

# **Racial vs. Economic Barriers to Ambulatory Surgery Usage in the United States**

## **DRAFT**

### **Independent Analysis of HCUP NASS 2020 Dataset**

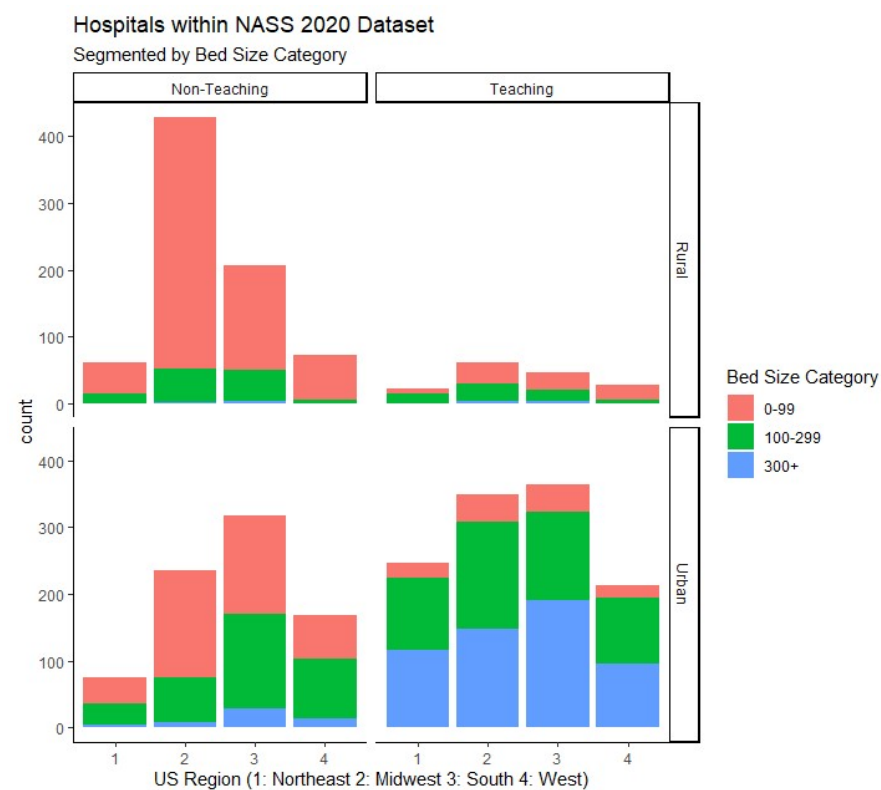
US Dept. of Health and Human Services  
Agency for Healthcare Research and Quality (AHRQ)  
Healthcare Cost and Utilization Project (HCUP)  
National Ambulatory Surgery **Sample** (NASS)

