

30 Day Complication Rates After Gender-Affirming Bottom Surgery- An Analysis of the NSQIP Database from 2010-2020

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Introduction

- Gender affirming surgeries (GAS) are rapidly becoming an evolving field within plastic surgery and include surgeries such as facial/head/neck, breast (top), and genito-urinary (bottom) procedures.¹
- In particular, gender-affirming bottom surgeries (GABS) play a key role in treating individuals who suffer from gender dysphoria, in which there is a distressing disconnect between the biological sex external signs and gender identity internal signs.²
- Postoperative complications and risk factors may arise in any surgical procedure, however limited data exists for GABS.
- With more than 1.3 million adults in the United States who identify as part of the TGNB community, it is important to understand the post-surgical complications and risk factors in TGNB patients to improve care going forward.³
- While there are several reports on the various complications that may arise from GABS procedures, the present analysis focused on the much less understood question of how sociodemographic and clinical variables affected the outcomes of GABS.^{4,5}

Purpose

To address this question, the present study aimed to analyze and determine the incidence and risk of 30-day postoperative complications in patients undergoing GABS over a 10 year period from 2010 to 2020 using the largest existing data set of surgical procedures in the United States.

Methods

- Using the American College of Surgeons-National Surgical Quality Improvement Program (ACS-NSQIP) database, we identified patients undergoing gender affirmation surgery using Current Procedural Terminology (CPT) codes included in male to female (MtF) and female to male (FtM) bottom surgery (Table 1) starting from the beginning of 2010 to the end of 2020.
- The cases were then selected by filtering for International Classification of Diseases Ninth and Tenth Revisions (ICD 9 and ICD 10) codes for gender identity disorder and transsexualism (Table 2).
- A multivariate analysis was performed to identify sociodemographic and clinical risk factors for increased 30-day postoperative complications. IBM SPSS statistics software was used to compare the odds ratio of 30-day postoperative complications based on age, race, BMI, smoking status, and diabetes. Statistical significance was defined as a p-value of less than 0.05.

Table 1. CPT Codes for GABS

CPT Code	Description
MtF	
55970, 57335, 57291, 17380, 53430, 54125, 54520, 57291, 56805, 58999	Intersex (MtF) transfeminine bottom surgery Vaginoplasty, Vaginal construction, Electrolysis, Urethroplasty, Penectomy, Orchiectomy, Colovaginoplasty, Clitoroplasty, Labiaplasty
FtM	
55980, 15757, 15758, 58552, 58571, 58262, 58150, 55175, 54660, 54401, 53410, 57110, 56625, 55899	Intersex (FtM) transfeminine bottom surgery, free skin flap, free fasciocutaneous flap, TAH-BSO, laparoscopic hysterectomy, vaginal hysterectomy, hysterectomy, scrotoplasty, testicular prosthesis, penile prosthesis (inflatable), urethroplasty, vaginectomy, vulvectomy, metoidioplasty

