medical records on TriNetX LLC using the standard ICD-10 code or through a digital phenotype, involving grouping codes for the individual components. Percentage of patients with MetS not captured with the standard code was identified. In addition, disparities in blood pressure, glucose, lipid-lowering medication, and lifestyle intervention between the coding schemas were assessed, shedding light on healthcare inequities and informing targeted interventions. Odds ratios (RR) were presented for all outcomes. RESULTS/ANTICIPATED RESULTS: Patient demographics and lab values were similar between the standard code and digital phenotype cohorts. Of the 4.3 million individuals aged 50 to 80 identified as having MetS using the digital phenotype in the TriNetX research network, only 1.78% of participants shared the standard code. Individuals with the digital phenotype for MetS were at lower odds in receiving glucose lowering medication (OR: 2.11, 95% CI: 1.98–2.13, p <0.001) and exercise or nutrition-based intervention advice (OR: 1.76, 95% CI: 1.55–1.96, p <0.001) after controlling for demographics and lab values for each MetS component. DISCUSSION/SIGNIFICANCE: This project utilized TriNetX to create a digital phenotype for MetS, and suggests most patients are not coded for it using the standard ICD-10 system. This is troublesome given those with the standard code are less likely to receive certain interventions.

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Sociodemographic and Hospital-Level Characteristics Associated with Hospital-Onset Bacteremia in the Neonatal Intensive Care Unit

Aaron Milstone[1], Shaoming Xiao[1], Elizabeth Colantuoni[2] and Erica Prochaska[1]
[1]Johns Hopkins University School of Medicine and [2]Johns Hopkins University Bloomberg School of Public Health

OBJECTIVES/GOALS: The primary objective is to measure the independent association of hospital-level and sociodemographic variables on the rate of hospital-onset bacteremia among infants admitted to the neonatal intensive care unit in a United States of America retrospective cohort. The secondary outcome will be relative blood culture collection rate. METHODS/STUDY POPULATION: The study is an analysis of a retrospective cohort comprised of infants admitted to 322 neonatal intensive care units (NICUs) in the United States of America between 2016-2021. The primary outcome will be hospital-onset bacteremia (HOB), defined as a positive blood culture with a bacteria or fungi after day 3 of admission. Independent risk factors will include birthweight, postnatal age, central venous catheter presence, sociodemographic variables (race, ethnicity, insurance status and ZIP code-level demographic data from the US Census American Community Survey (ACS), and hospital-level variables. Infants will be stratified by sociodemographic groups and a Poisson model will be utilized to measure the adjusted association between risk of HOB and clinical and hospital-level variables. RESULTS/ANTICIPATED RESULTS: I anticipate that infants in sociodemographic groups with a history of socioeconomic marginalization will have a higher unadjusted rate of HOB; however, sociodemographic variables will not be independently associated with HOB risk after adjusting for markers of hospital quality and acuity, such as quartiles of the following: mean admissions per year, percentage of infants born <1500g, annual blood culture contamination rate, and percentage infants born at another facility. DISCUSSION/SIGNIFICANCE: Neonatal bacteremia has high morbidity and mortality; however, its contribution to known infant mortality inequities is unknown. This study will estimate the burden of infant HOB stratified by sociodemographic groups and measure the independent association of sociodemographic and hospital-level variables on the adjusted rate of HOB.

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Clinical, Socioeconomic, and Facility Factors Influencing Receipt of Autologous Breast Reconstruction: Analysis of the National Cancer Database

Omar Jean-Baptiste, Theresa Wicklin Gillespie, Albert Losken and Yuan Liu
Emory University

