

Acute Perioperative Pain Management Among Adult Patients Undergoing Orthopaedic Surgery

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Issue

Patients undergoing elective orthopaedic surgery may experience pain that is acute, chronic, or a combination of the two, with less than half of all surgical patients reporting adequate pain relief (Chou et al., 2016). Unrelieved acute pain can result in many adverse sequelae including delayed healing, increased morbidity, pulmonary complications, limited rehabilitation participation, anxiety, depression, increased length of stay, prolonged duration of opioid use, and the development of chronic pain (Glare et al., 2019; Quinlan-Colwell, 2020).

Background and Significance

Pursuant to achieving optimal pain management for orthopaedic patients, the National Association of Orthopaedic Nurses (NAON) and the American Society for Pain Management Nursing (ASPMN) have partnered to provide evidence-informed guidance to empower nurses to employ effective pain management (ASPMN, n.d.; NAON, n.d.). The focus of this position statement is elective postoperative orthopaedic pain; however, many of the concepts apply to nonelective and trauma situations. Although this position statement arose from a nursing focus, it is clear that optimal pain management depends on strong interdisciplinary collaboration that includes the patient.

Perioperative pain in patients undergoing orthopaedic surgery varies on the basis of person-specific characteristics, the etiology of the pain, and the specific procedure, which underscores the importance of individualizing safe multimodal analgesic plans of care (Gan, 2017; Hsu et al., 2019; Hyland et al., 2021; Institute of Medicine, 2011; Lespasio et al., 2019; Perry et al., 2019; Quinlan-Colwell, 2020). Patients who have an increased risk of postoperative pain benefit from interventions in the perioperative period to modify risk and improve outcomes (Pua et al., 2019). In addition to optimizing analgesia, utilizing a personalized approach builds a therapeutic alliance between the nurse and the patient based on trust and respect (U.S. Department of Health and Human Services, 2019).

Position With Guiding Principles

It is the position of NAON and ASPMN that nurses have an ethical imperative to optimally facilitate the relief of acute postoperative pain and suffering among orthopaedic patients while mitigating untoward risks (American Nurses Association, 2018; Anderson & Alger, 2019). The perioperative period for the orthopaedic surgical patient provides opportunities and challenges for nursing. Understanding and applying ethical, evidence-informed, patient-focused, interprofessional interventions will improve outcomes for patients, clinicians,¹ and healthcare organizations. NAON and ASPMN encourage nurses to embrace the following guiding principles:

- Effective personalized pain management is a right for all patients, regardless of income, race, gender, age, status, comorbidities, or geographic location (ASPMN, n.d.; Institute of Medicine, 2011, Rhon et al., 2018).

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¹For the purpose of this statement, to emphasize the importance of the team approach toward positive outcomes, the term “clinician” will be used to reference all providers of the interdisciplinary team including physicians, advanced practice providers, nurses, rehabilitation providers, etc.

- Individualized assessment and pain management considerations are needed when caring for members of vulnerable populations to ensure that postoperative pain is managed effectively and nuanced approaches are applied (Herr et al., 2019; Institute of Medicine, 2011; Martinez, 2021).
- Patients and clinicians are jointly responsible for having an open and honest patient–clinician relationship. This includes patients informing clinicians about all medications, supplements, and substances used and clinicians providing nonstigmatizing assessments and interventions (U.S. Food and Drug Administration, 2018).
- Preoperative education and preconditioning are associated with increased perception of preparedness and decreased opioid utilization, thus should be maximized whenever possible (Clode et al., 2018; Khorfan et al., 2020).
- Establish a postoperative pain management plan between the patient and the provider prior to the surgical procedure (Filbay et al., 2018; Horn et al., 2020; Institute for Healthcare Improvement, 2019; Khorfan et al., 2020).
- Realistic expectations and goals are best determined by utilizing functional pain scales to assess and educate patients about their pain level (Adeboye et al., 2021).
- Provide safe and effective pain management by the use of comprehensive pain assessment tools along with regular reassessments. These assessments must include assessing sedation and consideration of individualized risk factors (Chou et al., 2016; Pasero et al., 2016).
- To achieve optimal pain management, utilize multimodal analgesia, including the intentional use of appropriate pharmacological and nonpharmacological techniques, and adherence to Enhanced Recovery After Surgery (ERAS) protocols (Chou et al., 2016; Echeverria-Villalobos et al., 2020; Goode et al., 2019; Institute of Medicine, 2011; Montgomery & McNamara, 2016; Tick et al., 2018).
- Organizations are responsible for developing standardized policies and providing appropriate pain management education and training for clinicians, patients, and families (Hsu et al., 2019; The Joint Commission, 2021).