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PGY-2 Anesthesiology

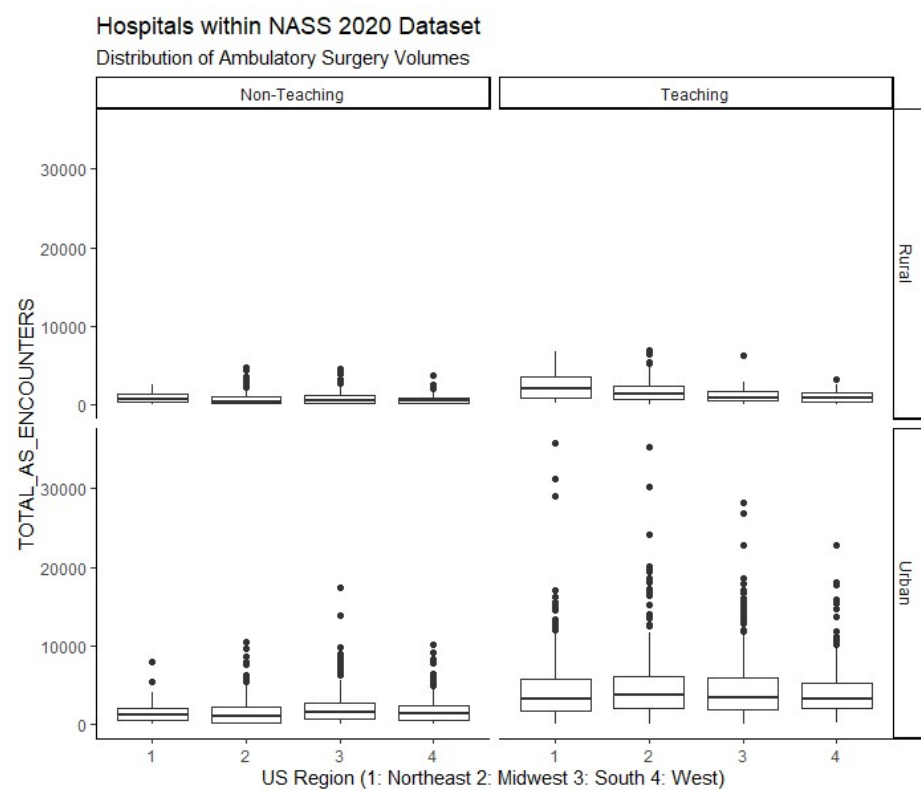
**Riverside University Health System**

**June-October, 2024**

*HCUP NASS 2020 dataset includes ~3k US community-hospital owned ambulatory surgery institutions of varying classes. Volumes of Institutions are generally in line, with exception of few large urban centers.*

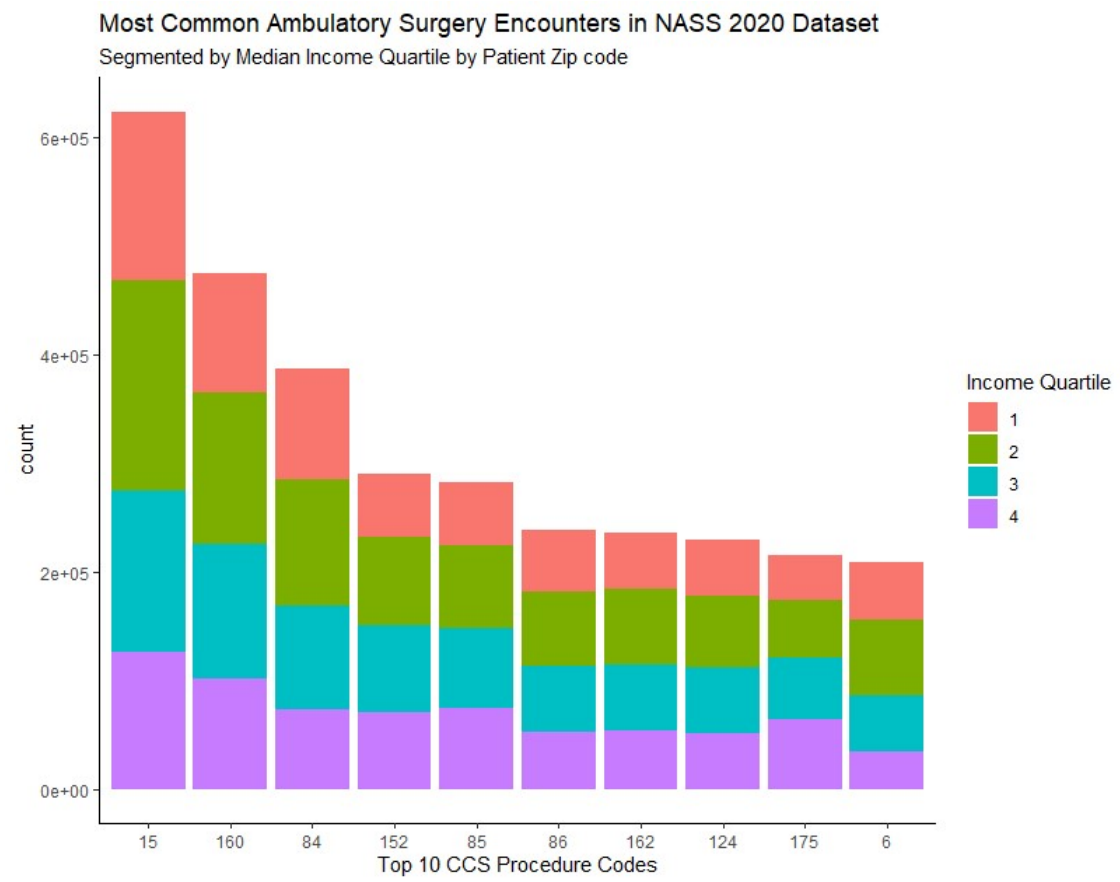


Total Institutions: **2,899**



Total 2020 Ambulatory Encounters: **7,828,310**

*The 10 most common ambulatory surgical encounters in the HCUP NASS 2020 data set account for 41% of all encounters, and show good distribution across all income quartiles.*



