When More Is Less: Increased Time Burden and Disparity in Access to Surgical Care by Transportation Means

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INTRODUCTION: Although barriers to healthcare, such as insurance, have been elucidated, structural factors like transportation require exploration. We hypothesized that transportation time to facilities with acute surgical capacity in our community disproportionately burdens census tracts with higher minority population.

METHODS: We identified facilities with acute surgical capacity within a 20-mile radius of city center, having emergency department, ICU, and acute care surgery services. We estimated travel times from centroid of each census tract to nearest facility. Drive time was minutes for the shortest route to make an 11:00 AM Monday appointment by car. Bus time was the shortest route using public buses. Transportation time was weighted by percentage of the population in each census tract with/without vehicle access (American Community Survey).

RESULTS: For the 144 census tracts within the city, drive time was 12 ± 5 minutes; bus time was 33 ± 15 minutes. For those without vehicle access, weighted average bus time was 28 minutes vs drive time of 11 minutes for those with vehicle access, with significant association between bus time and percent minority population per census tract: for each 10% increase in minority population there was approximately 3 minutes increase in bus time ($p < 0.001$), controlling for socioeconomic status. Average transportation time ranged from 2 to 25 minutes (for the population with/without vehicle access) (Figure).

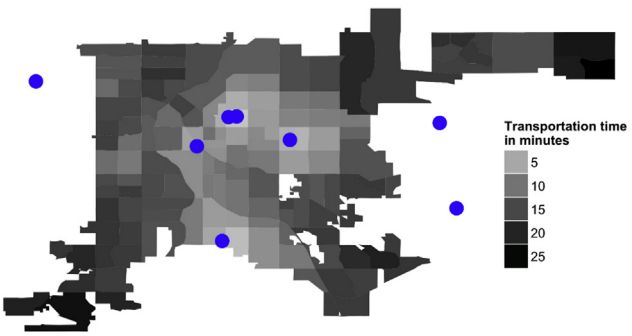

Figure.

CONCLUSIONS: Controlling for socioeconomic status, neighborhoods with higher minority population have increased travel time to healthcare facilities using public transportation. Geographic information systems have potential to identify communities with disproportionate burden to access acute care surgical services.

Work Relative Value Units: Winners and Losers During the Past 20 Years

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INTRODUCTION: Physician reimbursement is directly tied to the number of work relative value units (wRVUs) assigned to a procedure. The system of assigning and updating wRVUs has been criticized as subjective and potentially biased. Recent work found that cardiac procedures might be overvalued, but it is unclear whether this is a new phenomenon or one that has existed since wRVU inception.

METHODS: The change in wRVUs from 1998 to 2017 was calculated for surgical CPT codes (10021 to 69990) using files from the Centers of Medicare and Medicaid Services. This was combined with the 2017 provider/supplier procedure summary file to assign CPT codes to specialties. Weights were generated to account for the volume of each CPT code within a specialty.

RESULTS: The number of unique CPT codes attributed to each specialty ranged from 707 (maxillofacial) to 3,634 (general). The weighted average change in wRVUs over time was +12.1% across all specialties (Figure). Within a specialty, this average ranged from −13.4% (ophthalmology) to +36.8% (cardiac). Gains in cardiac primarily occurred in 2007 when 3 high-volume services were increased by 30.7% (coronary artery bypass grafting), 35.0% (aortic valve replacement), and 62% (mitral valve replacement). Losses in ophthalmology occurred primarily in 2011 and 2013 when cataract surgery and intraocular injections were devalued by 17.1% and 42.9%, respectively.

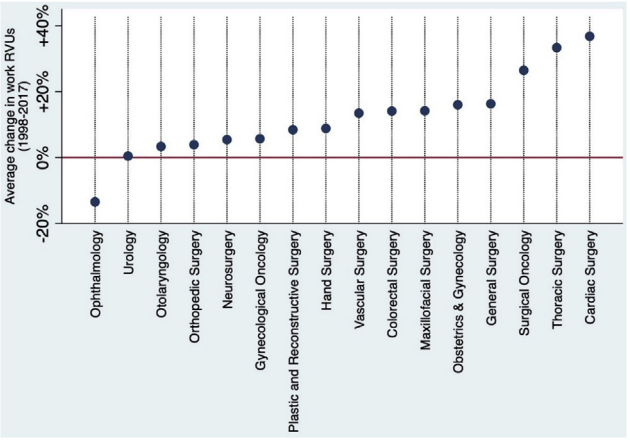

Figure.

CONCLUSIONS: Work RVUs have generally increased over time but with large variation by specialty. The update process, rather than the initial valuations, might be largely to blame for differences across specialties that exist today.