

# A Program Evaluation of a Nurse Practitioner-led Metabolic and Bariatric Surgery Clinic

Jennifer Conklin, DNP candidate, MSN, APRN, AGACNP-BC, CMSRN

March 18, 2025



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# Background & Significance: Obesity

- Defined as a BMI of 30 or greater, obesity contributes to the global burden of chronic disease and disability.<sup>10,11</sup>
- The National Health and Nutrition Examination Survey reported an increase in **obesity** from 30.5% to **41.9%** and **severe obesity** from 4.7% to **9.2%** within the last twenty years.<sup>22</sup>
- Obesity costs the US healthcare system approximately 173 billion a year.<sup>8</sup>
- There are many treatment options for people with obesity including diet, exercise, behavior modification, medication, and surgery. **For people with severe obesity, defined as a BMI >40, bariatric surgery remains the most effective and sustainable treatment.**<sup>3,14</sup>

# Background: Obesity

- Obesity is a disease.
- While generally accepted as a disease in the medical field, stigma around obesity and obesity treatment can create barriers that impact a patient's **autonomy** to make informed, voluntary decisions about their healthcare.
- There should be **justice** in ensuring equitable access to bariatric surgery for all individuals who qualify as bariatric surgery can be life saving.<sup>12,21</sup>
- Improving inequity requires universal insurance coverage, reducing provider bias, and reducing obesity stigma primarily by treating obesity as a disease.<sup>15</sup>

# Background: Metabolic Bariatric Surgery (MBS) Clinic

1986

- The MBS clinic at an academic health system in the Southeastern United States was established.

2019

- The clinic transitioned to a NP-led model of care where NPs function as lead providers among an interdisciplinary care team.

2025

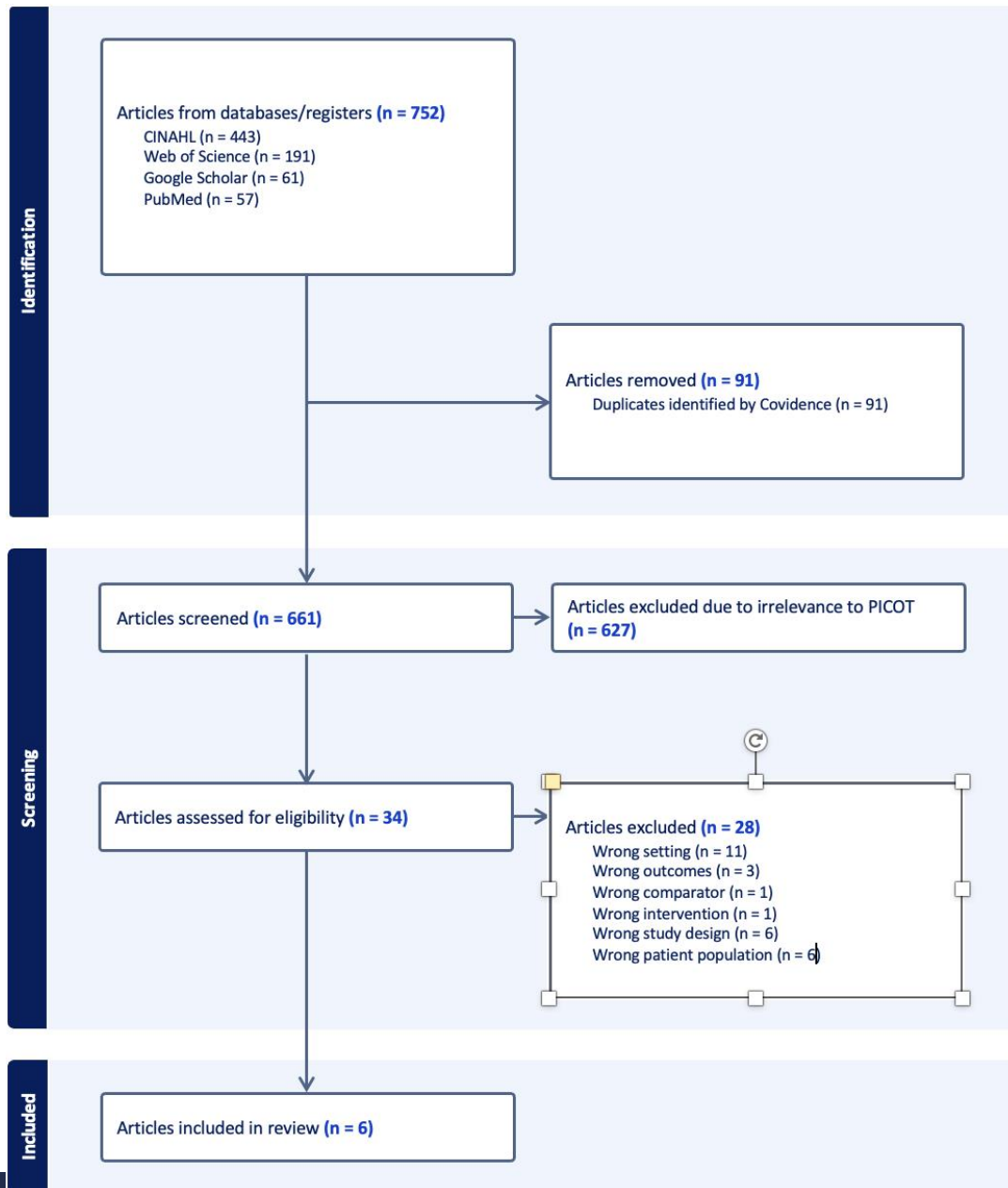
- Today, the MBS clinic consists of 3 NPs who provide peri-operative care, including most pre-operative visits.

## Question:

In adult bariatric surgery patients, what impact does a NP-led metabolic and bariatric surgery clinic have on post-operative outcomes?

