25 YEARS OF SURGICAL OUTCOMES RESEARCH USING ILLINOIS HOSPITAL DATA

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DIVISION OF GENERAL INTERNAL MEDICINE

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ILLINOIS HOSPITAL DISCHARGE DATA

- MANDATED ADMINISTRATIVE (BILLING AND CLINICAL) DATA COLLECTED FROM NON-FEDERAL IL HOSPITALS/ PUBLIC AVAILABILITY OF 'RESEARCH' DATASET (RODS) IDPH
- CATEGORY III: NON-PROFIT/EDUCATIONAL INSTITUTION/COLLEGE STUDENT NON-IL INSTITUTION CUSTOMERS WITH NO RESALE OR REDISTRIBUTION RESEARCH ORIENTED DATASET
- INPATIENT: $1,500 QUARTER $4,500 A YEAR PLUS OUTPATIENT HOSPITAL DEPT 1,000 $3,000
- HTTPS://DPH.ILLINOIS.GOV/TOPICS-SERVICES/PREVENTION-WELLNESS/PATIENT-SAFETY-QUALITY/DISCHARGE-DATA.HTML
-

DATA ELEMENTS

- Admission and discharge dates, patient age, zip code, sex, race and ethnicity, insurance status, DRG, discharge status
- LOS (proxy for operative complications) and total charges (operatingroomcharge, othercharge, devicecharge, pharmacycharge, imagingcharge, diagcharge, ancillarycharge)
- ICD PDX and up to 24 2nd Dx and 24 Procedure Codes
- Attending MD and Operating Clinician codes (can match to MD IDs)
- Does not have:
- Linked Encrypted Patient Identifiers (Visits not Patients)
- outpatient care data other than Hospital Departments

VASCULAR SURGERY DIVISION 1990S-EARLY 2000S

- Drs. James Yao, Bill Pearce, Walt McCarthy
- First AHCPR (now AHRQ) grant: observational study to investigate patient-reported functional outcomes after LE bypass, angioplasty or watchful waiting for patients with intermittent claudication -12 Chicago-area vascular surgery practices
- Controversy about increasing use of limb salvage procedures for claudication as amputation rates increased in late 1990s (the 'churning hypothesis')
- Beginning of PSRO (SF36, Physical Functioning) Measuring walking speed and distance, Mary McDermott a GIM Fellow then….now national PAD expert
- Logistic model of Amputation vs LE bypass/angioplasty–shows racial and income disparities in likelihood of amputation among patients hospitalized with LE ischemia (based on zip code areas before individual patient race and ethnicity collected)

Peripheral Bypass Surgery and Amputation

Northern Illinois Demographics, 1993 to 1997

Joe Feinglass, PhD; Saurabh Kaushik, MD; Dan Handel; Amy Kosifas, MBA; Gary J. Martin, MD; William H. Pearce, MD

Hypothesis: This study tests whether age, sex, income, and racial differences predict rates of aortoiliac and femorodistal bypass surgery and above- and below-knee amputation for residents of northern Illinois from 1993 to 1997.

Design: A hospital discharge survey study describing standardized procedure rates and the odds of undergoing amputation vs bypass procedures for specified sociodemographic populations. Multiple logistic regression was used to compare the odds of undergoing major amputation vs bypass surgery controlling for the prevalence of diabetes, gangrene, high-risk comorbid conditions, and treatment at major area teaching hospitals.

Results: Between 1993 and 1997, 19 250 study procedures were performed during 18 603 admissions at 105 Illinois hospitals. The mean annual major amputation rate per 100 000 was 20.77; femorodistal and aortoiliac bypass rates were 24.26 and 4.70, respectively. Significantly higher odds (between 1.14 and 1.36) of undergoing amputation were found for low-income areas and ZIP codes with large and medium African American populations. Severe comorbidity, diabetes, and especially gangrene (odds ratio, 12.9) predicted amputation, while treatment at a major teaching hospital and male sex predicted a higher odds of undergoing bypass procedures.

Conclusions: Results are consistent with unmeasured racial and income differences in the severity of atherosclerosis (or related risk factors such as smoking, diet, and exercise), barriers to timely primary care, or selective referral of lower-income and African American patients to hospitals with less vascular surgery capacity. These findings imply a particular need to identify and review the quality of care for patients undergoing primary lower-extremity amputations.

Arch Surg. 2000;135:75-80

COMPARING POPULATION-BASED AMPUTATION RATES USING ACS CENSUS DATA

- 323 NI Zip ZCTAs from (5 year rolling average) to get distinct 9 County Northern Illinois population procedure rates, including by median income level
- ICD-9 coding for gangrene/ diabetes/ PAD level severity and comorbidity measures
- Unable to assess primary versus repeat amputation procedures same patient- later research on racial disparities in repeat amputation

A census-based analysis of racial disparities in lower extremity amputation rates in Northern Illinois, 1987-2004

Joe Feinglass, PhD,[a] Shabir Abadin, MD, MPH,[c] Jason Thompson, BA,[a] and William H. Pearce, MD,[b] *Chicago, Ill*

Background: **Given improvements in care for peripheral vascular disease and diabetes over the last two decades, it was of interest whether racial disparities in lower extremity amputation rates had changed.**
Methods: **Hospital data for 18 years (1987-2004) were used to compute above, below, and through foot amputation rates for over eight million people living in the Chicago metropolitan area. Three areas were created from zip code level census data. Differences in amputation rates were compared between residents of zip code areas that were >50% African American, 10% to 50% African American, or <10% African American.**
Results: **The largely African American area of the South and West sides of Chicago, with less than 15% of the area population, accounted for 27% of all amputation discharges (n = 33,775) over the 18 years. For all residents of northern Illinois, major (above and below knee) amputation rates declined to 17 per 100,000 residents over the last decade, and both inpatient mortality and length of stay fell throughout the period. However, residents of largely African American zip codes had over five times higher per capita amputation rates than residents of primarily white zip codes.**
Conclusions: **Racial disparities have remained remarkably constant, despite progress in reducing the overall major amputation rate in northern Illinois. Addressing these disparities will require that low income, medically complex patients at risk of limb loss receive timelier, high performance care, combined with community-based public health and preventive medicine interventions that address the social determinants of health. (J Vasc Surg 2008;47:1001-7.)**

