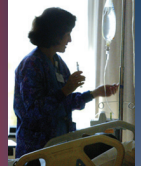


By Carla R. Jungquist, PhD, RN, ANP-BC, FAAN, April Hazard Vallerand, PhD, RN, FAAN, Corinna Sicoutris, MSN, CRNP, FCCM, Kyung N. Kwon, MSN, CRNP, CCRP, and Rosemary C. Polomano, PhD, RN, FAAN

Assessing and Managing Acute Pain: A Call to Action

Best nursing practices can minimize the risk of transition from acute to chronic pain.

ABSTRACT: Acute pain, which is usually sudden in onset and time limited, serves a biological protective function, warning the body of impending danger. However, while acute pain often resolves over time with normal healing, unrelieved acute pain can disrupt activities of daily living and transition to chronic pain. This article describes the effects of unrelieved acute pain on patients and clinical outcomes. The authors call on nurses to assess and manage acute pain in accordance with evidence-based guidelines, expert consensus reports, and position statements from professional nursing organizations in order to minimize the likelihood of its becoming chronic.

Keywords: acute pain, chronic pain, pain guidelines, persistent acute pain

The International Association for the Study of Pain defines pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage."[1] The Interagency Pain Research Coordinating Committee (IPRCC) of the U.S. Department of Health and Human Services describes acute pain as "an expected physiologic experience [in response] to noxious stimuli that can become pathologic, is normally sudden in onset, time limited, and motivates behaviors to avoid actual or potential tissue injuries."[2] Acute pain serves a protective purpose, warning the body of impending danger by activating the "fight or flight" response of the sympathetic nervous system, which often produces pallor, diaphoresis, increased pulse rate, elevated blood pressure, dilated pupils, tenseness of skeletal muscles, and rapid or shallow respiration. Patients in acute pain may also exhibit such behavioral signs as crying, moaning, or guarding painful body areas. Physiologic and behavioral signs, however, are not always evident in acute pain and, if present, may last for only a brief period. With longer exposures to pain—even severe pain—physiologic adaptation may occur and patients may alter their behavior in an attempt to appear stoic or because of exhaustion.[3] It is important to appreciate that, even in the absence of physiologic or behavioral signs, patients may experience severe pain, and their reports of pain should be taken seriously.

Acute pain tends to be easier to assess and treat than chronic pain. Patients can often localize acute pain, describe its quality and character (as sharp, dull, piercing, or cramping, for example), and indicate temporal patterns (when it originated and how it has changed over time). Clinicians often expect acute pain to resolve once noxious stimuli are removed, tissue injury or inflammation is reduced, and healing has occurred. Acute pain, however, does not always resolve on its own or even with treatment. Acute pain, which is predicted to diminish within days or weeks, may linger up to three months or longer, at which point it is said to be chronic. Acute pain that persists for weeks or months may signal a serious injury, condition, or disease. Moreover, regardless of its cause, and even if none can be identified, acute pain that continues for weeks or months can, and often does, transition to chronic pain (a process sometimes referred to as "chronification" of pain).[4-7]

This article discusses some of the pathophysiologic processes through which the transition from acute to chronic pain occurs in both hospitalized patients and outpatients whose acute pain is inadequately managed. Citing evidence-based guidelines, the position statements of notable pain associations, and consensus reports by expert panels on the assessment and management of acute pain, we call on nurses to use best practices to minimize the risk of acute pain transitioning to chronic pain.

IMPACT OF ACUTE PAIN

Trauma, including that of surgery, is a common cause of acute pain. The worldwide and U.S. prevalence rates of acute pain are unknown, but a survey published in 2014, which included 300 randomly selected U.S. patients who had undergone surgery within the preceding five years, indicated that 86% had experienced pain after surgery, with 75% describing their pain as moderate to extreme during the immediate postoperative period, and 74% reporting that they continued to experience that level of pain intensity following discharge.[8] A systematic review published in 2016, which analyzed studies conducted in nine countries and included a total of 23,523 patients across 56 hospitals, estimated that the prevalence of acute pain among hospitalized patients ranged from 37.7% to 84%, whereas the prevalence of severe acute pain ranged from 7% to 36%.[9] A Canadian study of hospitalized patients determined that clinically significant (moderate and severe) pain was experienced by 54% of patients undergoing emergency surgery, 48% of those undergoing elective surgery, and 26.5% of general medical patients.[10]

Pain is one of the most common symptoms reported by patients seeking care in the ED, accounting for about 42% of ED visits,[11] and it is a frequent reason for unplanned visits to general practitioners. Because acute pain is perceived as short lived, it may be difficult for clinicians to appreciate the degree to which it disrupts activities of daily living, or the extent to which such disruptions worsen when acute pain transitions to chronic pain.