# Systematic Literature Review

- 752 articles were retrieved from 4 databases: **CINAHL**, **Web of Science**, **Google Scholar**, **PubMed**
- Articles were excluded that deviated from focus of evaluating NP care and patient outcomes within an outpatient setting
- The John Hopkins Nursing Evidence Based Practice (JHNEBP) appraisal methodology was used to assess quality of evidence of the six articles. The quality of evidence among the six articles ranged from level **I-B** to level **V-B**.



# Summary of Literature

- Comparison of NP-led care to usual care or physician care.<sup>9,13,17,20</sup>
- NPs are effective at managing patients with multiple comorbidities<sup>5,9,17</sup>
- Focus on patients' health related quality of life (HRQoL)<sup>5,9,20</sup>
- Impact of NP-led care on weight loss, length of stay, ED visits, hospital readmissions, and post-operative outcomes<sup>1,13,20</sup>

# Review of Literature Conclusions

- The overall strength of evidence supports the implementation of a NP-led care model in the outpatient clinic setting.
- The literature demonstrates that nurse practitioners have equivalent or better outcomes when compared to physician care.
- NP-led care within surgical specialty outpatient clinics is rarely found within the literature. More high-quality research and quality improvement methodologies are needed to evaluate the effect of NP-led care on bariatric surgery outcomes.

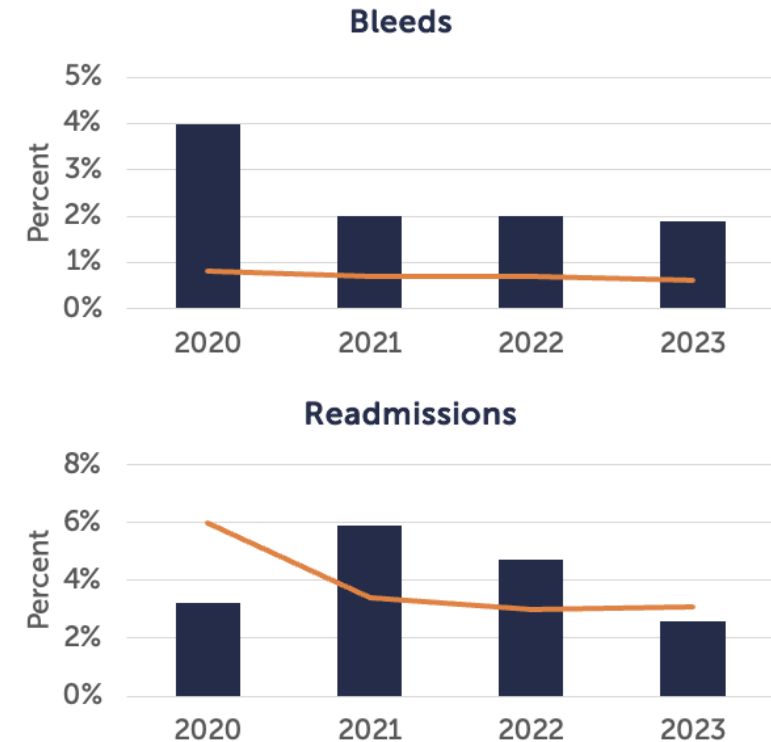
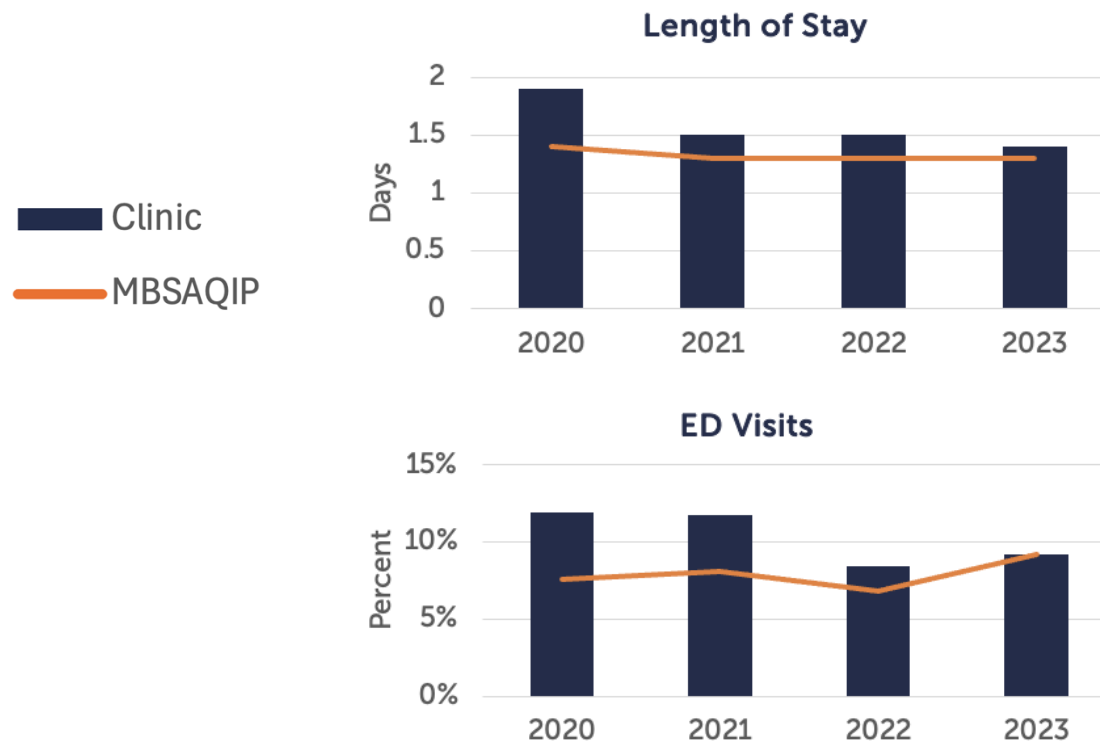


