Cancer-Related Pain
Assessment and management with Putting Evidence Into Practice interventions

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The World Health Organization (2016) estimates that more than 90% of cancer pain can be controlled with routine interventions. Despite the number of interventions available to manage cancer pain, patients continue to suffer because these evidence-based interventions are not routinely integrated into practice. An investigation of 114 oncology units in the United States, representing 810 patients with cancer, revealed that the average pain score for patients on the inpatient oncology unit was 5.87 (on a scale of 0–10, with 10 indicating worst possible pain), and 25% of patients spent more than 50% of the time in constant or severe pain, indicating a significant need to improve pain management efforts (Brant, Potter, Tavernier, & Beck, 2012). A meta-analysis of 52 studies on cancer pain prevalence indicated that patients with cancer experience pain after curative treatments (33%) and while undergoing treatment (59%), and 64% of patients with advanced disease experience pain (van den Beuken-van Everdingen et al., 2007). This Clinical Journal of Oncology Nursing supplement provides an updated foundation about cancer pain management. It includes the assessment of cancer pain and four systematic reviews on the management of cancer pain. An overview of the systematic reviews, the systematic review methods, and the results are described.

This supplement begins with the cancer pain assessment, followed by the four systematic reviews on pain management. Assessment of pain is the first step in effective management. Because cancer pain is a multidimensional experience influenced by biologic, psychological, social, and environmental factors, a detailed assessment is essential to adequately understand the patient’s pain experience. Cancer pain may be considered acute, chronic, refractory, or breakthrough. Some patients may experience all of these types of pain at once, which adds to the challenge of assessing this complex symptom accurately. Comprehensive assessment of pain in special populations (e.g., nonverbal patients, patients with substance use disorders) is also included. Attention toward addiction and opioid use disorders (OUDs) may interfere with optimal pain management in patients with cancer; therefore, clinicians must understand the disease of addiction, how to assess for potential OUDs, and how to balance risks and benefits of opioid therapy for patients with cancer (Brant, 2016). A fear of addiction by providers can curb prescribing patterns and seriously affect the comfort of patients who need opioids and other medications to control pain. On the other hand, OUDs exist, and nurses and other healthcare professionals must understand this serious dilemma. Every clinician should know how to assess for the presence of OUDs, and understand that cancer pain remains seriously undermanaged and that patients continue to suffer (Brant, 2016).
"A fear of addiction by providers can curb prescribing patterns and affect the comfort of patients who need opioids to control pain."

Although the overview of pain assessment sets the foundation for management strategies, the focus of this supplement is on the management of cancer pain. The first systematic review is on acute pain and includes evidence regarding the pharmacologic and nonpharmacologic management of acute pain resulting from cancer surgery, procedures, and other acute pain syndromes. The second systematic review is on the pharmacologic management of chronic and refractory cancer pain. Pharmacologic complementary strategies (e.g., caffeine, herbal medicines) are included. Procedures that involve pharmaceuticals (e.g., intraspinal interventions, radiopharmaceuticals) are also included. The third systematic review is comprised of nonpharmacologic approaches to chronic cancer pain. These include educational interventions, complementary interventions (e.g., acupuncture, hypnosis, massage), and nonpharmacologic procedures, including radiation therapy, nerve blocks, and other innovative procedures. The fourth and final systematic review provides evidence for the management of breakthrough cancer pain. Chronic pain management is a foundation for breakthrough cancer pain management.

Through the four systematic reviews, the authors have synthesized the evidence for acute, chronic, refractory, and breakthrough cancer pain that can be evaluated for implementation into practice. These implications have application for health care teams and scientists to (a) evaluate important issues when implementing the recommended interventions into practice and (b) stimulate discussion and examination of potential research topics that require further investigation.

**Background**
The Oncology Nursing Society (ONS) is committed to evidence-based practice and improvement of patient outcomes. The Putting Evidence Into Practice (PEP) initiative, which began in 2006, is a reflection of this effort. The primary goal of PEP is to identify and disseminate the best available scientific evidence for patient care and teaching of patients with cancer. Twenty PEP topics currently exist: anorexia, anxiety, caregiver strain and burden, chemotherapy-induced nausea and vomiting, cognitive impairment, constipation, depression, diarrheaa, dyspnea, fatigue, hot flashes, lymphedema, mucositis, pain, peripheral neuropathy, prevention of bleeding, prevention of infection, radiodermatitis, skin reactions, and sleep-wake disturbances. This supplement updates the PEP resource for pain.