10 Most Common Procedure Encounters:

**3,223,125**

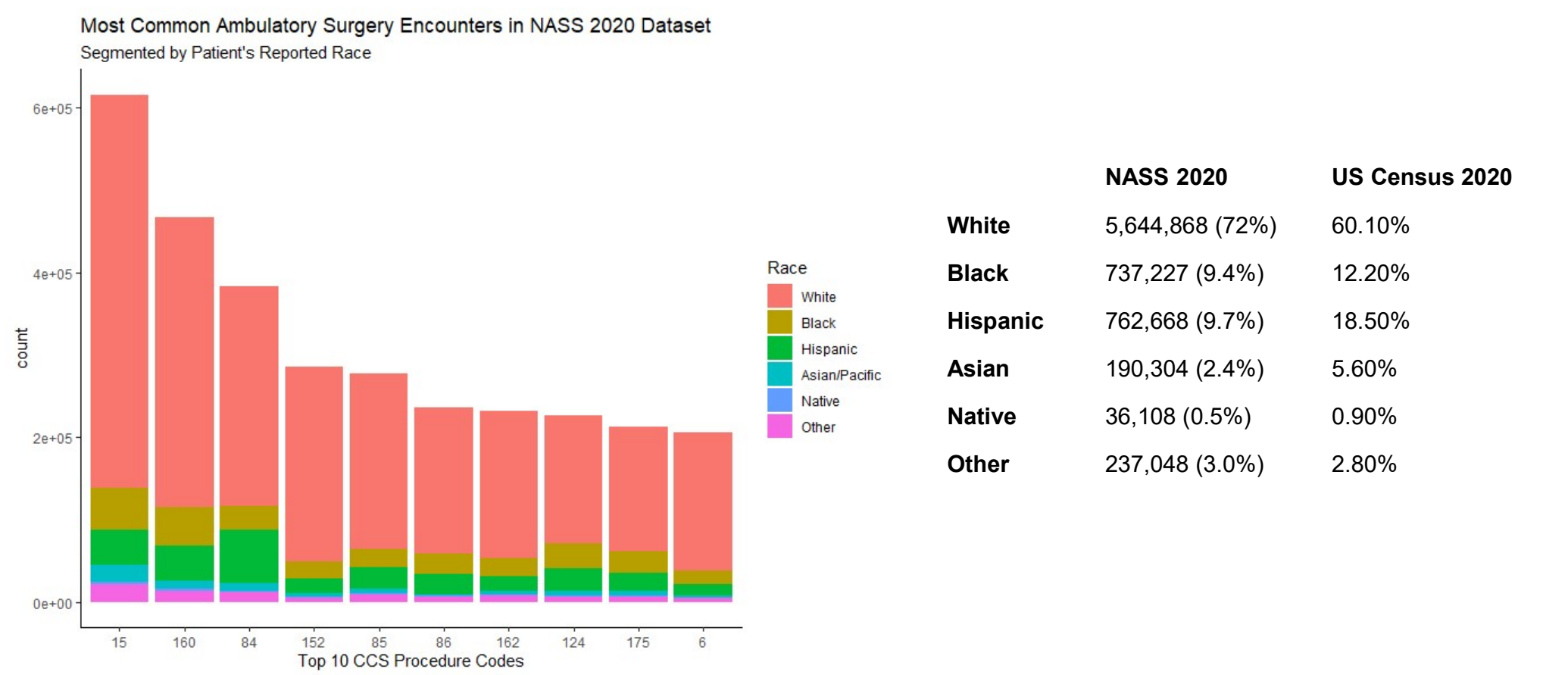
% of NASS 2020 Encounters Data covered:

