

SMARTER PPI DECISIONS START WITH BETTER DATA

Hospital X Case Study

Even with contracted CAP Construct Pricing in place, implant costs can drift over time due to subtle changes in utilization, case mix, and out-of-bundle spend. Hospital X used advanced analytics to uncover an **8.34%** rise in average cost per knee case over an eight-month period—variability that would have been nearly impossible to detect through manual review alone.

Normalizing the highest-cost month to the eight-month average revealed a potential savings opportunity of **\$12,437.25**.



COST TRENDS

- 8.34% increase in average knee cost per case over eight months
- \$144.60 standard deviation in monthly average costs
- \$12,437.25 potential savings if October costs were normalized to the eight-month mean

VOLUME & SPEND

- 34–47 monthly knee bill sheets (spike to 69 in October)
- \$149,420 → \$242,843 range of total monthly approved cost
- \$112,600–\$153,040 range of approved CAP construct cost (October: \$231,700)
- \$3,248 → \$3,519 increase in average bill sheet cost (March → October)

CAP PLUS SPEND

- Increased from \$2,443 (March) to \$11,143 (October)
- 4.5× growth over the eight-month period
- 102 CAP Plus items billed
- \$25,374 in total approved CAP Plus spend

KEY FINDINGS

Cost Drift Detected



- Average knee case cost trended upward month over month.
- Monthly variability (SD: \$144.60) indicated recurring cost fluctuations.

Higher-Cost Construct Utilization



- Increased use of mid- and high-tier construct options.
- Shifts in case complexity (e.g., hybrid/cementless patterns) contributed to cost movement.

CAP Plus Spend Growth

4.5x

- CAP Plus spend rose 4.5×, driven by additional components and accessories.
- 102 items totaling \$25,374 were billed outside CAP construct pricing.

Low-Volume, High-Cost Cases Impact Averages



- Isolated use of higher-cost implant systems influenced monthly averages due to elevated per-case costs.

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CONSTRUCT UTILIZATION

- Highest-cost CAP codes ranged from \$4,385–\$5,180
- Lowest-cost CAP codes around \$2,665
- Mid/high-tier codes gained share in late months (e.g., 17.30% and 21.74% usage in October)

VENDOR/CASE MIX IMPACT

- Primary implant system average monthly cost range: \$2,906–\$3,935
- Occasional high-cost cases from alternative systems: \$6,660–\$7,042
- Even 1–2 non-standard cases affected overall monthly averages

THE TAKEAWAY

This case study demonstrates the power of real-time PPI analytics. Small variations in case complexity, implant selection, or add-on items can significantly impact spend—even under standardized pricing models.

With better data, hospitals can:

- Detect trends early
- Prevent budget drift
- Strengthen surgeon alignment
- Protect margins
- Improve operational and financial consistency



ACTIONS TAKEN

- Standardized construct utilization across surgeons
- Surgeon-level dashboards to increase cost visibility
- CAP compliance reviews to ensure correct mapping
- Evaluation of CAP Plus items to target unnecessary variance
- Vendor utilization monitoring to reduce high-cost one-off cases

