

## Introduction

Postoperative risks are determined by the surgeon. Risks are often defined by:

- Surgeon experience
- Elective vs. emergent need of surgery
- Patient/family pressures
- Evidence-based literature

In addition, a surgical risk calculator can be used to provide an objective risk score, however, it is not something that is widely used during the preoperative phase.

## Background & Significance

**Postoperative complications are monitored by:**

- Unplanned 30-day readmissions
- Patient Safety Indicators (PSI's)
  - Postop iatrogenic pneumothorax
  - Perioperative hemorrhage and hematoma
  - Postoperative acute kidney injury requiring dialysis
  - Postoperative respiratory failure
  - Perioperative pulmonary embolism or deep vein thrombosis
  - Postoperative sepsis
  - Postoperative wound dehiscence
  - Unrecognized abdominopelvic accidental puncture or laceration

## Hospital Impact

- Unplanned readmissions and PSI's are used by CMS for Hospital Compare, all-cause readmissions, and value-based purchasing. Leapfrog also uses PSI's and surgical outcomes.
- Current practice, did not use a validated surgical risk calculator preoperatively.
- The National Surgical Quality Improvement Program (NSQIP) Surgical Risk Calculator (SRC) is an objective and validated tool that can be used to predict postoperative complications 30 days after surgery.

## Clinical Question

*How does the implementation of the NSQIP risk calculator impact the readmissions and postoperative complications for patients undergoing elective general surgery?*