OBJECTIVES/GOALS: The goal of this study is to leverage a national database to see if autologous reconstruction rates differ in patient and clinical characteristics, readmission rates, and overall survival (OS) compared to other forms of reconstruction. Autologous reconstruction has not been looked at in this way before. METHODS/STUDY POPULATION: • Aim 1: Use the National Cancer Data Base to construct three patient cohorts for women under 70 and above 18 treated surgically for breast cancer with A) mastectomy only, B) implant-based reconstruction, and C) autologous breast reconstruction. • Aim 2: Examine receipt rates of surgical intervention in Cohorts A vs. B vs. C based on clinical and patient demographic/socioeconomic characteristics. • Aim 3: Compare readmission and overall survival (OS) rates for Cohorts A vs. B vs. C while controlling for age and other key variables. RESULTS/ANTICIPATED RESULTS: Based on the literature, we expect rates of autologous reconstruction (Cohort C) to be lower for patients of minority backgrounds compared to white individuals. In addition, we do not expect overall survival to differ between implant-based (Cohort B) and Cohort C reconstruction. Still, we expect mastectomy-only (Cohort A) survival to vary from the two cohorts even when adjusting for different clinical factors, as similar but smaller studies have shown. Finally, we expect readmission rates to be higher for Cohort C, compared to Cohorts A & B, as it is a more complicated procedure typically done in academic institutions with skilled surgeons. DISCUSSION/SIGNIFICANCE: Autologous reconstruction is now considered the gold standard due to its ability to restore the breast shape with higher patient satisfaction and superior long-term outcomes. Multiple studies have documented ongoing racial disparities in post-mastectomy breast reconstruction and autologous reconstruction, with lower rates and referrals.

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Characteristics of Medicare patients receiving peripheral vascular interventions for peripheral artery disease differ by outpatient site of service

Terrence Tsou, Chen Dun and Caitlin Hicks
Johns Hopkins University School of Medi cine

OBJECTIVES/GOALS: Endovascular peripheral vascular interventions (PVIs) are increasingly utilized for the treatment of peripheral artery disease (PAD). We aimed to assess characteristics of patients

https://doi.org/10.1017/cts.2024.39 Published online by Cambridge University Press

receiving PVI at ambulatory surgical centers and office-based labs (ASC/OBL) versus the outpatient hospital (hospital) site of service. METHODS/STUDY POPULATION: We performed a retrospective analysis using 100% Medicare fee-for-service claims data between January 1, 2017 and December 31, 2022. We used Current Procedural Terminology (CPT) codes to identify patients undergoing angioplasty, stenting, or atherectomy. Patient demographics were collected from the Medicare Master Beneficiary Summary File and associated comorbidities and PVI indications were identified using International Classification of Disease (ICD)-10 codes. We used patient ZIP codes to determine patients' residence densities and regions. We used site of service codes to determine whether PVI were performed in the ASC/OBL versus hospital. Results were analyzed with descriptive statistics. RESULTS/ANTICIPATED RESULTS: Of 817,241 patients undergoing PVI for PAD, 461,068 (56.4%) were treated in an ASC/OBL. Compared to patients treated in the hospital, patients receiving PVI at ASC/OBLs were more likely to be older, female, non-white race, with fewer comorbidities (end stage renal disease, diabetes, hypertension, and any history of tobacco use) (all, P<0.001). Patients treated in ASC/OBLs more frequently resided in urban (vs. rural) locations, and in the South and West (both, P<0.001). Indication for PVI was predominately chronic limb-threatening ischemia, and clinically similar between groups (77.1% vs. 76.2%). There was a significant change in site of service over time: a minority (47.6%) of PVIs were performed in the ASC/OBL in 2017, whereas the majority (64.7%) of PVIs were performed in the ASC/OBL in 2022 (P<0.001). DISCUSSION/SIGNIFICANCE: Patients treated in ASC/OBLs were less medically complex compared to those treated in the outpatient hospital setting. Further study is needed to examine whether differences in patient characteristics versus other factors (e.g. reimbursement) are driving the increase in PVIs performed in the ASC/OBL over time.