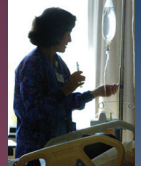
In a national Internet survey sent to 173,854 Americans, 22,018 (12.7%) of whom responded, 606 (2.8%) respondents reported having moderate to moderately severe pain.[12] For the 359 respondents with lower back pain or osteoarthritis, pain was classified as chronic; for the 247 respondents who reported pain from surgery or other trauma, pain was classified as acute. Although a high percentage (over 75%) of patients whose pain was classified as chronic reported that pain limits participation in favorite activities, impedes routine tasks, and prevents enjoyment of family time and time with significant others, a substantial proportion (over 50%) of patients whose pain was classified as acute also reported that pain interfered in these areas. In addition, both those with acute pain and those with chronic pain reported that pain interfered with their sleep—29% and 38% of the time, respectively. Respondents in both groups reported needing sleep medication and being awakened by pain at night and in the morning. Of the 247 respondents with acute pain, 187 were taking short-acting analgesic medications, and about 60% of these reported "clock-watching" in advance of their next scheduled dose.[12]

Inadequate management of acute postoperative pain can have numerous undesirable consequences, including poor patient outcomes, increased likelihood of readmission, increased health care costs, and patient dissatisfaction.[13] Because the type, level, and duration of pain, as well as the response to pain treatments and course of recovery, are affected by the nature and extent of surgery, a multidisciplinary team of surgeons, anesthesiologists, pain specialists, and other health care professionals came together in 2013 to establish the Surgical Pain Congress, which seeks to improve pain management by expanding on the work of the European-based Procedure Specific Postoperative Pain Management (PROSPECT) collaborative, whose evidence-based protocols for numerous surgical procedures can be accessed at www.postoppain.org.[13] These experts contend that the greater use of pain management plans targeted to specific surgical procedures will improve postoperative pain management and patient outcomes.

Nonopioid-based multimodal analgesic regimens and nonpharmacologic interventions should always be considered before opioids.

UNDERTREATMENT OF ACUTE PAIN

The landmark Physicians Partnering Against Pain (P3) survey of physicians and patients clearly demonstrated that analgesia for acute pain is inadequate. The study analyzed physician prescribing patterns and patient outcomes using a database of 50,869 patients with acute pain who were treated in outpatient settings across the United States.[14] Adequacy of analgesia was judged according to the pain management index (PMI), an accepted means of determining concordance between a patient's reported pain level (mild, moderate, or severe) and type and potency of prescribed analgesics. The patients were experiencing low back pain; neck pain; and acute pain as a result of injury, surgery, osteoarthritis, herpes zoster, or other conditions. Overall, 22,267 (44%) of the patients were found to have inadequate analgesia (negative PMI scores). In some cases, opioids were discontinued or doses were lowered because of adverse effects, though this does not explain the high rates of inadequate pain



management. Of the 39,675 patients receiving opioids, only 10,925 (28%) had at least one gastrointestinal adverse effect (nausea, vomiting, or constipation) that was cause for discontinuation (13%) or dose reduction (16%). Notably, inadequate analgesia was found to be significantly more common among older than younger patients, with 46% of those ages 65 to 74 and 52% of those ages 75 and older having negative PMI scores, compared with 43% of patients under age 65.[14] Similarly, a national study that examined analgesic practices based on thousands of ED visits found that adults ages 65 and older were less likely to receive any analgesics, opioid or nonopioid, compared with patients under 65.[15]

The undertreatment of acute pain is rooted in many complex issues, including insufficient pain education in medical and nursing schools; the high cost of pain medications; the reluctance of patients to report pain; and disparities in pain management that differentially and negatively affect vulnerable populations, including not only older adults, but ethnic and racial minorities and the economically disadvantaged.[16-18] Green and colleagues reviewed literature related to pain treatment and found that, compared with non-Hispanic white patients, black patients and other racial and ethnic minorities were consistently undertreated for pain across a wide range of conditions, including postoperative, chest, and cancer pain; acute pain presenting in the ED; and chronic low back pain.[19]

