

What Are the Total Costs of Comprehensive Outpatient Management of Carpal Tunnel and Trigger Finger Using Time Driven Activity Based Costing Models?

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Introduction

- Rising musculoskeletal care costs in the U.S. drive the development of value-based models for patient-centric outcomes.
- Integrated practice units (IPUs) play a key role, delivering evidence-based strategies in outpatient settings.
- While IPUs reduce costs for lower extremity conditions, upper extremity conditions' cost drivers are unclear.

Objectives

1. Estimate total costs for carpal tunnel and trigger finger management using time-driven activity-based costing (TDABC)
2. Identify key cost drivers and reductions across the care continuum.

Methods

- Study Design:** Time-drive activity-based costing (TDABC) Models
- Study Location and Time Period:** University of Texas at Austin Musculoskeletal Upper Extremity IPU from June 2022 through August 2022
- Data Collection:**
- Process maps, resource documentation, and time estimates, obtained through electronic records, stop-watch, and interviews informed cost calculations.
 - Capacity cost rates were estimated for personnel, multiplied by process times for direct and indirect costs.
 - Total care costs were then compared to Medicare reimbursement rates for carpal tunnel and trigger finger release.

Statistical Analyses

- We developed TDABC models, calculated capacity cost rates (CCR) using financial data, calculated total costs of care.

Results

Figure 1. Diagram of a full care pathway process map for both non-operative and operative management of carpal tunnel

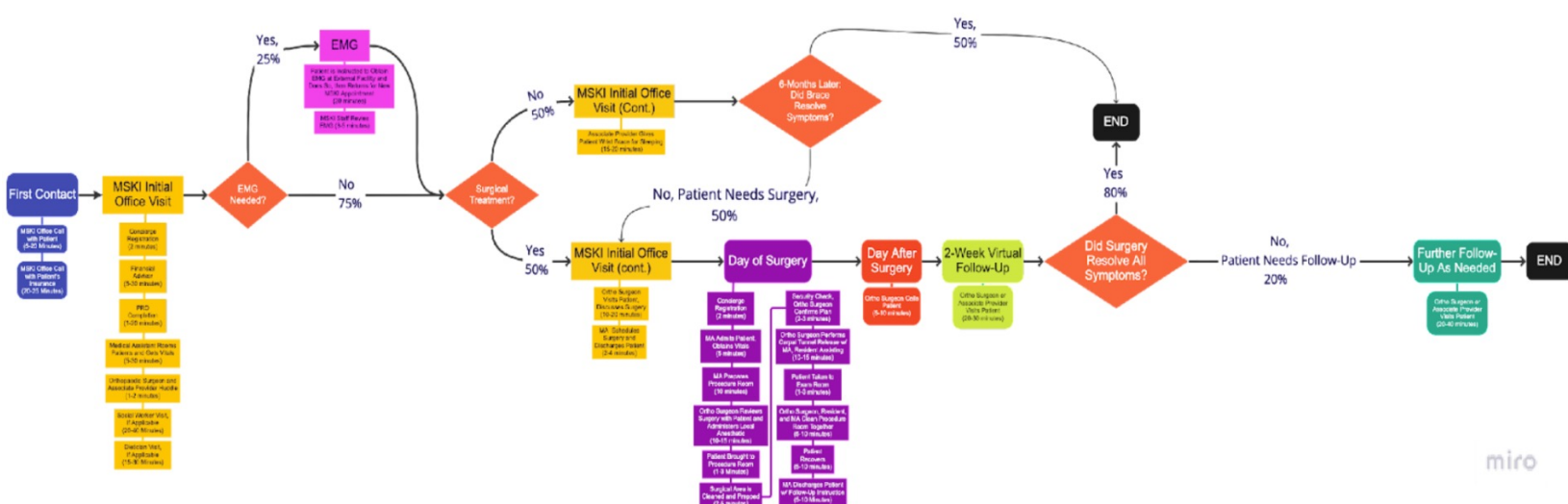


Figure 2. Diagram of full care pathway process map for both non-operative and operative management of trigger finger

