Geographic Proximity to Accredited Bariatric Surgery Centers: A County-Level Geographic Information System Analysis

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Background:

- Surgical centers accredited through the MBSAQIP represent important locations for safe, high-quality metabolic and bariatric surgery (MBS).
- We aimed to examine the association between distance to the nearest MBSAQIP center and county-level markers of social vulnerability.

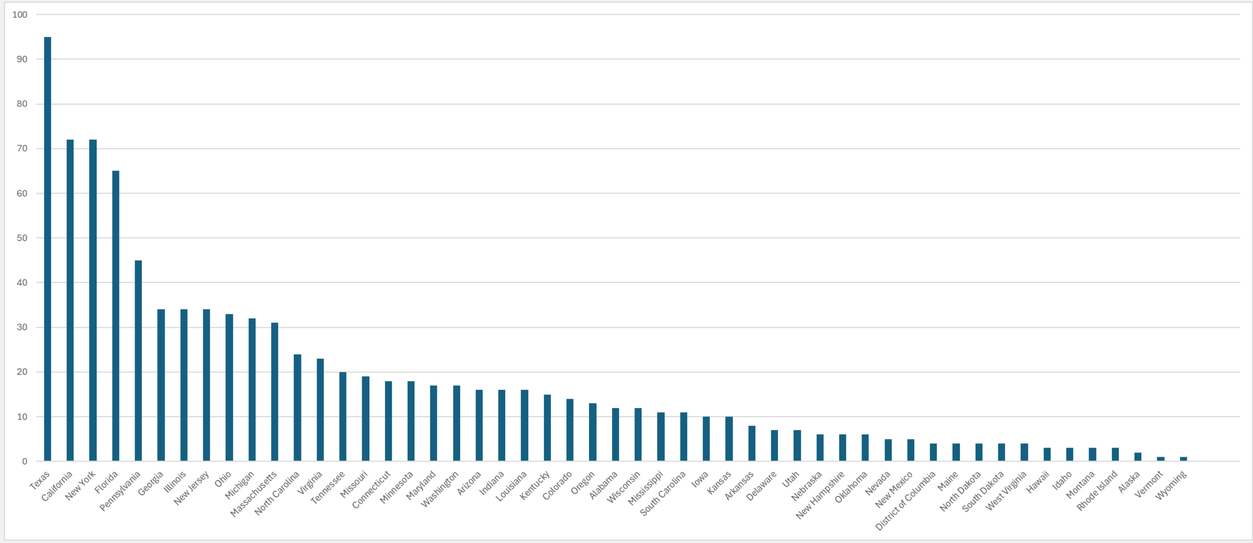
Methods:

- Using Esri ArcGIS, we geocoded MBSAQIP center addresses. We also geocoded coordinates of US county population centroids obtained from the 2020 US Census Bureau. We calculated the distance from each county centroid to the nearest MBSAQIP center.
- We examined the associations between distance to the nearest center and county-level measures of social vulnerability obtained from 2020 US Census data.

Results:

In total, we geocoded 945 MBSAQIP centers and 3,126 US county centroids. Of all counties, 466 (14.9%) had at least one MBSAQIP center. The county with the most centers (20) was Harris County (Houston, Texas). The number of MBSAQIP centers per state ranged from 1 to 94 (Figure).

Figure. Number of MBSAQIP Centers Per State



Results:

- At the national level, the median distance and travel time from a county centroid to an MBSAQIP center were 44.2 miles (IQR 24.5-75.1) and 52.1 minutes (IQR 31.7-81.3), respectively.
- Counties with proportionally more uninsured individuals ($r = 0.16$, $p<0.01$) and those with proportionally more individuals 65 years and older ($r = 0.22$, $p<0.01$) were likely to be further from an MBSAQIP center.

Conclusions:

- Our county centroid-based analysis suggests that most individuals live at least 40 miles away from the nearest MBSAQIP center.
- Future studies are warranted to elucidate the relationship between distance from an MBSAQIP center and the likelihood of undergoing MBS among eligible candidates and variability in post-MBS outcomes.