

## Background

On July 1<sup>st</sup>, 2021, the University of Colorado Hospital (UCH) implemented new sedation protocols in the luminal gastrointestinal (GI) suite. GI proceduralist supervised, Nurse Administered Sedation with fentanyl, midazolam, and diphenhydramine (NAS) sedation was transitioned to Monitored Anesthesia Care with propofol under physician anesthesiologist supervision (MAC).

## Objective

To determine if there are statistically significant reductions in Sedation-Start to Scope-In time (SSSI) when using Monitored Anesthesia Care with propofol (MAC) versus Nurse Administered Sedation with fentanyl, midazolam, and diphenhydramine (NAS). Secondary objectives were to determine if statistically significant improvements to other operational times, quality measures, and satisfaction metrics were present.

## Method

This study was a retrospective analysis of a natural experiment resultant of a change from NAS to MAC sedation protocols. Outcomes for NAS protocols from 1/1/21–6/30/21 were compared to outcomes of MAC protocols from the dates 8/1/21–10/31/21. Results were analyzed using Quasi-Poisson regression analysis and stratified based on upper GI, lower GI, and combined procedures. Patient demographic data including age, biological sex, comorbidities, and BMI, were adjusted for in the analysis. ASA matching was not performed as nursing sedation does not use ASA classifications. Pre-anesthesia co-morbidities were assessed via evaluation of a strict set of comorbidities abstracted from the electronic medical record. Perioperative operational outcomes include Sedation Start to Scope-In (SSSI), In-Room to Scope-In Time (IRSI), Scope Out to Out of Room (SOOR), Total Case Length (TCL), and Post Anesthesia Care Unit Length of Stay (PACU LOS). Quality outcomes include PACU Administered Medications (PAM), and Clinician Satisfaction Scores (CSS).

## Results

A total of 5,582 gastrointestinal (GI) endoscopic cases (upper, lower, and combined endoscopies) were observed. Statistically significant decreases in SSSI of 2.5, 2.1, and 2.2 minutes for upper, lower, and dual GI procedures were observed when using MAC protocols. A statistically significant increase in satisfaction scores of 47.0 and 19.6 points were observed for nurses and proceduralists, respectively, when using MAC.

## Conclusion

MAC protocols for endoscopic GI procedures at UCH led to statistically significant decreases in the time required to complete procedures thus increasing operational efficiency.