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Temporal Trends in Gender-Affirming Surgery Among Transgender Patients in the United States

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IMPORTANCE Little is known about the incidence of gender-affirming surgical procedures for transgender patients in the United States.

OBJECTIVES To investigate the incidence and trends over time of gender-affirming surgical procedures and to analyze characteristics and payer status of transgender patients seeking these operations.

DESIGN, SETTING, AND PARTICIPANTS In this descriptive observational study from 2000 to 2014, data were analyzed from the National Inpatient Sample, a representative pool of inpatient visits across the United States. The initial analyses were done from June to August 2015. Patients of interest were identified by *International Classification of Diseases, Ninth Revision*, diagnosis codes for transsexualism or gender identity disorder. Subanalysis focused on patients with procedure codes for surgery related to gender affirmation.

MAIN OUTCOMES AND MEASURES Demographics, health insurance plan, and type of surgery for patients who sought gender-affirming surgery were compared between 2000-2005 and 2006-2011, as well as annually from 2012 to 2014.

RESULTS This study included 37 827 encounters (median [interquartile range] patient age, 38 [26-49] years) identified by a diagnosis code of transsexualism or gender identity disorder. Of all encounters, 4118 (10.9%) involved gender-affirming surgery. The incidence of genital surgery increased over time: in 2000-2005, 72.0% of patients who underwent gender-affirming procedures had genital surgery; in 2006-2011, 83.9% of patients who underwent gender-affirming procedures had genital surgery. Most patients (2319 of 4118 [56.3%]) undergoing these procedures were not covered by any health insurance plan. The number of patients seeking these procedures who were covered by Medicare or Medicaid increased by 3-fold in 2014 (to 70) compared with 2012-2013 (from 25). No patients who underwent inpatient gender-affirming surgery died in the hospital.

CONCLUSIONS AND RELEVANCE Most transgender patients in this national sample undergoing inpatient gender-affirming surgery were classified as self-pay; however, an increasing number of transgender patients are being covered by private insurance, Medicare, or Medicaid. As coverage for these procedures increases, likely so will demand for qualified surgeons to perform them.

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Transgender individuals have a gender identity that differs from their sex at the time of birth.[1,2] To address this incongruence, many transgender patients may seek gender-affirming interventions to achieve concordance between self-identified gender, physical appearance, and function. Gender-affirming interventions may include hormone therapy and gender-affirming surgical procedures such as genital or breast surgery and facial contouring.[3,4] These interventions have been gaining attention from third-party payers in the past few years because health insurance coverage for transgender individuals has been shown to be both affordable and cost-effective.[5] State and federal regulations have shifted toward ensuring coverage of gender-affirming care, with Section 1557 of the Affordable Care Act most recently banning discrimination on the basis of gender identity, while private insurers are also expanding coverage to include gender-affirming care.[6]

Plastic surgeons have found that even minor surgical alterations in transgender patients can have a profound improvement on patients' self-esteem and functioning.[7] These surgical procedures range from penile,[8,9] to neovaginal reconstruction[10] and chest wall contouring.[11] However, surgical outcomes resulting from these procedures remain understudied. In addition, although some studies[12,13] have estimated that only 20% to 40% of transgender individuals seek gender-affirming surgery, these estimates are only based on surveys of convenience samples of transgender individuals, which limits their generalizability.

The objective of the present study was to investigate the incidence of and temporal trends in gender-affirming surgery using a nationally representative data set. We also review trends in payer status of patients who seek these procedures. As transgender individuals have become more visible in mainstream society, we hypothesize that an increasing number of gender-affirming surgical procedures have occurred over time.

Key Points

Question What are the incidence of and trends in gender-affirming surgery over time in the United States?

Findings In this population-based study of 37 827 gender-affirming surgical encounters, genital surgery increased over time and most patients undergoing these procedures were self-payers. The number of patients seeking these procedures who were covered by Medicare or Medicaid increased from 2012 to 2014 by 3-fold.

Meaning As coverage for these procedures increases, likely so will demand for qualified surgeons to perform them.