HOW ACUTE PAIN MANAGEMENT AFFECTS LONG-TERM OUTCOMES

Acute tissue injury produces a cascade of events involving the release of neurotransmitters that elicit electrophysiologic, structural, and neuropsychological stress responses.[21] Surgical trauma causes tissue injury, inflammation, and nerve damage. The subsequent release of histamine, prostaglandins, serotonin, hydrogen ions, and potassium ions heightens the peripheral response to painful stimuli. Increased neuronal firing of pain fibers in the periphery enhances N-methyl-D-aspartate receptor activation in the dorsal horn of the spinal cord, increasing central sensitization—a complex condition contributing to the pathogenesis of chronic pain.[7,22] Subsequently, abnormal changes in pain pathways of the central nervous system disrupt the transmission and processing of painful stimuli. In many cases, central sensitization persists long after the original physiologic insult has resolved and healing has taken place.

Chronic pain as a consequence of acute pain: a case study. Two years ago, 56-year-old DM had a right thoracotomy and lobectomy for stage I adenocarcinoma of the lung. (This case is real; identifying details have been omitted to protect the patient's privacy.) While she was relieved that all traces of cancer were removed, DM never imagined that two years following surgery, she would continue to experience significant pain when she touched the area around her incision, feel discomfort when she wore tight-fitting clothing against her chest, and experience extreme sensitivity when shower water hit her right chest area (a form of allodynia—pain from stimuli that is not typically painful). Simply bumping up against something or being hugged caused her excruciating pain. Furthermore, several times a day, she felt a stabbing, shock-like pain in her chest, which was unpredictable and not related to any particular movement, activity, or other precipitating factor—a type of sensation characteristic of neuropathic pain, which develops when damage to the peripheral or central nervous system occurs.

Provisions for pain care must take into account such factors as patient age, sedation level, respiratory status, response to therapy, functional status, and cardiovascular status, all of which affect medication requirements and safe administration.

Widespread disparities in the recognition and treatment of acute pain were elucidated in the 2011 Institute of Medicine (IOM) report, *Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research*.[20] To confront these disparities and improve pain care, this report provided "an overview of needs for care, education, and research" based on an approach that values and recognizes the need for comprehensive treatment, interdisciplinary approaches, pain prevention, dissemination of existing knowledge, and a collaborative patient–clinician relationship.

DM has a type of chronic postsurgical pain syndrome (CPSP) called postthoracotomy syndrome. It is caused by unavoidable surgical trauma to intercostal nerves and other structures. Because she was frightened by the idea of having a "needle in her back," DM had declined epidural analgesia as part of her perioperative pain management plan, despite the urging of her surgeon and anesthesiologist. While many factors play a role in the development of CPSP—including younger age, female sex, emotional state (preoperative anxiety or depression, for example), preexisting pain, pain severity, and prolonged pain duration[6]—regional anesthetic techniques, such as thoracic epidural analgesia (TEA) initiated prior to thoracotomy, are associated with reduced risk.[23,24] The use of TEA probably would have reduced DM's acute postoperative pain and may have prevented her from developing postthoracotomy syndrome.

DM is not alone in experiencing residual chronic pain following the acute pain of surgery. CPSP develops in an estimated 10% to 50% of patients undergoing such common procedures as thoracotomy, mastectomy, inguinal hernia repair, and coronary artery bypass.[25] Following amputation, the incidence of CPSP is even higher, ranging from 50% to 85%.[26] Even general surgical procedures, both minor and major, carry some risk of CPSP, but incidence is typically less than 10%.[27]

Use of multimodal analgesia: a case study. Perioperative multimodal analgesic regimens can prevent or minimize CPSP and are recommended by many pain experts, including the American Pain Society.[25] These regimens combine different classes of analgesics and other interventions that target distinct pain mechanisms and pathways.

RD was a 67-year-old patient who benefited from multimodal analgesia when he had bilateral total knee arthroplasty. (This, too, is a real case; identifying details have been omitted to protect the patient's privacy.) RD had severe chronic pain from degenerative osteoarthritis and had developed depression from his limited mobility. Research suggests that 10% to 34% of patients who undergo this type of surgery develop CPSP.[28] RD, however, avoided CPSP because his surgical team, adult gerontology NP, and orthopedic nurse navigator collaborated to design a comprehensive multimodal pain treatment plan before surgery (see *RD's Perioperative Pain Management Plan*). A certified RN anesthetist placed bilateral femoral catheters for regional anesthesia and injected the catheters with the local anesthetic ropivacaine before and during surgery.