## Methods

**Design:** Retrospective chart review pre and postimplementation of the NSQIP SRC prior to surgery

**Setting:** Community, teaching, not-for-profit acute care hospital

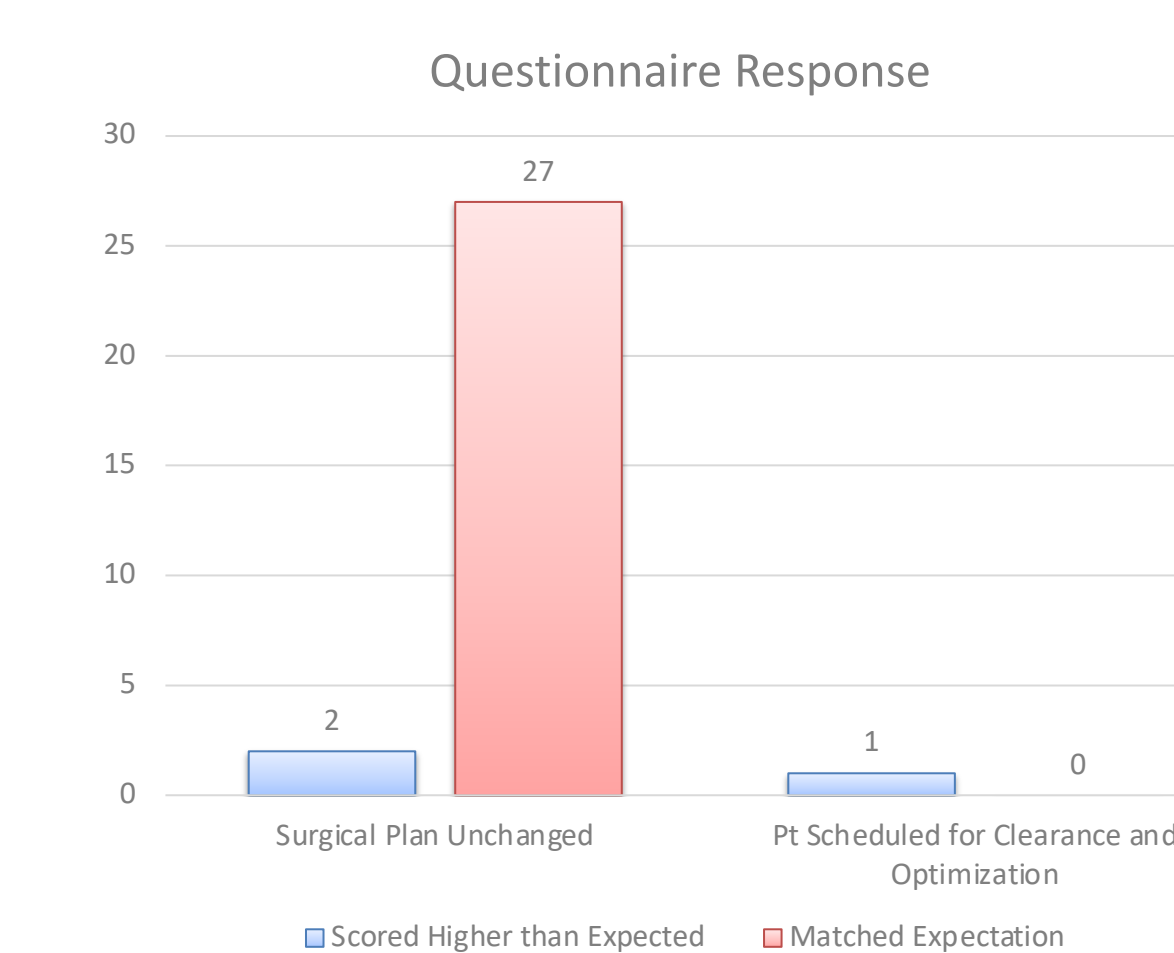
