treatment for children and adolescents with chronic noncancer pain: a preregistered systematic review and individual patient data meta-analysis. Pain. 2022 Dec;163(12):2281-301.

88. Connell NB, Prathivadi P, Lorenz KA, et al. Teaming in interdisciplinary chronic pain management interventions in primary care: a systematic review of randomized controlled trials. J Gen Intern Med. 2022 Mar 3;37(6):1501-12.

89. Choinière M, Peng P, Gilron I, et al. Accessing care in multidisciplinary pain treatment facilities continues to be a challenge in Canada. Reg Anesth Pain Med. 2020;45(12):943-8.

90. McEwen V, Esterlis MM, Lorello RG, et al. A scoping review of gaps identified by primary care providers in caring for patients with chronic noncancer pain. Can J Pain. 2023;7(1):2145940.

91. Pieper MJC, van der Steen JT, Francke AL, et al. Effects on pain of a stepwise multidisciplinary intervention (STA OP!) that targets pain and behavior in advanced dementia: a cluster randomized controlled trial. Palliat Med. 2018 Mar;32(3):682-92.

92. Balice-Bourgois C, Zumstein-Shaha M, Simonetti GD, Newman CJ. Interprofessional collaboration and involvement of parents in the management of painful procedures in newborns. Front Pediatr. 2020 Jul 22;8:394.

93. Bongiovanni A., Recine F., Fausti V., et al. Ten-year experience of the multidisciplinary Osteoncology Center. Support Care Cancer. 2019 Jan 16;27(9):3395-402.

94. Masters S, Hogarth L. Interdisciplinary spinal pain clinics in primary care: outcomes from one service. Aust J Gen Pract. 2019 May;48(5):308-13.

95. Witteveen H, van den Berg P, Vermeulen G. Treatment of menstrual migraine; multidisciplinary or monodisciplinary approach. J Headache Pain. 2017;18(1):45.

96. Lagisetty P., Smith A., Antoku D., et al. A physician-pharmacist collaborative care model to prevent opioid misuse. Am J Health Syst Pharm. 2020 May 20;77(10):771-80.

97. Tetlow J., Ainsley C., Twiddy H., et al. Development of an interdisciplinary specialist facial pain management programme. Br J Pain. 2022 Apr;16(2):161-9.

98. Papermaster AE, Whitney M, Vinas EK. Interprofessional case conference enhances group learning and the quality, safety, value, and equity of team-based care. J Contin Educ Health Prof. 2023 Winter;43(1):4-11.

99. Grona SL, Oosman S, Bath B. Bridging health care access gaps in a remote Indigenous community. Physiotherapy Practice. 2018;8(4):17-9.

100. Lee RR, McDonagh JE, Rapley T, et al. "My gut feeling is…": an ethnographic study ex-ploring interprofessional communication about children and adolescents with chronic musculoskeletal pain in paediatric rheumatology. J Pain. 2023 Dec;24(12):2257-67.

101. Zimmer Z, Fraser K, Grol-Prokopczyk H, Zajacova A. A global study of pain prevalence across 52 countries: examining the role of country-level contextual factors. Pain. 2022 Sep;163(9):1740-50.

102. Pain Education in Nursing. In: Alan Edwards Centre for Research on Pain. McGill University [Internet]. Montréal (QC): McGill University; c2024. Available from: https://www.mcgill.ca/painresearch/education/professional-degrees/pain-education-nursing

103. Graduate Certificate in Pain Management. In: Faculty of Rehabilitation Medicine. University of Alberta [Internet]. Edmonton (AB): University of Alberta; c2024. Available from: https://www.ualberta.ca/en/rehabilitation/programs/certificate-programs/certificate-in-pain-management.html

104. Cioffi I, Dale CM, Murphy L, et al. Ten years of interfaculty pain curriculum at the University of Toronto: impact on student learning. Pain Rep. 2021;6(4):e974.

105. Lax L, Watt-Watson J, Lui M, et al. Innovation and design of a web-based pain education interprofessional resource. Pain Res Manag. 2011;16(6):427-32.

106. Verma A, Patyal A, Meena JK, et al. Interactive teaching in medical education: experiences and barriers. Adesh Univ J Med Sci Res. 2021;3(2):69–73.

107. Sankey M, Birch D, Gardiner M. Engaging students through multimodal learning environments: the journey continues. In: Proceedings of the 27th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education (ASCILITE 2010) [Internet]. 2010 [cited 2024 Sep 9]. Available from: https://research.usq.edu.au/item/q026x

108. Bouchey B, Castek J, Thygeson J. Multimodal learning. Innov Learn Environ STEM High Educ Oppor Chall Look Forw. 2021;35–54.

109. Liossi C, Failo A, Schoth DE, et al. The effectiveness of online pain resources for health professionals: a systematic review with subset meta-analysis of educational intervention studies. Pain. 2018 Apr;159(4):631-43.

110. Moehl K, Wright RM, Shega J, et al. How to teach medical students about pain and dementia: e-learning, experiential learning, or both? Pain Med. 2020 Oct;21(10):2117-22.

111. Colleary G, O'Sullivan K, Griffin D, et al. Effect of pain neurophysiology education on physiotherapy students' understanding of chronic pain, clinical recommendations and attitudes towards people with chronic pain: a randomised controlled trial. Physiotherapy. 2017 Dec;103(4):423-9.

112. Poulsen M, Friesgaard KD, Seidenfaden S, et al. Educational interventions to improve medical students' knowledge of acute pain management: a randomized study. Scand J Pain. 2019;19(3):619-22.

113. Kelly MA, Slatyer S, Myers H, et al. Using audio-visual simulation to elicit nursing students' noticing and interpreting skills to assess pain in culturally diverse patients. Clin Simul Nurs. 2022 Oct;71:31-40.

114. Hovland C, Milliken B, Niederriter J. Interprofessional simulation education and nursing students: assessing and understanding empathy. Clin Simul Nurs. 2021 Nov;60:25-31.

115. Farshbaf-Khalili A, Jasemi M, Seyyedzavvar A. Comparing the effect of electronic and lecture education of pain management on the knowledge, attitude, and practice of nurses: A randomized-controlled trial. J Educ Health Promot. 2021;10(1):374.

116. Meghani SH, Polomano RC, Tait RC, et al. Advancing a national agenda to eliminate disparities in pain care: directions for health policy, education, practice, and research. Pain Med. 2012 Jan;13(1):5-28.

117. Adams MCB, Denizard-Thompson NM, DiGiacobbe G, et al. Designing actionable solutions and curriculum for pain disparities education. Pain Med. 2022 Feb;23(2):288-94.

118. Dale CM, Cioffi I, Novak CB, et al. Continuing professional development needs in pain management for Canadian health care professionals: A cross sectional survey. Can J Pain. 2023;7(1):2150156.