# DNP Project: Program Evaluation

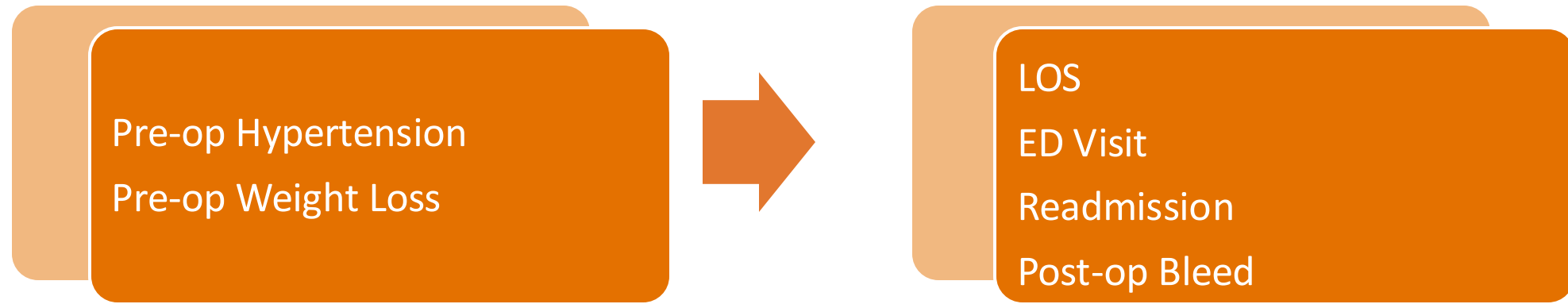
- The primary goal of this project was to evaluate the NP-led metabolic and bariatric surgery clinic, focusing on how NP pre-operative care influences post-operative outcomes.
- Additionally, this program evaluation examined whether the initial goals of the NP-led clinic were achieved and whether this clinic model is cost effective.

# DNP Project: Measure Selection

- As a Metabolic and Bariatric Accreditation and Quality Improvement (MBSAQIP) accredited center, the clinic aims to provide high quality care to its patients.



# DNP Project: Measure Selection



- Pre-operative hypertension is a well-established modifiable risk factor that can contribute to early post-operative bleeding.<sup>7,18,19,23,24</sup>
- Pre-operative weight loss is recommended by ASMBS to reduce body fat and liver size.<sup>6</sup>

# Agency for Clinical Innovation Framework



# Step 1 Establish a Team

## **DNP Project Team:**

Jennifer Conklin, DNP candidate, MSN, APRN, AGACNP-BC, CMSRN

Regina DeGennaro, DNP, MSN, RN, AOCN, CNL, advisor

Kimberly Giles, DNP, RN, site mentor

Terri Yost PhD, FNP-BC, second reader

## Step 2 Planning

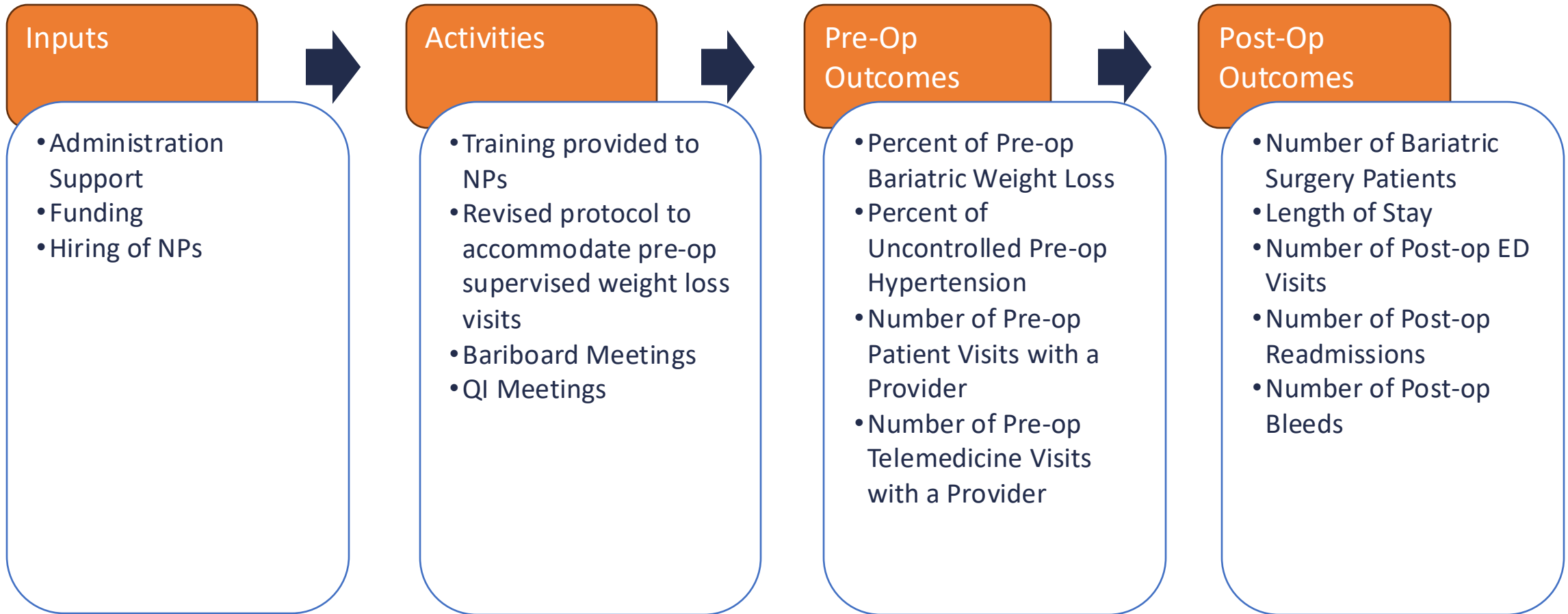
- **Communication Plan:**

- Regular communication with the MBS clinic
- Regular updates communicated to the project team
- Meetings with DNP project team as needed