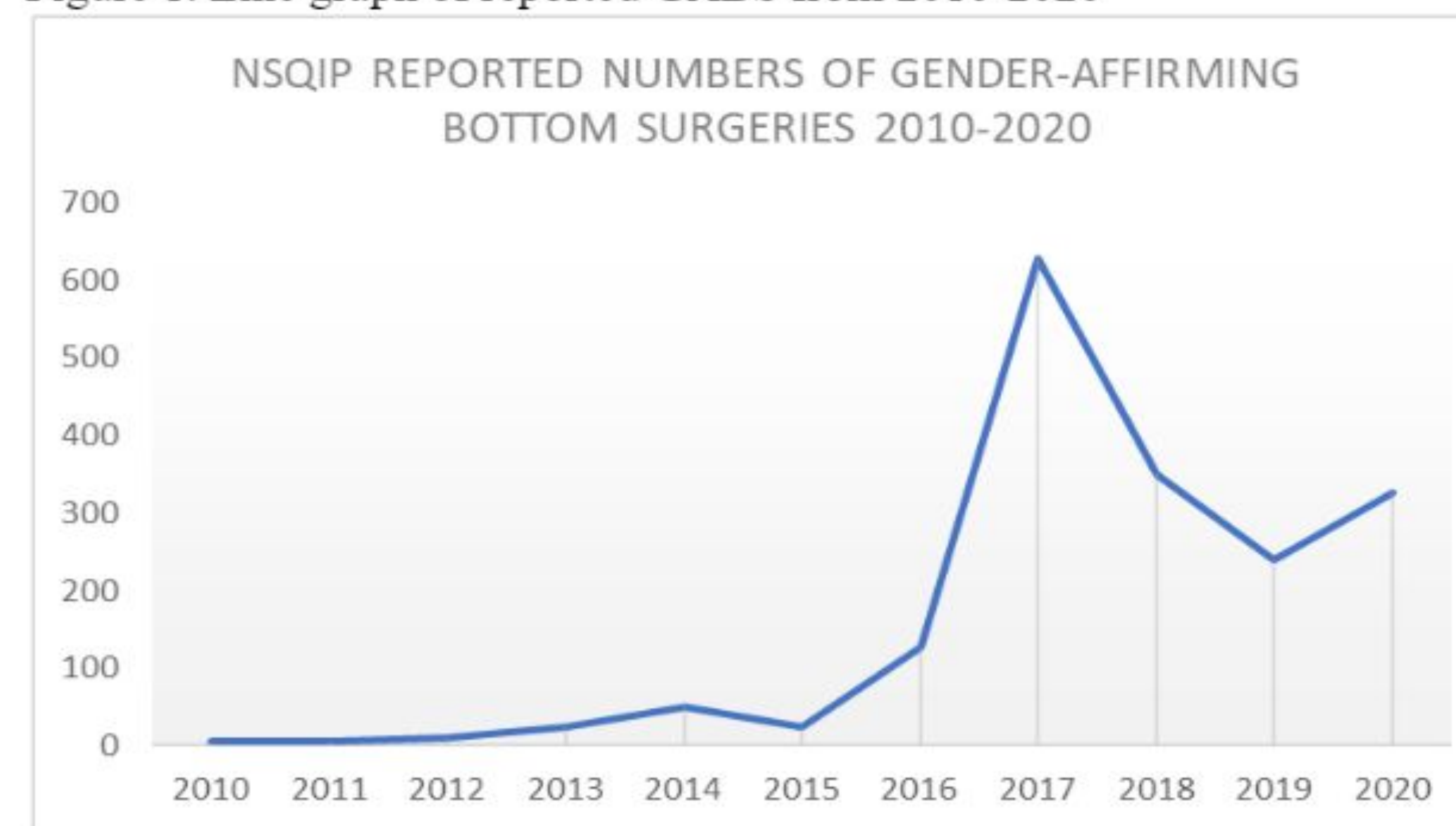
Table 2. ICD Codes for case selection

ICD Code	Description
ICD-9	
302.50	Transsexualism with unspecified history
302.51	Transsexualism with asexual history
302.52	Transsexualism with homosexual history
302.53	Transsexualism with heterosexual history
302.85	Gender identity disorder in adolescents or adults
ICD-10	
F64.0	Transsexualism
F64.1	Gender identity disorder in adults
F64.9	Gender identity disorder, unspecified

