American Association of Hip and Knee Surgeons Position Statement on Outpatient Joint Replacement in 2024

In 2018, the American Association of Hip and Knee Surgeons (AAHKS) in collaboration with The Hip Society, The Knee Society, and the American Academy of Orthopedic Surgeons (AAOS) published a position statement on outpatient total joint arthroplasty (TJA).[1] At the time it was published, outpatient TJA was an emerging topic with limited data available on outcomes, safety and the effort required to run a successful outpatient program. Since that time, there has been a marked increase in the number of outpatient TJA procedures performed in the United States. This increase is due to health policy changes as well as the recognition of the benefits of a successful outpatient TJA program by hospitals, surgeons, payers, and patients alike.[2–6] Since the original position statement, the Centers for Medicare and Medicaid services (CMS) has removed total knee arthroplasty (TKA) and total hip arthroplasty (THA) from the inpatient only (IPO) list, which has intensified the transition of THA and TKA arthroplasty care in the United States to the outpatient setting.[7,8] In addition, the COVID-19 pandemic expedited the transition to outpatient arthroplasty due to restrictions and limitations of utilizing inpatient resources during the pandemic.[9]

While the number of outpatient TJAs has significantly increased since 2018, the goals outlined in the original position statement remain the same: improve quality, maximize patient safety, minimize adverse events, reduce costs for the healthcare system, and to improve patient outcomes.[1] Recent literature has highlighted that to effectively and consistently achieve these goals proper patient selection, well-designed rapid recovery protocols, and a robust clinical infrastructure are necessary.[10–16]

Appropriate patient selection is tantamount to a successful outpatient program. A multidisciplinary approach is required and should consider medical, social, and surgical issues. Medical comorbidities and the need for close postoperative monitoring should be considered when deciding if a patient can be discharged the same day of surgery. From a social aspect, caution should be taken for those that have a limited support system or have physical barriers at home with particular attention for the elderly. Additionally, the overall complexity of the procedure should be considered and the need for extended operative times or additional instrumentation/trays beyond the routine primary arthroplasty procedure. Ultimately, the decision to proceed with same day discharge after total joint arthroplasty should be a shared decision made by the surgeon and patient considering the above factors after a comprehensive risk-benefit discussion.

In addition to proper patient selection, developing a robust multidisciplinary clinical infrastructure is essential for a successful outpatient TJA program. Most of the literature concerning safe implementation of outpatient arthroplasty programs has been confined to high volume specialty centers with resource capabilities to track and report outcomes. Tracking

utilization, patient progress and overall outcomes will help surgeons identify best practices and areas for improvement. Centers should consider whether outpatient programs are safe to be established in certain care settings and communities, particularly in those centers with a low volume of arthroplasty procedures. When developing an outpatient TJA program, surgeons should consider that increased resources both in the clinic as well as in the operating room will be required. In the clinic, having nurses or advanced practice providers is particularly beneficial for patient education, expectation management, and perioperative care coordination. These providers ensure that the necessary staff and service line resources have been coordinated successfully. In the operating room, outpatient TJA requires an efficient and streamlined operating room and central processing. Staff training and instrumentation are two areas that significantly impact the success of an outpatient program and the ability to reduce costs. While not unique to an ambulatory care setting, staff training in a high-volume, time-sensitive environment is vital to achieving the benefits offered by outpatient total joint arthroplasty. A successful outpatient TJA program requires significant time and effort from the surgeon and his or her staff with multidisciplinary collaboration[18].

Outpatient arthroplasty programs rely upon rapid recovery protocols that are designed from evidence-based multimodal anesthesia and analgesia techniques. Multimodal pain management pathways have become the standard of care for both inpatient and outpatient TJA.[19] In the outpatient setting, an effective anesthesia and analgesia program must be established to effectively control pain, decrease opioid use, minimize adverse reactions to anesthesia, and allow rapid mobilization after surgery. In 2020 and 2022 AAHKS published clinical practice guidelines on multimodal analgesia and anesthesia in TJA[20–28]. These guidelines provide evidence-based recommendations on how to design an effective and safe multimodal anesthesia and analgesia program. In contemporary multimodal protocols, medications including acetaminophen, nonsteroidal anti-inflammatories, tramadol, and opioids are used to control pain. Spinal anesthesia is often utilized to allow for rapid mobilization, intraoperative hypotension to reduce blood loss, and for minimizing side effects associated with general anesthesia. In TKA, adductor canal blocks may also be used to help improve postoperative pain and reduce opioid consumption. Periarticular injections with a long-acting local anesthetic have also been found to be effective. In addition to the above, preventing dehydration and minimizing intraoperative blood loss have been important advances in TJA allowing for rapid recovery. Therefore, when appropriate, perioperative tranexamic acid (TXA) should be administered.[29] Prior to discharge, patients should begin work with a physical therapist, or similarly trained medical staff member, with an emphasis placed on safe transfers, protected ambulation, and stair training. When utilized, these techniques allow for patients to be ambulatory within a few hours after surgery without significant pain and successfully discharge home the same day. Finally, frequent post-discharge communication and early office follow-up with the patient are encouraged.