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REFERENCES

Adeboye, A., Hart, R., Senapathi, S. H., Ali, N., Holman, L., & Thomas, H. W. (2021). Assessment of functional pain score by comparing to traditional pain scores. *Cureus*, *13*(8), e16847. <https://doi.org/10.7759/cureus.16847>

American Nurses Association. (2018). *The ethical responsibility to manage pain and the suffering it causes*. Retrieved October 4, 2021, from <https://www.nursingworld.org/~495e9b/globalassets/docs/ana/ethics/theethicalresponsibilitytomanagepainandthesufferingitcauses2018.pdf>

American Society for Pain Management Nursing (ASPMN). (n.d.) *Key messages*. <http://aspmn.org/whatwedo/Pages/keymessages.aspx>

Anderson, I., & Alger, J. (2019). The tightrope walk: Pain management and opioid stewardship. *Orthopaedic Nursing*, *38*(2), 111–115. <https://doi.org/10.1097/NOR.0000000000000528>

Chou, R., Gordon, D. B., de Leon-Casasola, O. A., Rosenberg, J. M., Bickler, S., Brennan, T., Carter, T., Cassidy, C. L., Chittenden, E. H., Degenhardt, E., Griffith, S., Manworren, R., McCarberg, B., Montgomery, R., Murphy, J., Perkal, M. F., Suresh, S., Sluka, K., Strassels, S., ... Wu, C. L. (2016). 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 [Erratum in: *Journal of Pain*, *17*(4), 508–510, 2016. <https://doi.org/10.1016/j.jpain.2016.05.007>]. *Journal of Pain*, *17*(2), 131–157. <https://doi.org/10.1016/j.jpain.2015.12.008>

Clode, N. J., Perry, M. A., & Wulff, L. (2018). Does physiotherapy prehabilitation improve pre-surgical outcomes and influence patient expectations prior to knee and hip joint arthroplasty? *International Journal of Orthopaedic and Trauma Nursing*, *30*, 14–19. <https://doi.org/10.1016/j.ijotn.2018.05.004>

Echeverria-Villalobos, M., Stoicea, N., Todeschini, A., Fiorda-Diaz, J., Uribe, A. A., Weaver, T., & Bergese, S. D. (2020). Enhanced Recovery After Surgery (ERAS). *The Clinical Journal of Pain*, *36*(3), 219–226. <https://doi.org/10.1097/AJP.0000000000000792>

Filbay, S. R., Judge, A., Delmestri, A., Arden, N. K., & COAST Study Group. (2018). Evaluating patients' expectations from a novel patient-centered perspective predicts knee arthroplasty outcomes. *The Journal of Arthroplasty*, *33*(7), 2146–2152. <https://doi.org/10.1016/j.arth.2018.02.026> 0883-5403

Gan, T. J. (2017). Poorly controlled postoperative pain: Prevalence, consequences, and prevention. *Journal of Pain Research*, *10*, 2287–2298. <https://doi.org/10.2147/JPR.S144066>

Glare, P., Aubrey, K. R., & Myles, P. S. (2019). Transition from acute to chronic pain after surgery. *The Lancet*, *393*(10180), 1537–1546. [https://doi.org/10.1016/S0140-6736\(19\)30352-6](https://doi.org/10.1016/S0140-6736(19)30352-6)

Goode, V. M., Morgan, B., Muckler, V. C., Cary, M. P., Jr., Zdeb, C. E., & Zychowicz, M. (2019). Multimodal pain management for major joint replacement surgery. *Orthopaedic Nursing*, *38*(2), 150–156. <https://doi.org/10.1097/NOR.0000000000000525>

Herr, K., Coyne, P. J., Ely, E., Gélinas, C., & Manworren, R. C. (2019). Pain assessment in the patient unable to self-report: Clinical practice recommendations in support of the ASPMN 2019 position statement. *Pain Management Nursing*, *20*(5), 404–417. <https://doi.org/10.1016/j.pmn.2019.07.005>

Horn, A., Kaneshiro, K., & Tsui, B. C. H. (2020). Preemptive and preventive pain psychoeducation and its potential application as a multimodal perioperative pain control option: A systematic review. *Anesthesia & Analgesia*, *130*(3), 559–573. <https://doi.org/10.1213/ANE.00000000000004319>

Hsu, J. R., Mir, H., Wally, M. K., Seymour, R. B., & Orthopaedic Trauma Association Musculoskeletal Pain Task Force. (2019). Clinical practice guidelines for pain management in acute musculoskeletal injury.