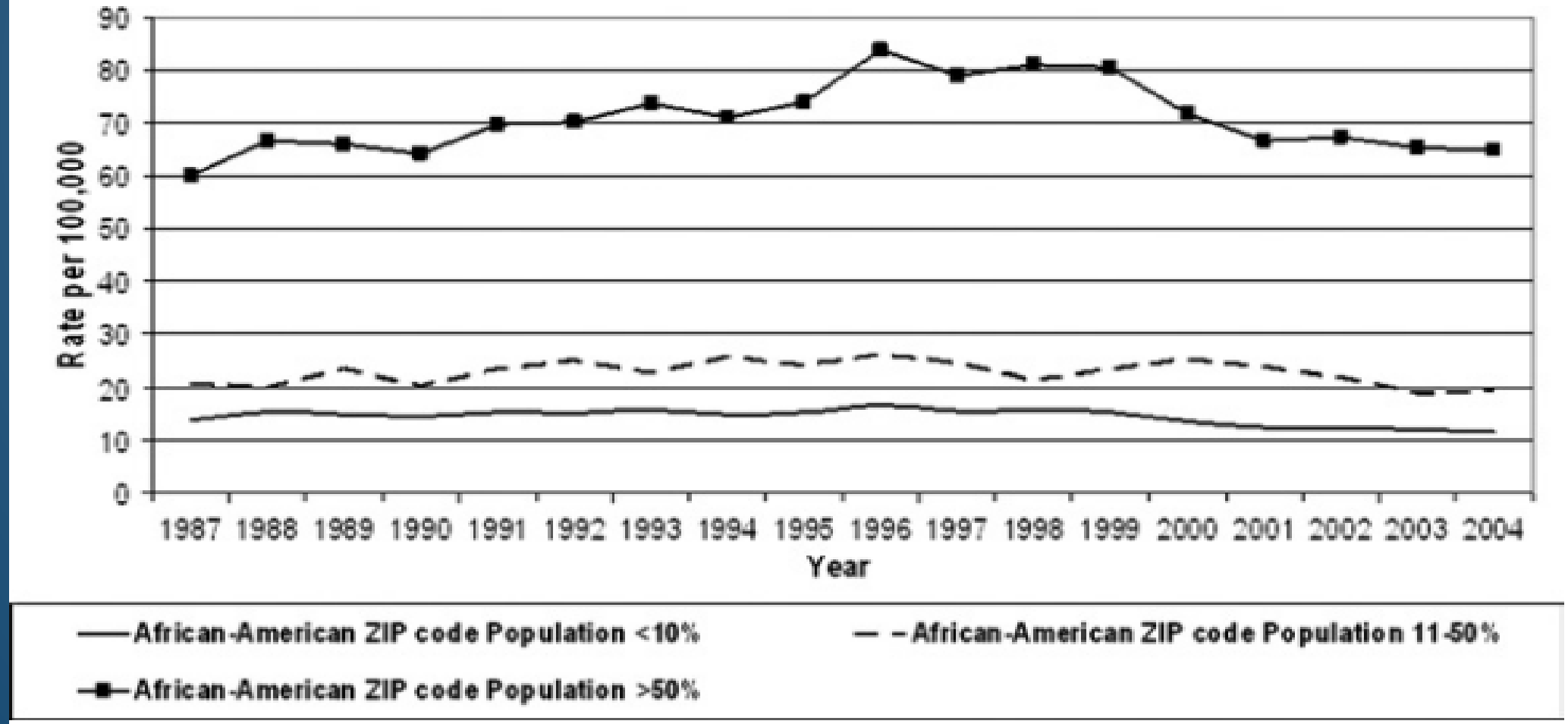

Fig 3. Major amputation rates for areas with differing African American population percentages, 1987-2004 (n = 28,042 discharges of Northern Illinois residents).

The effect of hospital vascular operation capability on outcomes of lower extremity arterial bypass graft procedures

James L. Ebaugh, MD, Joe Feinglass, PhD, *and* **William H. Pearce, MD,** *Chicago, Ill*

Background. *The purpose of this study was to determine whether hospitals with a high capability for vascular operations have lower rates of inpatient mortality, major complication, and major amputation with lower extremity arterial bypass (LEAB) procedures than do less well-equipped hospitals after controlling for hospital procedure volume and patient characteristics.*

Methods. *Admissions of 16,422 northern Illinois residents to Illinois hospitals for aortoiliac (AI) or distal bypass operations during 1993 to 1999 were analyzed. Hospitals were considered to have a high capability for vascular operations if they had cardiac surgical facilities and either an accredited blood flow laboratory, general surgical residency, or fellowship training in vascular surgery. Logistic regression was used to model the effect of hospital capability on mortality after controlling for hospital LEAB procedure volume, operation level, severity of illness, age, sex, and emergent admission.*

Results. *Sixteen of 98 Illinois hospitals with 34.4% of the sample patients, including 8 of 18 hospitals with more than 40 admissions for LEAB procedures annually, were classified as having high surgical capability. Hospitals classified as having high versus low capability had lower mortality (2.8% vs 3.7%;* P = *.003) and amputation rates (4.6% vs 4.9% [not significant]) but higher major complication rates (9.8% vs 8.5%;* P = *.006).*

Conclusions. *Mortality outcomes for LEAB procedures were superior at high capability hospitals, even after controlling for patient characteristics, disease severity, and LEAB volume. Hospital complication rates were not correlated with mortality rates and may not be a meaningful measure of quality of care.*
(Surgery 2001;130:561-9.)

From the Division of Vascular Surgery, Department of Surgery, Division of General Internal Medicine, and Institute for Health Services Research and Policy Studies, Northwestern University, Chicago, Ill

Patient outcomes for segmental colon resection according to surgeon's training, certification, and experience

Jay B. Prystowsky, MD, MHPE, Georges Bordage, MD, PhD, *and* **Joseph M. Feinglass, PhD,** *Chicago, Ill*

Background. *We examined patient outcomes for colon resection to determine if they varied according to surgeon-specific factors including: (1) American Board of Surgery (ABS) certification, (2) colorectal surgery subspecialty certification, (3) site of residency training (university-based vs nonuniversity-based), and (4) years of experience since ABS certification.*

Methods. *We performed a retrospective study of 15,427 admissions of northern Illinois residents who underwent segmental colon resection as their primary operation from 1994 to 1997 at 76 nonfederal Illinois hospitals. There were 514 surgeons. Main outcome measures were inpatient mortality, complications, and hospital length of stay. Regression analyses with mixed effects were used to assess the significance of surgeon-specific variables as a predictor of outcomes after risk adjustment for patient age, gender, emergency admission, surgeon volume, hospital site, colon pathology, and comorbid illnesses.*

Results. *ABS-certification was associated with reduced mortality and morbidity. Increasing years of experience was associated with reduced mortality. Colorectal surgery certification and site of residency training did not significantly affect outcomes.*

Conclusion. *We were able to link patient outcomes with surgeon's training. Certification was an important determinant of patient outcomes for colon resection. Increasing surgeon experience also had a favorable effect on outcomes, suggesting a continued learning curve subsequent to residency. (Surgery 2002;132:663-72).*

Contents lists available at ScienceDirect

Surgery

journal homepage: www.elsevier.com/locate/surg

Characterizing endovascular aortic intervention outcomes for nonruptured aortic aneurysms by physician specialty

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ABSTRACT

Background: Evaluate patient outcomes after endovascular aortic interventions performed for nonruptured aortic aneurysms by physician specialties.
Methods: Endovascular aortic repair (EVAR), fenestrated or branched repair (F-BEVAR), and thoracic endovascular aortic repair (TEVAR) procedures were obtained from the Illinois Hospital Association Comparative Health Care and Hospital Data Reporting Services database from 2016 to 2019. Logistic and Poisson regression were used to determine outcomes by patient, physician, and hospital characteristics.
Results: A total of 4,935 procedures, 3,666 (74.3%) EVAR, 567 (11.5%) F-BEVAR, and 702 (14.2%) TEVAR were performed by vascular surgeons, interventional radiologists, interventional cardiologists, and cardiac surgeons. Vascular surgeons performed interventions equally between hospital types while interventional radiologists primarily performed interventions in teaching hospitals (68.1%) and interventional cardiologists and cardiac surgeons typically performed interventions in community hospitals (91.8% and 82.1%, respectively; $P < .001$). No differences in inpatient mortality were noted between specialties. Patients treated by interventional radiologists had increased odds of staying in the hospital $\geq$8 days (odd ration [OR] 1.95, 95% confidence interval [CI] 1.19–3.19) and patients treated by interventional cardiologists had lower odds of being admitted to the intensive care unit [ICU] (OR 0.42, 95% CI 0.18–0.95).
Conclusion: Differences in practice patterns among specialties performing endovascular aortic aneurysm repair for nonruptured aneurysms suggest opportunities for collaboration to optimize quality of care.

ORTHOPEDIC SURGERY EARLY 2000S

- Dr. Bing Chang arthritis functional outcomes and physical activity research
- TJR Surgery 'biggest bang for buck' outside trauma care and major contributor to "successful aging"

Origin of "Patient Safety" Research (formerly iatrogenesis)

- More recently Dr. Linda Suleiman TKR and THA studies of CMS bundled payment/outpatient tx incentives

Arthritis & Rheumatism (Arthritis Care & Research)
Vol. 51, No. 1, February 15, 2004, pp 110–116
DOI 10.1002/art.20072

ORIGINAL ARTICLE

How Safe Is Primary Knee Replacement Surgery? Perioperative Complication Rates in Northern Illinois, 1993–1999

JOE FEINGLASS,[1] HAGAY AMIR,[2] PATRICIA TAYLOR,[3] ITHAI LURIE,[2] LARRY M. MANHEIM,[2] AND ROWLAND W. CHANG[4]

Objective. **To describe inpatient complications for primary total knee replacement (TKR) in a period of rapidly growing orthopedic surgery capacity, declining length of stay, and more frequent discharge to rehabilitation facilities.**
Methods. **Complication incidence according to published coding algorithms was estimated for 35,531 primary TKR admissions of northern Illinois residents to 65 Illinois hospitals. Complication odds were estimated as a function of patients' clinical and sociodemographic status, hospital volume, residency training, TKR length of stay, International Classification of Diseases, Ninth Revision (ICD-9) coding intensity, and discharges to skilled nursing or rehabilitation facilities.**
Results. **Primary TKR admissions increased 36% between 1993 and 1999, length of stay declined 43%, average ICD-9 code use increased 31%, and rehabilitation discharges increased 68%. Major complication rates declined 44% (12.4% to 6.9%; $P < 0.0001$) over this period, reflecting a 50% reduction in the adjusted odds of complication between 1993 and 1999. There was no association of procedure volume and outcome.**
Conclusion. **It is likely that the reduction in complications reflects true safety improvements as well as reduced length of stay.**

