

Validation of the Stopping Opioids after Surgery Score for Sustained Postoperative Opioid Use following Orthopaedic Surgery Procedures

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INTRODUCTION:

The Stopping Opioids after Surgery (SOS) score was developed to identify patients at risk for sustained opioid use following surgery. The SOS score has not been specifically validated for patients undergoing orthopaedic procedures. Our primary objective was to validate the SOS score within this context.

METHODS: In this retrospective cohort study, we considered a broad array of representative orthopaedic procedures performed between January 1, 2018, and March 31, 2022. These included rotator cuff repair, lumbar discectomy, lumbar fusion, total knee and total hip arthroplasty, ankle/distal radius fracture internal fixation, and ACL reconstruction. The SOS score's performance was evaluated by calculating the c-statistic, receiver-operating curve, and observed rates of sustained prescription opioid use (defined as uninterrupted prescriptions of opioids for 90 days or greater) following surgery. For our sensitivity analysis, these metrics were compared throughout various time epochs related to the occurrence of the COVID-19 pandemic.

RESULTS: A total of 26,114 patients were included. The observed prevalence of sustained opioid use was 1.3% (95% CI 1.2-1.5) in the low-risk group (SOS scores <30), 7.4% (95% CI 6.9-8.0) in the medium-risk group (SOS scores 30-60), and 20.8% (95% CI 17.7-24.2%) in the high-risk group (SOS scores >60). The performance of the SOS score on the overall group was strong with a c-statistic of 0.82. The SOS score's performance showed no evidence of worsening over time. The pre-pandemic c-statistic was 0.79 and ranged from 0.77-0.80 throughout various waves of the pandemic.

DISCUSSION AND CONCLUSION: We validated the use of the SOS score for sustained prescription opioid use after a diverse array of orthopaedic procedures across subspecialties. This tool is easy to implement to prospectively identify patients, in musculoskeletal service lines, at higher risk of sustained opioid use, allowing future upstream interventions and modifications to avert opioid abuse and combat the opioid epidemic.