Results

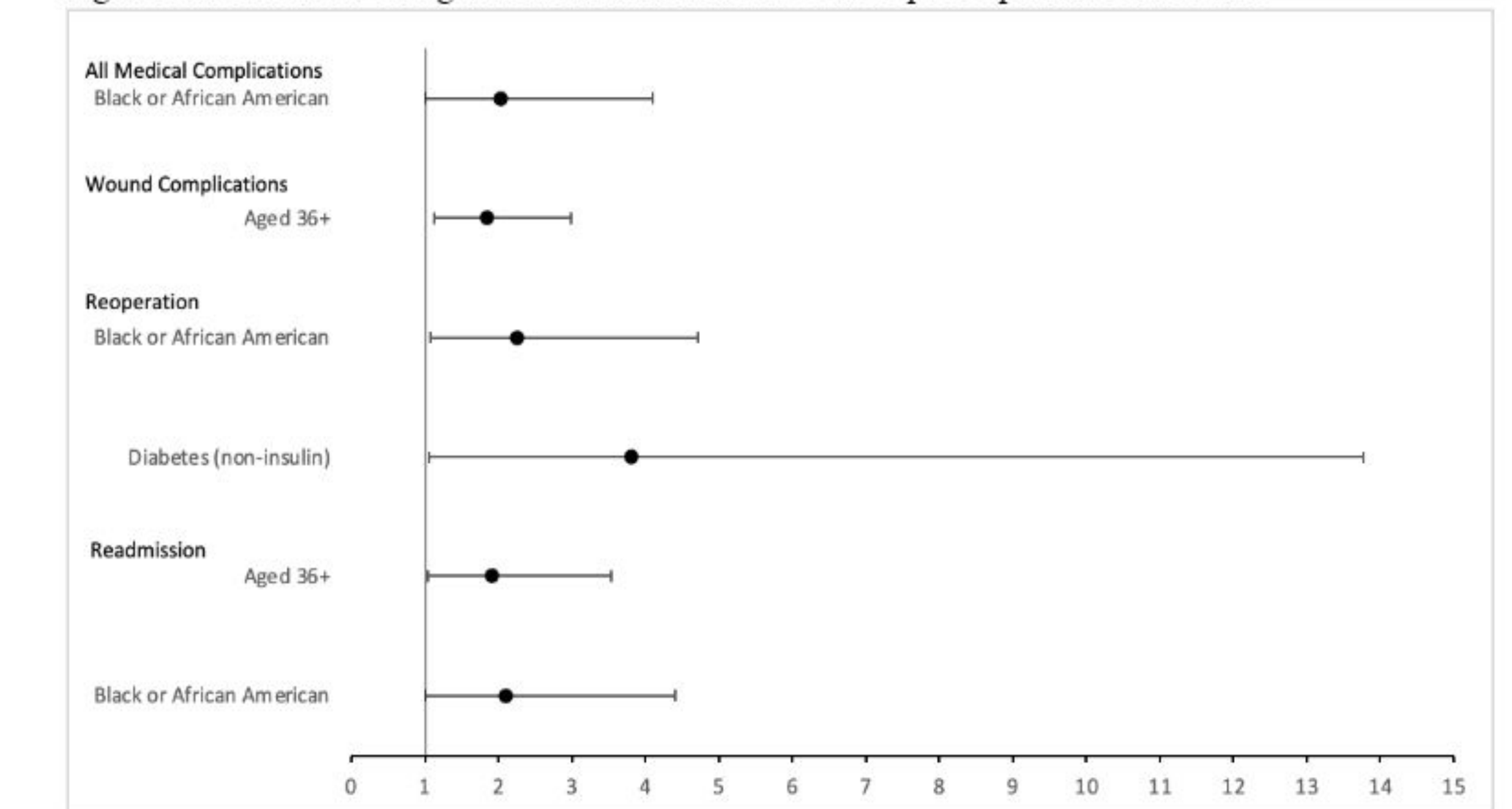
- As shown in Figure 1, there were a total of 1,809 procedures meeting the criteria for gender-affirming bottom surgery from the beginning of 2010 to the end of 2020 reported in the NSQIP database.
- The average age at the time of procedure was 33 years with a range of 18 to 78 years and a mean BMI of 28. Of the 1,809 total patients, 999 patients identified or were identified as female (55.2%), 789 (43.6%) male, and 21 (1.2%) nonbinary.
- White patients were the most commonly represented race at 70.2% (n = 1,270), black or African American made up 10.9% (n = 197), asian patients made up 3.6% (n = 65), Native American or Alaska Native made up 0.8% (n = 15), and other or unknown made up the final 14.5% (n = 262).

Figure 1. Line graph of reported GABS from 2010-2020



- The overall 30-day complication rate was 7.5% for those patients with at least 1 complication and 10.7% for the number of total complications.
- Unplanned reoperation related to the principal operative procedure was the most common complication with 48 cases (26.4%) of at least one unplanned reoperation. Surgical site infections (n = 40, 22%), wound dehiscence (n = 36, 19.8%), and urinary tract infections (n = 25, 13.7%) were the most common medical adverse events noted.
- There were several sociodemographic and clinical variables identified for increased risk of postoperative complications (Figure 2). Patients aged 36 and older were at an increased risk for unplanned readmission (p = 0.03) and wound complications (p = 0.02).
- Patients suffering from diabetes mellitus and not on insulin showed a significantly increased risk for unplanned reoperation (p = 0.04).
- Finally, patients of black or African American race demonstrated an increased risk for an unplanned readmission (p = 0.05), unplanned reoperation (p = 0.03), and other medical adverse events (p = 0.046).

Figure 2. Forest Plot of significant risk factors for GABS post-operative outcomes



Discussion

- Because this study utilized cases available in the NSQIP database, its scope was limited by how thoroughly patient information was recorded and reported prior to, during, and following the procedures.
- Our analyses demonstrated the number of GABS performed increased by over 25 times between the years of 2015 and 2017.² Notably, the greatest number of GABS cases in the last 10 years occurred in 2017, where 635 cases were performed.
- The multivariate analysis revealed that a potential risk factor for postoperative complications is race. Among patients undergoing GABS, the majority of patients (70.2%) identified as white race.
- Besides race, age was found to be an important factor for readmission and developing postoperative wound complications.
- It is important to note that social determinants of health can greatly influence whether or not patients follow post-operative instructions, report any postoperative complications, or trust medical professionals enough to seek any basic form of healthcare. The course of their care and relationship with providers can ultimately determine the outcome of procedures.

Conclusion

- As gender affirming bottom surgeries become increasingly more common, data analyses on larger patient cohorts can strengthen the results of this study and possibly identify more specific information on outcome variables.
- Forming a patient vignette that identifies a transgender and nonbinary individual at an increased risk for postoperative complications following GABS can lead to preventative guidelines and actions taken by the surgeon and healthcare team.

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