6:35am - 6:40am

**P16. A COMPREHENSIVE MULTIDISCIPLINARY APPROACH TO IMPROVE SURGICAL OUTCOMES FOLLOWING ELECTIVE COLORECTAL SURGERY**

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**Background:** Approximately 15% of patients undergoing colorectal surgery experience post-operative complications, and their average length of stay can range between 6-11 days. One of these complications is surgical site infection (SSI). SSIs are the second most common type of hospital-acquired infections. The rates of SSI following colorectal surgery are one of the highest for elective surgery and have been estimated to be as high as 43% in the USA. Strategies that reduce this SSI rate can significantly improve morbidity, mortality and subsequently health care costs. We implemented our own, unique enhanced recovery pathway at a community hospital with the goal of reducing surgical site infections, length of stay (LOS), major postoperative complications, and healthcare costs.

**Methods:** An IRB approved retrospective review of all patients undergoing elective colorectal surgery was conducted from 2013-2016, at a large urban community teaching hospital. A novel comprehensive evidence-based enhanced recovery pathway with a specific colorectal bundle for SSI reduction was created and implemented in 2015. The SSI rate, LOS, 30-day re-admission rate, overall complications rate, and potential cost savings were collected.

**Results:** The rate of SSI infection prior to implementation of the treatment algorithm was 37.5%. Following implementation, the rate of SSI dropped each year (1.4% in 2015). The rate of deep SSI, defined by deep incisional infections and organ space infections, also decreased each year (12.5% in 2012 vs. 0% in 2015). The LOS before implementation of the treatment algorithm was 7.85 days. Following implementation, the LOS decreased to 2.96 days. Despite a clinically significant decrease in the LOS, the 30-day re-admission rate remained stable. The overall complication rate decreased from 6.45% to 4%. It was estimated that approximately $11,227 per procedure was saved due to the decrease in utilization of healthcare resources.

**Conclusion:** An enhanced recovery pathway and colorectal bundle following elective colorectal surgery is a safe, low-cost and effective tool for reducing SSI, LOS, and overall complication rate. Of high clinical importance, the rate of deep space SSI was significantly reduced as well as overall SSI rates. By decreasing LOS by greater than 4 days, the cost of care related to elective colorectal surgery was reduced without negatively impacting readmission rates. The annualized saving in 1 year was nearly $1,200,000. With successful deployment of this protocol for elective colorectal surgery procedures, we plan to develop similar treatment pathways for other surgical procedures.
Background: Rural hospitals recruit surgeons at a higher cost than their urban counterparts and suffer additional costs that come with a lack of scale and location. Regionalization of care has caused cost of health care to skyrocket while causing displeasure amongst patients. Separately, academic surgical departments have increasingly relied on Graduate Medical Education (GME) funding to offset the cost of departmental administration and education. This has become more difficult as academic surgery departments are disproportionately burdened by indigent and Medicaid patients. Cuts to resident funding has further added to the fiscal difficulties of academic surgery departments. Our model addresses these two issues by exploiting an arbitrage opportunity between two supply and demand curves. Our model encourages academic surgical departments to increase their revenues by placing academic surgeons in rural areas through rural hospital partnerships. In addition to enjoying the better supply demand curve associated with academic surgeons, these rural hospitals also enjoy a reduction in transportation, locum coverage costs, expanded surgical service lines, and efficiencies of scale.

Methods: As an academic surgical department in rural West Texas our goal was to partner with rural hospitals to provide surgical services in the community while developing subspecialty care at the regional tertiary center. This “hub and spoke” model allows for surgical service lines in rural hospitals and development of regionalized care by specialists with minimal loss of continuity and a reduction of costs. Furthermore, as reimbursement for surgical procedures is significantly increased in rural areas, financial return on investment is maximized for the academic surgeons. Finally, rural hospitals are incentivized to fund resident education through federal grants.

Results: Our department acquired salary lines for faculty covering numerous surgical specialties. This allows us to cluster hospitals by region despite varying hospital interests while still keeping cost down for each member hospital. We have developed this model with five partner hospitals in the region. This has given our department 7 FTE’s as well as 9 resident salary lines. Our partner institutions have not required locum’s coverage since the start of this model and have reduced patient transfers by over 70%. Also, member institutions have increased surgical revenue on average by $5 million annually. Finally, patient satisfaction with local service has increased substantially.

Conclusion: We seek to showcase a successfully deployed novel methodology to address the costly and growing problem of rural area surgical care. The model has reduced rural area surgical costs, improved quality of care and has the simultaneous effect of funding resident salaries while increasing revenues for academic surgical programs. We have successfully mitigated reductions in
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P20. PATTERNS OF USE AND FACTORS ASSOCIATED WITH SUSTAINED PRESCRIPTION OPIOID USE AFTER EMERGENCY GENERAL SURGERY
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Background: Prolonged opioid use is a major concern when treating post-surgical pain. The proportion of patients using opioids at one year after low-risk surgery has been reported to be as high as 7.7%. However, this has not been studied within the Emergency General Surgery (EGS) population. The objective of the current study was to determine the patterns of use and factors associated with sustained opioid use after EGS.

Methods: The 2007-2013 TRICARE insurance database was queried for patients 18-64 years, who underwent an EGS procedure. Basic demographic data, surgical procedures, as well as medical comorbidities were obtained. The opioid prescriptions present at discharge, three months, and six months were also obtained. A risk-adjusted Cox Proportional-Hazard model was used to identify predictors of opioid discontinuation to highlight the likelihood of sustained opioid use.

Results: Among the 3,476 patients that received an opioid prescription at discharge, 48% filled ≥ 1 opioid prescription after discharge, 12% continued opioid use at 3 months, 5.8% at 6 months, and 1.7% at 1 year. In risk-adjusted models, being retired (HR: 1.35, p=0.006) and being in the Midwest (HR: 1.48, p<0.001) were associated with higher likelihood of opioid discontinuation, or a lower likelihood of sustained opioid use. Older age (45-64 vs. 18-24 years, HR: 0.56, p<0.001), being married (HR: 0.87, p=0.027), anxiety diagnosis (HR: 0.56, p=0.029), pre-existing comorbidities (Charlson Comorbidity Index ≥ 1, HR: 0.41, p<0.001) and length of stay (HR: 0.96, p=0.001) were associated with decreased likelihood of opioid discontinuation or higher likelihood of sustained opioid use at one year. Gender, race, rank and diagnosis of depression were not significant predictors of sustained opioid use.

Conclusion: Less than 2% of patients continued to use opioids for more than 1 year after EGS, lower than the reported rate after low-risk surgery. Our findings showed that the development of prolonged postoperative opioid use is unlikely within the EGS population.