Neighborhood Tabulation Areas: Triangulating the ACS with Other Data at the Small Area Level to Enhance Community Health Improvement Capacity in NYC

Tsu-Yu Tsao
Kathleen Reilly
Anna Zhilkova
New York City Department of Health and Mental Hygiene
May 11, 2017
Social Determinants of Health

- Increased focus on SDH
- Health data often lack SDH information
- Necessity of linking health with census and other data at census geography
- Optimal census geography for community health?

Source: https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health
Neighborhood Defined as Community District (CD)

- Community Health Profiles 2015
- Critical geography for community planning and decision making
- Readily available census data
- Limitation: median population = 140,000
Neighborhood Tabulation Area (NTA)

- Statistical area created by NYC DCP
- NTA is aggregation of census tracts within the same PUMA
- NTAs are granular, reliable, compatible with other census geographies, and identifiable as NYC neighborhoods

NTAs
Count = 188
Median Population = 36,600
Granularity of NTA Data
Age-adjusted Premature Mortality Rate in CD 313 (Brighton Beach & Coney Island)

CD 313 = 218 per 100,000
Reliability of NTA Estimates
Identifiable Neighborhood Names for NTAs

NTAs are composed of Census Tracts

West Village

Neighborhood Tabulation Areas or NTAs, are aggregations of census tracts that are subsets of New York City's 55 Public Use Microdata Areas (PUMAs). Primarily due to these constraints, NTA boundaries and their associated names may not definitively represent neighborhoods.

Source: U.S. Census Bureau, American Community Survey, 2006-2010 Summary File Population Division-New York City Department of City Planning
Compatibility with Other Census Geographies

- Potential impact of $15 minimum wage on health (Tsao et al.)
- Simulation exercise based on ACS PUMS data
- Ecological model of premature mortality at the CD level
- Used NTAs to verify model estimates
Data Sources

- American Community Survey
- NYS Statewide Planning and Research Cooperative System (SPARCS)
- NYC Office of Vital Statistics data
- Other DOHMH data (Disease Control, Environmental Health, A1C Registry, etc.)
- NYC FITNESSNESSGRAM
- NYC Medicaid data (accessed through Salient Interactive Miner)
- Health Data NY
- Data from other city agencies, including ACS, DHS, DFTA and HRA
Potential Data Uses

• Identify health concerns and disparities in small areas
• Uncover multiple determinants of health in NYC communities
• Help drive community prevention planning and investments
Use Case: TCNY 2020 Community Heath Planning Funding Decisions
Use Case: Post Emergency Canvassing Operation

Number of people with disabilities by NTA

- 0 - 2686
- 2687 - 4041
- 4042 - 5905
- 5906 - 13513

- Parks, Cemeteries, Airports
## Use Case: Ecological Regression Analysis of Avoidable Hospitalizations

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient estimate</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female, %</td>
<td>8.26</td>
<td>11.08</td>
</tr>
<tr>
<td>Non-Hispanic Black, %</td>
<td>5.41*</td>
<td>1.37</td>
</tr>
<tr>
<td>Hispanic, %</td>
<td>7.14*</td>
<td>2.12</td>
</tr>
<tr>
<td>Asian, %</td>
<td>-1.78</td>
<td>2.69</td>
</tr>
<tr>
<td>Other race, %</td>
<td>-2.42</td>
<td>11.0</td>
</tr>
<tr>
<td>Foreign born, %</td>
<td>-11.12**</td>
<td>2.6</td>
</tr>
<tr>
<td>Less than HS degree, %</td>
<td>-0.46</td>
<td>5.51</td>
</tr>
<tr>
<td>Below FPL, %</td>
<td>34.45**</td>
<td>8.99</td>
</tr>
<tr>
<td>Unemployed, %</td>
<td>55.15**</td>
<td>8.98</td>
</tr>
<tr>
<td>No health insurance, %</td>
<td>-6.07</td>
<td>13.30</td>
</tr>
<tr>
<td>Constant</td>
<td>-126.91</td>
<td>1,165.89</td>
</tr>
<tr>
<td>N</td>
<td>188</td>
<td></td>
</tr>
<tr>
<td>R$^2$</td>
<td>0.88</td>
<td></td>
</tr>
</tbody>
</table>
Conclusions

• NTAs represent a useful geography to organize NYC data to examine and promote community health.
• The current plan is to share NTA data publicly by the end of 2017.
• Please contact Tsu-Yu Tsao with questions and suggestions: (ttsao@health.nyc.gov)
Acknowledgements

• Funding for this project is provided by RWJF Data Across Sectors for Health (DASH)

• Project partners include:
  o Department of City Planning (DCP)
  o Center for Innovation through Data Intelligence (CIDI)
  o Administration for Children’s Services
  o Department for the Aging
  o Department of Social Services
  o The New York Academy of Medicine (NYAM)
  o United Hospital Fund (UHF)
  o The Fund for Public Health in New York