RD's postoperative pain management plan included several different classes of analgesic agents, the application of cold packs to his surgical sites, and frequent assessment of his pain and response to therapy by nurses on the orthopedic unit, who kept the surgical team informed of his progress. For the first 18 hours after surgery, RD reported very low pain levels of 1 to 2 on a 0-to-10-point numeric pain scale, both at rest and with movement. His low levels of pain were attributed to the multimodal regimen that incorporated intraoperative regional anesthesia. Once the effects of the anesthesia had faded, RD's pain level at rest remained a 4 or lower; with physical therapy, he occasionally reported a pain level of 5. The nurses worked with physical therapists to make sure that RD used his IV patient-controlled analgesia (PCA) before physical therapy sessions, and that additional analgesics were available if needed. RD had an uneventful

RD's Perioperative Pain Management Plan

Preoperative (two days before surgery)
Celecoxib 200 mg orally twice a day

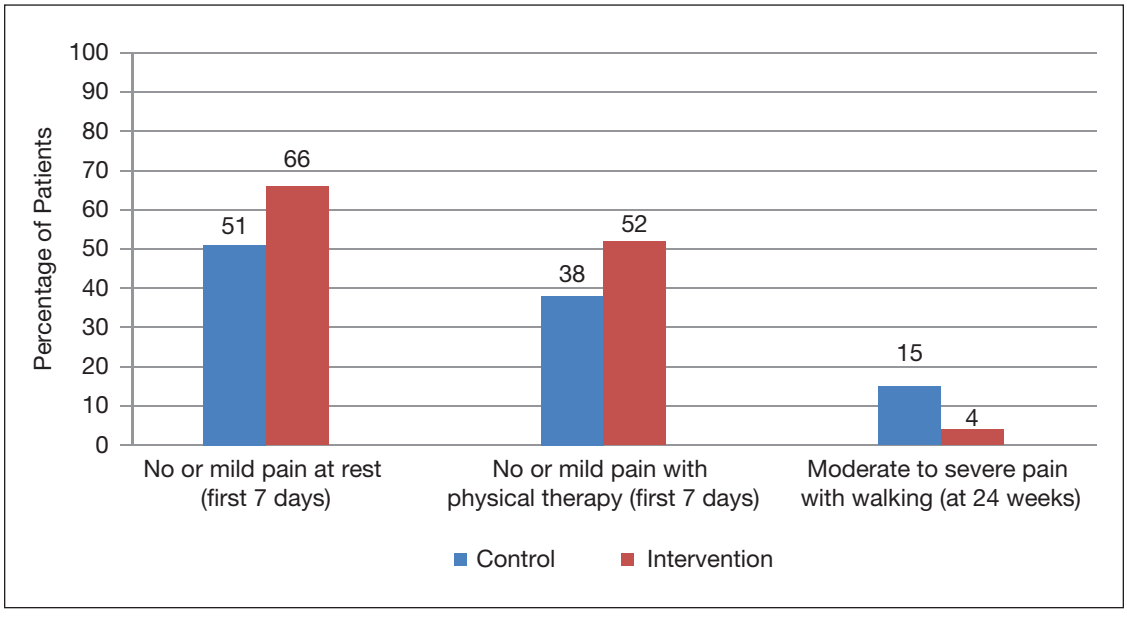
Intraoperative
Regional anesthesia: bilateral femoral catheters injected with ropivacaine to provide pain relief for up to 18 hours

Postoperative
Analgesic therapy[a]:
- IV acetaminophen 1,000 mg every six hours for 24 hours; then oral acetaminophen 650 mg every six hours
- IV patient-controlled analgesia (PCA) with a hydromorphone 0.2 mg demand dose with a lockout interval of 10 minutes for the first 48 hours; then oral controlled-release oxycodone 10 mg every 12 hours, supplemented by short-acting oxycodone 5 mg every three to four hours as needed
- IV ketorolac 15 mg every six hours for 24 hours

Comfort measures (during hospitalization)
- Apply ice packs to surgical sites for 20 minutes every two hours.
- Reposition lower extremities with elevation and limited range of motion every two hours for the first 24 hours following surgery.
- Instruct patient to self-administer an IV PCA demand dose 10 minutes before repositioning and any activity.

[a]Oral analgesics to continue after discharge as needed for at least two weeks.

