

COST REDUCTION TECHNIQUES IN THE OPERATING SUITE: SURGICAL TRAY OPTIMIZATION

Hypothesis / aims of study

The American College of Obstetricians and Gynecologists supports vaginal hysterectomy as the safest and most cost effective route. While the cost-benefit ratio is favorable, there are still opportunities to optimize efficiency and contain cost. Numerous studies have highlighted the low instrument utilization within surgical trays, which results in excess processing costs and surgical case set-up time. Other risks related to excess surgical instruments include a reduction in instrument longevity from excess wear-and-tear, increased risk for tray assembly errors, and unnecessary strain placed on operating suite staff from instrument tray weight. Notably, in gynecologic surgery, one study reported as few as 13% of instruments on a surgical tray were used in vaginal cases.

We aimed to evaluate the instrument usage within our vaginal hysterectomy trays to reduce unnecessary instruments without compromising high quality, safe patient care. Using an estimated cost of processing of \$0.51/instrument, we calculated cost savings from the development of a "minor gynecology" tray that could replace the vaginal hysterectomy tray previously used for benign outpatient vaginal cases.

Study design, materials and methods

The Female Pelvic Medicine and Reconstructive Surgeons (FPRMS) and operating room staff first eliminated extraneous instruments based on clinical experience. Following that initial reduction, the Surgical Quality Committee initiated a formal audit of surgical instrument usage. The vaginal hysterectomy tray was used for major benign gynecology cases including vaginal hysterectomy with and without pelvic reconstruction, urogenital and rectovaginal fistulas approached vaginally, and vaginal mesh removal. Minor gynecology cases included isolated anterior or posterior repairs, Bartholin cyst/labial lesions, urethral diverticulum, midurethral sling, and revision of midurethral sling. Cost of sterile processing and packaging was estimated to be \$0.51/instrument based on published data¹.

Results

The standard vaginal hysterectomy tray contains 67 instruments. This was reduced to 48 instruments in the Minor GYN pan (**Figure 1**). Processing costs were estimated to be \$34.17/vaginal hysterectomy tray and \$24.48/Minor GYN tray. Instrument usage for the vaginal hysterectomy tray averaged 66%, which higher than what has been reported by other studies in gynecology. In 2015, four FPRMS specialists at our institution performed 844 cases. The cost to process the instruments for those cases would have been \$28,839.48 prior to the development of the minor gynecology tray. Estimating that the minor gynecology tray could be used for 20% of those cases, we achieved a cost savings of \$1637.61.

Interpretation of results

Cost savings are likely underestimated in this study due to the surgeon- and operating room staff-driven initiative to reduce the number of instruments in each tray prior to the formal audit. Healthcare costs related to set-up, processing and packaging of unused surgical instruments can be reduced when surgeons and operating suite staff work together to identify opportunities to reduce inefficiencies.

Concluding message

The development of a minor gynecology pan resulted in a modest cost savings within this department, but advantages regarding time to set-up and process instruments as well as longevity cannot be understated.

Figure 1:



References

1. Stockert, E. W., & Langerman, A. (2014). Assessing the magnitude and costs of intraoperative inefficiencies attributable to surgical instrument trays. *J Am Coll Surg*, 219(4), 646-655.

Disclosures

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