CLINICAL ORTHOPAEDICS AND RELATED RESEARCH
Number 429, pp. 279–285

Revision Total Knee Arthroplasty Complication Rates in Northern Illinois

Joe Feinglass, PhD; Samuel Koo, MD, MPH†; and Jason Koh, MD†*

A paucity of population-based data exist which describe the rapid growth of revision total knee arthroplasties, changes in patient characteristics, or the association of hospital volume with complication rates. We analyzed whether inpatient complications for 2986 revision knee arthroplasties done on patients admitted to 63 hospitals in northern Illinois from 1993–1999 were correlated with volume of revision total knee arthroplasties. Coded complication rates for hospitals with less than seven, seven to 14, or greater than 14 annual procedures were compared using logistic regression to control for clinical and demographic characteristics of patients, hospital teaching status, and the proportion of the hospitals' patients discharged to rehabilitation facilities. Revision total knee arthroplasties increased 59%, and the overall complication rate declined from 9.3% during 1993–1996 to 7.3% during 1997–1999 (p = .04). When compared with the lowest volume hospitals, medium-volume hospitals had higher complication rates, whereas the highest volume hospitals were not significantly different. The absence of volume-outcome effects may be related to the relatively high volume of primary knee arthroplasties done at almost all area hospitals, surgeon group coverage across multiple hospitals, and the small annual number of revision total knee arthroplasties done during these years.

of TKAs almost tripled from 137,000 procedures per year to 328,000 per year.[11] The number of revision TKAs are expected to increase at an equally rapid rate as older implants require revision. Coyte et al[4] estimated a 7-year revision rate of 4.3–8.0% among patients who had primary TKAs in Ontario, Canada.

Compared with a primary TKA, a revision TKA is more technically demanding and complication rates are higher.[3,9,10,23,24] However, as the frequency of revision TKAs has grown, few articles have been little published with population-based data on actual complication rates in revision TKAs, trends in patient characteristics and hospital procedure volume, and whether there is an association between higher hospital procedure volume and lower complication rates. This current study presents longitudinal regional data describing the rate of increase in revision TKAs, changes in the demographic and clinical characteristics of patients admitted for revision TKAs, and an analysis of whether hospital volume is associated with the risk-adjusted incidence of serious inpatient complications or death. The findings provide a regional glimpse of trends in revision TKA volume and complication outcomes dur-

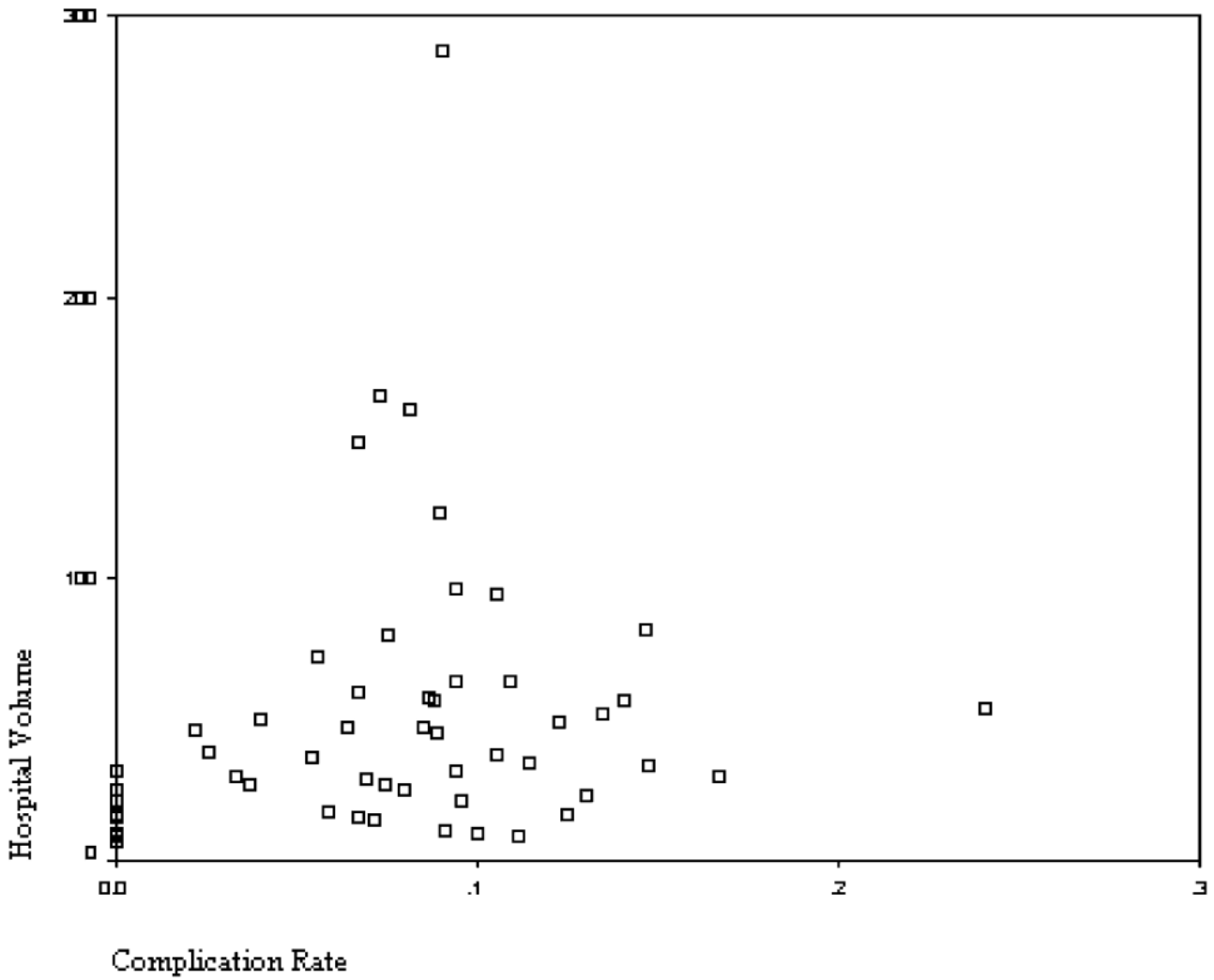

Fig 1. The correlation of 1993–1999 hospital volume and complication rates for revision TKAs is shown for 63 northern Illinois hospitals.

The Journal of Arthroplasty 35 (2020) 1466–1473

Contents lists available at ScienceDirect

The Journal of Arthroplasty

journal homepage: www.arthroplastyjournal.org

Health Policy & Economics

What Are the Risk Factors for 48 or More–Hour Stay and Nonhome Discharge After Total Knee Arthroplasty? Results From 151 Illinois Hospitals, 2016-2018

Akash H. Adhia, BS [a], Joe M. Feinglass, PhD [b], Linda I. Suleiman, MD [a, *]

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ABSTRACT

Background: Bundled payment programs and the Centers for Medicare and Medicaid Services removal of total knee arthroplasty (TKA) from the inpatient-only list potentially incentivize avoiding patients with extended length of stay (eLOS) and nonhome discharge (NHD). We aimed to describe which patients are most at risk of eLOS (>2 days), very eLOS (veLOS; >4 days), and NHD.

Methods: Admissions for unilateral TKAs at 151 Illinois nonfederal hospitals from January 2016 to June 2018 were selected from the Illinois Hospital and Health Systems Association COMPdata administrative hospital discharge database. Records included patient age, race and ethnicity, Illinois region, insurance status, principal diagnosis, and date of procedure. Zip code level median household income, Charlson comorbidity index, and obesity status were computed. Hospitals were characterized through their bundled payment participation status, academic status, and annual knee replacement volume. Poisson regression was used to test the associations between patient and hospital characteristics and the likelihood of eLOS, veLOS, and NHD.