119. Mankelow J, Ryan C, Taylor P, et al. A systematic review and meta-analysis of the effects of biopsychosocial pain education upon health care professional pain attitudes, knowledge, behavior and patient outcomes. J Pain. 2022;23(1):1–24.

120. Horsley TL, O'Rourke J, Mariani B, et al. An integrative review of interprofessional simulation in nursing education. Clin Simul Nurs. 2018 Sep;22:5-12.

121. Hopkins D, editor. Framework for action on interprofessional education & collaborative practice [Internet]. Geneva (CH): WHO Press; 2010. Available from: https://apps.who.int/iris/bitstream/handle/10665/70185/?sequence=1

122. IASP Interprofessional Pain Curriculum Outline. International Association for the Study of Pain (IASP) [Internet]. Washington (DC): IASP; c2018. Available from: https://www.iasp-pain.org/education/curricula/iasp-interprofessional-pain-curriculum-outline/

123. Ozawa M, Yokoo K, Sumiya T, Kawano R. Effectiveness of e-learning on neonatal nurses' pain knowledge and pain measurement skills: a pilot study. Adv Neonatal Care. 2022 Apr;22(2):132-9.

124. Eaton LH, Godfrey DS, Langford DJ, et al. Telementoring for improving primary care provider knowledge and competence in managing chronic pain: a randomised controlled trial. J Telemed Telecare. 2020 Feb;26(1-2):21-7.

125. Yoo J, De Gagne JC, Kim HJ, Oh J. Development and evaluation of a web-based acute pain management education program for Korean registered nurses: a randomized controlled trial. Nurse Educ Pract. 2019 Jul;38:7-13.

126. MacDonell-Yilmaz RE, Murillo A, Welch JG. Pediatric opioid analgesia self-instruction system (PedOASIS): an effective education tool. Pediatr Blood Cancer. 2022;69(Suppl 2):S115.

127. Salim NA, Tuffaha MG, Brant JM. Impact of a pain management program on nurses' knowledge and attitude toward pain in United Arab Emirates: experimental-four Solomon group design. Appl Nurs Res. 2020 Aug;54:151314.

128. Al-Maaitah EI, Abdel Razeq NM, Obeidat HM. Nurses' improved provision of infants' procedural pain assessment and management with non-pharmacological interventions following a training program in Jordan. J Neonatal Nurs. 2023;29(2):356-60.

129. Kamm AM, Liu JB, Demitroulas K, et al. An interdisciplinary approach to safe opioid prescribing and administration for surgical patients at an academic medical center. J Clin Nurs. 2022 Feb;31(3-4):454-63.

130. Leung YW, Wong J, Kiteley C, et al. Addressing educational needs in managing complex pain in cancer populations: evaluation of APAM: an online educational intervention for nurses. Am J Hosp Palliat Med. 2019 Jul;36(7):587-97.

131. Jacobs ZG, Elnicki DM, Perera S, Weiner DK. An e-learning module on chronic low back pain in older adults: effect on medical resident attitudes, confidence, knowledge, and clinical skills. Pain Med. 2018 Jun;19(6):1112-20.

132. Liu X., Li L., Wang L., et al. Implementation and evaluation of a pain management core competency education program for surgical nurses. Int J Nurs Sci. 2021 Jan 10;8(1):51-7.

133. Chu TL, Wang J, Lin HL, et al. Multimedia-assisted instruction on pain assessment learning of new nurses: a quasi-experimental study. BMC Med Educ. 2019;19(1):68.

134. Anderson D., Zlateva I., Davis B., et al. Improving pain care with project ECHO in community health centers. Pain Med. 2017;18(10):1882-9.

135. Kang D., Zhang L., Jin S., et al. Effectiveness of palliative care simulation in newly hired oncology nurses' training. Asia Pac J Oncol Nurs. 2022 Mar;9(3):167-73.

136. Carlin L., Zhao J., Dubin R., et al. Project ECHO telementoring intervention for managing chronic pain in primary care: insights from a qualitative study. Pain Med. 2018 Jun;19(6):1140-6.

137. Ball S, Wilson B, Ober S, Mchaourab A. SCAN-ECHO for pain management: implementing a regional telementoring training for primary care providers. Pain Med. 2018 Feb;19(2):262-8.

138. Mulchan SS, Miller M, Theriault CB, et al. A systematic approach to developing virtual patient vignettes for pediatric health equity research. Health Equity. 2022;6(1):862-72.

139. Eissa A, Rowe R, Pinto A, et al. Implementing high-quality primary care through a health equity lens. Ann Fam Med. 2022 Mar;20(2):164-9.

140. Ickmans K, Rheel E, Rezende J, Reis FJJ. Spreading the word: pediatric pain education from treatment to prevention. Arch Physiother. 2022;12(1):25.

141. Giannitrapani KF, Ahluwalia SC, McCaa M, et al. Barriers to using nonpharmacologic approaches and reducing opioid use in primary care. Pain Med. 2018 Jul;19(7):1357-64.

142. Bushnell MC, Frangos E, Madian N. Non-pharmacological treatment of pain: grand challenge and future opportunities. Front Pain Res [Internet]. 2021;2:696783. Available from: https://www.frontiersin.org/articles/10.3389/fpain.2021.696783/full

143. Becker WC, Dorflinger L, Edmond SN, et al. Barriers and facilitators to use of non-pharmacological treatments in chronic pain. BMC Fam Pract. 2017;18(1):41.

144. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. Int J Soc Res Methodol. 2005;8(1):19-32.

145. Harrison MB, Graham ID, Fervers B, van den Hoek J. Adapting knowledge to local context. In: Straus SE, Tetroe J, Graham ID, editors. Knowledge translation in health care [Internet]. Chichester (UK): John Wiley & Sons; 2013. p. 110-20. Available from: https://onlinelibrary.wiley.com/doi/10.1002/9781118413555.ch10

146. Rey M, Grinspun D, Constantini L, Lloyd M. The anatomy of a rigorous best practice guideline development process. In: Grinspun D, Bajnok I, editors. Transforming nursing through knowledge: best practices in guideline development implementation science and evaluation. Indianapolis (IN): Sigma Theta Tau International; 2018. p. 3-27.

147. Grinspun D. Transforming nursing through knowledge: the conceptual and programmatic underpinnings of RNAO's BPG program. In: Grinspun D, Bajnok I, editors. Transforming nursing through knowledge: best practices in guideline development implementation science and evaluation. Indianapolis (IN): Sigma Theta Tau International; 2018. p. 3-27.