Methods

Study Participants and Sampling

Using the National Inpatient Sample (NIS), we identified patients who had an *International Classification of Diseases, Ninth Revision* (*ICD-9*) diagnosis code of transsexualism (TS) (code 302.5) or gender identity disorder (GID) (codes 302.6 and 302.85). The study period was from 2000 to 2014, and there were no age-related restrictions for collecting information about the overall patient population with diagnosis codes for TS or GID. The initial analyses were done from June to August 2015. This project was deemed exempt from review by the Johns Hopkins Medical Institutions Institutional Review Board.

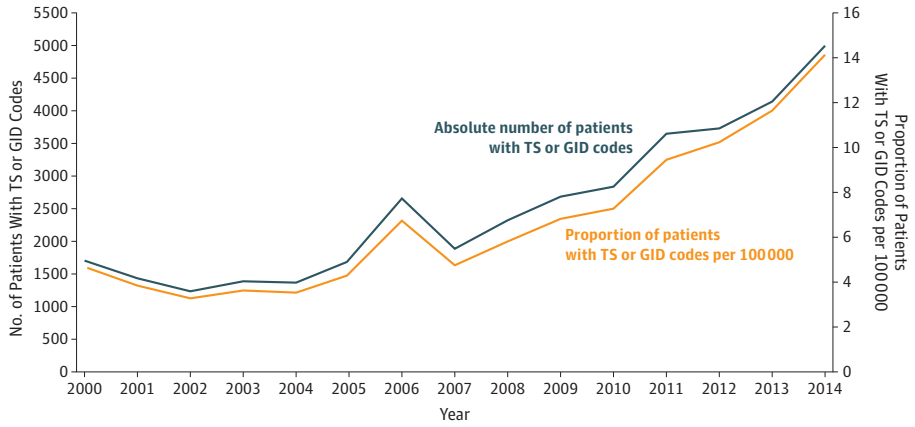
The NIS collects inpatient health record information from approximately 1000 hospitals per year across a varied number of states, with 46 states represented in 2011. The total pool of hospitals is considered representative of 95% of the US population. A stratified sampling method is then used to choose 20% of nonrehabilitation hospitals. The NIS analysts then apply sampling weights that are based on each hospital's discharges as recorded by the American Hospital Association. This sampling method changed in 2012 from sampling 20% of hospitals to sampling 20% of total discharges from the pool of hospitals that are part of the NIS annually. The specific sampling strategy used by the NIS is described elsewhere.[14,15]

Data Collection and Analysis

All data regarding demographics, payment, and procedures were extracted from the NIS. Gender-affirming surgery was defined using *ICD-9* procedure codes. The following procedures were considered to be gender affirming among transgender patients who were transitioning from male to female (MtF): bilateral orchiectomy (code 62.41), amputation of penis (code 64.3), vaginal construction (code 70.61), vaginal construction with graft or prosthesis (code 70.63), bilateral breast augmentation (code 85.52), and bilateral breast implant (code 85.54). The following operations were considered to be gender affirming among transgender patients transitioning from female to male (FtM): bilateral salpingo-oophorectomy (codes 65.61 and 65.63), obliteration and total excision of vagina (code 70.4), total bilateral salpingectomy (code 66.51), operations on clitoris (code 71.4), vulvectomy (code 71.62), total hysterectomy (codes 68.4x and 68.5x), testicular prosthesis (code 62.7), construction of penis (code 64.43), bilateral extended mastectomy (code 85.48), and bilateral mastectomy (codes 85.42, 85.44, and 85.46). Code 64.5 refers to operations for sex change that are not classified elsewhere. Only patients who were 18 years or older were included in our analysis of individuals undergoing gender-affirming surgical procedures. The Clinical Classifications Software provided by the Healthcare Cost and Utilization Project was used to assess nonsurgical reasons for hospital admission of patients with TS or GID codes.[16]

