



- **FACT SHEET No. 14**

Using Outcomes to Improve Pain Care After Surgery: Real-Time, Short- Term, and Long-Term

Assessing the quality of pain management includes evaluating structures, processes, and outcomes [15]. Outcomes, for the most part, reflect the results of processes and structures. This Fact Sheet focuses on describing outcomes to make treatment decisions at point-of-care for individual patients, those used for quality improvement (QI) initiatives such as enhanced recovery after surgery programs, and those used for research. Measurement of outcomes is also increasingly required for accountability (performance measures) that in some countries is linked to financial incentives for health-care systems.

Quality care has been defined as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” [9]. There is currently no consensus definition as to what constitutes high-quality perioperative pain management. This gap reflects a lack of agreement as to what are desired health outcomes in this context, how and when to measure them, and which thresholds should be used to judge quality [10,12].

Outcomes of importance related to the management of pain caused by surgery may differ based on the perspective of the observer (whether it is the patient, a clinician, an administrator, or a researcher), time (near to and far from the time of surgery), and the available resources, including staffing and technology. Examples of outcomes include, among others:

- **Patient-reported outcomes (PROs);** e.g., pain intensity, interference with function, adverse effects, quality of life, satisfaction, quality of recovery, development of chronic pain
- **Clinical outcomes;** e.g., complications, analgesic consumption, mortality
- **Health economic outcomes;** e.g., costs of resource utilization and interventions (manpower, equipment, and disposables) in ambulatory environments compared with inpatient ones and private versus state-run health-care systems



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Outcome Measurement for Treatment Decisions at Point-of-Care, in Real Time

To help guide treatment decisions in clinical practice, several PROs should be used to assess a patient's pain status and the impacts of the host of factors that affect their experience of pain (type of procedure, genetics, sociodemographic characteristics, mood, fatigue, and previous and current drug therapy). These outcomes should address the overarching goal of early functional recovery. Core outcome measures should be simple. They may include:

- patient report of pain severity
- pain interference with function (e.g. movement in or out of bed and with sleep)
- presence and severity of adverse effects
- how the patient perceives the treatment received (e.g. satisfaction, wish for more effective pain treatment).

Outcome targets should, when possible, include no worse than mild pain [9] and minimal interference with function from pain and from pain treatments.

The dynamic nature of postoperative pain necessitates repeated measurements of pain. Basing treatment decisions on single ratings of pain intensity (e.g., worst or least) is not associated with improved care [3] and has been linked to reports of overtreatment and serious adverse events [2].

Various pain assessment questionnaires are available, but research has not demonstrated a single best tool or an optimal frequency to apply it to assess and reassess postoperative pain [8].

A pain trajectory can capture the dynamic nature of a patient's pain. A pain trajectory is a graphical representation of a patient's pain intensity scores over the observation period. Compared with a single pain score, trajectories draw attention to the speed of onset of initial pain relief, the consistency of pain relief, and the overall amount of pain relief achieved [4,5].

In clinical situations where pain assessments are carried out routinely, the primary data for creating trajectories already exist. Awareness about this technique and knowledge of how to interpret the findings are needed.

Outcome Measurement for Quality Improvement [7]

QI initiatives depend upon providing the right information at the right time to the right group of people. A clinical data registry can offer information about quality and safety of treatment for a group or groups of patients at the ward, hospital, and even national or international level. Providers can use the data to:

- Track their own performance and the impact of interventions, thereby identifying clinical weaknesses and strengths, and apply this information to allocate improvement resources in a data-driven fashion
- Compare performance with other institutions (benchmarking)



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Registry information may be more generalizable because it does not exclude complex patients.

- PAIN OUT (www.pain-out.eu) is an international perioperative registry [13, 14] and is endorsed by IASP
- The Collaborative Health Outcomes Information Registry (CHOIR) (www.choir.stanford.edu) is currently developing an acute module for assessing quality of perioperative pain in the USA

Outcome Measurement for Research

Including clinically important patient-centered outcomes using standardized, valid measurement instruments is essential in perioperative research. [1]

- The Initiative on Methods, Measurement, and Pain Assessment in Clinical Trials (IMMPACT) group offers a core set of outcome measures for designing and implementing randomized controlled perioperative pain studies [6,11].
- “Big Data” registries provide opportunities for epidemiological and clinical research

Outcome Measurement for Accountability: Assessing Health-Care System Performance

Performance indicators are publicly reported back to the health-care purchaser/consumer and can be used to channel market demand toward systems with the best performance. Few such indicators currently exist for pain. Examples that include pain items are the U.S. Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) (www.hcahpsonline.org) and the Picker Institute inpatient surveys in the UK (www.pickereurope.org/).

Robust assessment of health-care performance must also consider pain after discharge because the current emphasis on shortened hospital stays for enhanced recovery protocols risks pain problems after surgery (e.g., chronic postsurgical pain) being under-recognized in the community.

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