Figure 1. Pain Outcomes of Hospitalized Older Adults (N=249) During and After a Pain Management Intervention Following Hip Fracture or Hip or Knee Arthroplasty[29]



A total of 168 patients (104 intervention and 64 control) were assessed through day 7 and 202 patients (123 intervention and 79 control) were assessed at 24 weeks. From day 1 through day 7, a significantly greater percentage of intervention than control patients reported no or mild pain at rest ($P = 0.004$) and with physical therapy ($P = 0.02$). At 24 weeks, a smaller percentage of intervention than control patients reported moderate to severe pain with walking ($P = 0.02$). Patients in the intervention group received more analgesia (morphine sulfate equivalents) per day than patients in the control group (23.6 mg versus 15.6 mg, $P < 0.001$).

postoperative course of recovery, was transitioned from IV PCA to a short-acting oxycodone–acetaminophen combination, and was discharged to a rehabilitation unit two days after surgery with only mild pain. RD had no negative postsurgical consequences and at six months was pain free, walking half a mile every day without an assistive device.

Others have confirmed the short- and long-term advantages of using similar pain management protocols for older adults undergoing orthopedic surgery. Morrison and colleagues found that such a protocol yielded significantly better pain outcomes than routine care among older adults receiving in-hospital rehabilitation services after hip fracture or knee or hip arthroplasty (see Figure 1).[29] In addition, on rehabilitation days 4 and 7 those in the intervention group had significantly faster (in seconds) mean eight-foot walk times compared with the control group ($P = 0.02$). In this study, the intervention included the use of guidelines for pain control and making informed decisions based on patients' responses to therapy, much like the interdisciplinary team approach used in RD's postoperative care.

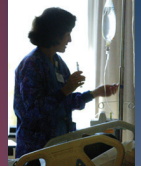
The importance of early effective pain control to improve outcomes was emphasized in a study by Lindberg and colleagues, who found that patients with higher versus lower pain scores at rest and with activity on the day of total knee arthroplasty required additional days with a femoral block, needed a greater average daily opioid dose, and scored higher on the Brief Illness Perception Questionnaire for emotional response to osteoarthritis.[30]

A CALL FOR ACTION

While the IOM's *Relieving Pain in America* report acknowledged that not all acute pain can be managed effectively, it identified pain as a major health problem and confirmed that people with unrelieved acute pain are not being offered comprehensive, integrated, evidence-based assessment and treatment. Several evidence-based guidelines, expert consensus reports, and position statements from professional nursing organizations are available to guide clinical decision making in the assessment and management of acute pain (see Table 1[2, 25, 31-38]). Among these is the IPRCC's *National Pain Strategy*, which outlines a

Table 1. Evidence-Based Guidelines and Practice Resources for Acute Pain

Sponsoring Organization	Title	Type of Report	Reference
American Academy of Pain Medicine (AAPM)	Acute Pain Medicine in the United States: A Status Report	Expert consensus report	Tighe P, et al., 2015[25] Free access is available to members of the AAPM and the Spine Intervention Society at http://painmedicine.oxfordjournals.org/content/16/9/1806.long. (Available to nonmembers with purchase.)
American Pain Society; American Society of Regional Anesthesia and Pain Medicine; American Society of Anesthesiologists' Committee on Regional Anesthesia, Executive Committee, and Administrative Council	Management of Postoperative Pain: A Clinical Practice Guideline from the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of Anesthesiologists' Committee on Regional Anesthesia, Executive Committee, and Administrative Council	Evidence-based practice guideline	Chou R, et al., 2016[33] www.jpain.org/article/S1526-5900(15)00995-5/pdf
American Society of Anesthesiologists (ASA)	Practice Guidelines for Acute Pain Management in the Perioperative Setting: An Updated Report by the American Society of Anesthesiologists Task Force on Acute Pain Management	Evidence-based practice guideline	ASA Task Force on Acute Pain Management, 2012[32] http://anesthesiology.pubs.asahq.org/article.aspx?articleid=1933589
American Society for Pain Management Nursing and Emergency Nurses Association in collaboration with American Pain Society and American College of Emergency Physicians	Optimizing the Treatment of Pain in Patients with Acute Presentations	Position statement	American Society for Pain Management Nursing (ASPMN), et al., 2010[31] www.aspmn.org/documents/OptimizingPositionPaper.pdf
American Society for Pain Management Nursing	American Society for Pain Management Nursing Guidelines on Monitoring for Opioid-Induced Sedation and Respiratory Depression	Expert consensus report	Jarzyna D, et al., 2011[35] www.aspmn.org/documents/GuidelinesonMonitoringforOpioid-InducedSedationandRespiratoryDepression.pdf
American Society for Pain Management Nursing	Prescribing and Administering Opioid Doses Based Solely on Pain Intensity: A Position Statement by the American Society for Pain Management Nursing	Position statement	Pasero C, et al., 2016[37] www.aspmn.org/Documents/Position%20Statements/Dose_Numbers_PP_Final.pdf
Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine	Acute Pain Management: Scientific Evidence (Fourth Edition 2015)	Evidence-based practice guideline	Schug SA, et al., 2015[38] http://fpm.anzca.edu.au/documents/apmse4_2015_final
Emergency Nurses Association (ENA)	Care of Patients with Chronic/Persistent Pain in the Emergency Setting	Position statement	ENA, 2014[34] www.ena.org/practice-research/Practice/Position/Pages/ChronicPain.aspx
Interagency Pain Research Coordinating Committee (IPRCC)	National Pain Strategy: A Comprehensive Population Health-Level Strategy for Pain	National report	IPRCC, 2016[2] https://iprcc.nih.gov/docs/HHSNational_Pain_Strategy.pdf
National Association for Orthopaedic Nurses (NAON)	Acute Pain Management Algorithms for the Adult Orthopaedic Patient	Clinical resource	NAON, 2013[36] Available for purchase at: www.orthonurse.org/p/pr/vi/prodid=174



