

## DocSpera Achieves 46% PRO-PM Capture Rate via Text Message, Collects Key Functional Measures, and Reduces Costs by Over 90%

### Executive Summary

DocSpera is transforming musculoskeletal (MSK) outcomes collection by leveraging LainaHealth's proprietary webAI and computer vision technology to deliver affordable, engaging surveys and functional tests to patients via simple text messages.

Deployment of pre- and post-operative orthopedic surgery surveys demonstrated a 46% capture rate, meeting PRO-PM ASC Patient Reported Outcome Measures (PROMs) requirements while also remotely collecting patients' joint Range of Motion (ROM) and functional measures.

### Background

According to the Journal of the American Academy of Orthopaedic Surgeons (JAAOS) The Value of PROMs in Orthopaedic Surgery article, "There is a systemwide imperative to collect, aggregate, and apply PROMs and patient-generated health data at scale, especially if we are to reduce variation and disparities in access, experience, and outcomes of musculoskeletal care in the United States."<sup>1</sup>

JAAOS's 2024 PROM collection and utilization survey found that "the greatest barriers to adoption include concerns about staff burden (72%), challenges in patients completing PROMs (69%), and cost (47%)."<sup>2</sup>

The Centers for Medicare and Medicaid Services (CMS) has mandated PRO-PM with the goal of quantifying pain and functional improvement with validated PROMs to improve patient lives.

Canfield et al in Arthroplasty Today found that institutional costs for collecting a complete data set per patient undergoing total joint arthroplasty were:

Costs /dataset / patient <sup>3</sup>	6mo	12mo	24mo
Institutional	\$128	\$158	\$272

Further extending the scope of optimal collection, a 2022 Physical Therapy article adds that "functional tests are critical to fully evaluate function objectively after TKA."<sup>4</sup>

Patient  
Response Rate

46%

Outcomes Collection  
Cost Savings

90%+

## Objective

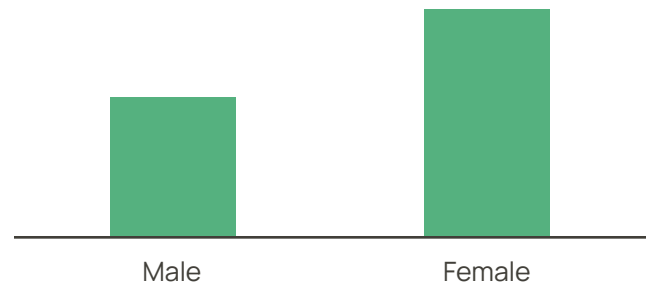
The primary objective of this white paper is to assess the effectiveness of LainaHealth's webAI computer vision technology combined with Docspera's platform to remotely collect both CMS mandated PROMs and key functional tests while reducing barriers to adoption.

## Results

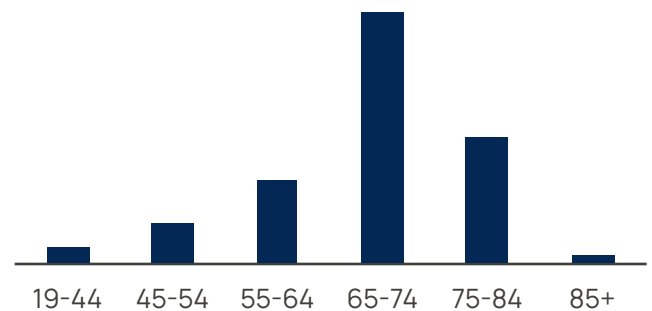
Patients undergoing Total Knee Arthroplasty (TKA) and Total Hip Arthroplasty (THA) at an ambulatory surgery center (ASC) were sent PRO-PM mandated PROMs (e.g. PROMIS-Global, HOOS JR, KOOS JR), hip and knee joint ROM assessments and 5x Sit-to-Stand (FTSTS) functional assessments via text message at the following intervals: Pre-operatively and 30 days post-operatively, 60 days post-operatively.

Patient age and gender distributions are displayed to the right. Deployment was automated via organizational database, requiring negligible effort from staff, and yielded an overall capture rate of 46%, exceeding the CMS mandated 45% for ASCs.