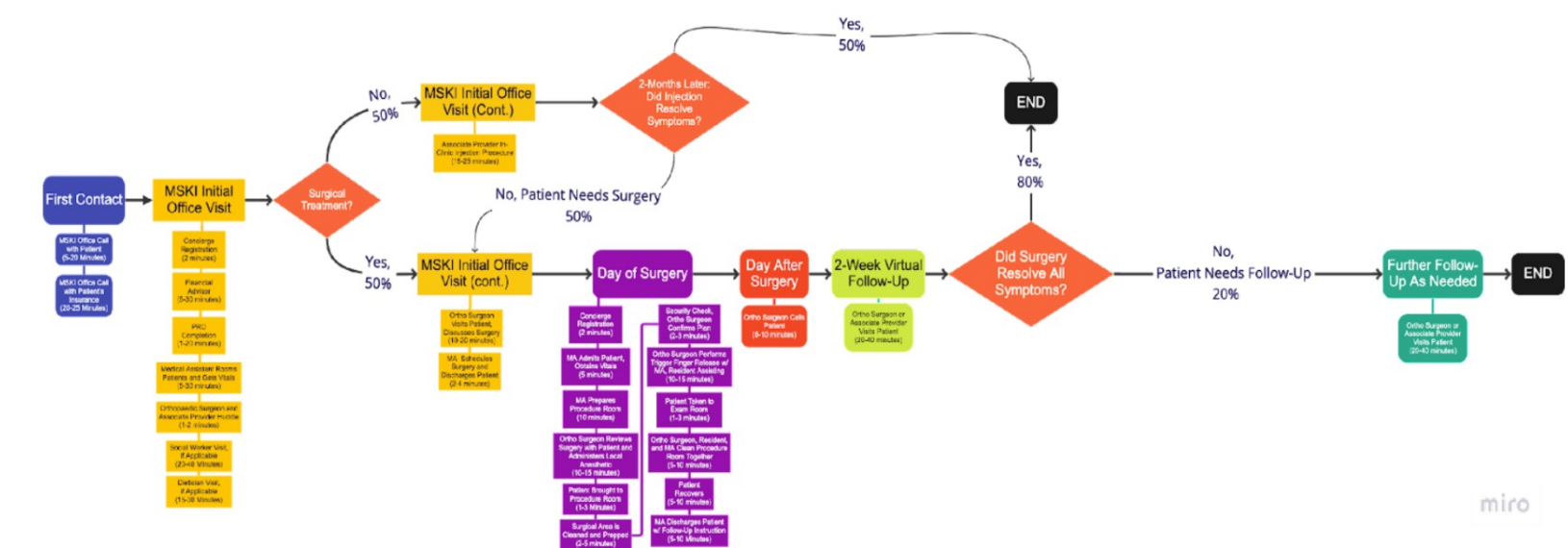


Table 1. Total Costs of Care for IPU-based Care Pathways

	IPU Non-Operative Management			IPU Operative Management		
	Low Complexity	High Complexity	Weighted Average	Low Complexity	High Complexity	Weighted Average
Carpal Tunnel	\$109	\$277	\$151	\$379	\$823	\$504
Trigger Finger	\$117	\$140	\$129	\$394	\$734	\$564

Discussion

- Both IPU-based operative treatments for carpal tunnel and trigger finger were significantly lower than Medicare national average reimbursement rates.
- Reasons for lower costs of non-operative management included greater utilization of NPs and PAs over surgeons (Mean NP/PA CCR = \$1.39/min vs. Mean Orthopedic Surgeon CCR = \$6.71/min).
- The cost driver for operative treatment was the direct labor costs of the orthopedic surgeon, performing administrative and clinical roles during surgical episodes (median labor time (22 minutes, range: 15-28 minutes) at \$148 (range: \$101-\$188).

Conclusion

- Total costs for carpal tunnel and trigger finger release treatments were significantly below established Medicare reimbursement rates.
- Identifying potential cost-saving drivers informs service configuration, finance, payment flow, and program pricing.
- This information guides stakeholders in developing holistic care models across the entire care continuum.