Results: Of the 72,359 admissions included, 25.0% had an NHD, 41.1% had eLOS, and 4.0% veLOS. Female patients, those 75 years old or more as compared to those 65-74 years old, non-Hispanic blacks, Hispanics and Asians versus non-Hispanic whites, Medicaid/uninsured patients versus those privately insured, obese patients, those with nonzero Charlson comorbidity index, and those treated at low-volume hospitals (<200 TKAs/year vs >600 TKAs/year) were more likely to have eLOS, veLOS, and/or NHD ($P < .05$).

Conclusion: Arthroplasty surgeons may be incentivized to avoid the abovementioned patient groups due to bundled payment programs and recent Centers for Medicare and Medicaid Services legislation.

The Journal of Arthroplasty 35 (2020) 1776–1783

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The Journal of Arthroplasty

journal homepage: www.arthroplastyjournal.org

Health Policy & Economics

Disparities in Hip Arthroplasty Outcomes: Results of a Statewide Hospital Registry From 2016 to 2018

Joseph A. Weiner, MD [a], Akash H. Adhia, BS [a], Joe M. Feinglass, PhD [b], Linda I. Suleiman, MD [a, *]

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inpatient-only list

ABSTRACT

Background: In November 2019, Centers for Medicare and Medicaid Services announced total hip arthroplasty (THA) will be removed from the inpatient-only list. This may lead to avoidance of patients who have prolonged hospitalizations and discharge to skilled nursing facilities or push providers to unsafely push patients to outpatient surgery centers. Disparities in hip arthroplasty may worsen as patients are "risk stratified" preoperatively to minimize cost outliers. We aimed to evaluate which patient characteristics are associated with extended length of stay (eLOS)—greater than 2 days—and nonhome discharge in patients undergoing hip arthroplasty.

Methods: The Illinois COMPdata administrative database was queried for THA admissions from January 2016 to June 2018. Variables included age, sex, race and ethnicity, median household income, Illinois region, insurance status, principal diagnosis, Charlson comorbidity index, obesity, discharge disposition, and LOS. Hospital characteristics included bundled payment participation and arthroplasty volume. Using multiple Poisson regression, we examined the association between these factors and the likelihood of nonhome discharge and eLOS.

Results: There were 41,832 THA admissions from January 2016 to June 2018. A total of 36% had LOS greater than 2 midnights and 25.3% of patients had nonhome discharges. Female patients, non-Hispanic black patients, patients older than 75, obese patients, Medicaid or uninsured status, Charlson comorbidity index > 3, and hip arthroplasty for fracture were associated with increased risk of eLOS and/or nonhome discharge ($P < .05$).

Conclusion: With the Centers for Medicare and Medicaid Services emphasis on cost containment, patients at risk of extended stay or nonhome discharge may be deemed "high risk" and have difficulty accessing arthroplasty care. These are potentially vulnerable groups during the transition to the bundled payment model.

OBSTETRICS OUTCOMES RESEARCH

- Drs. Alan Peaceman, Bill Grobman and Lynn Yee maternal delivery outcomes
- Increase in Low Risk Cesarean Birth
- Severe Maternal Morbidity trends and disparities, other potentially preventable, route-specific complications
- ICD-9 and later ICD-10 studies (coding systems incommensurate)
- Hospital medical record coding intensity: number of codes used for uncomplicated delivery predicts complication coding rate
- Now studying EDW data for combined maternal and neonate outcomes, CA data for linked antepartum and postpartum hospital use
- More recent studies of disparities in access to MIS hysterectomy (Drs Jessica Traylor and Melissa Simon)

2002 MODELING 15.8% CESAREAN SECTION RATE AT NMH

0855-713X/02/113–117$03.00/0
AMERICAN JOURNAL OF MEDICAL QUALITY

Vol 17, No 3
May/Jun 2002

Risk-Adjustment of Cesarean Delivery Rates: A Practical Method for Use in Quality Improvement

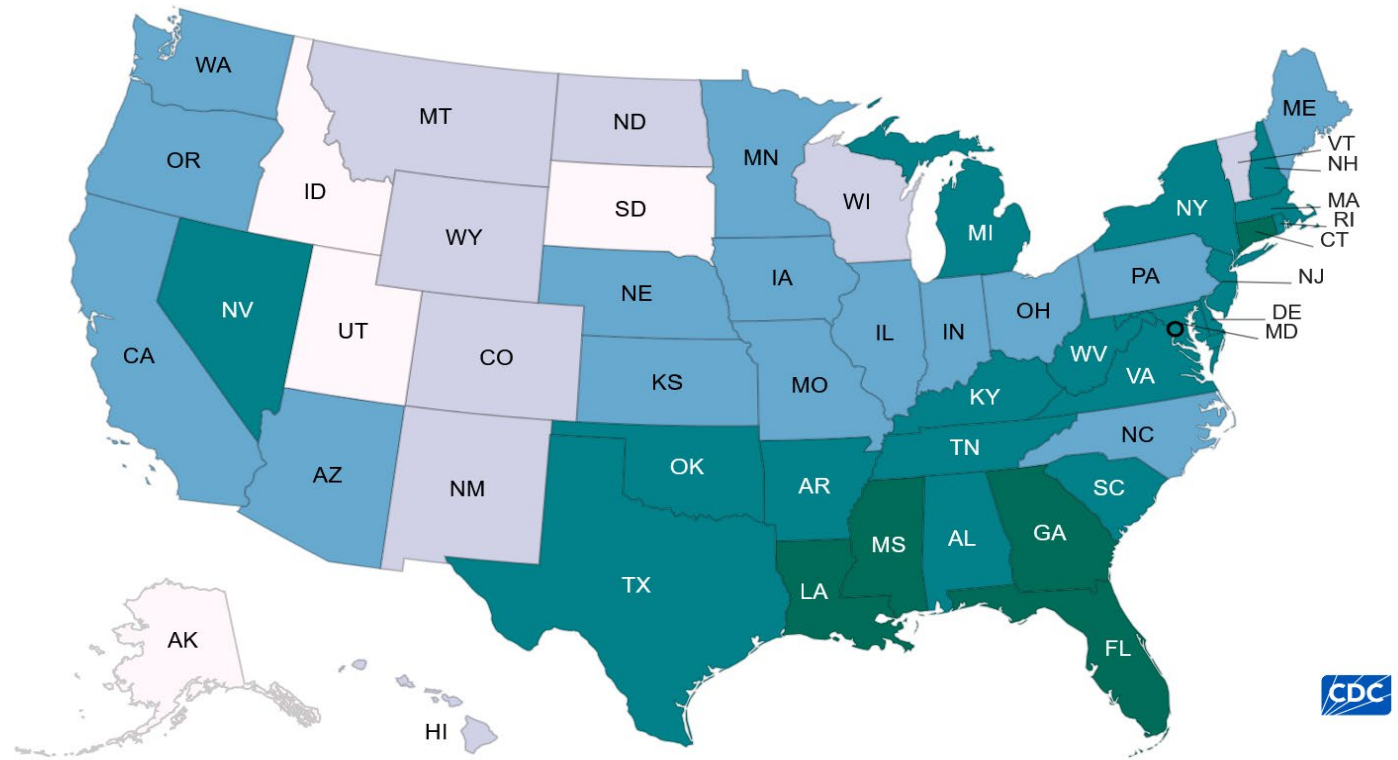
Alan M. Peaceman, MD, Joe Feinglass, PhD, and Larry M. Manheim, PhD

Cesarean Delivery Rate by State

Print

Year

2022



Cesarean Delivery Rate[1]

- 21.6 - < 24.98
- 24.98 - < 28.36
- 28.36 - < 31.74
- 31.74 - < 35.12
- 35.12 - 38.5

The Joint Commission Journal on Quality and Patient Safety 2019; 45:24–30

Maternal Obstetric Complication Rates Remain High in Illinois: A Retrospective Study, 2010–2015

Archana Roy, MD; Alan Peaceman, MD; Moeun Son, MD; Joe Feinglass, PhD

Background: Quality measures for maternal childbirth outcomes remain controversial, although there is a consensus that maternal morbidity has been increasing in recent years. To determine whether childbirth safety has declined in Illinois, the likelihood of maternal obstetric complications was modeled by using both an established measure of severe maternal morbidity and a more expansive complication coding algorithm.

