



# Direct and Indirect Costs of Ankle Fracture Fixation Between Two Surgical Departments

Elizabeth Duckworth, BA<sup>1</sup>  
Kimberly Stevenson, MD<sup>2</sup>  
Samir Mehta, MD<sup>1,2</sup>  
Derek Donegan, MD, MBA<sup>1,2</sup>

<sup>1</sup> Perelman School of Medicine,  
University of Pennsylvania

<sup>2</sup> Department of Orthopaedic Surgery,  
University of Pennsylvania

## Background

Ankle fractures are the most common fracture of the foot and ankle treated at trauma hospitals in the United States. In 2011, professional fees and hospital charges for operative treatment of ankle fracture totaled \$50.3 million.<sup>1</sup> The purpose of this study was to determine if there is a difference in the direct and indirect costs of surgical fixation of ankle fractures between orthopaedic surgeons and podiatrists at our tertiary care academic medical center.

## Methods

We analyzed cost, volume, length of stay, collections, and contribution margin data for surgical treatment of ankle fracture in both the inpatient and outpatient settings by the orthopaedic surgery and podiatry departments during the fiscal years 2016-2018. Based on these data we compared projected costs, collections, and contributions margins across a five-year period with the procedure being performed by a single department (orthopaedics only, podiatry only).

## Results

Total costs per case fell by 16% in the orthopaedic surgery department and 8% in

the podiatry department over the three-year period. The podiatry department spent an average of \$1,261 (45%) more per case than the orthopaedic surgery department, which was driven by increased average supply costs. Both departments had decreased total costs and significantly decreased direct costs ( $p = 0.0056$  orthopaedic surgery,  $p = 0.033$  podiatry) in the outpatient setting. The orthopaedic surgery department also had significantly decreased total costs in the outpatient setting ( $p = 0.0091$ ).

## Conclusion

The orthopaedic surgery department performed a higher volume of cases at a lower cost per case than the podiatry department. These cost savings were driven by decreasing direct costs and lower supply costs. Our results suggest treatment of ankle fracture cases by the orthopaedic surgery department alone is economically advantageous.

## References

1. Belatti DA, Phisitkul P. Economic burden of foot and ankle surgery in the US Medicare population. *Foot Ankle Int.* 2014; 35: 334-340.