- **Project Plan:**

- Conduct interviews with key MBS team members to ascertain NP-led clinic objectives and identify outcomes of importance
- Project Proposal
- Obtain IRB determination: not human subject research
- Describe and analyze data, compare NP measures and patient outcomes using charts
- Disseminate results

## Step 3 Program Logic



# Step 4 Evaluation Design

- **Summative Design**
  - **What were the stated goals of bringing NPs into the clinic:**
    - Increase patient access to care
    - Offer insurance required, supervised pre-op weight loss visits
    - Improve bariatric surgery patient outcomes
  - **Were the goals met?**
  - **How did NPs impact bariatric patient post-operative outcomes?**
    - Specifically, evaluating effectiveness of NP-led care in optimizing patients for surgery through *pre-operative HTN management* and *pre-operative weight loss*
  - **Has the NP-led model of care been cost effective?**



# Step 5 Data Plan

## Multivariate Time-Series Analysis:

- Data collected from patients having primary bariatric surgery during the period of September 1<sup>st</sup> to November 30<sup>th</sup> from 2018 to 2023.
- **Objective:** to analyze multiple time-dependent variables simultaneously to understand their relationships, trends, and how they evolve over time

## Data Sources:

- MBSAQIP data set and Epic Electronic Health Record

## Outcomes:

- **NP Pre-op outcomes:** % pre-op hypertension & % pre-op weight loss
- **Post-op outcomes as defined by MBSAQIP:** LOS, 30-day post-op ED visits, 30-day post-op readmissions, 30-day post-operative bleeds

## Step 6 Implementation Plan

- Data Management: Excel, patient data de-identified
- Data Analysis: Pivot Tables and Crosstabs  
Line Graphs, Bar Charts, Run Charts

**Summer 2024**  
Project Approved

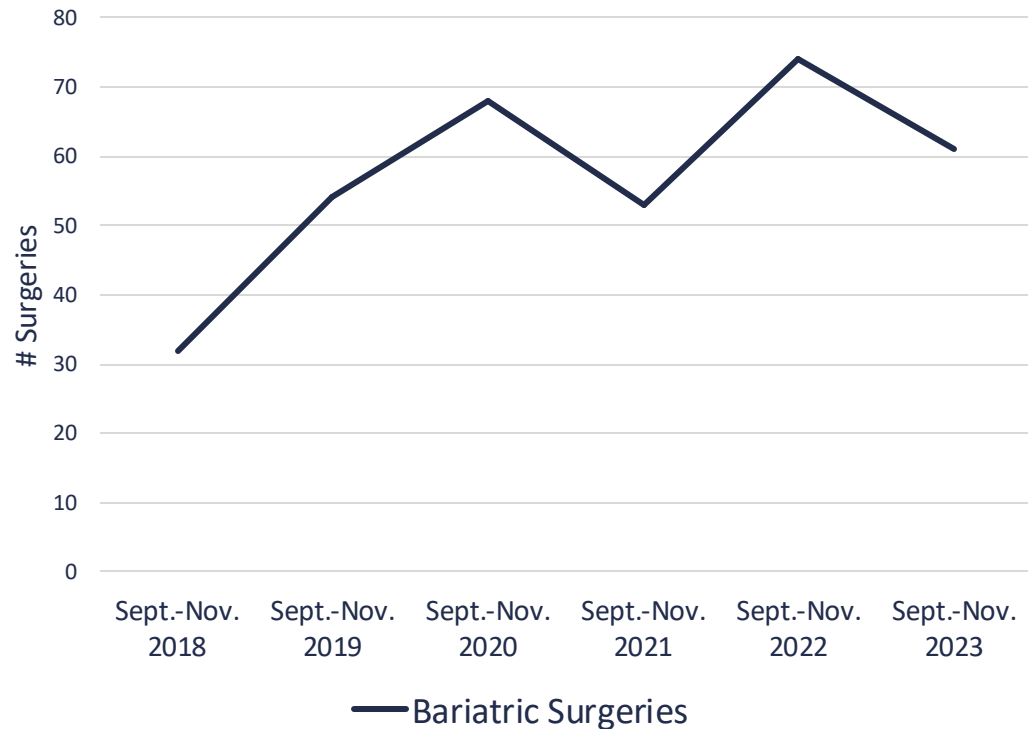
**September-  
November 2024**  
Data Collection