Methods: In a retrospective cohort study of 792,122 deliveries at 127 Illinois hospitals from July 2010 to September 2015, International Classification of Diseases, Ninth Revision (ICD-9) codes were used to identify Centers for Disease Control and Prevention–defined severe maternal morbidity, as well as other maternal complications defined by a route of delivery–specific algorithm originally used to evaluate the quality of obstetrics residency programs. Poisson and logistic regression were used to analyze the likelihood of delivery complications during the study period, controlling for maternal sociodemographic and clinical characteristics.

Results: The severe maternal morbidity rate was 0.99% for vaginal and 3.76% for cesarean deliveries. The maternal complication rates were much higher—9.44% for vaginal and 14.66% for cesarean deliveries. After controlling for patient characteristics, severe maternal morbidity remained constant, but there was a statistically significant, approximately 20% increase in the incidence of other maternal complications from 2010 to 2015 for both vaginal and cesarean deliveries.

Conclusion: Severe maternal morbidity remained stable during the study period, but other maternal complications increased significantly. Severe maternal morbidity may undercount potentially preventable complications. New, more reliable measures of preventable delivery complications may have to be based on electronic health record standards.

JOURNAL OF WOMEN'S HEALTH
Volume 30, Number 7, 2021

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Trends and Risk Markers for Severe Maternal Morbidity and Other Obstetric Complications

Antoinette Oot, MD, MPH,[1] Kaitlin Huennekens,[1] Lynn Yee, MD, MPH,[2] and Joe Feinglass, PhD[3]

Abstract

Background: Studies of obstetric quality of care have almost exclusively focused on severe maternal morbidity (SMM) and have rarely examined more common complications.
Methods: This 2016–2018 retrospective, population-based cohort study analyzed maternal delivery outcomes at 127 Illinois hospitals. International Classification of Disease (ICD)-10 Revision codes were used to describe the incidence of SMM and route-specific complications. Poisson regression models were used to estimate the association of maternal sociodemographic, clinical, and hospital characteristics with the likelihood of coded complications.
Results: Among 421,426 deliveries, the SMM rate was 1.4% overall, 0.4% for vaginal, and 2.8% for cesarean delivery. Other complications were documented for 6.9% of women with vaginal and 10.0% of women with cesarean deliveries. While SMM rates were stable, vaginal delivery complications increased 5.9% from 2016 to 2018 and cesarean delivery complications increased 13.8%. Patient age, minority race and ethnicity, high poverty level, and preexisting and pregnancy-related clinical conditions were significantly associated with each complication outcome. Higher hospital delivery volume was associated with higher route-specific complications.
Conclusion: SMM significantly underestimates the incidence of maternal complications. Complicated deliveries have much higher charges and length of stay, although ICD-10 coding intensity may influence incidence. New outcome measures based on more detailed clinical data and linked antepartum and postpartum care will be necessary to improve obstetric quality of care measurement.

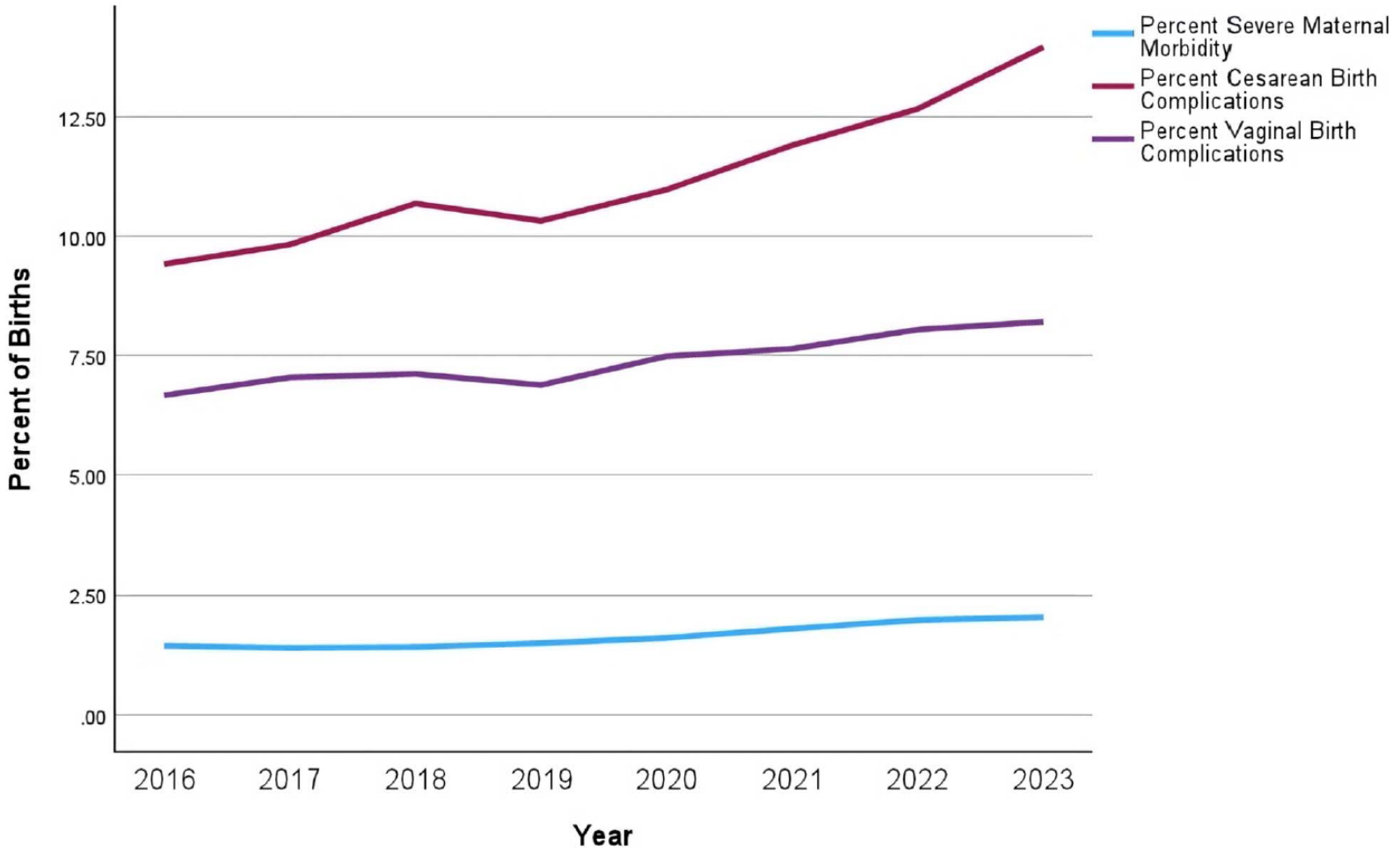


Fig. 1. Annual trends in severe maternal morbidity (SMM) and route-specific birth complications in Illinois from 2016 through the first 6 months of 2023. N=988,480 births at 127 Illinois hospitals, January 2016–June 2023. All annual comparisons $P<.001$. Births with SMM are identified by the Centers for Disease Control and Prevention–defined 21 indicators of SMM and the associated International Classification of Diseases, Tenth Revision (ICD-10) codes. Cesarean birth complications include ICD-10 codes associated with operative complications in addition to infection, thrombosis, or hemorrhage-related diagnoses associated with the birth hospitalization. Vaginal birth complications include infection, thrombosis, and hemorrhage-related diagnoses associated with the birth hospitalization.

Mokashi. Trends in Illinois Birth Complications and SMM. O&G Open 2024.

ELSEVIER

JMIG The Journal of Minimally Invasive Gynecology

Original Article

Patient and Hospital Characteristics Associated with Minimally Invasive Hysterectomy: Evidence from 143 Illinois Hospitals, 2016 to 2018

Jessica Traylor, MD, Melissa Simon, MD, MPH, Susan Tsai, MD, and Joe Feinglass, PhD

From the Department of Obstetrics and Gynecology, Division of Minimally Invasive Gynecologic Surgery (Drs. Traylor and Tsai), Feinberg School of Medicine, Northwestern University, Chicago, Illinois., Departments of Obstetrics and Gynecology, Preventative Medicine and Medical Social Sciences (Dr. Simon), Feinberg School of Medicine, Northwestern University, Chicago, Illinois, and Department of Medicine, Division of General Internal Medicine and Geriatrics (Dr. Feinglass), Feinberg School of Medicine, Northwestern University, Chicago, Illinois.

ABSTRACT

Study Objective: To identify patient and hospital characteristics associated with minimally invasive hysterectomy.

Design: Retrospective population-based analysis of administrative data.

