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
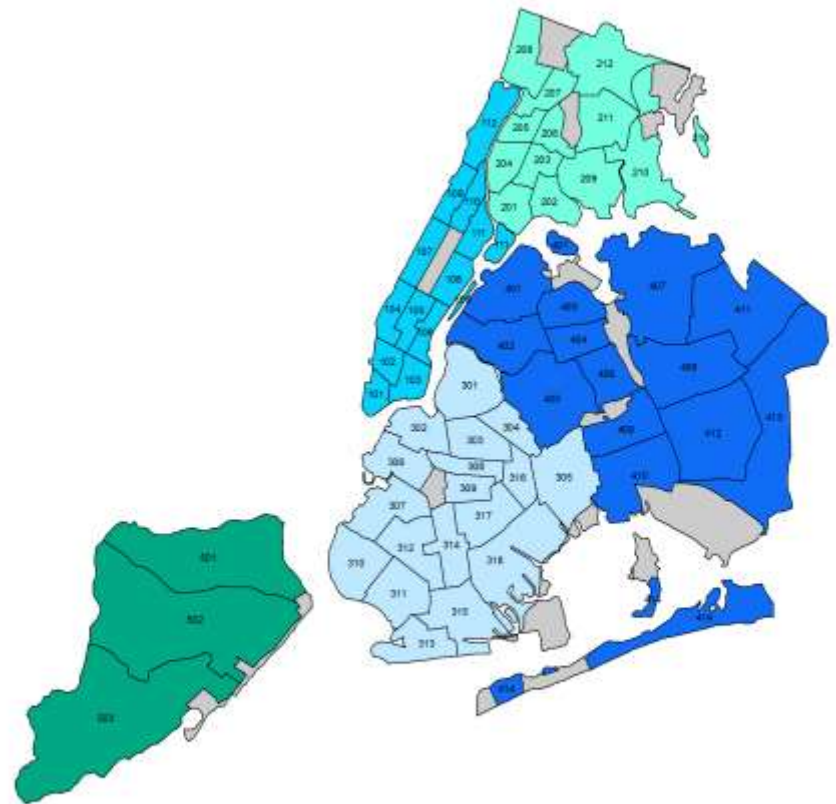**May 11, 2017**

1

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
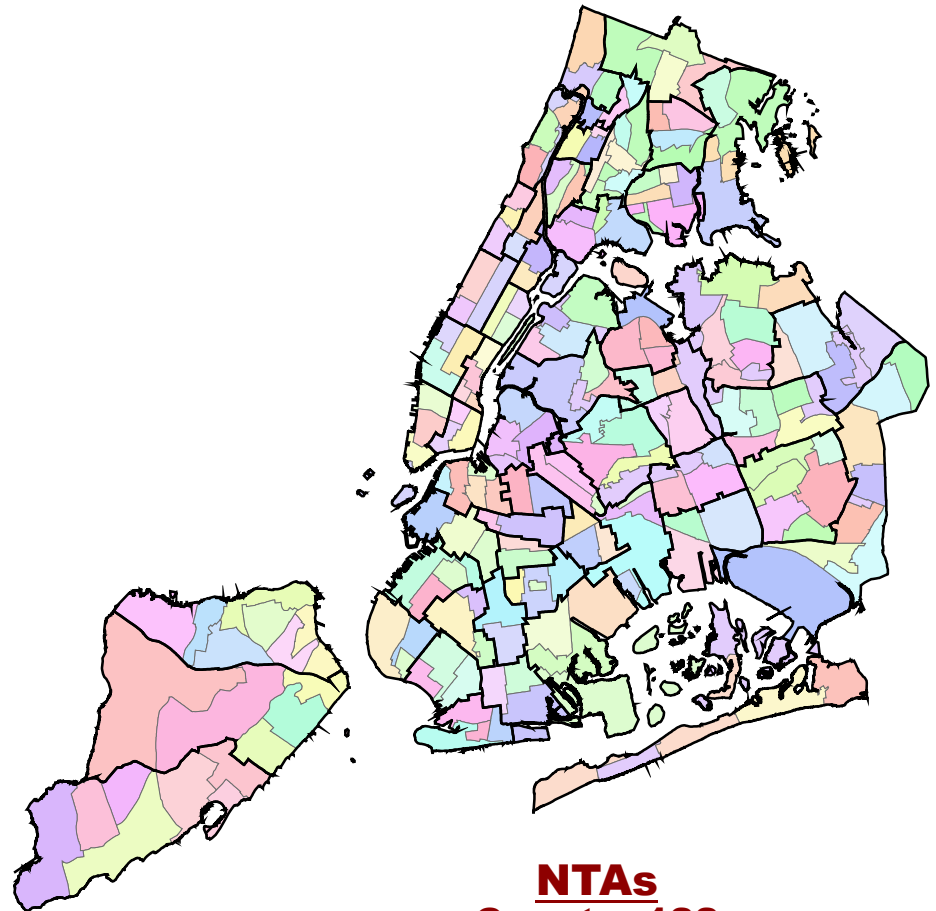
Neighborhood Defined as Community District (CD)