### Gender Distribution

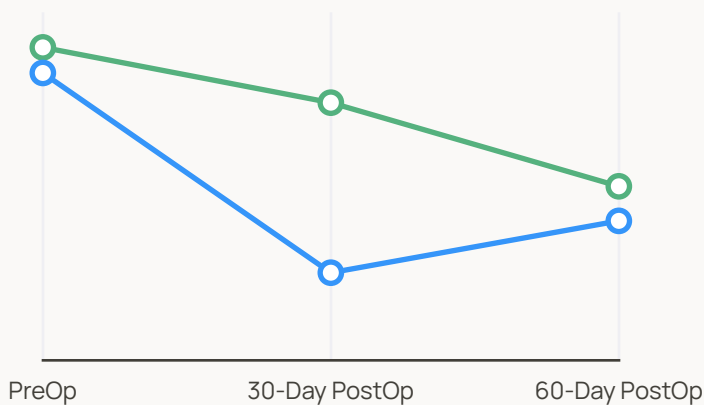


### Age Distribution



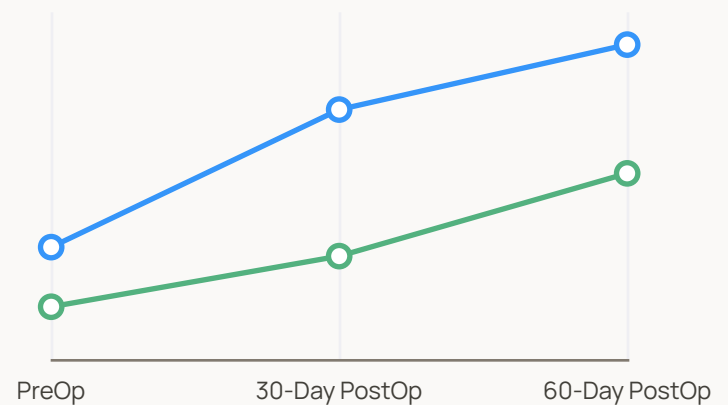
### Wong-Baker Pain Scale

● THA ● TKA



### HOOS JR & KOOS JR

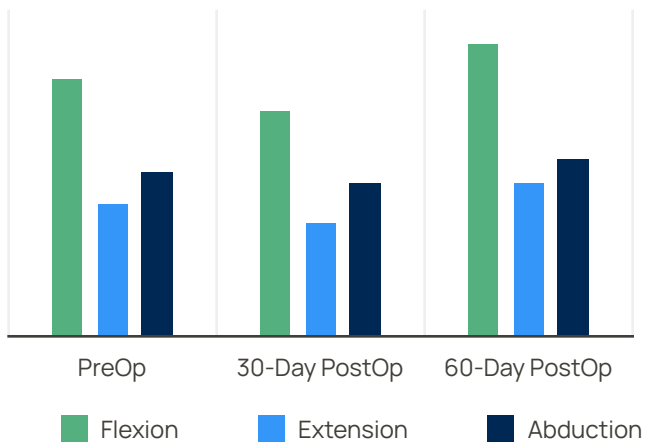
● HOOS JR ● KOOS JR



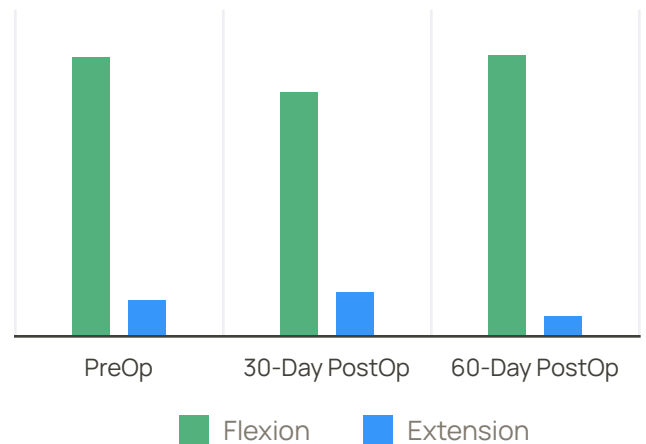


Joint flexibility and functional status data were also collected, providing critical, ongoing visibility of patients' progress throughout their surgical recovery.

