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Pain Management Research*

Over the past decade, increased awareness by the medical profession of the devastating consequences of opioid addiction has resulted in substantial efforts to limit the number of opioid prescriptions for both perioperative pain management and chronic pain. While these efforts have had some success, opioid misuse remains a crisis, which we in the orthopaedic community have a particular opportunity to address. It is the belief of the undersigned that progress depends on improved research methods and reporting to further the understanding of pain experience and response to management, with the end goal of identifying more effective, nonnarcotic pain control measures for our orthopaedic patients.

To further these efforts, JBJS, with support from an R-13 scientific meeting grant from the National Institute of Arthritis and Musculoskeletal and Skin Diseases, conducted a Symposium on Pain Management Research in Newton, Massachusetts, on November 19, 2019. At this meeting, 10 experts in pain research along with 12 orthopaedic journal editors came together to present and discuss the latest findings on perioperative musculoskeletal pain management, define unmet clinical needs, and develop a set of guiding principles for the next phase of research in this arena. This endeavor came to fruition in a series of papers published as the JBJS Supplement on Pain Management Research as well as a summary list of Recommendations for Pain Management Research based on those papers and the meeting itself.

We hope that investigators will find the JBJS Supplement on Pain Management Research to be a useful guide when designing and reporting future studies. Again, we believe that strengthening the integrity of pain management research is key to winning the battle against the opioid crisis, which requires moving away from narcotics as a primary mode of pain relief while improving the pain experience of our patients.

James D. Heckman, MD, Editor Emeritus, *Marc Swiontkowski, MD*, Editor-in-Chief, and *Jeffrey N. Katz, MD, MSc, Elena Losina, PhD*, and *Andrew J. Schoenfeld, MD, MSc*, Deputy Editors, The Journal of Bone & Joint Surgery; *Nicholas A. Bedard, MD*, Editorial Board, The Journal of Arthroplasty; *Christopher M. Bono, MD*, Editor-in-Chief, The Spine Journal; *James L. Carey, MD, MPH*, Associate Editor, American Journal of Sports Medicine; *Brent Graham, MD, MSc, FRCSC*, Editor-in-Chief, The Journal of Hand Surgery; *Robert N. Hensinger, MD*, Editor-in-Chief, Journal of Pediatric Orthopaedics; *Mark C. Gebhardt, MD*, Senior Editor, Clinical Orthopaedics and Related Research; *William J. Mallon, MD*, Editor-in-Chief, Journal of Shoulder and Elbow Surgery; *Michael J. Rossi, MD, MS*, Assistant Editor-in-Chief, and *Elizabeth Matzkin, MD*, Editorial Board, Arthroscopy: The Journal of Arthroscopic and Related Surgery; and *Michael S. Pinzur, MD*, Associate Editor, Foot & Ankle International

Declaration of Conflicting Interests

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Recommendations for Pain Management Research*

1. **Definition:** Define all terms (such as "new opioid prescription" or "long-term opioid use") precisely, using criteria established by the Centers for Disease Control and Prevention (CDC) or a similar institution if possible. If a more established descriptor is not applicable to the database, explain why and clearly state the criteria for the definition used.
2. **Quantification:** Quantifying opioid use in morphine milligram equivalents (MMEs) enables comparisons within the literature. As >1 conversion factor is available, state how MMEs were calculated. The CDC provides a toolkit for calculating MMEs.
3. **Population:** As different groups experience pain differently, the study population (age, sex, socioeconomic, cultural) should be defined precisely. Research on sex-based differences in pain experienced and response to opioids is needed.
4. **Risk factors/predictors:** Factors such as previous pain/opioid use, demographics, depression, catastrophizing, expectations, sleep disturbance, somatosensory function, physical activity, and coping ability should be studied as contributors to musculoskeletal pain and risk of opioid overuse.

Outcomes:

5. The key measure should be better patient-related outcomes—including a positive experience that is free of complications and excessive pain—not just number of pills taken.
6. Distinguish among medications prescribed, obtained, and consumed. Be clear about the methods used to obtain these data and their limitations.
7. Pain relief using alternative strategies (nonsteroidal anti-inflammatory drugs [NSAIDs], ice, nerve growth factor inhibitors, psychological interventions), as opposed to elimination of opioids, should be a goal. ■

*These recommendations are based on presentations and discussions at the Pain Management Research Symposium held in Newton, Massachusetts, on November 19, 2019, as well as the articles in the *Supplement on Pain Management Research* (J Bone Joint Surg Am. 2020 May 21;102[Supplement 1]) authored by experts in pain research participating in that meeting.

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