When referring to the sex category, the NIS data use the following 4 discrete variables: male, female, inconsistent, or missing. *Inconsistent* refers to individuals whose sex as seen on their medical record does not match a procedure that they are receiving,[17] such as a male patient who is undergoing a hysterectomy. In these situations, the *ICD-9* procedure code in question is also recoded as inconsistent. Because we only included patients who had a diagnosis code of TS or GID, we assumed that the inconsistent surgical procedure would refer to patients undergoing gender-affirming surgery who had a sex variable in their medical record that was not compatible with their procedure. Therefore, an FtM transgender patient who had modified his sex to male on his medical record and was

Figure. Temporal Trends in Reporting TS or GID Diagnosis Codes in the National Inpatient Sample Data Set



TS indicates transsexualism; GID, gender identity disorder.

undergoing a hysterectomy is classified as having an inconsistent surgical procedure and is considered to have undergone genital gender-affirming surgery in our analysis.

When analyzing NIS data collected before 2012, hospitals were classified as high-volume and low-volume centers based on the number of gender-affirming procedures completed each year. Hospitals that performed more than 50 gender-affirming procedures per year were considered to be high-volume centers. Bivariable comparisons were made based on 2 time frames, namely, 2000-2005 and 2006-2011. Ranges of 5 years were chosen to dilute possible selection bias where high-volume hospitals would be sampled in one year but not another. Due to the use of different sampling methods, data from 2012 to 2014 were analyzed and compared separately and on a yearly basis.

χ^2 Tests were used to compare global differences by temporal trends for the defined time points. When estimating the proportion of patients with TS or GID diagnosis codes compared with the global population, the numerator included patients with these codes for a specific year, and the denominator included the weighted total number of patients in the NIS data set for that same year. Statistical significance was defined as 2-sided $P < .05$.

Results

Overall, a weighted estimate of 37 827 encounters with TS and/or GID diagnosis codes from 2000 to 2014 were included in this study. Of all encounters, 4118 (10.9%) involved gender-affirming surgery. Both the absolute and relative numbers show an increase in the estimates of patients who had a diagnosis code of TS or GID over time (**Figure**). The rates increased by 3.67-fold, from 3.87 per 100 000 patients in 2000 to 14.22 per 100 000 patients in 2014. Overall, transgender patients identified in the NIS had a median age of 38 years and predominantly self-identified as being of white race/ethnicity (57.1%). A total of 40.5% of patients with TS or GID diagnosis codes had mental health listed as their diagnosis code (**Table 1**).

The subanalysis of patients who sought gender-affirming surgery during 2000 to 2011 showed that these patients were more likely to pursue genital surgery alone. While 83.9% of patients in 2006-2011 sought genital surgery only, 72.0% of patients in 2000-2005 pursued genital surgery only ($P = .003$). These patients were also becoming more likely to pay out of pocket for these procedures. In 2006-2011, a total of 65.8% of patients had no health coverage plan; in 2000-2005, a total of 50.8% of patients did not have a health coverage plan ($P < .001$). No patients who underwent inpatient gender-affirming surgery died during hospitalization during either period (**Table 2**).

Stratifying these data by center volume shows that compared with low-volume centers high-volume centers are more likely to admit patients who are seeking gender-affirming surgery who do not have any health coverage plan. Self-payers represented 84.4% of patients seeking surgery in high-volume centers compared with 28.7% for those seeking them in low-volume centers ($P < .001$). As summarized in **Table 3**, more than three-quarters (76.5%) of patients who were seeking these operations at high-volume centers sought MtF procedures, which is significantly higher than the proportion of patients who sought MtF procedures in low-volume centers (6.2%) ($P < .001$).

When comparing annual data after 2012, the analysis shows that there has not been any significant change in the racial/ethnic proportions of patients seeking these operations: 68.2% of the patients in 2012 self-identified as being of white race/ethnicity, while 68.3% of patients in 2014 self-identified as such ($P = .36$) (**Table 4**). There was a nonsignificant increase in the number of patients seeking genital procedures only: 66.3% in 2014 sought these operations alone compared with 62.1% in 2012 ($P = .62$). There also was not any significant difference in health insurance coverage of patients seeking gender-affirming surgery in that period, with most still having no health coverage plan (46.4% were self-payers over the 3 years). However, the percentages of those patients who were self-payers decreased over time: 53.0% of patients were self-payers in 2012, 50.0% in 2013, and 39.4% in 2014 ($P = .10$). Meanwhile, the percentage of