- Journal of Orthopaedic Trauma*, 33(5), e158–e182. <https://doi.org/10.1097/BOT.0000000000001430>
- Hyland, S. J., Brockhaus, K. K., Vincent, W. R., Spence, N. Z., Lucki, M. M., Howkins, M. J., & Cleary, R. K. (2021). Perioperative pain management and opioid stewardship: A practical guide. *Healthcare*, 9(3), 333. <https://doi.org/10.3390/healthcare9030333>
- Institute for Healthcare Improvement. (2019). *Advancing the safety of acute pain management*. Institute for Healthcare Improvement. Retrieved October 4, 2021, from <http://www.ihl.org/resources/Pages/Publications/Advancing-the-Safety-of-Acute-Pain-Management.aspx>
- Institute of Medicine. (2011). *Relieving pain in America: A blueprint for transforming prevention, care, education, and research*. The National Academies Press. <https://doi.org/10.17226/13172>
- Khorfan, R., Shallcross, M. L., Yu, B., Sanchez, N., Parilla, S., Coughlin, J. M., Johnson, J. K., Bilimoria, K. Y., & Stulberg, J. J. (2020). Preoperative patient education and patient preparedness are associated with less postoperative use of opioids. *Surgery*, 167(5), 852–858. <https://doi.org/10.1016/j.surg.2020.01.002>
- Lespasio, M. J., Guarino, A. J., Sodhi, N., & Mont, M. A. (2019). Pain management associated with total joint arthroplasty: A primer. *The Permanente Journal*, 23, 18–169. <https://doi.org/10.7812/TPP/18-169>
- Martinez, R. (2021). Challenges in the management of pain in hospital patients with opioid use disorder. *Nursing Standard*, 36(4), 55–60. <https://doi.org/10.7748/ns.2021.e11521>
- Montgomery, R., & McNamara, S. A. (2016). Multimodal pain management for enhanced recovery: Reinforcing the shift from transitional pathways through nurse-led interventions. *AORN Journal*, 104(6S), S9–S16. <https://doi.org/10.1016/j.aorn.2016.10.012>
- National Association of Orthopaedic Nurses (NAON). (n.d.) *About us: Vision statement*. <http://www.orthonurse.org/page/aboutus>
- Pasero, C., Quinlan-Colwell, A., Rae, D., Broglio, K., & Drew, D. (2016). American Society for Pain Management Nursing position statement: Prescribing and administering opioid doses based solely on pain intensity. *Pain Management Nursing*, 17(3), 170–180. <https://doi.org/10.1016/j.pmn.2016.03.001>
- Perry, M., Baumbauer, K., Young, E. E., Dorsey, S. G., Taylor, J. Y., & Starkweather, A. R. (2019). The influence of race, ethnicity and genetic variants on postoperative pain intensity: An integrative literature review. *Pain Management Nursing*, 20(3), 198–206. <https://doi.org/10.1016/j.pmn.2018.11.002>
- Pua, Y. H., Poon, C. L., Seah, F. J., Thumboo, J., Clark, R. A., Tan, M. H., Chong, H. C., Tan, J. W., Chew, E. S., & Yeo, S. J. (2019). Predicting individual knee range of motion, knee pain, and walking limitation outcomes following total knee arthroplasty. *Acta Orthopaedica*, 90(2), 179–186. <https://doi.org/10.1080/17453674.2018.1560647>
- Quinlan-Colwell, A. (2020). Importance of multimodal pain management. In M. F., Cooney & A. Quinlan-Colwell (Eds.), *Assessment and multimodal management of pain: An integrative approach* (pp. 19–27). Elsevier.
- Rhon, D. I., Snodgrass, S. J., Cleland, J. A., Sissel, C. D., & Cook, C. E. (2018). Predictors of chronic prescription opioid use after orthopedic surgery: Derivation of a clinical prediction rule. *Perioperative Medicine*, 7, 25. <https://doi.org/10.1186/s13741-018-0105-8>
- The Joint Commission. (2021, October 19). *Pain assessment and management—Understanding the requirements. Standards FAQs*. <https://www.jointcommission.org/standards/standard-faqs/hospital-and-hospital-clinics/leadership-ld/000002161>
- Tick, H., Nielsen, A., Pelletier, K. R., Bonakdar, R., Simmons, S., Glick, R., Ratner, E., Lemmon, R. L., Wayne, P., Zador, V., & Pain Task Force of the Academic Consortium for Integrative Medicine and Health. (2018). Evidence-based nonpharmacologic strategies for comprehensive pain care: The Consortium Pain Task Force White Paper. *Explore*, 14(3), 177–211. <https://doi.org/10.1016/j.explore.2018.02.001>
- U.S. Department of Health and Human Services (2019, May). *Pain Management Best Practices Inter-Agency Task Force report: Updates, gaps, inconsistencies, and recommendations*. Retrieved August 19, 2021, from <https://www.hhs.gov/ash/advisory-committees/pain/reports/index.html>
- U.S. Food and Drug Administration. (2018). *FDA Education blueprint for health care providers involved in the treatment and monitoring of patients with pain*. Retrieved August 28, 2021, from https://www.accessdata.fda.gov/drugsatfda_docs/rems/Opioid_analgesic_2018_09_18_FDA_Blueprint.pdf