**41%**

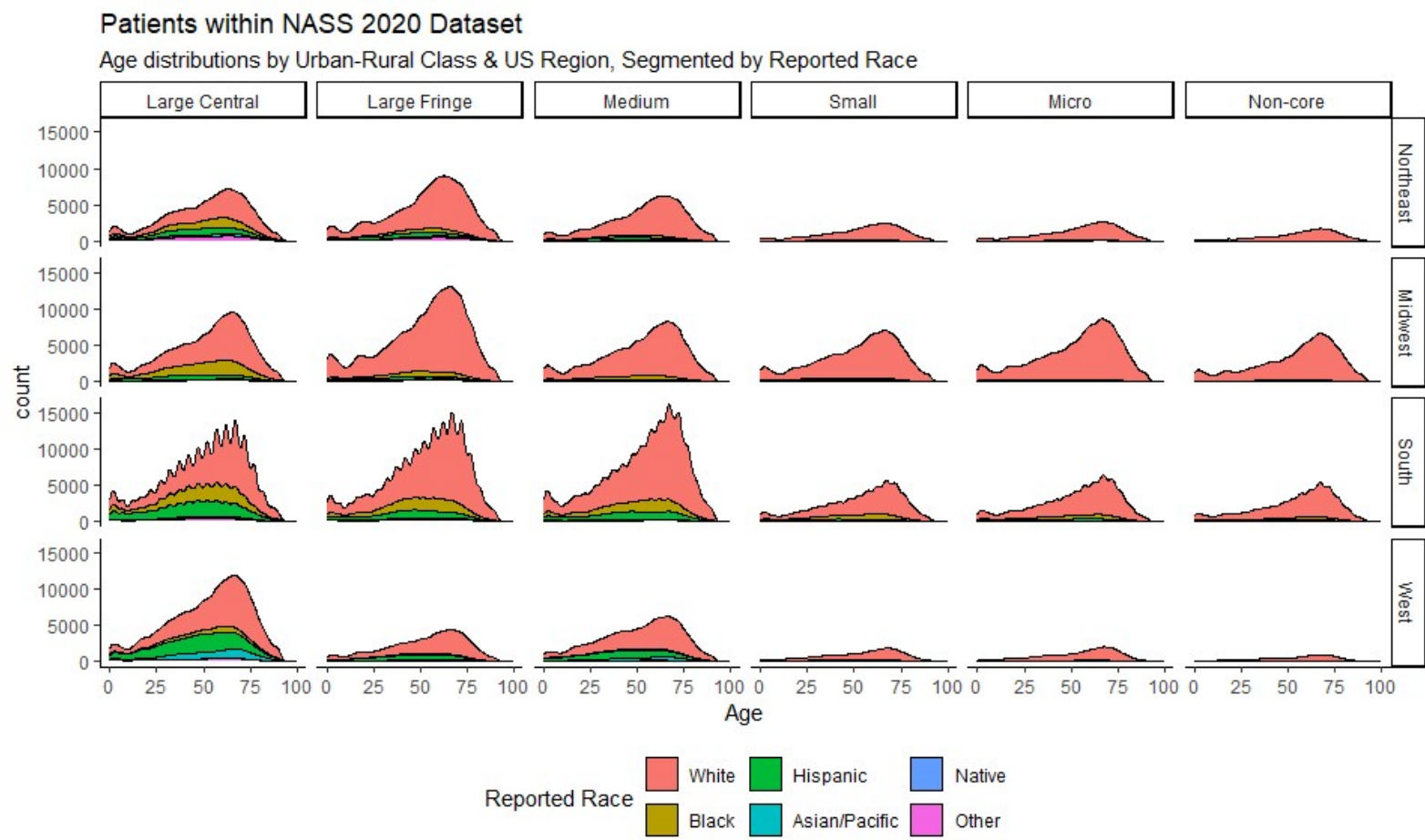
**CCS Code Procedure**

- 15 Lens and cataract procedures
- 160 Other therapeutic procedures on muscles and tendons
- 84 Cholecystectomy and common duct exploration
- 152 Arthroplasty knee
- 85 Inguinal and femoral hernia repair
- 86 Other hernia repair
- 162 Other OR therapeutic procedures on joints
- 124 Hysterectomy, abdominal and vaginal
- 175 Other OR therapeutic procedures on skin and breast
- 6 Decompression peripheral nerve