148. Healthcare Excellence Canada (HEC). Policy guidance for the reintegration of caregivers as essential care partners: executive summary and report [Internet]. Ottawa (ON): HEC; [updated 2021 Sep]. Available from: https://www.healthcareexcellence.ca/media/4btksgep/202110_policyguidance_en.pdf

149. Public Health Agency of Canada. Common definitions on cultural safety: chief public health officer health professional forum. Ottawa (ON): Public Health Agency of Canada; 2023 Jun. Available from: https://www.canada.ca/content/dam/hc-sc/documents/services/publications/health-system-services/chief-public-health-officer-health-professional-forum-common-definitions-cultural-safety/definitions-en2.pdf

150. Stevens KR. The impact of evidence-based practice in nursing and the next big ideas. Online J Issues Nurs [Internet]. 2013;18(2):4. Available from: https://doi.org/10.3912/OJIN.Vol18No02Man04

151. Registered Nurses' Association of Ontario (RNAO). Person- and family-centred care [Internet]. Toronto (ON): RNAO; 2015 May. Available from: RNAO.ca/bpg/guidelines/person-and-family-centred-care

152. Health equity. In: World Health Organization (WHO) [Internet]. Geneva (CH): WHO; c2024. Available from: https://www.who.int/health-topics/health-equity

153. College of Nurses of Ontario (CNO). RHPA: scope of practice, controlled acts model. [Internet]. Toronto (ON): CNO, 2014. Available from: https://neltoolkit.RNAO.ca/sites/default/files/Legislation%20and%20Regulation%20RHPA_Scope%20of%20Practice,%20Controlled%20Acts%20%20Model_Revised%20June%202014.pdf

154. College of Nurses of Ontario (CNO). Working with unregulated care providers. [Internet]. Toronto (ON): CNO 2013. Available from: https://www.cno.org/globalassets/docs/prac/41014_workingucp.pdf

155. Eccles MP, Mittman BS. Welcome to Implementation Science. Implement Sci. 2006 Feb 22;1:1.

156. United Nations (UN). United Nations permanent forum on Indigenous issues: who are Indigenous peoples? [Internet]. [place unknown]: UN; [date unknown]. Available from: https://www.un.org/esa/socdev/unpfii/documents/5session_factsheet1.pdf

157. Indigenous peoples and communities. In: Government of Canada [Internet]. Ottawa (ON): Government of Canada; [modified 2024 Jun 13]. Available from: https://www.rcaanc-cirnac.gc.ca/eng/1100100013785/1529102490303

158. Higgins JPT, Thomas J, Chandler J, et al. Cochrane handbook for systematic reviews of interventions [Internet]. Version 6.3. [place unknown]: Cochrane; 2022. Available from: https://training.cochrane.org/handbook/archive/v6.3

159. Pain Assessment and Measurements. In: International Association for the Study of Pain (IASP) [Internet]. Washington (DC): IASP; c2021 [cited 2024 Sep 18]. Available from: https://www.iasp-pain.org/resources/topics/pain-assessment-and-measurements/

160. Maryland Board of Nursing (MBON). Pain management nursing role/core competency a guide for nurses [Internet]. Baltimore (MD): MBON; [date unknown]. Available from: https://mbon.maryland.gov/Documents/pain_management.pdf#:~:text=Pain%20management%20encom-pass-es%20various%20types%20of%20pain%20experiences,many%20symptoms%20of%20the%20patient%20receiving%20palliative%20care

161. Pain Assessment and Management – Understanding the Requirements. In: The Joint Commission [Internet]. Oakbrook Terrace (IL): The Joint Commission; 2017 Oct 18 [last updated 2023 Jul 25]. Available from: https://www.jointcommission.org/standards/standard-faqs/hospital-and-hospital-clinics/provision-of-care-treatment-and-services-pc/000002161/

162. Registered Nurses’ Association of Ontario (RNAO). Transitions in care and services. 2nd ed. Toronto (ON): RNAO; 2023 Jun.

163. Hedges C, Williams B. Anatomy of research for nurses. Sigma Theta Tau International; 2014.

164. Ruiz S, Brady TJ, Glasgow RE, et al. Chronic condition self-management surveillance: what is and what should be measured? Prev Chronic Dis [Internet]. 2014;11:130328. Available from: https://www.cdc.gov/pcd/issues/2014/13_0328.htm

165. Albuquerque MLL, Monteiro D, Marinho DA, et al. Effects of different protocols of physical exercise on fibromyalgia syndrome treatment: systematic review and meta-analysis of random-ized controlled trials. Rheumatol Int. 2022;42(11):1893-908.

166. Almeida C, Monteiro-Soares M, Fernandes Â. Should non-pharmacological and non-surgical interventions be used to manage neuropathic pain in adults with spinal cord injury? - a systematic review. J Pain. 2022;23(9):1510-29.

167. Almeida KAM, Rocha AP, Carvas N, Pinto ACPN. Rehabilitation interventions for shoulder dysfunction in patients with head and neck cancer: systematic review and meta-analysis. Phys Ther. 2020;100(11):1997-2008.

168. Álvarez-García C, Yaban Z. The effects of preoperative guided imagery interventions on preoperative anxiety and postoperative pain: a meta-analysis. Complement Ther Clin Pract. 2020;38:101077.

169. Ampiah PK, Hendrick P, Moffatt F, Ahenkorah J. Operationalisation of a biopsychosocial approach for the non-pharmacological management of patients with chronic musculoskeletal pain in low- and middle-income countries: a systematic review. Musculoskeletal Care. 2020;18(3):227-44.

170. Anshasi HA, Ahmad M. An assessment of methodological quality of systematic reviews of acupuncture and related therapies for cancer-related pain. Complement Ther Clin Pract. 2018;32:163-8.

171. Arnold E, La Barrie J, DaSilva L, et al. The effect of timing of physical therapy for acute low back pain on health services utilization: a systematic review. Arch Phys Med Rehabil. 2019;100(7):1324-38.

172. Bakker CJ, Wise KL, Williams BR, Swiontkowski MF. Complementary and alternative medicine for postoperative pain: a systematic review. J Bone Joint Surg Am. 2020;102(Suppl 1):36-46.

173. Bao Z, Landers M. Non-pharmacological interventions for pain management in patients with dementia: a mixed-methods systematic review. J Clin Nurs. 2022;31(7-8):1030-40.

174. Barnes P, Rivera M. The effect of Active Release Technique® on clinician and patient-reported outcomes: a systematic review. J Sport Rehabil. 2022;31(3):331-6.

175. Benoit B, Martin-Misener R, Latimer M, Campbell-Yeo M. Breast-feeding analgesia in infants: an update on the current state of evidence. J Perinat Neonatal Nurs. 2017;31(2):145-59.

176. Bernier Carney KM, Young EE, Guite JW, Starkweather AR. A systematic review of biological mechanisms and chronic pain outcomes during stress reduction interventions. Biol Res Nurs. 2020;22(2):205-16.

177. Bice AA, Wyatt TH. Holistic comfort interventions for pediatric nursing procedures: a systematic review. J Holist Nurs. 2017;35(3):280-95.

178. Birnie KA, Noel M, Chambers CT, et al. Psychological interventions for needle-related procedural pain and distress in children and adolescents. Cochrane Database Syst Rev. 2018;(10):CD005179.