Table 1. Characteristics of Patients Who Have a Diagnosis Code for Transsexualism or Gender Identity Disorder in the National Inpatient Sample

Variable	No./Total No. (%) (N = 37 827)
Age, median (IQR), y	38 (26-49)
Sex category	
Male	20 548 (54.3)
Female	14 492 (38.3)
Inconsistent	1964 (5.2)
Missing	823 (2.2)
Race/ethnicity	
White	21 588 (57.1)
Black	5415 (14.3)
Hispanic	2414 (6.4)
Asian/Pacific Islander	576 (1.5)
Native American	188 (0.5)
Other	1248 (3.3)
Missing	6398 (16.9)
Insurance	
Medicare	9210 (24.3)
Medicaid	10 426 (27.6)
Private	10 336 (27.3)
Self-pay	5342 (14.1)
Other	2312 (6.1)
Missing	201 (0.5)
Region	
Northeast	9211 (24.4)
Midwest	9121 (24.1)
South	8211 (21.7)
West	11 284 (29.8)
Reason for hospital admission[a]	
Genital surgery[b]	3586/34 882 (10.3)
Breast surgery[b]	358/34 882 (1.0)
Both surgical procedures[b]	486/34 882 (1.4)
Other (nongenital, nonbreast) surgery	3692/34 882 (10.6)
Mental health	14 128/34 882 (40.5)
Substance abuse	1038/34 882 (3.0)
HIV	871/34 882 (2.5)
Poison/suicide	1262/34 882 (3.6)
Other	9461/34 882 (27.1)
In-hospital mortality	162 (0.4)
Length of stay, median (IQR), d	4 (2-7)

Abbreviation: IQR, interquartile range.

[a] Denominator includes only those who are 18 years or older (n = 34 882).

[b] Gender-affirming surgery is included as a subset of this category.

patients who were seeking these procedures and who were covered by Medicare or Medicaid increased by 3-fold in 2014 (to 70) compared with 2012-2013 (from 25). No patients who underwent inpatient gender-affirming surgery died during hospitalization during any year.

Discussion

This is the first study to our knowledge that broadly evaluates national temporal trends in gender-affirming surgery for transgender patients in the United States. The results identify and characterize inpatient gender-affirming procedures for transgender patients using an existing national health data repository. There were no cases of in-hospital mortality reported among patients undergoing inpatient gender-affirming surgery. There is an increasing trend in reporting the diagnosis of TS and/or GID codes among patients within the NIS. Validation of the above findings is limited by the lack of routine, standardized collection of gender identity information in electronic health record systems,[18-21] which could then be reported out to national clinical data repositories, including the NIS, the American College of Surgeons' National Surgical Quality Improvement Program, or the National Trauma Data Bank. Culturally appropriate methods for collecting these data have been outlined by several leading groups in the field.[22,23] Gender identity information should be accurately collected in all electronic health records[24,25] using the 2-step approach adopted by the Center of Excellence for Transgender Health at the University of California, San Francisco, which consists of asking patients about their sex at birth and then about their gender identity. This method avoids pathologizing transgender identities by using diagnosis codes to refer to them.[26] Technical guidance has been outlined to describe how these data should be stored.[25] Widespread adoption of gender identity data collection in health care settings and reporting these back to data repositories like the NIS is the only way to truly evaluate trends and opportunities to improve care for this population.[27]

The high prevalence of mental health diagnosis codes is consistent with the high prevalence of depression, anxiety, and suicidal ideation in this population.[28] Our data suggest that genital surgery is the most common type of inpatient gender-affirming surgery; however, these data do not include gender-affirming surgical procedures performed in outpatient settings, which likely includes most chest, breast, and facial surgery. Data on gender-affirming care, including surgery, should be collected in both inpatient and outpatient settings to better identify trends, outcomes, and opportunities to improve care.

