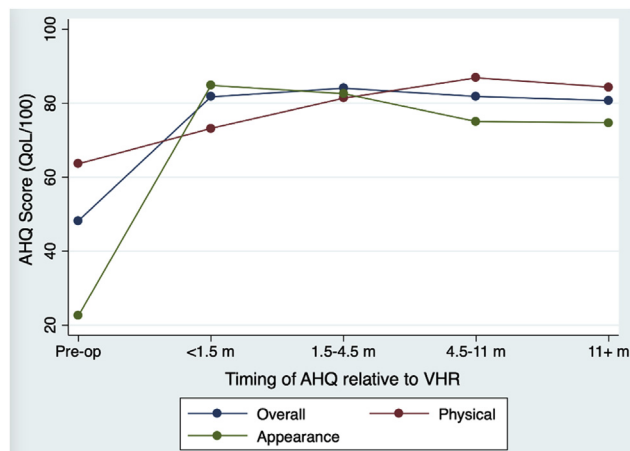




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Figure

### The Butterfly Effect: How an Outpatient Quality Improvement Project Affected Prescribing Habits on an Inpatient Service

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**INTRODUCTION:** We assessed whether a quality improvement project focused on providers' education of responsible opioid prescribing, creating order sets to facilitate pre- and postoperative adjunct use, and decreasing the number of opioids prescribed after elective outpatient surgery (ACS QI) affected opioid prescribing habits and the use of adjunct pain medication on the inpatient Emergency General Surgery (EGS) service.

**METHODS:** We retrospectively assessed our inpatient EGS opioid prescribing habits after laparoscopic cholecystectomy, laparoscopic and open inguinal hernia repair, or open umbilical hernia repair during the pre- and post-ACS QI periods. Demographics, type and dose of opioids, and non-opioid adjuncts prescribed were collected. Opioids were converted to oral morphine equivalents (OME). Pre- and post-ACS QI data were compared. Post-ACS QI discharge opioids prescribed were compared to reported use of opioids. Patients' rating of pain management is reported.

**RESULTS:** One hundred twenty-two and 62 patients were included during the pre- and post-ACS QI periods, respectively. Post-ACS QI, opioid prescribing decreased (Fig.1) and adjunct prescribing increased (31.1% vs 72.6%;  $p < 0.001$ ) at discharge. Interestingly, higher 24-hour pre-discharge OME was associated with a higher OME prescribed at discharge ( $B = 1.255 [0.377 - 2.134]$ ;  $p = 0.005$ ). Of the 47 EGS patients who followed up in clinic post-ACS QI, 89.4% rated their pain management as excellent/good, 8.5% as fair, and 2.1% as poor.

**CONCLUSION:** Implementation of a multifaceted approach to decrease opioid prescribing in the outpatient setting organically affected opioid prescribing habits at discharge for inpatients.

### The Impact of the Influenza Vaccine on Postoperative Outcomes in Covid-19 Positive Patients: An Analysis of 43,580 Patients Utilizing a Globally Federated Electronic Medical Record Network

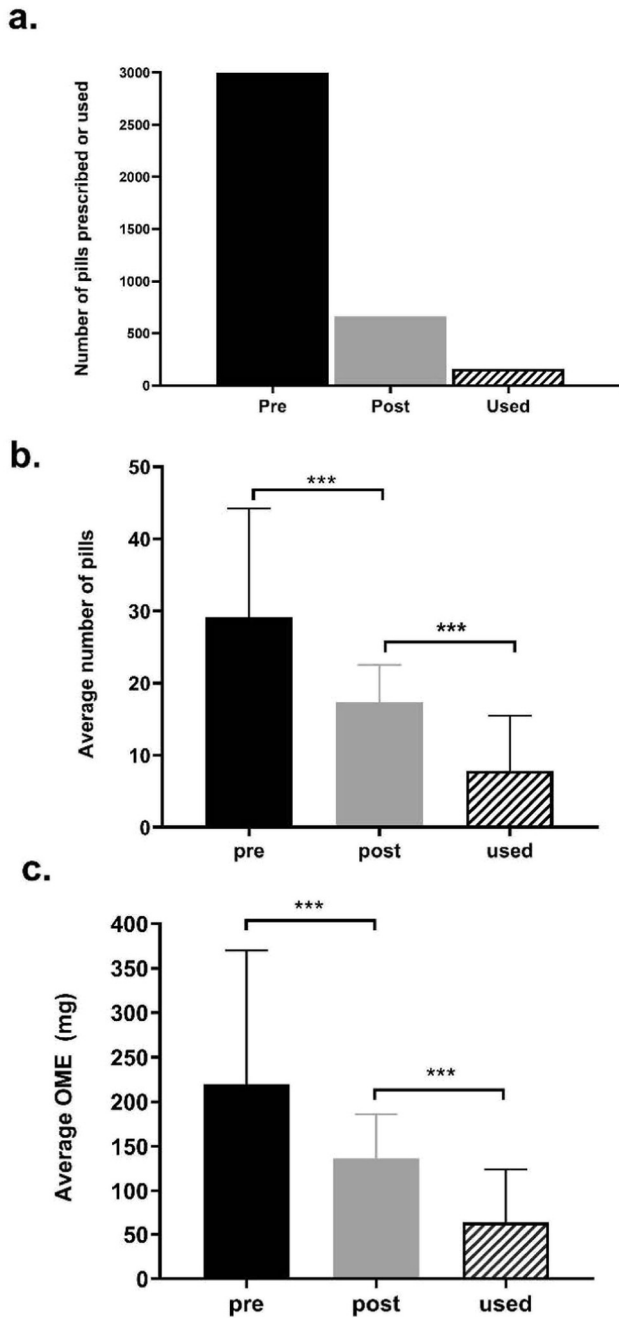
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**INTRODUCTION:** Recent studies suggest a possible protective effect of the influenza vaccine against Covid-19; however, this has not been examined in surgical patients.<sup>1</sup> This study uses a continuously updated network of 65 million EMRs (TriNetX Inc) for analysis of the efficacy of the influenza vaccine against postoperative complications in Covid-positive patients.