**December 2024-  
January 2025**  
Interpret Results

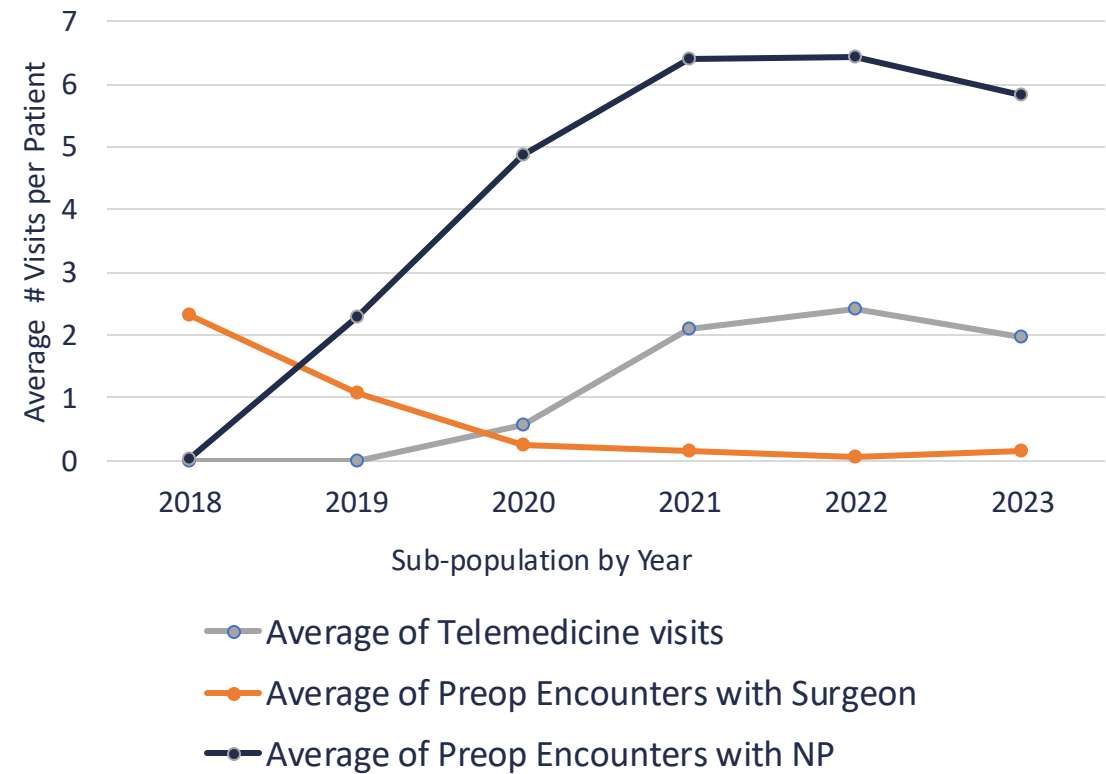
# Step 7 Communicating Results

Sub-population = 342

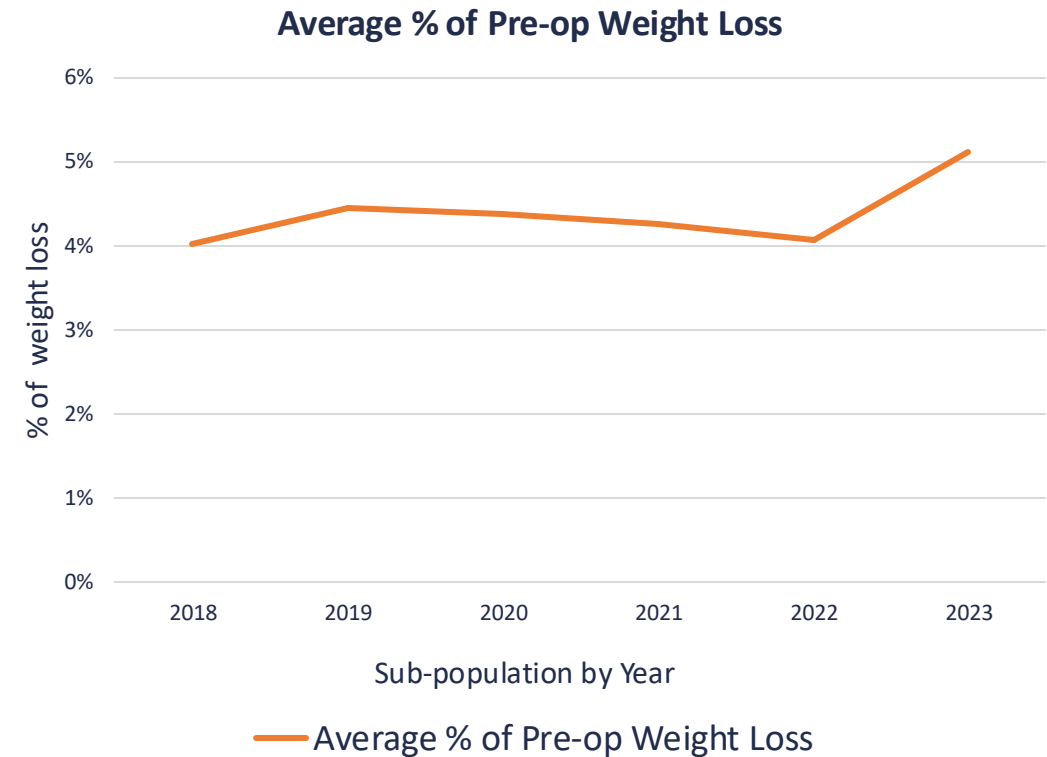
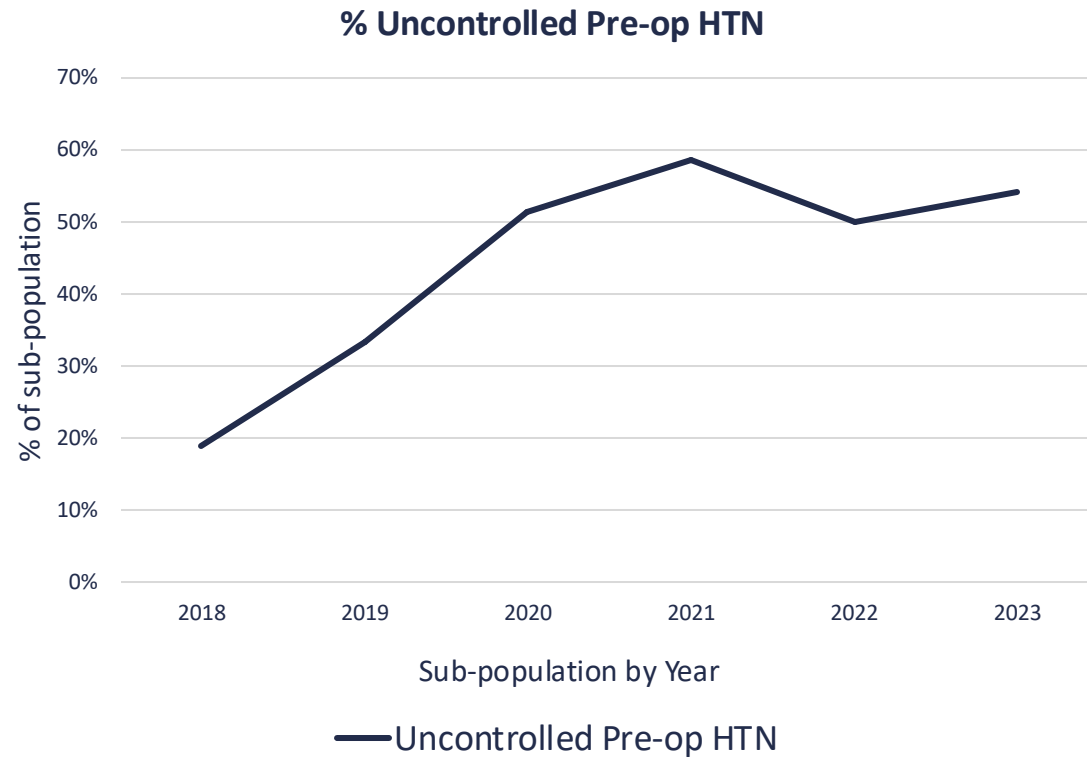
## Number of Bariatric Surgeries