Our results confirm findings from other convenience sample studies[13,29,30] regarding the frequent lack of insurance coverage among patients with codes for TS and/or GID.[31] Although the data set does not provide information about what procedures third-party payers are specifically covering, it shows a 3-fold increase between 2012-2013 (from 25) and 2014 (to 70) in those who are covered by Medicare or Medicaid. These estimates fall short in comparison with recently published estimates on coverage of transgender patients in 2013 by Medicare.[32] However, these data still support the hypothesis that after the Centers for Medicare & Medicaid Services began covering transition-related services for patients covered by Medicare in 2014 more transgender individuals enrolled in these health programs. This expansion of coverage may rep-

Table 2. Time Trends in Characteristics of Patients Who Sought Inpatient Gender-Affirming Surgery, 2000 to 2011[a]

Variable	2000-2005 (n = 969)	2006-2011 (n = 1889)	Total (N = 2858)	*P* Value[b]
Age, median (IQR), y	40 (33-47)	39 (29-51)	39 (30-49)	.82
Sex category, No. (%)				
Male	164 (16.9)	136 (7.2)	300 (10.5)	<.001
Female	250 (25.8)	479 (25.4)	730 (25.5)	
Inconsistent	551 (56.9)	821 (43.5)	1372 (48.0)	
Missing	[c]	453 (24.0)	457 (16.0)	
Race/ethnicity, No. (%)				
White	709 (73.2)	1414 (74.9)	2124 (74.3)	<.001
Black	18 (1.9)	57 (3.0)	75 (2.6)	
Hispanic	[c]	123 (6.5)	133 (4.7)	
Asian/Pacific Islander	13 (1.3)	51 (2.7)	64 (2.2)	
Native American	14 (1.4)	0	14 (0.5)	
Other	0	16 (0.8)	16 (0.6)	
Missing	205 (21.2)	228 (12.1)	433 (15.2)	
Insurance, No. (%)				
Medicare	37 (3.8)	65 (3.4)	103 (3.6)	<.001
Medicaid	114 (11.8)	33 (1.7)	147 (5.1)	
Private	248 (25.6)	483 (25.6)	731 (25.6)	
Self-pay	492 (50.8)	1242 (65.7)	1734 (60.7)	
Other	[c]	23 (1.2)	33 (1.2)	
Missing	67 (6.9)	43 (2.3)	110 (3.8)	
Surgery type, No. (%)				
Genital	698 (72.0)	1584 (83.9)	2282 (79.8)	.003
Breast	25 (2.6)	72 (3.8)	97 (3.4)	
Both	166 (17.1)	166 (8.8)	332 (11.6)	
Inconsistent	80 (8.3)	67 (3.5)	147 (5.1)	
Diagnosis code, No. (%)				
TS	137 (14.1)	906 (48.0)	1043 (36.5)	<.001
GID	425 (43.9)	478 (25.3)	903 (31.6)	
Both	407 (42.0)	506 (26.8)	913 (31.9)	
Region, No. (%)				
Northeast	122 (12.6)	115 (6.1)	237 (8.3)	<.001
Midwest	470 (48.5)	95 (5.0)	567 (19.8)	
South	125 (12.9)	172 (9.1)	297 (10.4)	
West	251 (25.9)	1507 (79.8)	1758 (61.5)	
In-hospital mortality, No. (%)	0	0	0	.99
Length of stay, median (IQR), d	4 (2-8)	3 (2-6)	3 (2-6)	<.001

Abbreviations: GID, gender identity disorder; IQR, interquartile range; TS, transsexualism.

[a] The sum of 2000-2005 and 2006-2011 may not equal the total due to weighting and rounding.

[b] *P* values are from global χ^2 tests.