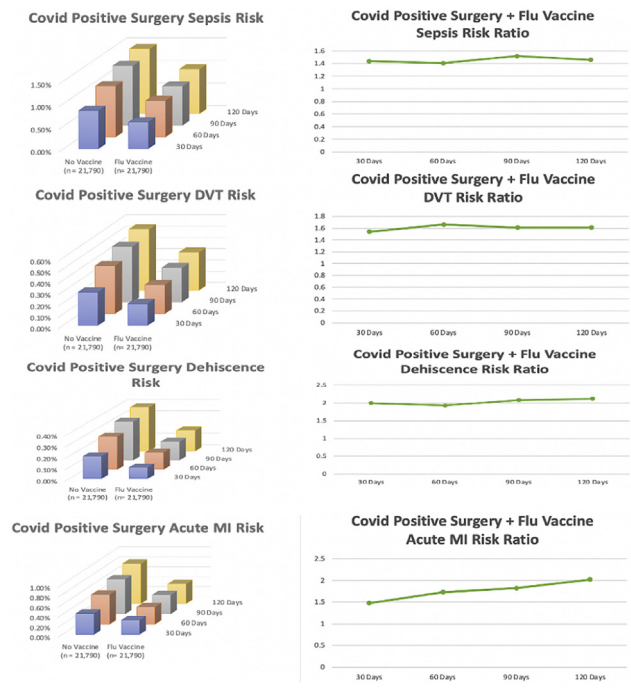
**METHODS:** The deidentified records of 73,341,020 patients were retrospectively screened. Two cohorts of 21,790 patients having either received or not received the influenza vaccine within 6 months to 2 weeks of their Covid-19 diagnosis, and undergoing any type of surgery, were created using CPT codes. Postoperative complications within 30, 60, 90, and 120 days of index event were analyzed. Outcomes were assessed with propensity score matching for characteristics including age, race, ethnicity, gender, hypertension, diabetes, hyperlipidemia, COPD, obesity, heart disease, and lifestyle habits such as smoking.

**RESULTS:** Covid-positive patients receiving the influenza vaccine experienced significantly less sepsis, deep venous thrombosis, dehiscence, and acute myocardial infarctions at all time points (Fig. 1)( $p < 0.05$ ). Additional significant differences suggesting a possible protective effect of the influenza vaccine included surgical site infections, stroke, arthralgias, pneumonia, and death.

**CONCLUSION:** TriNetX uses real-time data from thousands of patients, thereby allowing for precise cohort matching and increasing external validity. Our analysis examines the potential protective effect of preoperative influenza vaccination in Covid-positive patients undergoing surgery. Limitations include this study's retrospective nature and its reliance on the accuracy of medical coding. Future prospective studies to determine if an increased emphasis on preoperative influenza vaccination will improve outcomes would be beneficial.



**Figure 1.** Change in opioid prescription. a) Overall number of opioid pills proven bed pre- and pent- implementation and number of opioid pills used as reported by patients during their follow up visit. b) Average number of pills prescribed pre- and post- implementation and average number of opioid pills used is reported by patients during their follow up visit c) Avenge oral morphine equivalent (OME) pre- and post- implementation and average OME used as reported by patients during their follow up visit Mann-Whitney and Wilcoxon tests were used to compare pre- vs. post-ACS QI and post-ACS QI vs. used opioids, respectively; \*\*\*= p <0.001.



**Figure 1.** Complication trends at 30-120 days post-operatively (P<0.05).

### The Role of Interfacility Transfer for Nonelective Cholecystectomy in High Model for End-Stage Liver Disease Score Patients

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**INTRODUCTION:** Interfacility transfer to a referral center for patients requiring nonelective cholecystectomy is often considered in patients with liver disease given management complexities and peri-operative risk. The association between disease severity, classified by the Model for End Stage Liver Disease (MELD) score, transfer frequency, and outcomes in those patients remains unknown.

**METHODS:** The ACS-NSQIP participant use files were queried for nonelective cholecystectomy from 2016-2018. Patients were stratified according to low (6-11), intermediate (12-18), or high (>18) MELD score. In the high MELD group, patient characteristics and outcomes were compared between transferred and non-transferred patients, and multivariate regression was performed to evaluate independent predictors of outcomes. Outcomes included in-hospital mortality, complications, length of stay (LOS), and 30-day reoperation and readmission.

**RESULTS:** There were 30,171 subjects included. Transfer was more likely as MELD increased (19.5% high vs 12.1% low, p<0.001). High MELD patients had increased LOS, reoperation,