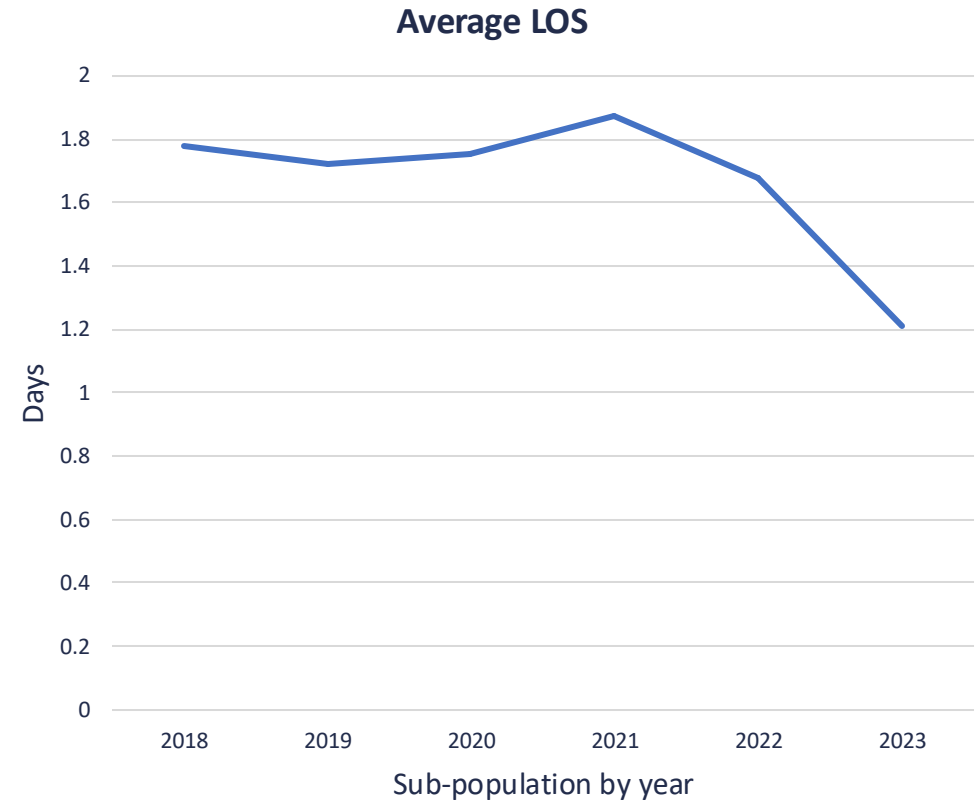
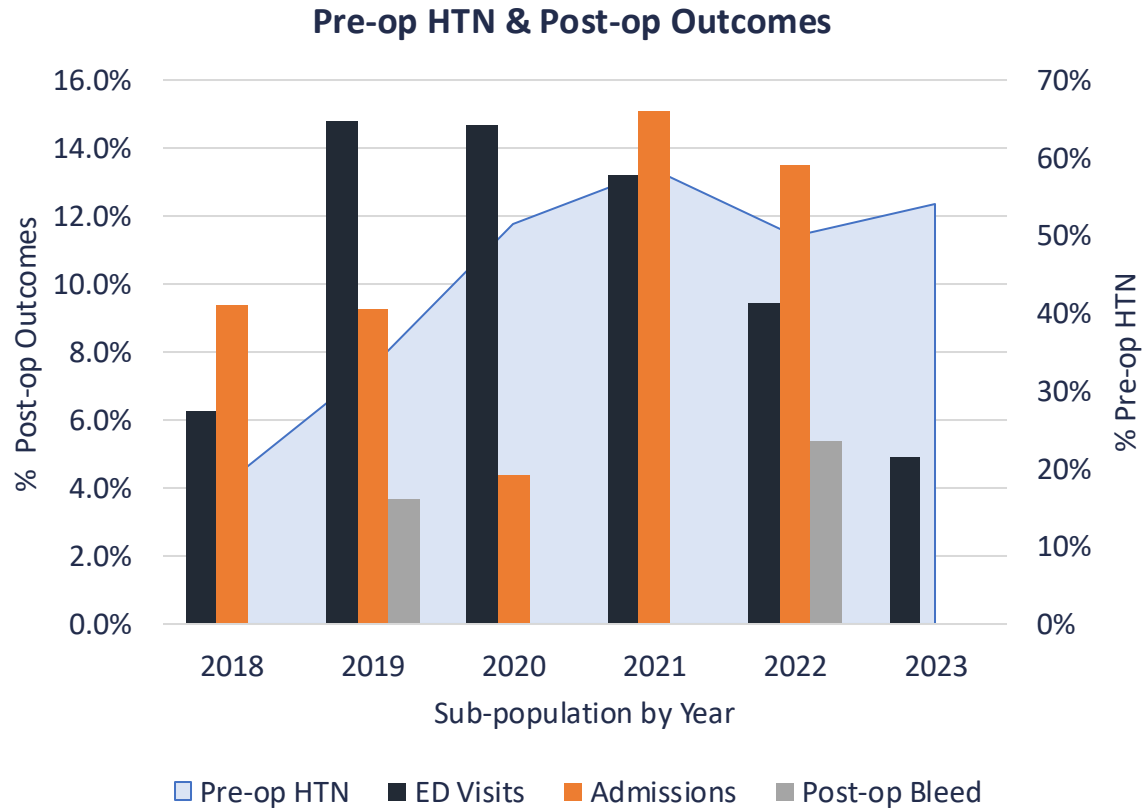
## Patient Access