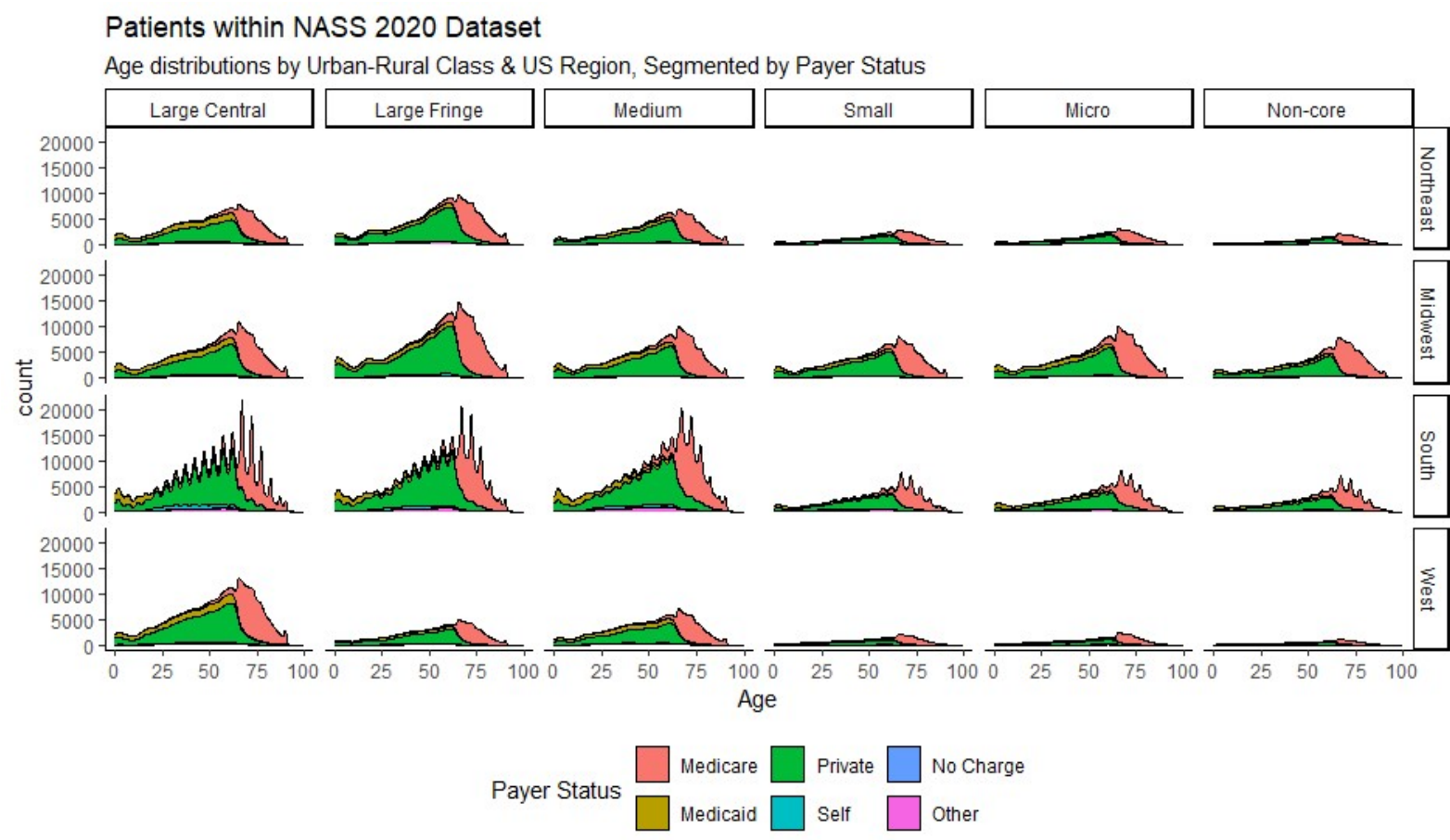
*The same 10 most common ambulatory surgery encounters seem to show much poorer distribution across race, with overall NASS 2020 dataset showing distribution that trends but does not match US 2020 census.*