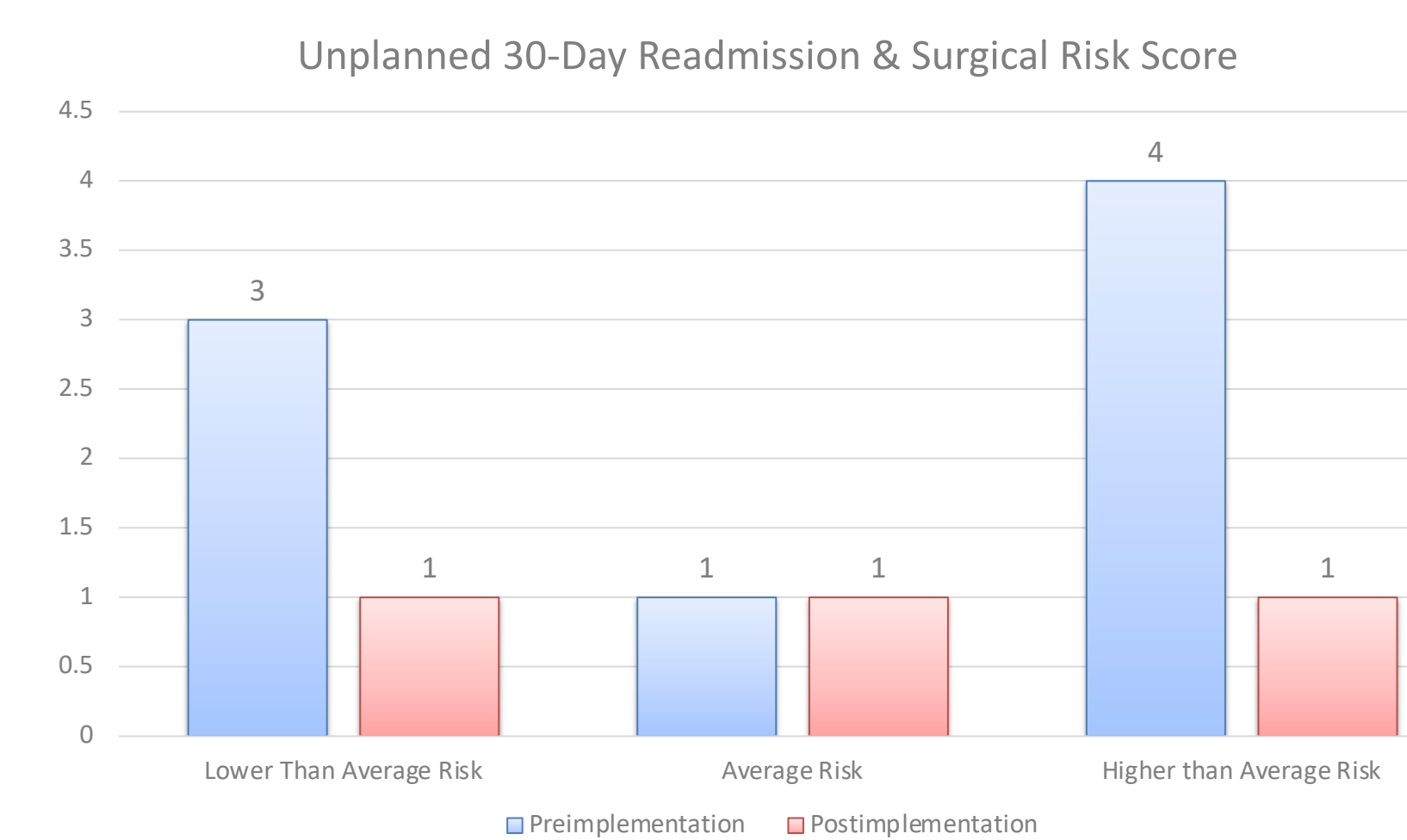
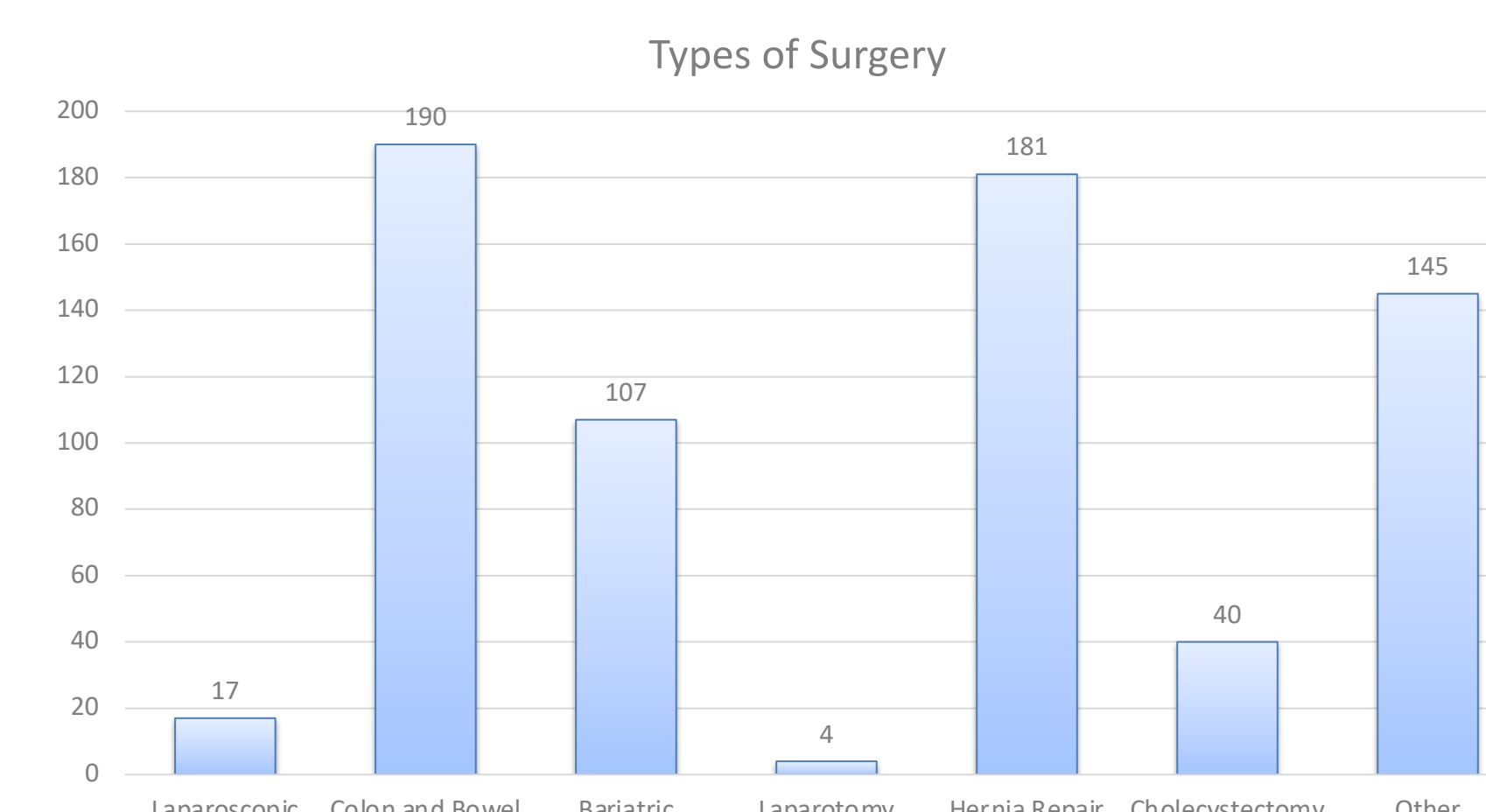
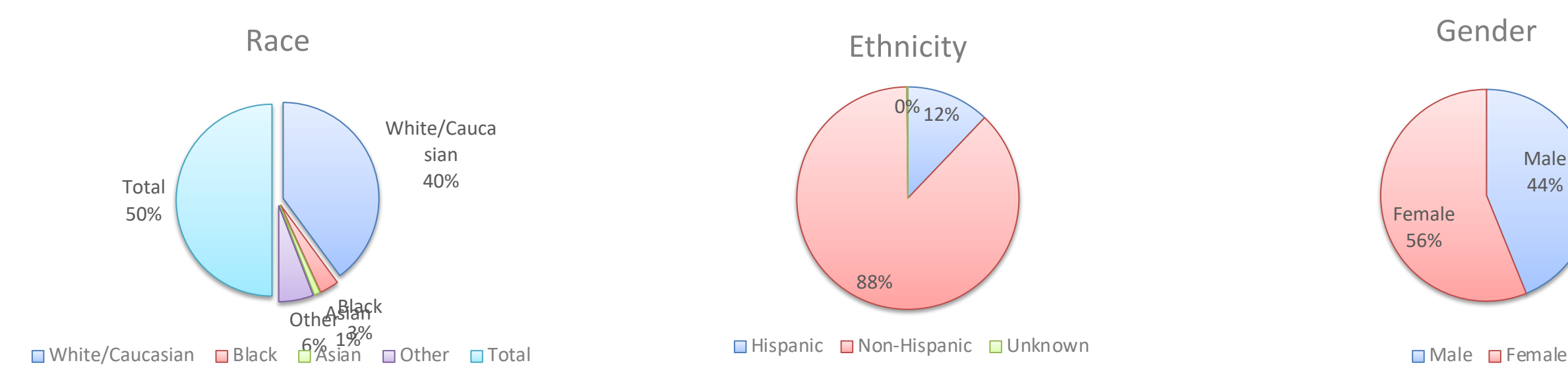
**Timeline:** Data review 3 months before and after implementation

