- **FACT SHEET No. 2**

Pain After Surgery: What Health-Care Professionals Should Know

Hundreds of millions of surgical operations are performed worldwide each year. These range from brief minor office procedures to multi-hour operations upon crucial organs in fragile patients. The past generation has seen a major shift in attitudes about postsurgical pain control—from fatalistic endurance toward confidence in controlling and enhancing a physiological and psychological process [Wilder-Smith 2014], even as pain continues or transitions to become chronic in some patients [Niraj 2011].

Further, improvements in minimally invasive surgical techniques and multimodal rehabilitative regimens, including analgesia, can optimize postoperative recovery and shift it from inpatient to outpatient self-care [Chou 2106].

Today's approach to pain after surgery:

- Assumes that nearly all pain after surgery can—and should—be managed to optimize physical and emotional function
- Assesses pain intensity at rest and with relevant activity to tailor pain therapy to rehabilitative needs, usually aiming for mild intensity but with notable exceptions such as in severe trauma with altered mental status [Zaslansky 2015]
- Identifies in advance those patients who may require special attention for postoperative pain control—because of preoperative chronic pain, anxiety, therapy with opioids, or behavioral issues such as catastrophizing or substance use disorder, for example [Schug 2015]
- Integrates pain control and other aspects of preparing for and recovering from surgery such as patient education, nutrition, and fluid intake

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- Combines several types of medication such as anti-inflammatory drugs and when feasible, local anesthesia in a multimodal strategy to reduce reliance on one agent alone (such as with opioids with their many side effects)
- Monitors patients post-discharge to identify and treat persistent pain and other undesired surgical consequences as early as possible
- Organizes pre-, intra-, and postoperative pain control according to a context-appropriate and health-system-wide process to enhance quality and safety
- Recognizes (in some countries) that management of acute pain such as after surgery has become a medical subspecialty owing to the growth of knowledge and specialized techniques such as regional anesthesia [Tighe 2015]

Today's evidence-guided, procedure- and site-specific approach can reduce or avoid the following adverse effects of undertreated acute postoperative pain:

- Unfavorable patient experiences
    - Fear, anxiety, and needless suffering
    - Limited mobility or breathing and low patient autonomy
    - Poor sleep
    - Urinary retention
    - Reduced quality of life during a needlessly slow recovery
    - Unnecessary partial or total disability with lost work productivity
- Undesired clinical outcomes
    - Delayed wound healing due to increased sympathetic tone and poor oxygenation
    - Increased risk of maintaining or transitioning to chronic pain
    - Increased rate of anastomotic insufficiency
    - Increased risk of pulmonary morbidity, including pneumonia due to pain-impaired breathing
    - Increased risk of thrombosis
    - Increased risk of delirium
    - Increased mortality risk
    - Sustained stress response: elevated catecholamines, cortisol, catabolism
- Costly administrative burdens
    - Increased length of stay in the hospital or intensive care unit
    - Higher complication rates (including possible chronic pain) that increase costs to the health-care system
    - Reduced "pay-for-performance" based on inferred lower quality of care

Clinicians have shown they can adjust and personalize clinical guidelines according to individual patient variability and needs [IASP AP SIG 2014]. Potential factors contributing to variability of pain after surgery include:

- Genetic differences (including gender) in nociception, sensitization and endogenous analgesia, and systems targeted by analgesics that influence pharmacokinetics and pharmacodynamics of, for example, opioid metabolism, or magnitude of the inflammatory response
- Patient age, weight, physical status, and medical comorbidity, including concurrent medications
- Ethnicity, that influences postoperative pain and how it is managed [Green 2003, Campbell 2102]
- Preoperative and distant prior pain and pain treatment; e.g., sensitization by pain or adaptation to opioid therapy
- Psychological factors such as informed control, expectation (e.g., placebo or nocebo effects), or catastrophization
- Social factors such as the context and meaning of the individual's operation and pain (e.g., disability status or curative versus non-curative cancer surgery)
- The operative site and surgical technique (e.g., "keyhole" or nerve-sparing incisions)

Tomorrow's practice is already underway in some centers and research groups. Overall it seeks to advance a patient-centered multimodal approach to analgesia that is integrated with other dimensions of enhanced recovery: physical mobilization, fluid and temperature management, nutrition and restoration of diminished pulmonary function [Kehlet 2016].

Specific patient groups and types of operations are presented in other Fact Sheets to support IASP's 2017 Global Year Against Pain After Surgery. It is important to keep in mind that regardless of the magnitude of a specific physiological or economic benefit (or not) of aggressive pain control, patients have a fundamental human right to receive the best pain control that their health-care providers can provide. This does not mean all patients must have zero pain intensity. Rather, for each patient the risks, benefits, and ability to safely provide postoperative care in that specific setting include effective pain control as an integral component.

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AUTHORS

Daniel B. Carr, MD, DABPM, FFPMANZCA (Hon)
Professor of Public Health and Community Medicine
Professor of Anesthesiology and Medicine
Founding Director, Tufts Program on Pain Research, Education and Policy
Boston, Mass., USA

Bart Morlion, MD, PhD, DESA
Director of the Leuven Center for Algology & Pain Management
University Hospitals Leuven, KU Leuven, Belgium
Hon. Assoc. Professor, University of Groningen, Netherlands

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REVIEWERS

Asokumar Buvanendran, MD
William Gottschalk, Endowed Chair of Anesthesiology
Vice Chair Research & Director of Orthopedic Anesthesia
Professor, Department of Anesthesiology
Rush University Medical Center
Chicago, Illinois, USA

Lars Arendt-Nielsen, Dr Med Sci, PhD, FRSM, FIAMBE
Director, Professor, Center for Sensory-Motor Interaction
Department of Health Science and Technology
School of Medicine, Aalborg University
Aalborg, Denmark

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As part of the Global Year Against Pain After Surgery, IASP offers a series of Fact Sheets that cover specific topics related to postsurgical pain. These documents have been translated into multiple languages and are available for free download. Visit www.iasp-pain.org/globalyear for more information.

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