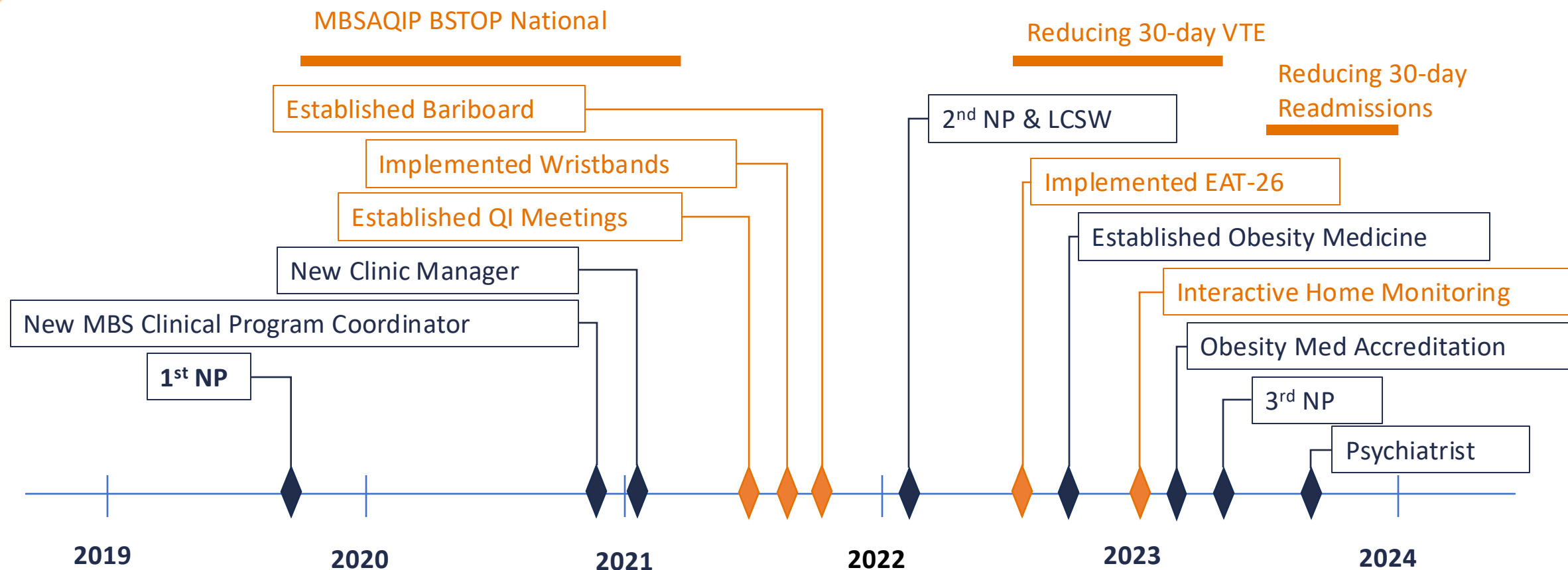
# Step 7 Communicating Results



# Step 7 Communicating Results



# Step 7 Communicating Results: Timeline



\*\*\*Virginia Medicaid expansion took effect in January 2019

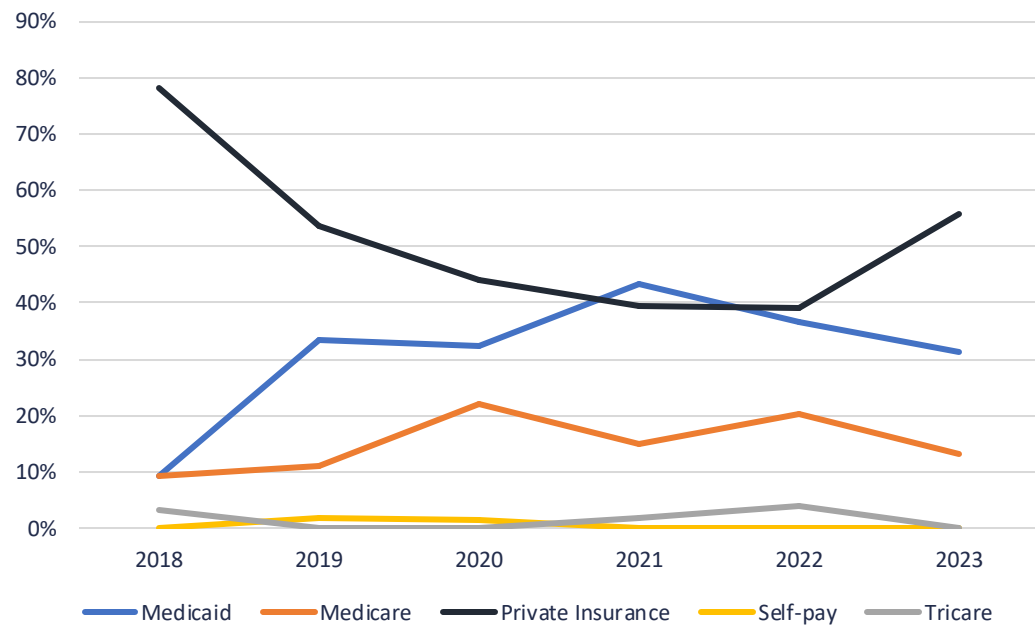


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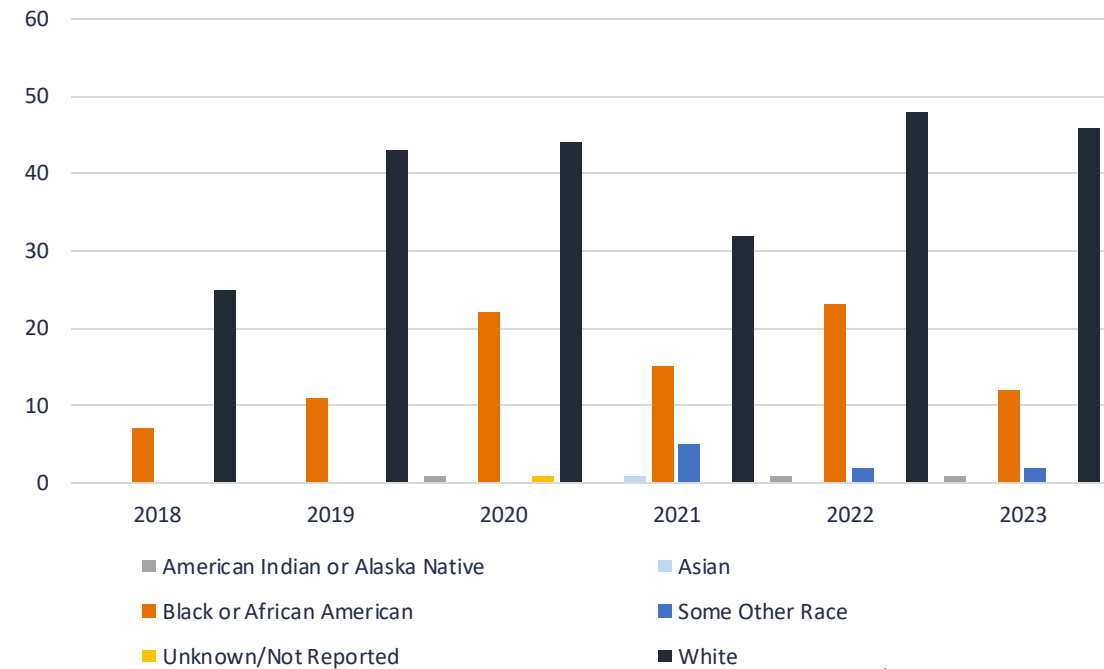
## Step 7 Communicating Results: Equity and Inclusion

- This clinic serves a greater proportion of patients with Medicaid and Medicare health insurance compared to the average across MBSAQIP-accredited centers.

Sub-population Proportion of Payors



Sub-population by Ethnicity



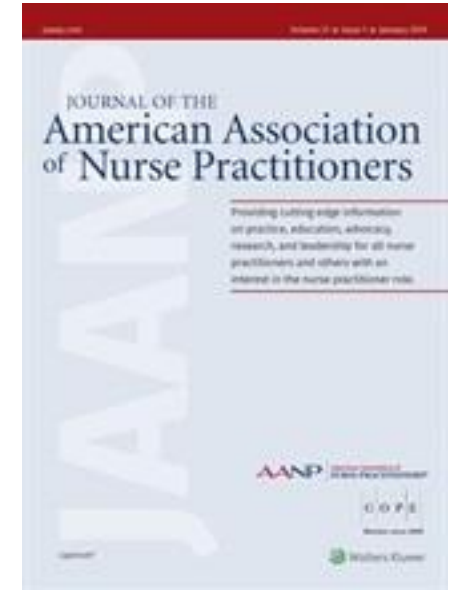
## Step 7 Communicating Results: Financial Impact

	Surgeon Led	NP Led
# Surgeries	154	311
Average Surgery Cost	\$ 5,318	\$ 5,318
Total Revenue	\$ 818,972	\$1,653,892
<b>Increase in Revenue</b>		<b>\$ 834,920</b>
Clinic Operation Cost	\$ 443,481	\$ 741,526
<b>Investment</b>		<b>\$ 298,045</b>
<b>ROI</b>		<b>180%</b>



## Step 7 Communicating Results: Dissemination

- APOGEE Conference poster presentation
- Present findings to the MBS clinic
- DNP Doctoral Defense
- UVA Libra Database
- Journal of the American Association of Nurse Practitioners



## Step 8 Incorporating Findings

- The NP-led clinic achieved its initial goal of increasing patient access to bariatric surgery.
  - Standardize telemedicine patient visits to ensure equity
- Overtime, bariatric surgery patient outcomes improved, but there are opportunities for NPs to optimize patient comorbidities in effort to improve early post-operative bleeding.
  - Obtain blood pressure with every patient visit
  - Identify and manage patients with uncontrolled preoperative HTN