**Pain Resource**
The ONS PEP team compiled the initial resource for pain in 2007. At that time, the evidence included only pharmacologic interventions. Literature searches were conducted using a decentralized approach by individual PEP team members without using specific inclusion and exclusion criteria.

In 2009, topic content was expanded to include nonpharmacologic interventions. Interventions were further organized by acute, chronic, breakthrough, or refractory pain, and inclusion and exclusion criteria

**DATABASES USED**
PubMed
CINAHL®
- (MH “Cancer Pain” OR (TI cancer AND TI pain)) OR (MM pain AND (cancer OR neoplasms OR oncology®))
- Limiters: English language; clinical queries: therapy–high sensitivity, therapy–high specificity, therapy–best balance

**INCLUSION CRITERIA**
- Full research report, systematic review, guideline, or meta-analysis
- Study must report results of measurement of pain, including acute, chronic, breakthrough, or refractory pain.
- The study examines a pharmacologic or nonpharmacologic intervention aimed at affecting pain.
- Sample must include patients with cancer.
- Include pediatric and/or adult studies
- Studies aimed at treatment of pain (may include other symptoms) rather than treatment of the cancer
- Sample size of at least 40, or 20 per study group
- For complex interventions, the description of the intervention must be sufficient to identify the components of that intervention.

**EXCLUSION CRITERIA**
- Gray literature
- Descriptive study
- Studies involving the use of standard short-acting or sustained or extended-release opioids (Only studies involving new formulations or unusual use of these medications will be included.)
- Studies involving examination of effects of different types of surgical anesthesia
- Studies involving surgical procedures as the primary intervention
were established. These criteria have continued to evolve in response to the nature and volume of evidence considered. For example, in 2013, given the large volume and clear effectiveness of multiple opioid preparations for pain, it was recognized that continued review of standard opioids would not alter PEP categorization. Therefore, moving forward, only new agents or formulations would be included in the evidence review.

Evidence summaries are published on the ONS website, and updates are ongoing. Pharmacologic and nonpharmacologic interventions for pain were also previously published in an ONS monograph by PEP team members (Irwin, Brant, & Eaton, 2011).

**Synthesis Method**
The processes for PEP evidence synthesis followed standard processes that have been described elsewhere in detail (Johnson, 2014). Briefly, the ONS information resources supervisor thoroughly searched the literature according to the strategy and search terms shown in Figure 1. Studies that met inclusion criteria were assigned to pairs of pain PEP team members, who reviewed and summarized included articles using a standard form. Each article was reviewed by one pain PEP team member and then peer-reviewed by the second pain PEP team member. The form included information about the purpose of the study and a brief description of the intervention, sample size and characteristics, study design, measurement instruments, conclusions, limitations that show risk of bias and threats to validity in design, and implications for nursing practice. Finally, PEP team members applied the ONS PEP classification schema (Mitchell & Friese, 2009) to individual interventions via web-based meetings occurring about every six months. PEP team members included nurse scientists, advanced practice nurses, and staff nurses.

**Results**
The results of the literature retrieved are shown in Figure 2. Prior to the current process used, 34 articles were included in the review. For the current process, the literature search retrieved 6,253 titles. These included 4,699 articles retrieved through a PubMed search, 1,532 retrieved through CINAHL®, and 22 additional articles from PubMed and CINAHL using a more focused search, requested by the PEP team, with the realization that some articles may have been missed with the original retrieval. The ONS information resources supervisor and an ONS staff member reviewed titles and abstracts and selected 740 articles for full article review, and a final set of 462 articles met full inclusion criteria and are included in the evidence reviews.

**Implications for Practice**
Integrating evidence into practice is not an easy task. The literature search alone can be tedious for any one individual or organization. Nursing societies are uniquely positioned to promote evidence-based practice in a variety of ways, including the summary and synthesis of research (Mallory, 2010). Through this rigorous and transparent process, ONS provides nurses with evidence-based summaries and clear recommendations for practice. The summaries are updated regularly online and are vetted through a team of experts and staff nurses. PEP is easily accessible to organizations and to individual oncology nurses and can be used to improve the quality of cancer care.
Conclusion

Oncology nurses and healthcare professionals have a responsibility to patients and family members to apply evidence-based research to practice. The current supplement is based on the up-to-date work of the ONS PEP team and includes evidence from January 2005–July 2016. This is the first time the work has been published in an indexed journal, which will allow for global dissemination.

The current supplement will serve as a reference to keep at hand for the assessment of pain and the management of acute, chronic, breakthrough, and refractory cancer pain. Having the best evidence can improve the care that oncology nurses deliver, inform policies and procedures, and improve the quality of life for patients with cancer and their families.

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REFERENCES