Setting: Data from the Illinois Hospital Association Comparative Health Care and Hospital Data Reporting Services Database.

Patients: Women undergoing hysterectomy for benign gynecologic indications in Illinois, 2016 to 2018.

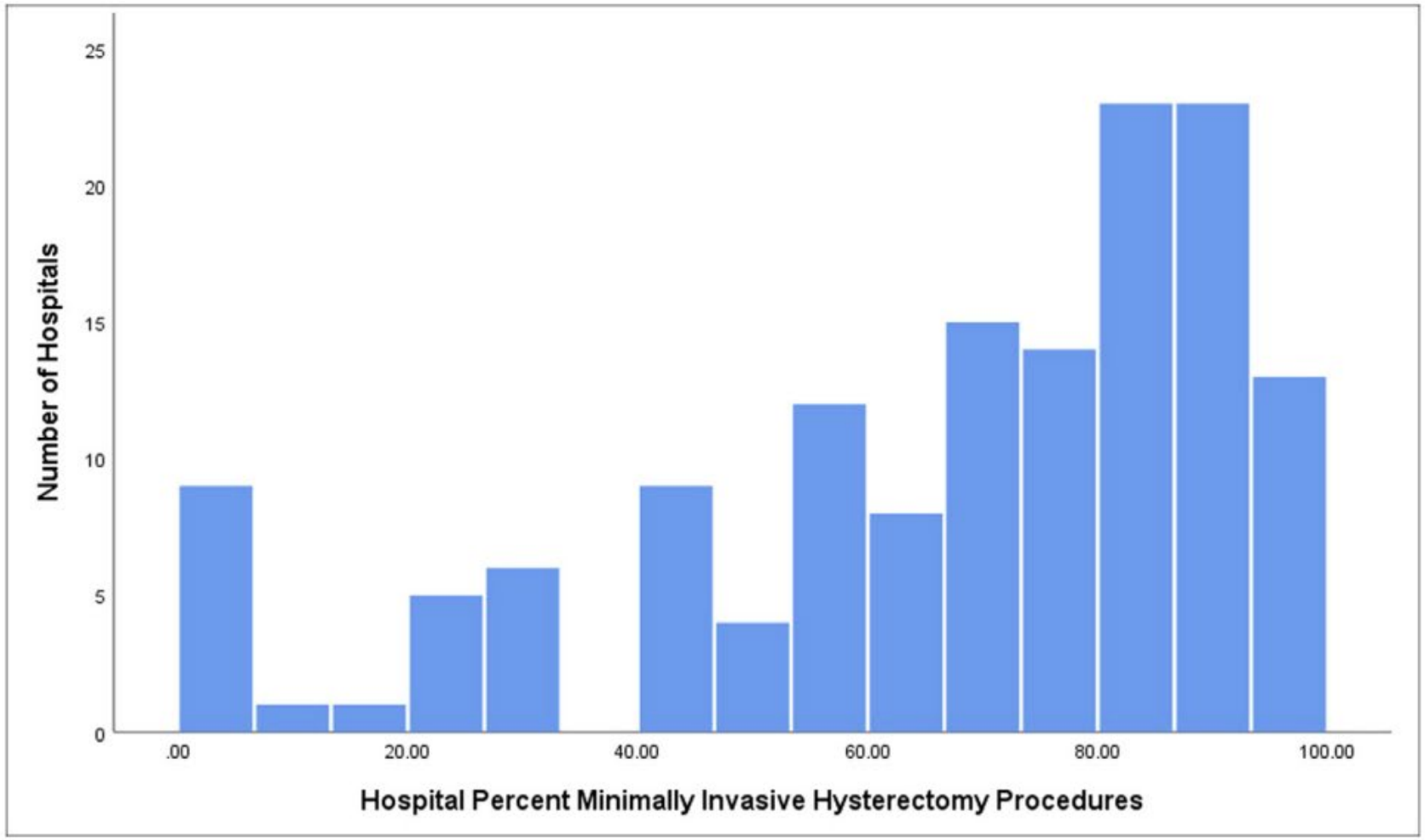
Interventions: None.

Measurements and Main Results: We determined the significance of the proportion of minimally invasive surgery (MIS) versus abdominal hysterectomies by patient and hospital characteristics. Multivariable logistic regression was used to determine the association between patient and hospital characteristics and the likelihood of MIS versus abdominal hysterectomy controlling for the simultaneous effects of all patient and hospital characteristics and year of surgery. There were 42 945 hysterectomies for benign indications at 143 nonfederal Illinois hospitals from 2016 to 2018. More than three-fourths (32 387, 75.4%) of hysterectomies were MIS. Non-Hispanic black patients had the lowest percentage of MIS (54.7%) compared with 82.1% among whites ($p < .001$). Being non-Hispanic black (odds ratio [OR] = 0.53, 95% confidence interval [CI], 0.47−0.60), other or unknown race and ethnicity (OR 0.76, 95% CI, 0.52−0.85), or having a diagnosis of myomas (OR 0.54, 95% CI, 0.49−0.60) were associated with a lower likelihood of MIS. Patients treated at hospitals with >80% MIS had almost 6 times the likelihood of MIS (OR 5.89, 95% CI, 4.51−7.68).

Conclusion: Black race and a myoma diagnosis were independently associated with decreased odds of undergoing an MIS hysterectomy, whereas the strongest predictor of undergoing an MIS hysterectomy was hospital proportion of minimally invasive procedures. Journal of Minimally Invasive Gynecology (2020) 27, 1337−1343.

Fig. 1

Proportion of minimally invasive hysterectomies performed at 143 Illinois hospitals, 2016 to 2018.



LUNG CANCER DISPARITIES IN ILLINOIS

- Dr. David Odell --epidemiologic monitoring of lung cancer rates by race and ethnicity
- All public state of IL datasets (MPH student project)
- Hospital discharge data on medical admissions, lung ca surgery, and lung cancer screening
- IL Cancer Registry data on incidence, stage at diagnosis, mortality rates
- IL BRFSS survey smoking prevalence data

JOURNAL OF HDRP

Racial and Ethnic Disparities in Illinois Lung Cancer Incidence, Mortality Stage at Diagnosis, Surgical Treatment, and Screening

Journal of Health Disparities Research and Practice

Volume 14 | Issue 1 Article 2

2021

Racial and Ethnic Disparities in Illinois Lung Cancer Incidence, Mortality Stage at Diagnosis, Surgical Treatment, and Screening

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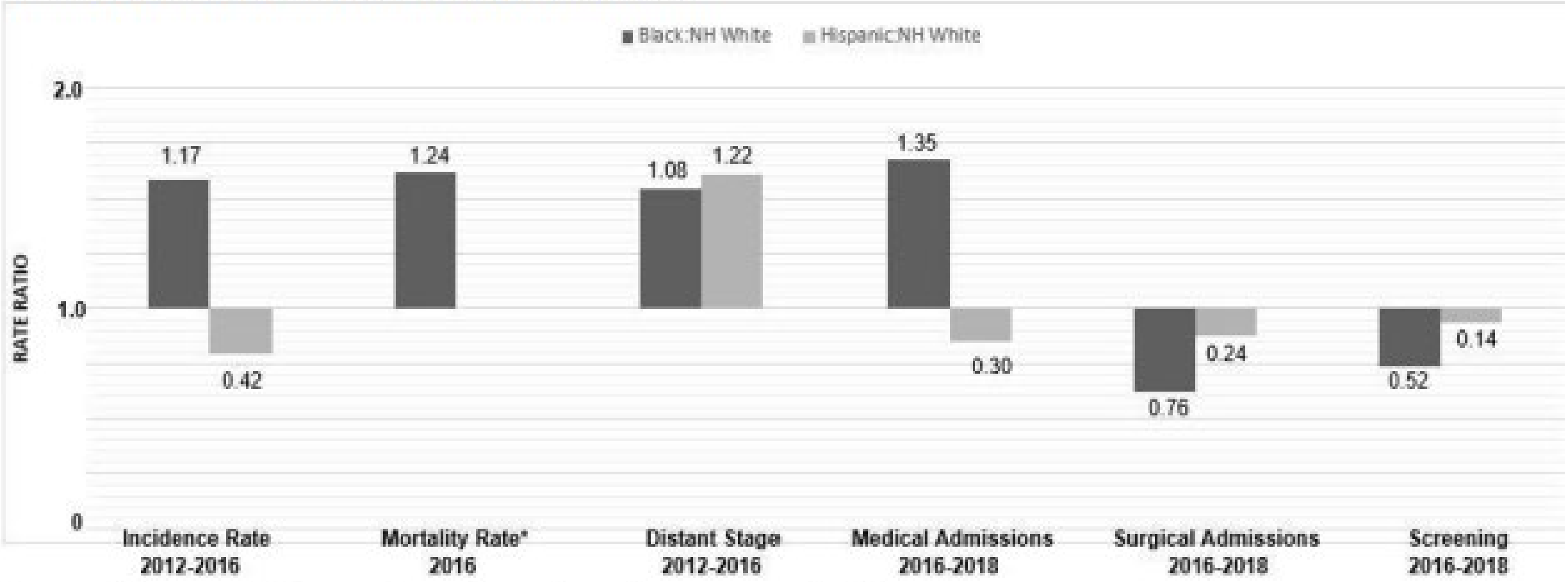
Table 2: Average Annual Rates per 10,000 for Hospital Admissions, Lung Resection Procedures and Low Dose CT Screening for Illinois Residents coded as having Lung Cancer (2016-2018)*

