

EDITORIAL

COST-EFFECTIVE OUTPATIENT ARTHROPLASTY WORLDWIDE IN 2025

A change is needed: taking a step toward expanding outpatient arthroplasty programs globally

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The total number of joint replacements (TJR) worldwide is growing rapidly: by 2030, total knee arthroplasties (TKA) are projected to rise by 673%, while total hip arthroplasties (THA) will increase by 174%.¹ This dramatic rise is placing a growing burden on healthcare systems.

High-performing universal health care systems, such as those in Australia, Italy, France, Spain, Germany, and the United Kingdom, use activity-based funding to pay hospitals. The cost of a single arthroplasty episode varies widely, but hospital stay-related expenses (including bed and ward costs) are significant, as the price of the implant is generally decreasing worldwide. Recent reports indicate a decrease in reimbursement rates for primary and revision TKA and THA, both in the United States (a more than 50% reduction from 2000 to 2024) and in Europe.^{2, 3}

To address this, new, affordable models have been developed in TJR. The number of Ambulatory Surgery Centers (ASCs) able to offer outpatient arthroplasty pathways is growing worldwide, with some countries (the United States, Denmark, and the Netherlands) leading the way. In other countries where legislation is cautious about approving outpatient arthroplasty pathways, Enhanced Recovery After Surgery (ERAS) programs designed to shorten the average length of stay (LOS) after TJR have been successfully implemented. A recent narrative review⁴ found

that more than two-thirds of the available literature on outpatient arthroplasty originates in the United States; more research from other countries is needed to support the shift from traditional inpatient arthroplasty programs to outpatient pathways.

This special issue of *Minerva Orthopedics* on “Cost-Effective Outpatient Arthroplasty in 2025” provides a thorough overview of outpatient arthroplasty by featuring contributions from some of the world’s leading experts.

The article by Wickline *et al.*⁵ discusses the rationale for establishing an outpatient total joint arthroplasty program and outlines practical steps to initiate such a program. This article highlights early intervention protocols to decrease swelling, minimize pain with limited opioid use, lower the risk of complications such as surgical site infections and deep venous thrombosis, and rapidly restore joint function.⁶ Such multimodal perioperative protocols are ideal tools for reducing LOS, perioperative morbidity, and the overall cost of a single care episode.

The extensive work by Andrew Wickline in the United States could serve as a guide for *Minerva Orthopedics* readers in designing and establishing high-volume, cost-effective ambulatory surgery centers dedicated to arthroplasty in Europe. Following similar protocols, a few authors⁷ have recently built extensive experi-

ence with same-day arthroplasty in the Netherlands, a country known for leadership in this area. In fact, the Netherlands is a leading country in arthroplasty clinical pathway innovation and was among the first European nations to adopt outpatient arthroplasty pathways.⁷ In a recent article, Kort *et al.* demonstrated that outpatient arthroplasty clearly benefits patients, doctors, and hospitals.⁸ The first step in establishing such a program was to assemble a multidisciplinary team of administrative officials, knee surgeons, anesthesiologists, physician assistants, care managers, nurses, pain specialists, and physiotherapists.⁸

The article by Ponti *et al.*⁹ emphasizes the importance of a multidisciplinary team (medical, anesthesiologic, surgical, and rehabilitative) in developing an ERAS program. In a country (Italy) where the legislation does not yet support outpatient arthroplasty programs, this article describes how to create a successful “fast-track” knee arthroplasty program based on a successful, multimodal analgesic protocol. The same authors showed that preoperative TKA cryotherapy helps patients by reducing postoperative inflammation, accelerating rehabilitation, and improving postoperative range of motion.¹⁰

The article by Qordja *et al.*¹¹ is a narrative review on the benefits of including enabling technologies – preoperatively, intraoperatively, and postoperatively – in outpatient arthroplasty settings. The authors also analyze international health policies to compare different healthcare systems, focusing specifically on procedure-related reimbursement rates. In several countries, the transition from inpatient to outpatient arthroplasty has led to reduced hospital costs.¹² In the same study, the authors presented a 10-year analysis of a regional joint arthroplasty registry, demonstrating a significant economic impact from implementing an outpatient arthroplasty protocol. The authors also urged the managers of their healthcare system to remove total joint arthroplasty from the inpatient-only list.

The article by Bocchino *et al.*¹³ reviews the latest developments in remote patient monitoring applications to improve outpatient arthroplasty protocols. The authors, confirming the findings of a previous study,¹⁴ strongly recommend telerehabilitation after TJR, which seems

to provide short-term functional and patient-reported outcomes comparable to those of traditional rehabilitation in selected patient groups. Unfortunately, significant global disparities exist in access to telerehabilitation and telehealth, and arthroplasty-related telemedicine reimbursement codes are not available in all regions.¹⁵

This special issue of *Minerva Orthopedics* on “Cost-Effective Outpatient Arthroplasty in 2025,” aims to increase awareness of changes in planning, scheduling, execution, and postoperative monitoring of a widely adopted and successful procedure like joint arthroplasty. Surgeons and hospital administrators interested in this shift can find practical tips for starting or enhancing their outpatient arthroplasty programs. While healthcare providers at all levels already benefit from using various digital technologies to support the transition from inpatient to outpatient arthroplasty, public healthcare system managers and private insurance administrators must also facilitate this change. These stakeholders should work to reduce the differences highlighted by many articles in this special issue across various continents and healthcare systems.

Finally, as guest editor of this special issue, I hope readers find these articles useful for their practices, remembering that the main goal of any change in clinical practice should be to improve outcomes and patient satisfaction.

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Conflicts of interest

The authors certify that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

Authors' contributions

Both authors contributed to the conception and design of the study. Pier F. Indelli and Michele P. Festini Capello participated in data collection; Pier F. Indelli participated in the interpretation of the data and drafted the work; Michele P. Festini Capello revised the manuscript and performed the copy editing. Both authors read and approved the final version of the manuscript.

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