

What Is the Long-Term Impact of an Implant Stewardship Program on Orthopaedic Trauma Implant Pricing?

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Purpose: In 2013, an implant stewardship program was implemented at our institution in an effort to reduce overall implant expenditure while also maintaining surgeon autonomy. The purpose of this study was to longitudinally analyze the effectiveness of this implant stewardship program by tracking changes in implant pricing over the course of 5 years.

Methods: The implant stewardship program at our statewide trauma referral center consisted of a "red-yellow-green" (RYG) implant selection tool that classified 5 lower-extremity trauma constructs (tibial and femoral nails, lower-extremity external fixator, proximal tibia and distal femoral plates) from 4 vendors based on cost and categorized each construct as "Green" (least expensive), "Yellow" (midrange), or "Red" (most expensive). The color-coded RYG chart showing these constructs and vendors was posted, without prices, in each operating room. Procedures performed by 10 fellowship-trained orthopaedic trauma surgeons were monitored from April 2012 to September 2017. The minimum and mean prices were collected for each month of the study. The number and magnitude of price changes were calculated.

Results: There were 2468 procedures included over this 65-month study period. The overall mean price per construct decreased by \$66 (95% confidence interval [CI]: 36-96) per year over the study period; however, more pronounced price declines are observed when analyzing each construct in isolation. All constructs experienced an overall mean price decrease, with the greatest annual price decrease exhibited by the distal femoral plate construct at \$476 per year (95% CI: 404-549) followed by external fixators (-\$197 per year, 95% CI: -258 to -136). The smallest annual price decrease was seen in tibial nails (-\$98 per year, 95% CI: -124 to -89). These price decreases were all statistically significant ($P < 0.001$). The minimum price per construct decreased by \$131 per year (95% CI: -155 to -111). All constructs saw statistically significant decreases in minimum price ($P < 0.001$). The largest decreases in the minimum price per construct were found for distal femoral plates (-\$436 per year, 95% CI: -516 to -354) and external fixators (-\$122 per year, 95% CI: -258 to -136). The smallest decreases in minimum price were seen with femoral (-\$46 per year, 95% CI -56 to -35) and tibial nails (-\$46 per year, 95% CI: -59 to -33). A total of 35 price changes occurred during the course of the study, 28 of which were price decreases. The median price decrease was \$407 (range, \$6-\$2491) or 12.5% of the previous price.

Conclusion: Our implant stewardship program was able to show perennial decreases in all studied construct prices over a 5-year period in the face of a mean inflation rate of 1.8%. Further research should be directed at determining the applicability of this type of stewardship program at other trauma centers.