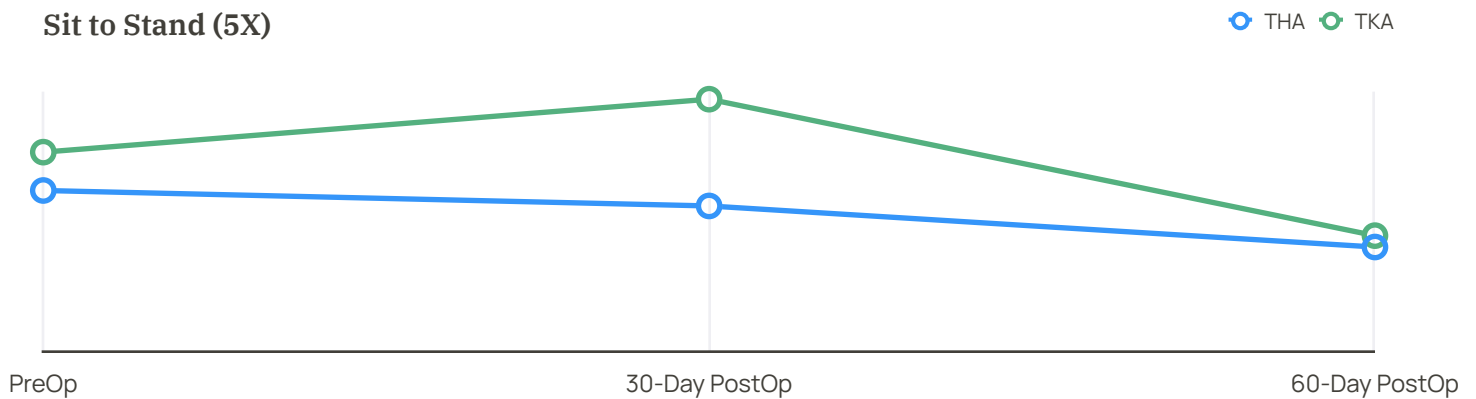
### Hip Range of Motion



### Knee Range of Motion



### Sit to Stand (5X)



## Summary

DocSpera and LainaHealth collaboratively demonstrated their ability to efficiently collect both PRO-PM mandatory PROMs and performance-based functional tests pre- and post-operatively for TKA and THA.

This was accomplished utilizing proprietary webAI and computer vision technology deployed via automated text messaging from an existing clinical database at an organizational cost of \$5 per data set.

Compared to the aforementioned study by Canfield et al, this is a 96% cost savings (or \$123 per data set) made possible by eliminating salaried staff effort of "0.75 FTE (\$75,000) and licensing/data maintenance fees (\$3500)."<sup>3</sup>

This approach clearly addressed the three greatest barriers to the adoption of PROM collection identified by the AAOS: staff burden, challenges in patient completion, and cost.

By empowering clinicians and health care organizations with cost-effective technology capable of remotely collecting PROMs while tracking patients' functional status, the combined solution enables data informed clinical decision making and value based musculoskeletal care across populations.

Patient  
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Outcomes Collection  
Cost Savings

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## References

1. Jayakumar P, Bozic K. Journal of the American Academy of Orthopaedic Surgeons Patient-Reported Outcome Measurements (PROMs) Special Issue: The Value of PROMs in Orthopaedic Surgery. J Am Acad Orthop Surg. 2023 Oct 15;31(20):1048-1056.
2. Shapiro LM, Spindler K, Cunningham B, Koh J. Patient-Reported Outcome Measure Collection and Utilization: A Survey of American Academy of Orthopaedic Surgeons Members. J Am Acad Orthop Surg. 2024 Feb 1;32(3):114-122.
3. Canfield M, Savoy L, Cote MP, Halawi MJ. Patient-reported outcome measures in total joint arthroplasty: defining the optimal collection window. Arthroplasty Today. 2019 Nov 25;6(1):62-67.
4. Capin JJ, Bade MJ, Jennings JM, Snyder-Mackler L, Stevens-Lapsley JE. Total Knee Arthroplasty Assessments Should Include Strength and Performance-Based Functional Tests to Complement Range-of-Motion and Patient-Reported Outcome Measures. Phys Ther. 2022 Jun 3;102(6):pzac033.