179. Cashin AG, Lee H, Bagg MK, et al. A systematic review highlights the need to improve the quality and applicability of trials of physical therapy interventions for low back pain. J Clin Epidemiol. 2020;126:106-15.

180. Chaibi A, Stavem K, Russell MB. Spinal manipulative therapy for acute neck pain: a systematic review and meta-analysis of randomised controlled trials. J Clin Med. 2021;10(21):5011.

181. Cho MK, Choi MY. Effect of distraction intervention for needle-related pain and distress in children: a systematic review and meta-analysis. Int J Environ Res Public Health. 2021;18(17):9159.

182. Clijsen R, Stoop R, Hohenauer E, et al. Local heat applications as a treatment of physical and functional parameters in acute and chronic musculoskeletal disorders or pain. Arch Phys Med Rehabil. 2022;103(3):505-22.

183. Colombo C, Salvioli S, Gianola S, et al. Traction therapy for cervical radicular syndrome is statistically significant but not clinically relevant for pain relief: a systematic literature review with meta-analysis and trial sequential analysis. J Clin Med. 2020;9(11):3389.

184. Comer C, Smith TO, Drew B, et al. A systematic review assessing non-pharmacological conservative treatment studies for people with non-inflammatory multi-joint pain: clinical outcomes and research design considerations. Rheumatol Int. 2018;38(3):331-41.

185. Coronado RA, Albers HE, Allen JL, et al. Pain-reducing effects of physical therapist-delivered interventions: a systematic review of randomized trials among older adults with dementia. J Geriatr Phys Ther. 2020;43(3):159-69.

186. da Silva AC, De Noronha M, Liberatori-Junior RM, et al. The effectiveness of ischemic compression technique on pain and function in individuals with shoulder pain: a systematic review. J Manipulative Physiol Ther. 2020;43(3):234-46.

187. de Zoete RM, Armfield NR, McAuley JH, et al. Comparative effectiveness of physical exercise interventions for chronic non-specific neck pain: a systematic review with network meta-analysis of 40 randomised controlled trials. Br J Sports Med. 2021;55(13):730-42.

188. Deniz Doğan S, Köse Tosunöz. Effects of aromatherapy on pain and anxiety in burn patients: a systematic review and meta-analysis. Explore. 2023 Jan-Feb;19(1):100-6.

189. Eaton LH, Brant JM, McLeod K, Yeh C. Nonpharmacologic pain interventions: a review of evidence-based practices for reducing chronic cancer pain. Clin J Oncol Nurs. 2017;21(3):54-70.

190. Ebadi S, Henschke N, Forogh B, et al. Therapeutic ultrasound for chronic low back pain. Cochrane Database Syst Rev. 2020;(7):CD009169.

191. Eijlers R, Utens EMWJ, Staals LM, et al. Systematic review and meta-analysis of virtual reality in pediatrics: effects on pain and anxiety. Anesth Analg. 2019;129(5):1344-53.

192. Eldaly AS, Avila FR, Torres-Guzman RA, et al. Virtual and augmented reality in management of phantom limb pain: a systematic review. Hand (N Y). 2024;19(4):545-54.

193. Erçelik ZE, Yilmaz D. Nonpharmacological applications during the retinopathy of prematurity examination and their effects on pain control: a systematic review and meta-analysis. J Perinat Neonatal Nurs. 2022;36(3):297-304.

194. Feng Y, Lin Y, Zhang N, et al. Effects of animal-assisted therapy on hospitalized children and teenagers: a systematic review and meta-analysis. J Pediatr Nurs. 2021;60:11-23.

195. Fisher E, Law E, Dudeney J, et al. Psychological therapies (remotely delivered) for the management of chronic and recurrent pain in children and adolescents. Cochrane Database Syst Rev. 2019;(4):CD011118.

196. Fraser JJ, Corbett R, Donner C, Hertel J. Does manual therapy improve pain and function in patients with plantar fasciitis? A systematic review. J Man Manip Ther. 2018;26(2):55-65.

197. Fusetti V, Re L, Pigni A, et al. Clown therapy for procedural pain in children: a systematic review and meta-analysis. Eur J Pediatr. 2022;181(6):2215-25.

198. Gandy M, Pang STY, Scott AJ, et al. Internet-delivered cognitive and behavioural based interventions for adults with chronic pain: a systematic review and meta-analysis of randomized controlled trials. Pain. 2022;163(10):E1041-53.

199. Garrido-Ardila EM, Santos-Domínguez M, Rodríguez-Mansilla J, et al. A systematic review of the effectiveness of virtual reality-based interventions on pain and range of joint movement associated with burn injuries. J Pers Med. 2022;12(8):1269.

200. Garzonio S, Arbasetti C, Geri T, et al. Effectiveness of specific exercise for deep cervical muscles in nonspecific neck pain: a systematic review and meta-analysis. Phys Ther. 2022 May;102(5):pzac001.

201. Gates M, Hartling L, Shulhan-Kilroy J, et al. Digital technology distraction for acute pain in children: a meta-analysis. Pediatrics. 2020;145(2):e20191139.

202. Gava V, Ribeiro LP, Barreto RPG, Camargo PR. Effectiveness of physical therapy given by telerehabilitation on pain and disability of individuals with shoulder pain: a systematic review. Clin Rehabil. 2022;36(6):715-25.

203. Gibson W, Wand BM, Meads C, et al. Transcutaneous electrical nerve stimulation (TENS) for chronic pain - an overview of Cochrane Reviews. Cochrane Database Syst Rev. 2019;(2):CD011890.

204. Gilliam JR, George SZ, Norman KS, et al. Mind-body exercise performed by physical therapists for reducing pain and disability in low back pain: a systematic review with meta-analysis. Arch Phys Med Rehabil. 2023 May;104(5):776-89.

205. Gordon M, Sinopoulou V, Tabbers M, et al. Psychosocial interventions for the treatment of functional abdominal pain disorders in children: a systematic review and meta-analysis. JAMA Pediatr. 2022;176(6):560-8.

206. Grassini S. Virtual reality assisted non-pharmacological treatments in chronic pain management: a systematic review and quantitative meta-analysis. Int J Environ Res Public Health. 2022;19(7):4071.

207. Griswold D, Learman K, Ickert E, et al. Comparing dry needling or local acupuncture to various wet needling injection types for musculoskeletal pain and disability. A systematic review of randomized clinical trials. Disabil Rehabil. 2024;46(3):414-28.

208. Gu Q, Hou JC, Fang XM. Mindfulness meditation for primary headache pain: a meta-analysis. Chin Med J (Engl). 2018;131(7):829-38.

209. Guerrero AVS, Maujean A, Campbell L, Sterling M. A systematic review and meta-analysis of the effectiveness of psychological interventions delivered by physiotherapists on pain, disability and psychological outcomes in musculoskeletal pain conditions. Clin J Pain. 2018;34(9):838-57.