multilevel, comprehensive national plan to address pain and is strategically focused on professional training, public education and communication, service delivery and reimbursement, prevention and care, disparities in pain management, and access to care.[2] It emphasizes efforts to prevent the progression of acute pain to high-impact chronic pain and encourages nurses and all health care professionals to adopt evidence-based, accepted standards for interdisciplinary pain care. The report illuminates the professional accountability nurses share with other health care professionals in ensuring that optimal and equitable pain care is available to all patients.

New guidelines for opioid prescribing have been released by the Centers for Disease Control and Prevention (CDC) amid growing concerns about the increase in opioid abuse in the United States, as well as the rising numbers of opioid-related deaths and patients with opioid dependence associated with the treatment of chronic noncancer pain.[39] These guidelines caution that prolonged use of opioids often starts with acute pain treatment and recommend that when opioids are indicated for acute pain, clinicians should prescribe the lowest effective dose of immediate-release opioids in quantities no greater than the anticipated duration of pain severe enough to require opioid treatment. Three or fewer days often suffice; treatment of seven or more days is rarely needed.[39] These guidelines have important implications for how nonsurgical and nontraumatic acute pain should be treated. Nonopioid-based multimodal analgesic regimens and nonpharmacologic interventions should always be considered before opioids for this type of acute pain. Nurses should consult the CDC guidelines to better understand ways to reduce unnecessary or prolonged use of opioids for managing both acute and chronic noncancer pain. It should be noted that postsurgical pain is outside the scope of this CDC recommendation.[39] (For managing postsurgical pain, see "Multimodal Analgesia for Acute Postoperative and Trauma-Related Pain" on page S12).

IMPLICATIONS FOR NURSES

Nurses assume an essential role in caring for patients with acute pain and in preventing that pain from transitioning to chronic pain. Nurses must advocate for patients to receive optimal treatment of acute pain and collaborate with other health care team members to design and administer care plans that promote comfort; facilitate recovery; restore physical, emotional, and social health; and lead to the best possible patient outcomes. Patients and families need to be engaged as partners in decisions regarding care, and their preferences for pain management must be known, valued, and supported.

In 2004, Gan and colleagues interviewed 50 hospitalized patients recovering from general surgery to determine whether, after discharge to home, they would prefer to have good pain relief with moderate nausea or fair pain relief with no adverse effects.[40] While 40% indicated they would prefer to have good pain relief despite moderate nausea, 60% said they would rather have no adverse effects, even if pain relief were only fair. When presented with alternative hypothetical scenarios, patients were influenced in their preferences by both severity and type of adverse effects, and they varied in their willingness to trade pain relief for different or milder adverse effects. Overall, patients weighted the importance of pain control and adverse effect type and severity similarly, giving them "importance" scores of 40.69% and 47.25%, respectively. Engaging patients in their own care, determining their previous experiences with surgery and analgesics, and discovering their care priorities should be a routine part of developing care plans.