  - Implement Interactive Home Health before surgery for patients with pre-op HTN
- The NP-led clinic model is cost effective.

## Step 8 Incorporating Findings

- The clinic's interdisciplinary approach and dedication to quality improvement likely played a key role in enhancing patient outcomes.
- The clinic's interdisciplinary team promoted patient autonomy and minimized stigma by approaching obesity as a disease rather than a personal failing.
- Bariboard ensured equitable access.
- The literature supports evaluating HRQoL in the bariatric surgery population as this ensures a more patient-centered approach to care.

## Step 8 Incorporating Findings: Sustainability

- A **program evaluation** supports sustainability by offering data-driven insights to inform the clinic's future quality improvement initiatives.
- The sustainability of this clinic depends on continuous quality improvement that is focused on enhancing bariatric surgery outcomes, streamlining workflows, and reducing inefficiencies by de-implementing practices that are no longer effective.
- A culture of continuous improvement fosters professional development, reduces burnout, and enhances teamwork, contributing to staff retention and overall clinic stability.

# Questions?

# Special Acknowledgements

- Jamie Conklin, spouse and tech/software support specialist
- Levi Conklin, son
- Jude Conklin, son
- Cindy Colvin, mother
- Robbie Colvin, father
- Jeff Eavey, mentor
- Crystal Johnson-Mann, mentor
- Kim Giles, mentor
- Regina DeGennaro, advisor
- Terri Yost, second reader
- David Martin, UVA data specialist
- Reece Meares, UVA student finance specialist
- The UVA DNP 2025 cohort!

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