**Population:** Elective general surgery cases, 18 years or older

**Measures:**

- 30-day unplanned readmission rates
- Total number of PSI's
- Descriptive analysis of surgeons' perception of the SRC

## Results



	Total Patients	Readmissions	Percentage
Preimplementation	316	8	2%
Postimplementation	316	3	<1%

Score Expectation	Not Completed	Matched Expectation	Score Higher than Expected	Total
Preimplementation	2	26	2	30
Postimplementation	0	1	1	2
Total	2	27	3	32

Chi-Square Test Surgical Score Expectation	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	124.920 <sup>a</sup>	4	<.001
Likelihood Ratio	124.042	4	<.001
Linear-by-Linear Association	85.936	1	<.001
N of Valid Cases	139		

## Discussion

### Limitations:

- Delays with implementation of the NSQIP SRC due to COVID-19 and shut down of elective surgeries.
- Staffing limited in Preadmission Testing Department and changes in preadmission process secondary to COVID-19, changing the timeframe the SRC to be sent to surgeons
- Surgeons overwhelmed with amount of surgeries from being delayed

### Implications of Practice

- Easy and accessible tool
- Can be used within perioperative area for awareness of the patient's risk (Surgeon, RN, APN, Anesthesia)

### Implications of Healthcare Policy

- Expand to other surgical specialties
- Documentation in the medical record

### Implications for Quality and Safety

- Peer Review and quality metrics
- Early identification of high-risk patients

### Education

- Multidisciplinary impact (Surgeons, Anesthesia, APN, RN)

### Economic

- Complications have a direct financial cost on quality metrics and hospital penalties for PSI and readmissions
- Hospital costs are impacted with additional treatments, use of staff and OR rooms

### Plans for Sustainability and Transition

- Expand the use to other surgical specialties
- Roll out the SRC in the physician office and referring all risk patients to Preadmission Testing for clearance, referrals and optimization

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