Many studies have demonstrated outpatient arthroplasty to be safe and effective with properly selected patients, when performed by a skilled surgeon with a robust clinical infrastructure and an effective rapid recovery protocol. Bemelmans et al. in their meta-analysis of 41 studies on outpatient TJA found that there were no differences between outpatients and inpatients in overall complications, readmission rates, or improvements in patient-reported outcomes.[30] Several other studies have corroborated these results including a study using the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database, which found that there was no greater risk of 30-day adverse events or readmission between

outpatient THA patients and inpatient THA patients even when adjusting for confounders.[31]

In addition to being safe for low risk patients, several studies have found that outpatient TJA improves outcomes comparable to inpatient TJA including reducing postoperative pain, reducing opioid consumption, and improving patient-reported outcome scores.[2,9,18,32–35] While outpatient TJA has largely been successful in improving outcomes, it has not come without a shift in the burden of care. The transition to outpatient TJA has markedly increased the time, effort, and cost of the surgeon and his or her team in preparing patients for a successful outpatient TJA. Historically with inpatient TJA, a successful surgery is accomplished with the help of multiple providers on the healthcare team including the surgeon and their team, floor nurses, nursing aides, pharmacists, social workers, physical therapists, occupational therapists, and other medical providers. However, the switch to outpatient has shifted these responsibilities, such as patient education and medication management, from the hospital and inpatient providers to the surgeon and his or her team. In addition, many ambulatory surgery centers have limited capacity for large inventory so there is increased planning required for instrumentation and supplies. Surgeons and their teams must coordinate with the operating room staff and the implant representatives to make sure that the necessary equipment is available to safely and successfully perform the TJA, even if an adverse event occurs.

Several studies have demonstrated the increased burden on the care team in a successful outpatient TJA program. Vega et al. evaluated unilateral TJA procedures at their institution over 7 years and found that the average time required for both unplanned and patient care for outpatient and inpatient TJA were similar.[36] Shah et al. studied the amount of time a high-volume outpatient surgeon and his team spent with their rapid recovery and outpatient TJA patients in the first 7 days after surgery.[18] In their series of 103 consecutive rapid discharge and outpatient TJA patients, they found that each patient required over 48 minutes of direct contact with a provider from the surgeon's team, which is the equivalent of three level 3 outpatient visits.[18] Grosso et al. in a survey of 265 members of the American Association of Hip and Knee Surgeons found that on average surgeons and their teams spend 153 additional minutes in preoperative activities that are not captured in the current procedural terminology (CPT) or hospital billing codes.[37] Krueger et al found similarly, that surgeons, advanced practice providers and ancillary medical staff spend an additional 211 minutes beyond the allocated 40 minutes of preservice time included in the current Relative Value Scale Update Committee review.[38] In the current economic model, this burden of perioperative care, which is transferred from the hospital and post-acute care facilities to the surgeon's team in outpatient TJA, is not reimbursed. Surgeons and their teams are spending more time with their patients who are discharged the same day both preoperatively and postoperatively providing education, answering questions, and coordinating additional care such as physical therapy. Over time as more outpatient TJAs are being performed, the overall perioperative time burden and work will continue to rise for the surgical team, despite a continued decline in per patient reimbursement.

As the current trend of outpatient arthroplasty continues, surgeons and institutions must evaluate whether an outpatient TJA program is appropriate for their clinical setting. Not all patients will be appropriate for the outpatient setting and it is important for these patients to continue to have access to inpatient care. An individualized approach should be taken for each patient and institution to determine whether outpatient surgery is appropriate. Implementation of a successful outpatient TJA program includes careful tracking

and upkeep of outcomes, judicious patient selection, establishing effective multimodal analgesia and accounting for the preoperative work that is required.

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This statement is an expression of the policy of the American Association of Hip & Knee Surgeons. It is not a comprehensive review of the subject nor is it intended as medical advice for the treatment of individual patients.

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