Pasero and colleagues emphasize that provisions for pain care must take into account such factors as patient age, sedation level, respiratory status, response to therapy, functional status, and cardiovascular status, all of which affect medication requirements and safe administration—especially when opioid-based regimens are used.[37] The IPRCC's *National Pain Strategy* calls on all health care professionals to recognize acute pain as a major health problem and to take actions to treat pain effectively, recognizing that unrelieved acute pain is likely to progress to chronic pain.[2] Astute pain assessment, an understanding of effective treatments for acute pain and evidence-based pain care, patient advocacy, and the involvement of patients and families in decisions surrounding pain care are key in preventing acute pain from becoming chronic. ▼

Carla R. Jungquist is an assistant professor in the University at Buffalo School of Nursing, Buffalo, NY. April Hazard Vallerand is associate dean for research and director of the PhD program at Wayne State University College of Nursing, Detroit. Corinna Sicoutris is associate director of advanced practitioners at the Hospital of the University of Pennsylvania, Philadelphia. Kyung N. Kwon is research manager in the Defense and Veterans Center for Integrative Pain Management, Henry M. Jackson Foundation, Rockville, MD. Rosemary C. Polomano is a professor of pain practice at the University of Pennsylvania School of Nursing, Philadelphia. Contact author: Carla R. Jungquist, carlajun@buffalo.edu. *Carla R. Jungquist has served on the advisory board of Mallinckrodt Pharmaceuticals; April Hazard Vallerand is on the speaker's bureaus of AstraZeneca and Purdue Pharma and is a consultant for Shionogi, Inc.; Rosemary C. Polomano has served on the advisory boards of Salix Pharmaceuticals, Daiichi Sankyo, and Mallinckrodt Pharmaceuticals. The authors have disclosed no potential conflicts of interest, financial or otherwise.*