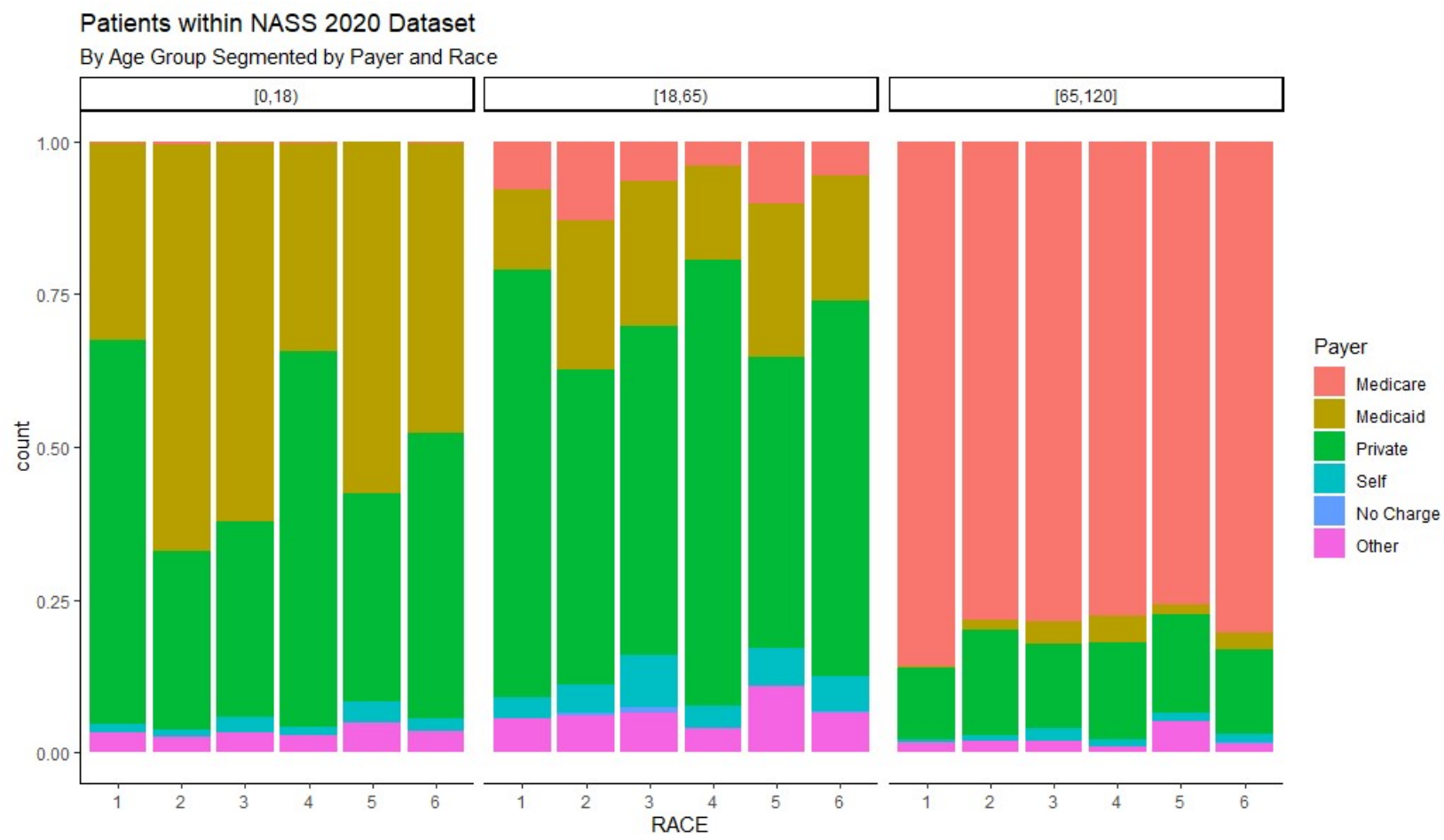
*The high relative utilization of ambulatory surgery by white patients holds true across regions and urban classification, but higher urban/south/west representation of minorities also suggests local patient mix as rationale.*