[c] Unable to display frequency per Healthcare Cost and Utilization Project rules[17] (n <11).

resent an important first step in enabling transgender patients to access previously unaffordable, yet necessary, gender-affirming care. In addition, the implementation of the Affordable Care Act in 2014 may have had a role in this increase.[33] Furthermore, when stratifying by center volume, patients seeking surgical procedures in high-volume centers are mostly self-payers, while those admitted to low-volume centers are not. This reflects a potential rejection of third-party payer plans from high-volume centers in relation to the coverage of these procedures. Gender-affirming surgery is complicated, requiring surgeons to develop and refine highly technical surgical skills.[34] It is possible that self-paying patients may be getting higher-quality care at high-volume centers, as has been observed in other types of surgery.[35] This further underscores the need for robust process, clinical, and patient-reported outcomes data reporting nationally to assess and improve gender-affirming surgical quality.

Limitations

This study has several inherent limitations. First, the process of identifying transgender patients relied on the use of diagnosis codes for TS and/or GID. In general, diagnosis codes in administrative data are known to have variable reliability depending on the topic of interest.[36,37] Due to the nature of the NIS as a deidentified national sample, it would be impossible to validate that individuals with diagnosis codes for TS and/or GID do, in fact, self-identify as transgender. Furthermore, using these codes, this analysis estimated the proportion of trans-

Table 3. Characteristics of Patients Who Sought Inpatient Gender-Affirming Surgery by Center Volume, 2000 to 2011[a]

Variable[b]	No. (%)		
	Low Volume (n = 1218)	High Volume (n = 1641)	Total (N = 2858)
Insurance			
Medicare	98 (8.0)	[c]	103 (3.6)
Medicaid	147 (12.1)	0	147 (5.1)
Private	486 (39.9)	245 (14.9)	731 (25.6)
Self-pay	349 (28.7)	1385 (84.4)	1734 (60.7)
Other	33 (2.7)	0	33 (1.2)
Missing	105 (8.6)	[c]	110 (3.8)
Surgery classification			
Unknown	231 (19.0)	24 (1.5)	255 (8.9)
MtF	75 (6.2)	1255 (76.5)	1330 (46.5)
FtM	834 (68.5)	51 (3.1)	886 (31.0)
Inconsistent	77 (6.3)	310 (18.9)	387 (13.5)

Abbreviations: FtM, female to male; MtF, male to female.

[a] The sum of low volume and high volume may not equal the total due to weighting and rounding.

[b] $P < .001$ for both comparisons from global χ^2 tests.

[c] Unable to display frequency per Healthcare Cost and Utilization Project rules[17] (n <11).

Table 4. Time Trends in Characteristics of Patients Who Sought Inpatient Gender-Affirming Surgery, 2012 to 2014

Variable	2012 (n = 330)	2013 (n = 410)	2014 (n = 520)	Total (N = 1260)	*P* Value[a]
Age, median (IQR), y	35 (24-46)	35 (25-47)	36.5 (26-51)	36 (25-48)	.75
Sex category, No. (%)					
Male	50 (15.2)	85 (20.7)	150 (28.8)	285 (22.6)	<.001
Female	115 (34.8)	85 (20.7)	85 (16.3)	285 (22.6)	
Inconsistent	70 (21.2)	105 (25.6)	260 (50.0)	435 (34.5)	
Missing	95 (28.8)	135 (32.9)	25 (4.8)	255 (20.2)	
Race/ethnicity, No. (%)					
White	225 (68.2)	270 (65.9)	355 (68.3)	850 (67.5)	.36
Black	[b]	15 (3.7)	45 (8.7)	70 (5.6)	
Hispanic	25 (7.6)	15 (3.7)	40 (7.7)	80 (6.3)	
Asian/Pacific Islander	15 (4.5)	[b]	25 (4.8)	50 (4.0)	
Native American	0	[b]	0	[b]	
Other	35 (10.6)	75 (18.3)	35 (6.7)	145 (11.5)	
Missing	20 (6.1)	20 (4.9)	20 (3.8)	60 (4.8)	
Region, No. (%)					
Northeast	115 (34.8)	150 (36.6)	185 (35.6)	450 (35.7)	.11
Midwest	25 (7.6)	15 (3.7)	35 (6.7)	75 (6.0)	
South	35 (10.6)	0	30 (5.8)	65 (5.2)	
West	155 (47.0)	245 (59.8)	270 (51.9)	670 (53.2)	
Insurance, No. (%)					
Medicare	[b]	[b]	35 (6.7)	50 (4.0)	.10
Medicaid	[b]	[b]	35 (6.7)	45 (3.6)	
Private	145 (43.9)	190 (46.3)	235 (45.2)	570 (45.2)	
Self-pay	175 (53.0)	205 (50.0)	205 (39.4)	585 (46.4)	
Other	0	0	[b]	[b]	
Surgery type, No. (%)					
Genital	205 (62.1)	250 (61.0)	345 (66.3)	800 (63.5)	.62
Breast	15 (4.5)	20 (4.9)	35 (6.7)	70 (5.6)	
Both	50 (15.2)	55 (13.4)	40 (7.7)	145 (11.5)	
Inconsistent	60 (18.2)	85 (20.7)	100 (19.2)	245 (19.4)	
Diagnosis code, No. (%)					
TS	15 (4.5)	30 (7.3)	25 (4.8)	70 (5.6)	.77
GID	180 (54.5)	250 (61.0)	310 (59.6)	740 (58.7)	
Both	135 (40.9)	130 (31.7)	185 (35.6)	450 (35.7)	
In-hospital mortality, No. (%)	0	0	0	0	.99
Length of stay, median (IQR), d	3 (2-3)	3 (3-3)	3 (3-3)	3 (3-3)	<.001

