

Cost Analysis of 135 Three-Column Osteotomy Adult Spinal Deformity Operations with Implications for 90-Day Cost Bundles

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Introduction

The Centers of Medicare and Medicaid Services (CMS) has recently implemented 90-day cost bundles for joint replacement surgery, and taken steps to expand the use of bundled payment programs. Our goal is to determine the 90-day costs associated with three-column osteotomies at a major spinal deformity center in order to guide the development of reasonable bundled payment plans.

Methods

Single-center retrospective evaluation of adults who underwent three-column osteotomies for spinal deformity 2009-2016. Total (indirect + direct) hospital costs for the index surgery and all inpatient and outpatient visits within the first 90 days after surgery were determined from hospital billing data. Direct costs include surgical supplies/implants, room/care, and pharmacy; indirect costs include overhead, administration, and utilities.

Results

Among the 134 patients (83 females, 51 males; mean age = 65.0 ± 11.3 years), 135 procedures were performed for spinal deformity. 122 (90.4%) procedures were pedicle subtraction osteotomies, and 13 (9.6%) were vertebral column resections. The average number of levels operated on was 12.4 ± 3.8. The average total hospital cost for the index procedure was \$129,514 ±58,483 (average direct cost = $$80,750 \pm 36,633$; range: \$11,752 -\$616,164; 90th percentile: \$183,811). The average total cost for the 90-day period including the surgery was \$131,541 ±59,256 (average direct cost = $\$82,430 \pm 37,404$; range: \$11,856 -\$616,164; 90th percentile: \$183,973). 6 of the 134 (4.5%) patients had catastrophic total 90-day costs, which were greater than two standard deviations above the mean (>\$250,052).

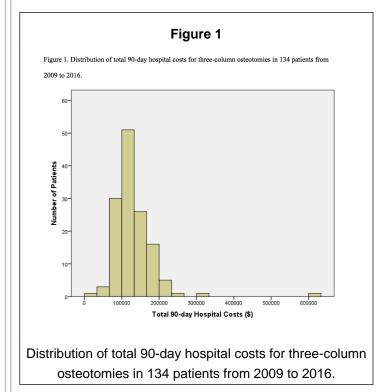
Conclusions

The average 90-day hospital costs for patients undergoing three-column osteotomies for spinal deformity were \$131,541. The diversity in the number of operated levels and readmission rates must be taken into account to create a reasonable 90-day cost bundled payment program for spinal deformity procedures. Future studies should focus on investigating costs at a national level to understand the full scope of 90-day costs.

Learning Objectives

By the conclusion of this session, participants should be able to:

- 1) Describe the 90-day costs associated with three column osteotomies at a major spinal deformity center
- 2) Explain the importance of identifying patients with catastrophic costs in planning for 90-day cost bundle payment plans



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