*Payer status similarly shows consistent patterns across regions and urban densities. Private insurance is best represented for most ages, is almost the majority of ambulatory encounters (47%), but is completely supplanted by Medicare by age of 65.*



*PENDING: When bracketed by Age group, payer mixes appear relatively uniform across races, with the exception of the under 18 bracket, which shows more Medicaid utilization in certain groups, as expected. TODO: Redo title, add marginal graph*





Overview of HCUP NASS 2020 Dataset Variables and Correlation Matrix of variables.  
Please see attached PDF for R script of figures.

1 Median (IQR); n (%)

|                         |                                     |                     |                               |
|-------------------------|-------------------------------------|---------------------|-------------------------------|
| Characteristic          | N = 7,828,3101                      | ZIPINC_QRTL         |                               |
| HOSP_NASS               | 30,020 (20,253, 30,792)             | -9                  | 83,969 (1.1%)                 |
| KEY_NASS                | 30,057,867 (20,597,736, 32,014,944) | -8                  | 104 (<0.1%)                   |
| AMONTH                  | 6 (2, 10)                           | 1 (Lowest)          | 1,784,061 (23%)               |
| FEMALE                  |                                     | 2                   | 2,204,802 (28%)               |
| -9                      | 701 (<0.1%)                         | 3                   | 1,975,063 (25%)               |
| -8                      | 40 (<0.1%)                          | 4 (Highest)         | 1,780,311 (23%)               |
| -6                      | 136 (<0.1%)                         | PAY1                |                               |
| 0 (Male)                | 3,472,335 (44%)                     | -9                  | 9,788 (0.1%)                  |
| 1 (Female)              | 4,355,098 (56%)                     | -8                  | 99 (<0.1%)                    |
| AGE                     | 57 (38, 68)                         | 1 (Medicare)        | 2,601,624 (33%)               |
| RACE                    |                                     | 2 (Medicaid)        | 1,019,170 (13%)               |
| -9                      | 219,935 (2.8%)                      | 3 (Private Ins.)    | 3,640,228 (47%)               |
| -8                      | 152 (<0.1%)                         | 4 (Self Pay)        | 220,234 (2.8%)                |
| 1 (White)               | 5,644,868 (72%)                     | 5 (No Charge)       | 10,996 (0.1%)                 |
| 2 (Black)               | 737,227 (9.4%)                      | 6 (Other)           | 326,171 (4.2%)                |
| 3 (Hispanic)            | 762,668 (9.7%)                      | TOTCHG              | \$23,353 (\$12,821, \$41,773) |
| 4 (Asian/PI)            | 190,304 (2.4%)                      | CPTCCS1             | 79 unique                     |
| 5 (Native)              | 36,108 (0.5%)                       | HOSP_TEACH          | 5,766,442 (74%)               |
| 6 (Other)               | 237,048 (3.0%)                      | HOSP_LOCATION       | 7,003,739 (89%)               |
| PL_NCHS                 |                                     | HOSP_REGION         |                               |
| -99                     | 10,956 (0.1%)                       | 1 (Northeast)       | 1,359,342 (17%)               |
| 1 (Large Metro Central) | 2,001,905 (26%)                     | 2 (Midwest)         | 2,496,947 (32%)               |
| 2 (Large Metro Fringe)  | 1,874,453 (24%)                     | 3 (South)           | 2,654,907 (34%)               |
| 3 (Medium)              | 1,692,414 (22%)                     | 4 (West)            | 1,317,114 (17%)               |
| 4 (Small)               | 767,598 (9.8%)                      | HOSP_BEDSIZE_CAT    |                               |
| 5 (Micropolitan)        | 865,911 (11%)                       | 1 (1-99)            | 1,188,114 (15%)               |
| 6 (Non-core)            | 615,073 (7.9%)                      | 2 (100-299)         | 2,491,495 (32%)               |
|                         |                                     | 3 (300+)            | 4,148,701 (53%)               |
|                         |                                     | TOTAL_AS_ENCOUNTERS | 4,841 (2,595, 9,398)          |