210. Guy L, McKinstry C, Bruce C. Effectiveness of pacing as a learned strategy for people with chronic pain: a systematic review. Am J Occup Ther. 2019;73(3):7303205060p1-10.

211. Halemani K, Issac A, Mishra P, et al. Effectiveness of preoperative therapeutic play on anxiety among children undergoing invasive procedure: a systematic review and meta-analysis. Indian J Surg Oncol. 2022;13(4):858-67.

212. Hall A, Richmond H, Copsey B, et al. Physiotherapist-delivered cognitive-behavioural interventions are effective for low back pain, but can they be replicated in clinical practice? A systematic review. Disabil Rehabil. 2018;40(1):1-9.

213. Hatfield LA, Murphy N, Karp K, Polomano RC. A systematic review of behavioral and environmental interventions for procedural pain management in preterm infants. J Pediatr Nurs. 2019;44:22-30.

214. Hawk C, Minkalis AL, Khorsan R, et al. Systematic review of nondrug, nonsurgical treatment of shoulder conditions. J Manipulative Physiol Ther. 2017;40(5):293-319.

215. Hayden JA, Ellis J, Ogilvie R, et al. Some types of exercise are more effective than others in people with chronic low back pain: a network meta-analysis. J Physiother. 2021;67(4):252-62.

216. He ZH, Yang HM, Dela Rosa RD, De Ala MB. The effects of virtual reality technology on reducing pain in wound care: a meta-analysis and systematic review. Int Wound J. 2022;19(7):1810-20.

217. Hochheim M, Ramm P, Amelung V. The effectiveness of low-dosed outpatient biopsychosocial interventions compared to active physical interventions on pain and disability in adults with nonspecific chronic low back pain: a systematic review with meta-analysis. Pain Pract. 2023;23(4):409-36.

218. Hosseini SJ, Manzari ZS, Karkhah S, Heydari A. The effects of Valsalva maneuver on pain intensity and hemodynamic status during short peripheral cannula insertion in adults: a systematic review and meta-analysis. J Vasc Access. 2024;25(4):1051-62.

219. Hsu HF, Chen KM, Belcastro F. The effect of music interventions on chronic pain experienced by older adults: a systematic review. J Nurs Scholarsh. 2022;54(1):64-71.

220. Hu H, Xu A, Gao C, et al. The effect of physical exercise on rheumatoid arthritis: an overview of systematic reviews and meta-analysis. J Adv Nurs. 2021;77(2):506-22.

221. Hu W, Yang K, Zhang L, Lu X. Effect of media distraction (audio-visual and music) for pain and anxiety control in patients undergoing shock-wave lithotripsy: a systematic review and meta-analysis. Exp Ther Med. 2021;21(6):623.

222. Iijima H, Takahashi M. Microcurrent therapy as a therapeutic modality for musculoskeletal pain: a systematic review accelerating the translation from clinical trials to patient care. Arch Rehabil Res Clin Transl. 2021;3(3):100145.

223. Jan AL, Aldridge ES, Rogers IR, et al. Review article: does acupuncture have a role in providing analgesia in the emergency setting? A systematic review and meta-analysis. Emerg Med Australas. 2017;29(5):490-8.

224. Ju W, Ren L, Chen J, Du Y. Efficacy of relaxation therapy as an effective nursing intervention for post-operative pain relief in patients undergoing abdominal surgery: a systematic review and meta-analysis. Exp Ther Med. 2019;18(4):2909-16.

225. Karlsson M, Bergenheim A, Larsson MEH, et al. Effects of exercise therapy in patients with acute low back pain: a systematic review of systematic reviews. Syst Rev. 2020;9(1):182.

226. Kim HJ, An JW, Lee Y, Shin YS. The effects of cryotherapy on perineal pain after child-birth: a systematic review and meta-analysis. Midwifery. 2020;89:102788.

227. Kim KS, Loring S, Kwekkeboom K. Use of art-making intervention for pain and quality of life among cancer patients: a systematic review. J Holist Nurs. 2018;36(4):341-53.

228. Kumar J, Alam MM, Johnson KC. Nonpharmacological interventions for pain management in lung cancer patients: a systematic review. Indian J Palliat Care. 2020;26(4):444-56.

229. Lafrance S, Lapalme JG, Méquignon M, et al. Advanced practice physiotherapy for adults with spinal pain: a systematic review with meta-analysis. Eur Spine J. 2021;30(4):990-1003.

230. Lambert V, Boylan P, Boran L, et al. Virtual reality distraction for acute pain in children. Cochrane Database Syst Rev. 2020;(10):CD010686.

231. Lauwens Y, Rafaatpoor F, Corbeel K, et al. Immersive virtual reality as analgesia during dressing changes of hospitalized children and adolescents with burns: a systematic review with meta-analysis. Children (Basel) [Internet]. 2020;7(11):194. Available from: https://doi.org/10.3390/children7110194

232. Li H, Man S, Zhang L, et al. Clinical efficacy of acupuncture for the treatment of rheumatoid arthritis: meta-analysis of randomized clinical trials. Evid Based Complement Alternat Med. 2022;2022:5264977.

233. Li J, Dong L, Yan X, et al. Is acupuncture another good choice for physicians in the treatment of chronic prostatitis/chronic pelvic pain syndrome? Review of the latest literature. Pain Res Manag. 2020;2020:5921038.

234. Li J, Li YX, Luo LJ, et al. The effectiveness and safety of acupuncture for knee osteoarthritis: an overview of systematic reviews. Medicine (Baltimore). 2019;98(28):e16301.

235. Li K, Giustini D, Seely D. A systematic review of acupuncture for chemotherapy-induced peripheral neuropathy. Curr Oncol. 2019;26(2):e147-54.

236. Li T, Fu Y, Yang Y, Zhou YE. Control effect of virtual reality technology on procedural pain in children's wound: a meta-analysis. Medicine (Baltimore). 2022;101(40):E30961.

237. Li X, Feng Y, Xia J, et al. Effects of cognitive behavioral therapy on pain and sleep in adults with traumatic brain injury: a systematic review and meta-analysis. Neural Plast. 2021;2021:6552246.

238. Li Y, Xing X, Shi X, et al. The effectiveness of music therapy for patients with cancer: a systematic review and meta-analysis. J Adv Nurs. 2020;76(5):1111-23.

239. Liampas A, Hadjigeorgiou L, Nteveros A, et al. Adjuvant physical exercise for the management of painful polyneuropathy. Postgrad Med. 2022;134(5):458-62.

240. Lin CL, Hwang SL, Jiang P, Hsiung NH. Effect of music therapy on pain after orthopedic surgery-a systematic review and meta-analysis. Pain Pract. 2020;20(4):422-36.

241. Lin KY, Tsai YJ, Hsu PY, et al. Effects of sling exercise for neck pain: a systematic review and meta-analysis. Phys Ther [Internet]. 2021;101(8):pzab120. Available from: https://doi.org/10.1093/ptj/pzab120

242. Liu J, Sai-Chuen Hui S, Yang Y, et al. Effectiveness of home-based exercise for nonspecific shoulder pain: a systematic review and meta-analysis. Arch Phys Med Rehabil. 2022;103(10):2036-50.