REFERENCES

1. International Association for the Study of Pain. *IASP taxonomy: pain*. 2012. http://www.iasp-pain.org/Taxonomy#Pain.
2. Interagency Pain Research Coordinating Committee. *National pain strategy: a comprehensive population health-level strategy for pain*. Bethesda, MD: National Institutes of Health; 2016. https://iprcc.nih.gov/docs/HHSNational_Pain_Strategy.pdf.
3. Pasero C, Portenoy RK. Misconceptions that hamper assessment and treatment of patients who report pain. In: Pasero C, McCaffery M, editors. *Pain assessment and pharmacologic management*. St. Louis: Elsevier/Mosby; 2011. p. 20-48.
4. Pergolizzi JV, Jr., et al. Treating acute pain in light of the chronification of pain. *Pain Manag Nurs* 2014;15(1):380-90.
5. Polomano RC, et al. Perspective on pain management in the 21st century. *J Perianesth Nurs* 2008;23(1 Suppl):S4-S14.
6. Pozek JP, et al. The acute to chronic pain transition: can chronic pain be prevented? *Med Clin North Am* 2016;100(1):17-30.
7. Voscopoulos C, Lema M. When does acute pain become chronic? *Br J Anaesth* 2010;105 Suppl 1:i69-i85.
8. Gan TJ, et al. Incidence, patient satisfaction, and perceptions of post-surgical pain: results from a US national survey. *Curr Med Res Opin* 2014;30(1):149-60.
9. Gregory J, McGowan L. An examination of the prevalence of acute pain for hospitalised adult patients: a systematic review. *J Clin Nurs* 2016;25(5-6):583-98.
10. Carr EC, et al. Pain: a quality of care issue during patients' admission to hospital. *J Adv Nurs* 2014;70(6):1391-403.
11. Pletcher MJ, et al. Trends in opioid prescribing by race/ethnicity for patients seeking care in US emergency departments. *JAMA* 2008;299(1):70-8.
12. McCarberg BH, et al. The impact of pain on quality of life and the unmet needs of pain management: results from pain sufferers and physicians participating in an Internet survey. *Am J Ther* 2008;15(4):312-20.
13. Joshi GP, et al. Defining new directions for more effective management of surgical pain in the United States: highlights of the inaugural Surgical Pain Congress. *Am Surg* 2014;80(3):219-28.
14. Moskovitz BL, et al. Analgesic treatment for moderate-to-severe acute pain in the United States: patients' perspectives in the Physicians Partnering Against Pain (P3) survey. *J Opioid Manag* 2011;7(4):277-86.
15. Hwang U, et al. Is all pain is treated equally? A multicenter evaluation of acute pain care by age. *Pain* 2014;155(12):2568-74.
16. Anderson KO, et al. Racial and ethnic disparities in pain: causes and consequences of unequal care. *J Pain* 2009;10(12):1187-204.
17. Hanks-Bell M, et al. Pain assessment and management in aging. *Online J Issues Nurs* 2004;9(3):8.
18. Meghani SH, et al. Advancing a national agenda to eliminate disparities in pain care: directions for health policy, education, practice, and research. *Pain Med* 2012;13(1):5-28.
19. Green CR, et al. The unequal burden of pain: confronting racial and ethnic disparities in pain. *Pain Med* 2003;4(3):277-94.
20. Committee on Advancing Pain Research, Care, and Education; Institute of Medicine. *Relieving pain in America: a blueprint for transforming prevention, care, education, and research*. Washington, DC: National Academies Press; 2011. http://www.nap.edu/catalog/13172/relieving-pain-in-america-a-blueprint-for-transforming-prevention-care.
21. Carr DB, Goudas LC. Acute pain. *Lancet* 1999;353(9169):2051-8.
22. Woolf CJ. Central sensitization: uncovering the relation between pain and plasticity. *Anesthesiology* 2007;106(4):864-7.
23. Romero A, et al. The state of the art in preventing postthoracotomy pain. *Semin Thorac Cardiovasc Surg* 2013;25(2):116-24.
24. Sentürk M, et al. The effects of three different analgesia techniques on long-term postthoracotomy pain. *Anesth Analg* 2002;94(1):11-5.
25. Tighe P, et al. Acute pain medicine in the United States: a status report. *Pain Med* 2015;16(9):1806-26.
26. Macrae WA. Chronic post-surgical pain: 10 years on. *Br J Anaesth* 2008;101(1):77-86.
27. Simanski CJ, et al. Incidence of chronic postsurgical pain (CPSP) after general surgery. *Pain Med* 2014;15(7):1222-9.
28. Beswick AD, et al. What proportion of patients report long-term pain after total hip or knee replacement for osteoarthritis? A systematic review of prospective studies in unselected patients. *BMJ Open* 2012;2(1):e000435.
29. Morrison RS, et al. A novel interdisciplinary analgesic program reduces pain and improves function in older adults after orthopedic surgery. *J Am Geriatr Soc* 2009;57(1):1-10.
30. Lindberg MF, et al. The impact of demographic, clinical, symptom and psychological characteristics on the trajectories of acute postoperative pain after total knee arthroplasty. *Pain Med* 2016 May 10 [Epub ahead of print].
31. American Society for Pain Management Nursing (ASPMN), Emergency Nurses Association (ENA), American College of Emergency Physicians (ACEP), American Pain Society (APS). Optimizing the treatment of pain in patients with acute presentations: policy statement. *Ann Emerg Med* 2010;56(1):77-9.
32. American Society of Anesthesiologists Task Force on Acute Pain Management. Practice guidelines for acute pain management in the perioperative setting: an updated report by the American Society of Anesthesiologists Task Force on Acute Pain Management. *Anesthesiology* 2012;116(2):248-73.
33. Chou R, et al. Management of postoperative pain: a clinical practice guideline from the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of Anesthesiologists' Committee on Regional Anesthesia, Executive Committee, and Administrative Council. *J Pain* 2016;17(2):131-57.
34. Emergency Nurses Association. *Position statement. Care of patients with chronic/persistent pain in the emergency setting*. Des Plaines, IL; 2014 Jan. https://www.ena.org/SiteCollectionDocuments/Position%20Statements/ChronicPain.pdf.
35. Jarzyna D, et al. American Society for Pain Management Nursing guidelines on monitoring for opioid-induced sedation and respiratory depression. *Pain Manag Nurs* 2011;12(3):118-45.e10.
36. National Association of Orthopaedic Nurses. *Acute pain management algorithms for the adult orthopaedic patient*. Chicago; 2013. http://www.orthonurse.org/p/pr/vi/prodid=174.
37. Pasero C, et al. American Society for Pain Management Nursing position statement: prescribing and administering opioid doses based solely on pain intensity. *Pain Manag Nurs* 2016;17(3):170-80.
38. Schug SA, et al. *Acute pain management: scientific evidence (4th edition)*. Melbourne: Australian and New Zealand College of Anaesthestists amd Faculty of Pain Medicine; 2015. https://www.ranzcog.edu.au/document-library/acute-pain-management-publication.html.
39. Dowell D, et al. CDC guideline for prescribing opioids for chronic pain—United States, 2016. *JAMA* 2016;315(15):1624-45.
40. Gan TJ, et al. Patient preferences for acute pain treatment. *Br J Anaesth* 2004;92(5):681-8.