

CONCLUSIONS: Emergency colorectal cancer surgery carries significant morbidity and mortality. Recognition of the increasing rate of postoperative complications may help minimize the detrimental impact of this event on overall outcomes.

Sustainability of Quality Improvement: Long-Term Outcomes after Implementation of an Institutional Colorectal Enhanced Recovery Protocol

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INTRODUCTION: Enhanced recovery protocols (ERP) are associated with reduced postoperative morbidity and length of stay (LOS). However, most studies focus on short-term improvements, with limited data on sustainability. We assessed long-term protocol compliance and durability of outcomes improvements after implementation of a colorectal ERP in 2013, hypothesizing that both would be maintained over time.

METHODS: Elective colorectal cases between August 2012 and June 2017 were identified. Compliance measures were collected for ERP patients, including preoperative carbohydrate loading, postoperative day (POD) 1 ambulation, morphine equivalents, and fluid balance. Changes in compliance and patient outcomes were calculated using linear regression and comparison of best-fit line to a slope of zero (representing no change). Outcomes including LOS, surgical site infection (SSI), and 30-day readmission were compared before and after ERP.

RESULTS: We identified 1,011 patients, including the 98 original pre-ERP patients and 913 consecutive ERP patients. Demographics including age, sex, race, and BMI did not differ between patients before and after ERP. Compliance measures with slopes of

best-fit lines are illustrated in the Figure, with no significant differences over the study period. LOS ($p=0.84$), SSI rate ($p=0.43$), and readmission rate ($p=0.28$) did not change significantly over time after ERP implementation, but remained improved compared to baseline (median LOS 5 vs 3 days, $p<0.001$; SSI 18.4% vs 5.9%, $p<0.001$; readmission 17.0% vs 13.3%, $p=0.28$).

CONCLUSIONS: This study demonstrates successful long-term sustainability of compliance and outcome improvements within an institutional ERP. Keys to success include strong multidisciplinary collaboration combined with institutional support, ongoing staff education, frequent compliance audits, and systems-level integration.

Sustained Positive Impact of American College of Surgeons NSQIP on Outcomes after Colorectal Surgery During the Last Decade

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INTRODUCTION: Whether or not the introduction of the American College of Surgeons (ACS) NSQIP has improved outcomes over time has not been well characterized. We evaluate trends in outcomes after colorectal resection during the decade of the introduction of the program as well as of targeted-colectomy information.

METHODS: From 2007 to 2016, patients undergoing nonemergent colorectal procedures were included. Patient demographics, operative complexity (American Society of Anesthesiologists [ASA] and wound class); postoperative surgical and medical complications, early discharge (<5 days), and mortality were plotted for the study years. Outcomes after introduction of colectomy-targeted datasets (2013 to 2016) were compared with those prior (2007 to 2012). Multivariable analyses were performed to evaluate the impact of the introduction of colectomy-targeted data on outcomes.

RESULTS: Of 310,632 included procedures, 131,122 (42.2%) and 179,510 (57.8%) were performed before and after the introduction of colectomy-targeted variables, respectively. Most complications including surgical site and urinary tract infections, sepsis, septic shock, venous thromboembolism, and respiratory complications, reoperation, and mortality reduced over time with increased early discharge. On multivariable analysis, introduction of colectomy-targeted data was associated with lower surgical site (odds ratio [OR] 0.78, 95% CI 0.77–0.80); systemic (OR 0.94, 95% CI 0.91–0.98); urinary tract (OR 0.70, 95% CI 0.67–0.74) infections; reoperation (OR 0.88, 95% CI 0.85–0.91), and early discharge (OR 1.60, 95% CI 1.57–1.63).

CONCLUSIONS: During its first decade of introduction, NSQIP has been associated with improved outcomes after colorectal surgery. The introduction of colectomy-targeted data has further improved results, underlining the value of such ACS-led initiatives in improving patient care and surgical quality.

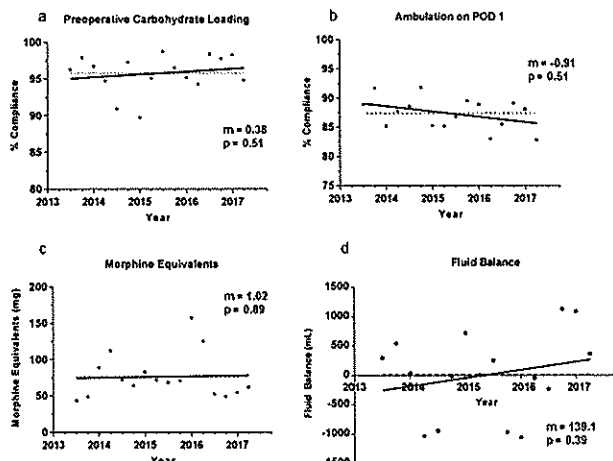


Figure. Line of best fit (solid blue line) versus no change (dotted black line) with associated slope (m), 95% confidence intervals (dotted blue lines), and p-values for: (a) preoperative carbohydrate loading, (b) ambulation on postoperative day 1, (c) morphine equivalents, and (d) fluid balance.