243. Liu M, Ni R, Huang S, et al. Efficacy of non-pharmacological interventions in pain relief and opioid consumption after cardiac surgery: a systematic review and Bayesian network meta-analysis. J Clin Nurs. 2023 Aug;32(15-16):4626-37. Available from:

244. Lluesma-Vidal M, Carcélen González R, García-Garcés L, et al. Effect of virtual reality on pediatric pain and fear during procedures involving needles: systematic review and meta-analysis. JMIR Serious Games. 2022;10(3):e35008.

245. Lopez-Rodriguez MM, Fernández-Millan A, Ruiz-Fernández MD, et al. New technologies to improve pain, anxiety and depression in children and adolescents with cancer: a systematic review. Int J Environ Res Public Health. 2020;17(10):3563.

246. Louw S, Makwela S, Manas L, et al. Effectiveness of exercise in office workers with neck pain: a systematic review and meta-analysis. S Afr J Physiother. 2017;73(1):392.

247. Marik TL, Roll SC. Effectiveness of occupational therapy interventions for musculoskeletal shoulder conditions: a systematic review. Am J Occup Ther. 2017;71(1):7101180020p1-11.

248. Matthewman G, Lee A, Kaur JG, Daley AJ. Physical activity for primary dysmenorrhea: a systematic review and meta-analysis of randomized controlled trials. Am J Obstet Gynecol. 2018;219(3):255.e1-20.

249. Medrado LN, Mendonça MLM, Budib MB, et al. Effectiveness of aquatic exercise in the treatment of inflammatory arthritis: systematic review. Rheumatol Int. 2022;42(10):1681-91.

250. Mohammady M, Sadeghi N. Effect of cold application on bruising and pain following heparin subcutaneous injection: a systematic review and meta-analysis. J Nurs Scholarsh. 2020;52(6):634-42.

251. Monsalve-Duarte S, Betancourt-Zapata W, Suarez-Cañon N, et al. Music therapy and music medicine interventions with adult burn patients: a systematic review and meta-analysis. Burns. 2022;48(3):510-21.

252. Moon M, Oh EG, Baek W, Kim YM. Effects of nurse-led pain management interventions for patients with total knee/hip replacement. Pain Manag Nurs. 2021;22(2):111-20.

253. Nascimento PRCD, Costa LOP, Araujo AC, et al. Effectiveness of interventions for non-specific low back pain in older adults. A systematic review and meta-analysis. Physiotherapy. 2019;105(2):147-62.

254. Nielsen A, Wieland LS. Cochrane reviews on acupuncture therapy for pain: a snapshot of the current evidence. Explore (NY). 2019;15(6):434-9.

255. Park YJ, Lee MK. Effects of nurse-led nonpharmacological pain interventions for patients with cancer: a systematic review and meta-analysis. J Nurs Scholarsh. 2022;54(4):422-33.

256. Pieri E, Bonetti F, Pellicciari L, Scipioni F. Well-described exercises for chronic low back pain in Life Science Literature: a systematic review. J Back Musculoskelet Rehabil. 2022;35(4):729-42.

257. Pitsillides A, Stasinopoulos D, Giannakou K. The effects of cognitive behavioural therapy delivered by physical therapists in knee osteoarthritis pain: a systematic review and meta-analysis of randomized controlled trials. J Bodyw Mov Ther. 2021;25:157-64.

258. Pourahmadi M, Dommerholt J, Fernández-de-Las-Peñas C, et al. Dry needling for the treatment of tension-type, cervicogenic, or migraine headaches: a systematic review and meta-analysis. Phys Ther [Internet]. 2021;101(5):pzab068. Available from: https://doi.org/10.1093/ptj/pzab068

259. Qiu H, Li J, Zhou T, et al. Electrical stimulation in the treatment of hemiplegic shoulder pain: a meta-analysis of randomized controlled trials. Am J Phys Med Rehabil. 2019;98(4):280-6.

260. Raposo F, Ramos M, Lúcia Cruz A. Effects of exercise on knee osteoarthritis: a systematic review. Musculoskeletal Care. 2021;19(4):399-435.

261. Sajeev MF, Kelada L, Yahya Nur AB, et al. Interactive video games to reduce paediatric procedural pain and anxiety: a systematic review and meta-analysis. Br J Anaesth. 2021;127(4):608-19.

262. Sánchez-Infante J, Navarro-Santana MJ, Bravo-Sánchez A, et al. Is dry needling applied by physical therapists effective for pain in musculoskeletal conditions? A systematic review and meta-analysis. Phys Ther [Internet]. 2021;101(3):pzab070. Available from: https://doi.org/10.1093/ptj/pzab070

263. Şanlialp Zeyrek A, Takmak Ş, Kurban NK, Arslan S. Systematic review and meta-analysis: physical-procedural interventions used to reduce pain during intramuscular injections in adults. J Adv Nurs. 2019;75(12):3346-61.

264. Santos EJF, Duarte C, Marques A, et al. Effectiveness of non-pharmacological and non-surgical interventions for rheumatoid arthritis: an umbrella review. JBI Database Syst Rev Implement Rep. 2019;17(7):1494-531.

265. Saragih ID, Suarilah I, Son NT, Lee BO. Efficacy of non-pharmacological interventions to reduce pain in people with dementia: a systematic review and meta-analysis. J Clin Nurs. 2023 Aug;32(15-16):5286-99.

266. Sbardella S, La Russa C, Bernetti A, et al. Muscle energy technique in the rehabilitative treatment for acute and chronic non-specific neck pain: a systematic review. Healthcare (Basel) [Internet]. 2021;9(6):746. Available from: https://doi.org/10.3390/healthcare9060746

267. Shah B, Wewege MA, Gilanyi YL, et al. Effects of a single exercise session on pain intensity in adults with chronic pain: a systematic review and meta-analysis. Musculoskelet Sci Pract. 2022;62:102679.

268. Shi Z, Zhou H, Lu L, et al. Aquatic exercises in the treatment of low back pain: a systematic review of the literature and meta-analysis of eight studies. Am J Phys Med Rehabil. 2018;97(2):116-22.

269. Sibanda A, Carnes D, Visentin D, Cleary M. A systematic review of the use of music interventions to improve outcomes for patients undergoing hip or knee surgery. J Adv Nurs. 2019;75(3):502–16.

270. Simpson PA, Mars T, Esteves JE. A systematic review of randomised controlled trials using Acceptance and Commitment Therapy as an intervention in the management of non-malignant, chronic pain in adults. Int J Osteopath Med. 2017;24:18-31.

271. Smith V, Warty RR, Sursas JA, et al. The effectiveness of virtual reality in managing acute pain and anxiety for medical inpatients: systematic review. J Med Internet Res. 2020;22(11):e17980.