Abbreviations: GID, gender identity disorder; IQR, interquartile range; TS, transsexualism.

[a] *P* values are reported from global χ^2 tests.

[b] Unable to display frequency per Healthcare Cost and Utilization Project rules[17] (n <11).

gender patients who were seeking care at only 14 per 100 000 patients in 2014, which is dramatically less than the national estimate.[38] This large difference suggests that this method underestimates the true number of hospitalized transgender patients. This also challenges the use of these codes to estimate transgender populations in the Centers for Medicare & Medicaid Services data set. Second, the NIS data set does not provide patient identifiers, which could highlight instances where the same patient is hospitalized at 2 different times. Therefore, estimates of the number of hospitalizations and procedures may be inflated due to counting the same patient multiple times. Third, the NIS changed its sampling method during the period under study. Before 2012, NIS data were abstracted from 20% of randomly selected hospitals; therefore, it could include high-volume centers during one year and not include them in another, which could have skewed each year's results. In 2006, a total of 685 gender-affirming procedures were recorded, with 70.5% of patients seeking them attending high-volume centers, while only 39 surgical procedures were recorded in 2004, when high-volume hospitals were not included in the sampling. Despite exploring 5-year ranges of time to account for this effect, there may have been residual bias. It is likely that the data presented from 2012 onward are more representative of patients with such diagnosis codes. Fourth, the NIS captures data collected during inpatient encounters only and does not report information for surgical procedures in ambulatory settings. Many common gender-affirming surgery procedures, including certain facial feminization procedures and breast augmentation, can be done on an outpatient basis. Cognizant of the personal expense that patients might incur, some experienced surgeons in gender-affirming surgery might prefer to complete many procedures in an ambulatory setting to reduce the cost burden on patients.

Conclusions

Among patients who had TS and/or GID diagnosis codes during their hospitalization, only approximately 10% were hospitalized for gender-affirming surgery. Furthermore, more than half of the patients undergoing these procedures are uninsured, although an increasing number of these individuals are covered by Medicare or Medicaid or private insurance. However, the efforts to estimate the numbers of transgender individuals hospitalized and seeking gender-affirming surgery in the United States are fraught with methodological difficulties, largely due to the absence of routine, standardized collection and reporting of gender identity in health care settings. Future efforts should improve gender identity data collection in health care settings and mandate reporting to ensure that gender-affirming care can be assessed. Furthermore, quality improvement agencies should focus on adopting a new set of patient-centered measures to better monitor transgender care and identify opportunities for advancing transition-related services both in high-volume and low-volume centers that perform such services. In addition, more research is needed to understand gender-affirming procedures in the outpatient setting. Policies banning discrimination based on gender identity among third-party payers are essential to engage transgender patients in care and ensure coverage of these medically necessary procedures.

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