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The Microbial Antibiogram as a Function of Testing Indication: Susceptibility Analysis of Escherichia coli from Symptomatic and Asymptomatic Bacteriuria Patients, 2020-2021

Allison Chan[1], Maddie Spradley[1], Tim Williams[1], Grace Morales[1], Gerald Van Horn[1] and Jonathan E. Schmitz[1,2]
[1]Vanderbilt University Medical Center, Department of Pathology, Microbiology, and Immunology; Nashville, Tennessee 37232 USA and [2]Department of Urology, Vanderbilt Institute for Infection, Immunology, and Inflammation; Nashville, Tennessee 37232 USA

OBJECTIVES/GOALS: Antibiograms are used to guide empiric antibiotic selection. However, it is unclear if antibiotic profiles differ between symptomatic urinary tract infections (UTIs) and asymptomatic bacteriuria (ASB). We aimed to compare antibiotic susceptibility profiles of urinary E. coli isolates from patients with a symptomatic UTI to those with ASB. METHODS/STUDY POPULATION: We conducted a cohort study of 1,140 urinary E. coli isolates from unique patients that received care through Vanderbilt University Medical Center (VUMC) from Nov 2020 – Jun 2021. We included any patient that was seen at VUMC as an inpatient, outpatient or at the emergency department with $\geq 10^5$ colony forming units/mL E. coli detected from a clinical urine specimen. Chart abstractions were performed to capture reported UTI symptoms and demographic information. Descriptive statistics were conducted to compare antibiotic susceptibility profiles (i.e., susceptible, intermediate, resistant) between symptomatic and ASB groups. The risk of detection of a multidrug-resistant organism (MDRO) (intermediate, or resistant to at least one antibiotic in three or more classes) was assessed between groups. RESULTS/ANTICIPATED RESULTS: Among 1,140, 1,018 (89%) and 122 (11%) were symptomatic and ASB, respectively. When comparing symptomatic and ASB, the median ages were 50 and 46. Groups had similar proportions of no indwelling catheter (94% v. 95%) and without diabetes (87% v. 88%). The collection setting between inpatient, emergency department, and outpatient were similar with most being outpatient (79% v. 83%). The proportion of patients who were pregnant, immuno compromised, or had a structural/functional urinary tract abnormality were higher in the symptomatic group. The proportion of isolates resistant and susceptible to tested antibiotics were similar between groups, with only ciprofloxacin showing slightly higher resistance among ASB (16% v. 25%). The risk of MDRO detection was similar between groups (RR: 0.858, 95% CI: 0.64, 1.15). DISCUSSION/SIGNIFICANCE: Antibiotic susceptibility comparison demonstrated similar profiles, which suggests antibiogram use as appropriate to guide ASB treatment. Results offer insight on whether traditional methods for assessing antibiotic susceptibility on population-levels could benefit from further refinement by patient-specific clinical parameters.

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AHA's Essential Eight: Opportunities for Preventive Care among Adults with Peripheral Arterial Disease

Edward Huang and Elizabeth A. Jackson
University of Alabama at Birmingham

OBJECTIVES/GOALS: The objective was to examine the American Heart Association's (AHA) Essential Eight metrics of cardiovascular (CV) health among Black and White adults with peripheral arterial disease (PAD) collected via validated surveys and medical records. Each metric was examined in association with available social determinants of health (SDoH) factors. METHODS/STUDY POPULATION: This observational study completed data collection through surveys and medical record review. Validated surveys were used to collect Essential Eight metrics of diet, physical activity, sleep, and smoking status. Medical records were used to collect data on body mass index, blood lipids, blood glucose, and blood pressure. Participants with a diagnosis of lower extremity PAD, ability to complete surveys, and provided informed written consent were eligible. Equal numbers of Black and White participants were enrolled. Essential Eight metrics were used to calculate CV health scores for each participant. Scores were examined for association with SDoH factors and by race using Student's T-test or ANOVA for continuous variables or Chi-Square tests for categorical variables. RESULTS/ANTICIPATED RESULTS: A total of 50 participants will be enrolled, with the expected majority being men and half self-reporting as Black individuals. Worse SDoH is expected to be associated with lower CV health metrics, including lower levels of physical activity and higher levels of saturated fatty food consumption. Higher levels of blood lipids, blood glucose, and blood pressure are expected to be associated with worse SDoH factors. We expect this association to be attenuated by rates of CV medications, such as statin therapy, antiglycemic medications, and antihypertensive medications. No effect modification by rurality is expected, although

https://doi.org/10.1017/cts.2024.39 Published online by Cambridge University Press