Age	Illinois Population*	Medical Admissions	Surgical Admissions	Screening
NH White				
35-54	2,118,172	3.86	0.26	0.98
55-74	1,971,939	36.78	2.94	48.95
75+	641,230	71.88	3.46	11.12
All Ages 35+	4,731,341	26.84	1.81	22.35
Black				
35-54	467,637	5.69	0.21	0.39
55-74	341,334	62.70	2.74	28.02
75+	86,621	94.93	2.35	8.74
All Ages 35+	895,592	36.21	1.38	11.73
Hispanic				
35-54	574,601	1.24	0.10	0.19
55-74	225,472	17.92	1.08	10.17
75+	42,930	46.35	1.55	4.04
All Ages 35+	843,003	8.07	0.43	3.05
All Illinois Residents**				
35-54	3,160,410	3.84	0.26	0.82
55-74	2,538,745	40.64	3.06	44.91
75+	770,781	77.00	3.52	10.92
All Ages 35 +	6,883,529	25.43	1.64	18.16

*Source: 2017 5-year American Community Survey Census Estimates
**Includes other or unknown race and ethnicity.

Figure 2: Rate Ratio for Illinois Lung Cancer Related Outcomes for Black:Non-Hispanic Whites and Hispanics:Non-Hispanic Whites*



*Mortality Rate information for Hispanics not available

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Inpatient lung cancer surgery outcomes in Illinois

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ABSTRACT

Objective: This study analyzed inpatient mortality and length of stay for lung cancer surgery in Illinois hospitals by patient clinical and demographic characteristics, procedure types, and hospital and surgeon volume.
Methods: The study analyzed lung cancer patients who underwent lobectomy or sublobar resection at Illinois hospitals from 2016 to June 2022. Trends in procedure type, inpatient mortality, one-day length of stay (LOS), and prolonged LOS (>10 days) were evaluated. Regression models were used to determine the likelihood of inpatient death and length of stay while controlling for clinical, procedure, hospital, and surgeon characteristics.
Results: There were 9602 admissions for lung cancer surgery at 89 non-federal Illinois hospitals. Overall, 0.7% of patients died, 12.2% of patients had one-day LOS, and 7.4% patients had prolonged LOS. From 2016 to 2022, rates of one-day LOS increased from approximately 5% to 23%, prolonged LOS dropped from almost 18% to under 5%, robotic lobectomies increased from <5% of procedures to over 40%, and VATS lobectomies went from almost 50% to 13%. The proportion of open lobectomy procedures remained stable. Robotic and VATS procedures were generally associated with better outcomes; however, VATS sublobar procedures were associated with worse LOS and mortality outcomes. Hospitals and surgeons with higher procedure volumes had significantly better outcomes.
Conclusions: Lung cancer surgery had low inpatient mortality and better LOS outcomes, with robotic steadily replacing VATS procedures. Higher hospital or surgeon volume was associated with better patient outcomes and may have been related to the greater utilization of Enhanced Recovery After Surgery Programs.

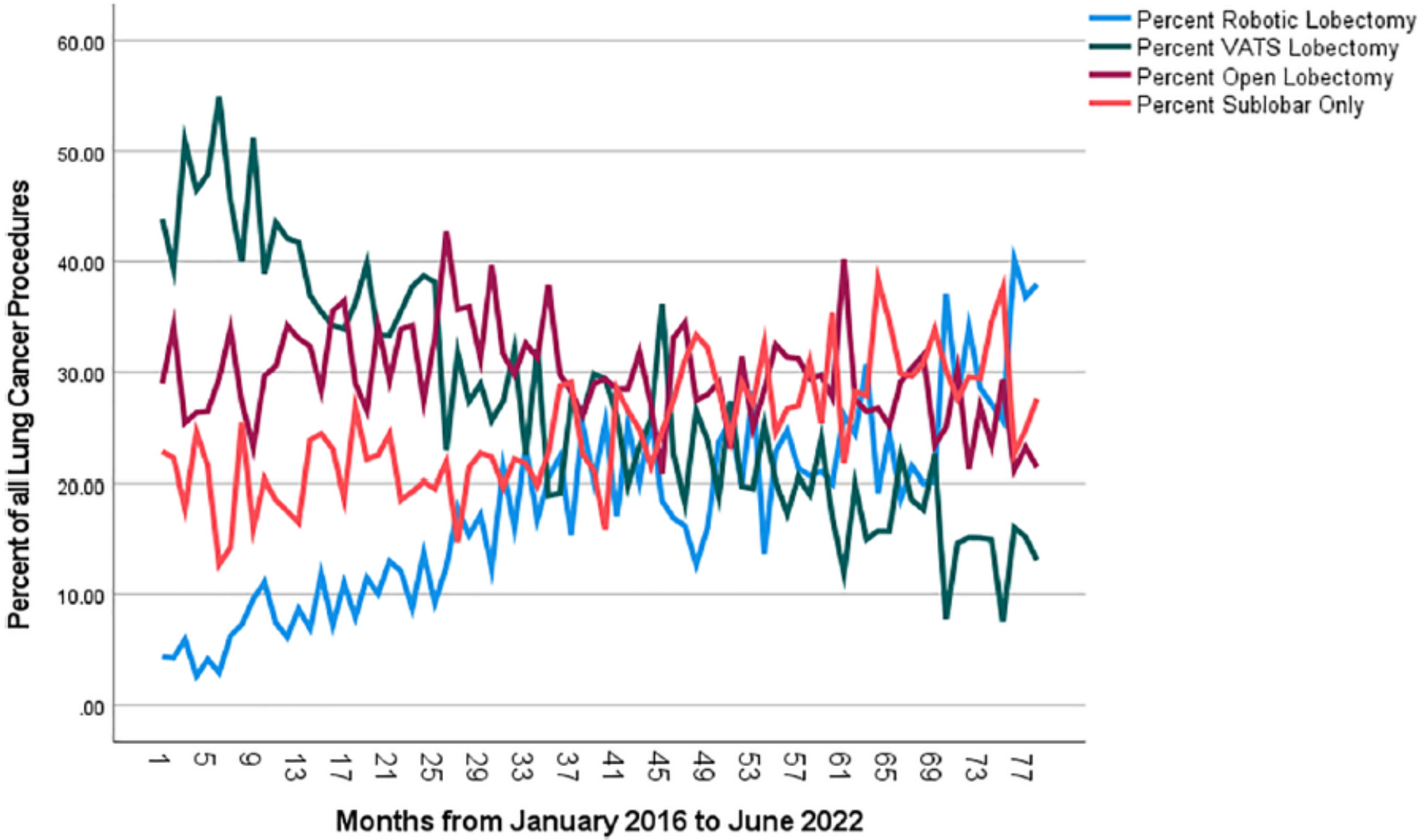

Fig. 2. Monthly percent of lung cancer surgery by procedure Type, N-9602 admissions at 89 non-federal Illinois Hospitals, 1/2016-6/2022.