272. Şolt Kırca A, Korkut Öksüz S, Murat N. The effect of cold application on episiotomy pain: a systematic review and meta-analysis. J Clin Nurs. 2022;31(5-6):559-68.

273. Song M, Li N, Zhang X, et al. Music for reducing the anxiety and pain of patients undergoing a biopsy: a meta-analysis. J Adv Nurs. 2018;74(5):1016-29.

274. Souza IG, Souza RF, Barbosa FDS, et al. Protocols used by occupational therapists on shoulder pain after stroke: systematic review and meta-analysis. Occup Ther Int. 2021;2021:8811721.

275. Stensland ML, McGeary DD. Use of animal-assisted interventions in relieving pain in healthcare settings: a systematic review. Complement Ther Clin Pract. 2022;46:101519.

276. Suder R, DeBoth KK, Carrick A, et al. A systematic review of occupational therapy-related interventions for pediatric chronic pain. OTJR (Thorofare N J). 2023;43(1):61-73.

277. Suleiman-Martos N, García-Lara RA, Membrive-Jiménez MJ, et al. Effect of a game-based intervention on preoperative pain and anxiety in children: a systematic review and meta-analysis. J Clin Nurs. 2022;31(23-24):3350-67.

278. Sun W, Zhang H, Lv C, et al. Comparative efficacy of 12 non-drug interventions on non-specific chronic low back pain in nurses: a systematic review and network meta-analysis. J Back Musculoskelet Rehabil. 2021;34(4):499-510.

279. Sundaramurthi T, Gallagher N, Sterling B. Cancer-related acute pain: a systematic review of evidence-based interventions for putting evidence into practice. Clin J Oncol Nurs. 2017;21(3):13-30.

280. Szeverenyi C, Kekecs Z, Johnson A, et al. The use of adjunct psychosocial interventions can decrease postoperative pain and improve the quality of clinical care in orthopedic surgery: a systematic review and meta-analysis of randomized controlled trials. J Pain. 2018;19(11):1231-52.

281. Tas FQ, van Eijk CAM, Staals LM, et al. Virtual reality in pediatrics, effects on pain and anxiety: a systematic review and meta-analysis update. Paediatr Anaesth. 2022;32(12):1292-304.

282. Tataryn N, Simas V, Catterall T, Furness J, Keogh JWL. Posterior-Chain Resistance Training compared to general exercise and walking programmes for the treatment of chronic low back pain in the general population: a systematic review and meta-analysis. Sports Med - Open. 2021;7(1):17.

283. Terpstra JA, van der Vaart R, van Beugen S, et al. Guided internet-based cognitive-behavioral therapy for patients with chronic pain: a meta-analytic review. Internet Interv. 2022;30:100587.

284. Tola YO, Chow KM, Liang W. Effects of non-pharmacological interventions on preoperative anxiety and postoperative pain in patients undergoing breast cancer surgery: a systematic review. J Clin Nurs. 2021;30(23-24):3369-84.

285. Toonders SAJ, van der Meer HA, van Bruxvoort T, et al. Effectiveness of remote physio-therapeutic e-Health interventions on pain in patients with musculoskeletal disorders: a systematic review. Disabil Rehabil. 2023;45(22):3620-38.

286. Trinh K, Zhou F, Belski N, et al. The effect of acupuncture on hand and wrist pain intensity, functional status, and quality of life in adults: a systematic review. Med Acupunct. 2022;34(1):34-48.

287. Ueki S, Yamagami Y, Makimoto K. Effectiveness of vibratory stimulation on needle-related procedural pain in children: a systematic review. JBI Database System Rev Implement Rep. 2019;17(7):1428–63.

288. Ughreja RA, Venkatesan P, Balebail Gopalakrishna D, Singh YP. Effectiveness of myofascial release on pain, sleep, and quality of life in patients with fibromyalgia syndrome: a systematic review. Complement Ther Clin Pract. 2021;45:101477.

289. Valencia-Chulián R, Heredia-Rizo AM, Moral-Munoz JA, et al. Dry needling for the management of spasticity, pain, and range of movement in adults after stroke: a systematic review. Complement Ther Med. 2020;52:102515.

290. van Erp RMA, Huijnen IPJ, Jakobs MLG, et al. Effectiveness of primary care interventions using a biopsychosocial approach in chronic low back pain: a systematic review. Pain Pract. 2019;19(2):224-41.

291. Vanti C, Andreatta S, Borghi S, et al. The effectiveness of walking versus exercise on pain and function in chronic low back pain: a systematic review and meta-analysis of randomized trials. Disabil Rehabil. 2019;41(6):622-32.

292. Wang H, Liu XL, Wang T, et al. Breathing exercises for pain management in cancer survivors: a systematic review. Pain Manag Nurs. 2023;24(3):299-310.

293. Wang Y, Guo L, Xiong X. Effects of virtual reality-based distraction of pain, fear, and anxiety during needle-related procedures in children and adolescents. Front Psychol. 2022;13:842847.

294. Wilhelm MP, Donaldson M, Griswold D, et al. The effects of exercise dosage on neck-related pain and disability: a systematic review with meta-analysis. J Orthop Sports Phys Ther. 2020;50(11):607-21.

295. Williams HM, Hunter K, Clapham K, et al. Efficacy and cultural appropriateness of psychosocial interventions for paediatric burn patients and caregivers: a systematic review. BMC Pub-lic Health. 2020;20(1):284.

296. Winkler SL, Urbisci AE, Best TM. Sustained acoustic medicine for the treatment of musculoskeletal injuries: a systematic review and meta-analysis. BMC Sports Sci Med Rehabil. 2021;13(1):159.

297. Wylde V, Dennis J, Gooberman-Hill R, Beswick AD. Effectiveness of postdischarge interventions for reducing the severity of chronic pain after total knee replacement: systematic review of randomised controlled trials. BMJ Open. 2018;8(2):e020368.

298. Xu Y, Zhao W, Li T, et al. Effects of acupuncture for the treatment of endometriosis-related pain: a systematic review and meta-analysis. PloS One. 2017;12(10):e0186616.

299. Yang J, Ganesh R, Wu Q, et al. Battlefield acupuncture for adult pain: a systematic review and meta-analysis of randomized controlled trials. Am J Chin Med. 2021;49(1):25-40.

300. Yangöz ŞT, Özer Z. The effect of music intervention on patients with cancer-related pain: a systematic review and meta-analysis of randomized controlled trials. J Adv Nurs. 2019;75(12):3362-73.

301. You E, Kim D, Harris R, D'Alonzo K. Effects of auricular acupressure on pain management: a systematic review. Pain Manag Nurs. 2019;20(1):17-24.

302. Zhang YH, Hu HY, Xiong YC, et al. Exercise for neuropathic pain: a systematic review and expert consensus. Front Med (Lausanne). 2021;8:756940.