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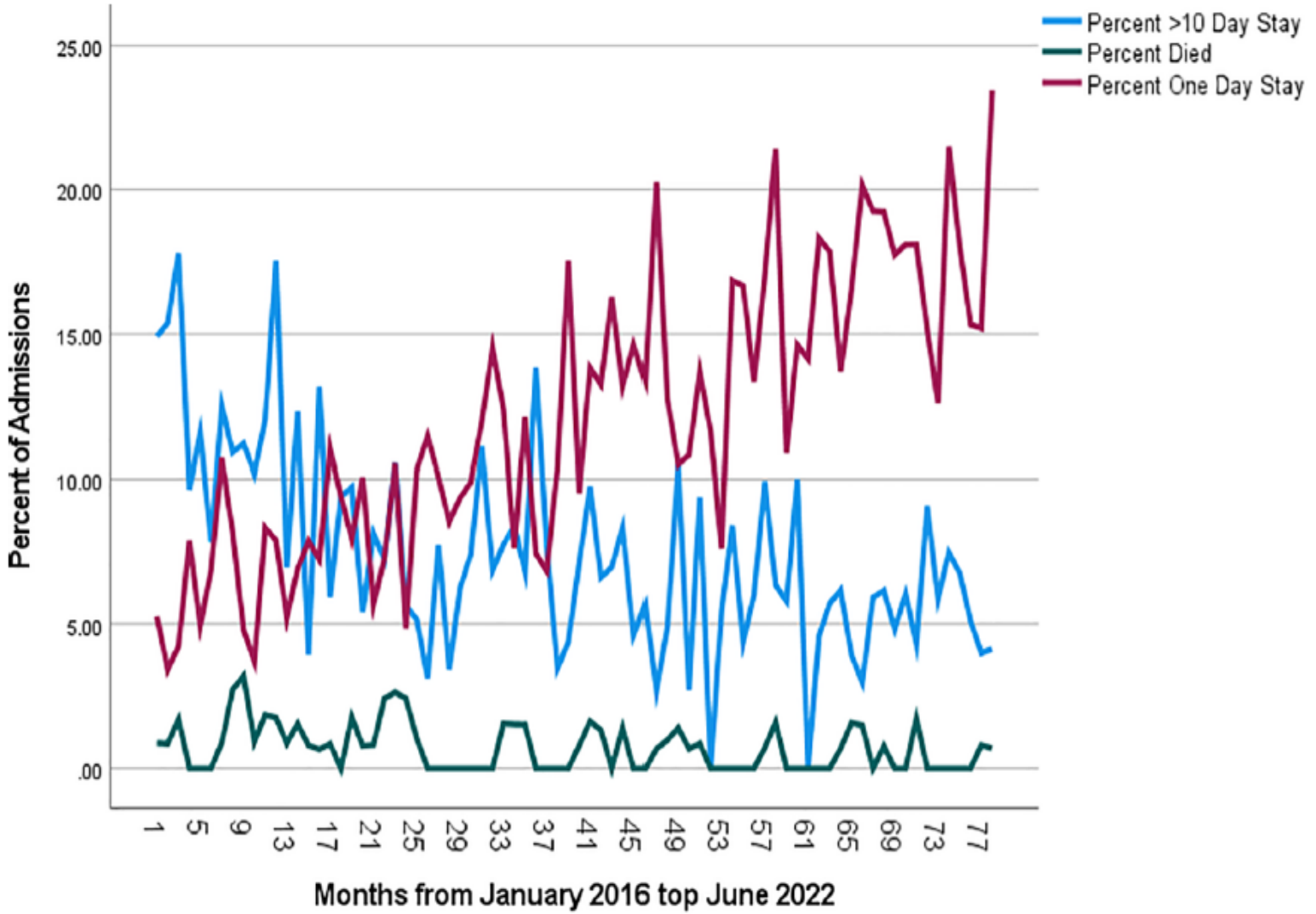

Fig. 3. Monthly percent of lung cancer surgery inpatient mortality and length of stay outcomes, N-9602 admissions at 89 non-federal Illinois Hospitals, 1/2016-6/2022.

ANALYZING PER CAPITA ILLINOIS RESIDENT SURGICAL RATES

- Bariatric Surgery-Cassie Valukis
- LE Amputation-Maggie Reilly

Table 1

Estimated Adult Bariatric Surgery Annual Rates per 100,000 Illinois Residents Qualified for Bariatric Surgery By Patient Zip Code Tract Area (ZCTA) Median Household Income and Race and Ethnicity *

N=42922 Bariatric Surgery Procedures at 105 Illinois Hospitals, 2016-2022

		Estimates for Illinois Age 18-69 Population (1)	Estimated Population Percent Qualifying for Bariatric Surgery (2)	Estimated Population Qualifying for Bariatric Surgery	Average Annual Number of Bariatric Procedures 2016-2022	Average Annual 2016-2022 Bariatric Surgery Rate per 100,000 Qualifying Persons
Total Population		8,317,926	10.5	873,382	6131	702
Median ZCTA Household Income	<$35k	1,522,923	11.5	175,136	278	159
	$35-49,999k	2,372,725	11.6	275,236	928	337
	$50-74,999	1,413,818	11.7	165,416	2,430	1469
	$75-99,999	967,742	12.2	118,064	1,603	1357
	$100k+	2,040,618	6.5	132,640	891	671
Race and Ethnicity (3)	NH White	4,868,275	9.4	457,617	2,943	643
	NH Black	1,092,457	15.5	169,330	1,507	890
	Hispanic	1,506,979	13.1	197,414	781	396

*Highest to lowest population rate comparisons $p<0.01$

1 Based on Illinois residents ages 18-69 from the 2021 Illinois Behavioral Risk Factor Surveillance System.

2. Based on 2021 Illinois Behavioral Risk Factor Surveillance System estimates for the proportion of each age 18-69 population reporting body mass index => 40 or body mass index =>35 and <40 and reporting hypertension, diabetes, arthritis, chronic kidney disease, stroke, myocardial infarction, or coronary artery disease.

3. Based on 2021 Illinois Behavioral Risk Factor Surveillance System estimates for the proportion of each age 18-69 racial and ethnic population, excludes Asian (6.9% of Illinois population) and Other or Multiracial race and ethnicity (3.3% of Illinois population).

Table 2. Differences in All Level Amputation Rates per 100,000 Illinois Population.

	Census population estimates	Amputation rate per 100,000 in 2016	Amputation rate per 100,000 in 2023	Average annual rate change per 100,000 from 2016 -2023 (Average Annual Percent Change)	Change in rate per 100,000, 2016 -2023 (Overall Percent Change)*
Age					
…All IL age35+	7,011,222	38.6	63.6	3.1 (8.1)	25.0 (65.0)
…All IL age 35-64	4,940,315	27.9	46.4	2.3 (8.3)	18.5 (66.2)
…All IL age 65-74	1,212,282	62.7	105.1	5.3 (8.5)	42.4 (67.6)
…All IL age 75+	858,625	65.6	103.8	4.8 (7.3)	38.2 (58.3)
Amputation Level					
Through Foot (TF)	7,011,222	13.6	31.2	2.2 (16.2)	17.6 (129.4)
Below Knee (BK)	7,011,222	16.9	20.3	0.43 (2.5)	3.4 (20.2)
Above Knee (AK)	7,011,222	8.0	12.0	0.5 (6.3)	4.0 (50.0)
Major Amputations (BK & AK)	7,011,222	24.9	32.3	0.93 (3.7)	7.4 (29.7)
Sex					
…Males	3,383,010	54.9	96.7	5.2 (9.5)	41.8 (76.1)
…Females	3,628,212	23.3	32.7	1.2 (5.1)	9.4 (40.5)
Race					
…Non-Hispanic White	4,681,859	33.2	50.2	2.1 (6.4)	17.0 (51.1)
…Non-Hispanic Black	895,351	77.0	122.1	5.6 (7.3)	24.7 (67.5)
…Hispanic	934,949	29.8	59.5	3.7 (12.4)	32.3 (62.8)
…Other/Unknown	409,432	44.2	112.8	8.6 (19.5)	47.6 (57.3)

FUTURE DIRECTIONS

- Lobbying for availability and encrypted patient linkage, research-available IDPH data infrastructure-links with social service data (housing, social services)
- Make data available (HCUP at AHRQ-Florida linked data inpatient or ED data all applicants $400 versus $7500 in IL)
- https://www.distributor.hcup-us.ahrq.gov/Databases.aspx
- Readmissions, ED visits, episodes of illness, hot spot/high utilization patterns, longitudinal patient outcomes
- DUAs that enable partnership between state and academic institutions (Anne Stey Trauma Registry data)