303. Zimpel SA, Torloni MR, Porfírio GJ, et al. Complementary and alternative therapies for post-caesarean pain. Cochrane Database Syst Rev. 2020;(9):CD011216.

304. Boitor M, Gélinas C, Richard-Lalonde M, Thombs BD. The effect of massage on acute postoperative pain in critically and acutely ill adults post-thoracic surgery: systematic review and meta-analysis of randomized controlled trials. Heart Lung. 2017;46(5):339-46.

305. Richard-Lalonde M, Gélinas C, Boitor M, et al. The effect of music on pain in the adult intensive care unit: a systematic review of randomized controlled trials. J Pain Symptom Manage. 2020;59(6):1304-19.e6.

306. Du S, Hu L, Dong J, et al. Self-management program for chronic low back pain: a systematic review and meta-analysis. Patient Educ Couns. 2017;100(1):37-49.

307. Geraghty AWA, Maund E, Newell D, et al. Self-management for chronic widespread pain including fibromyalgia: a systematic review and meta-analysis. PLoS One. 2021;16(7):e0254642.

308. Hayden JA, Ellis J, Ogilvie R, et al. Exercise therapy for chronic low back pain. Cochrane Database Syst Rev [Internet]. 2021;(9):CD009790. Available from: https://doi.org/10.1002/14651858.CD009790.pub2

309. Williams ACC, Fisher E, Hearn L, Eccleston C. Psychological therapies for the management of chronic pain (excluding headache) in adults. Cochrane Database Syst Rev [Internet]. 2020;(8):CD007407. Available from: https://doi.org/10.1002/14651858.CD007407.pub4

310. Fisher E, Law E, Dudeney J, et al. Psychological therapies for the management of chronic and recurrent pain in children and adolescents. Cochrane Database Syst Rev [Internet]. 2018;(9):CD003968. Available from: https://doi.org/10.1002/14651858.CD003968.pub5

311. Walker LO, Avant KC. Strategies for theory construction in nursing. 6th ed. Vol. 4. New York (NY): Pearson; 2019.

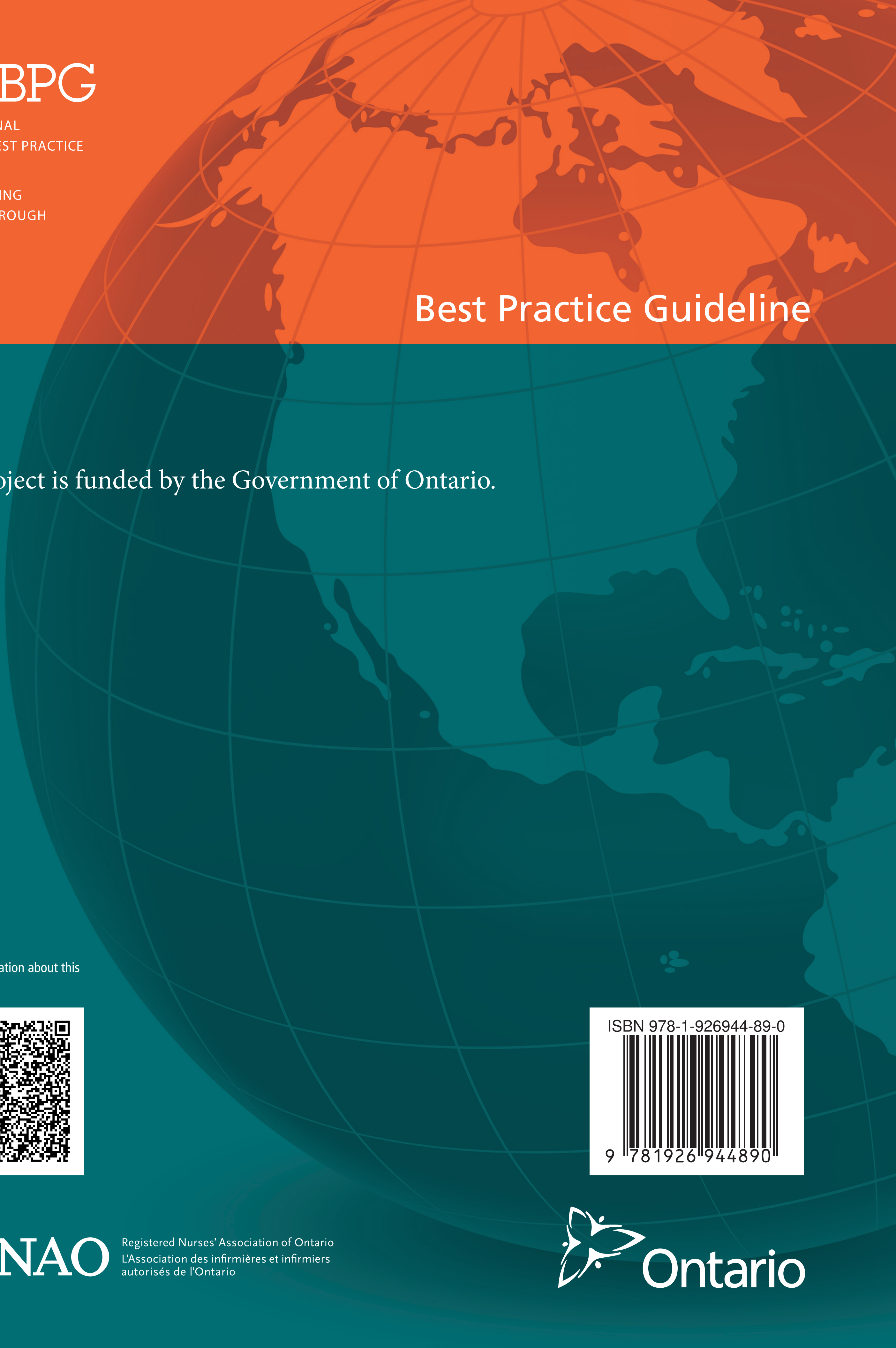
312. Liu Z, Chuang TY, Wang S. Race and gender biases in assessing pain intensity and medication needs among Chinese observers. PAIN reports. 2025 Feb 1;10(1):e1231.

313. Grant AR, Westhorp G, Mardon A, et al. Realist needs assessment investigating the factors affecting implementation of guideline-based care for chronic pain in rural Australia: program theory generation. Int. J. Qual. Methods. 2025 Jan 3;(24):16094069241310276.

314. Campbell N, Adair P, Doherty N, McCormack D, Walsh A. A systematic review of clinical practice guidelines for the assessment and management of pain in neonates. J of Neonatal Nurs. 2025 Apr 1;31(2):101603.

315. Filipponi C, Masiero M, Mazzoni D, et al. The voices of breast cancer survivors with chronic pain: a qualitative thematic analysis of patients’ challenges to pain management. J. Psychosoc. Oncol. 2025 Jan 2;43(1):34-58.

Notes



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