- Community Health Profiles 2015

- Critical geography for community planning and decision making

- Readily available census data

- Limitation: median population = 140,000
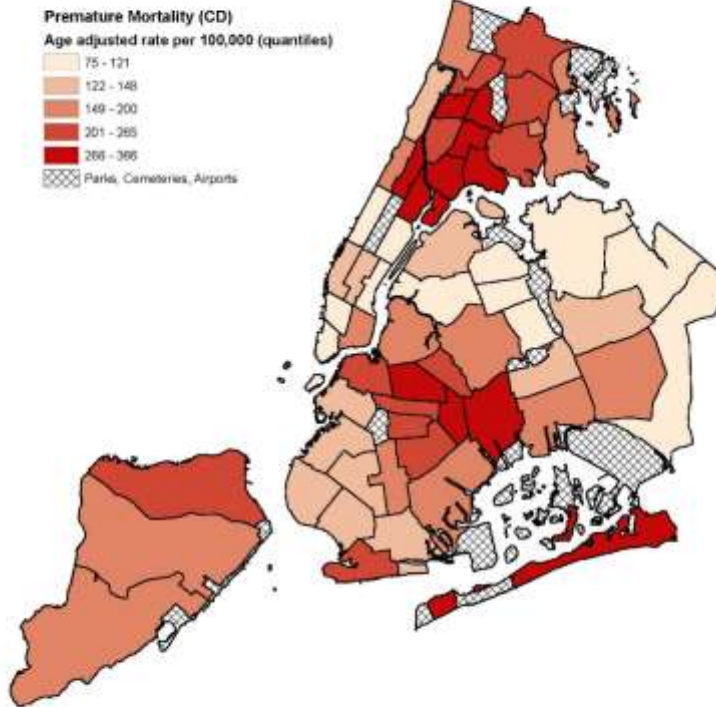
Neighborhood Tabulation Area (NTA)

- 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
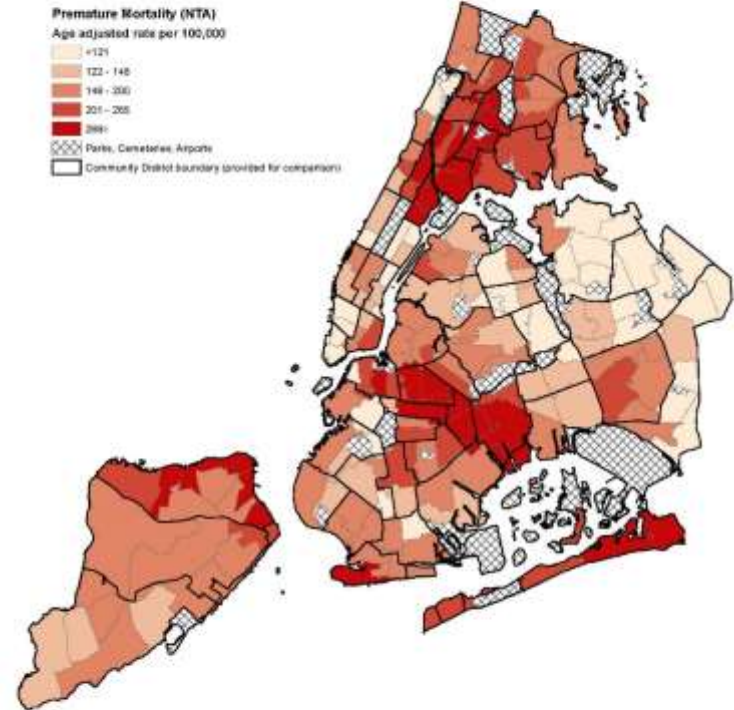**Median Population = 36,600**

Granularity of NTA Data

Premature Mortality Rates by Community District (CD) in New York City, 2009-2013

Premature Mortality (CD)
Age adjusted rate per 100,000 (quantiles)
- 75 - 121
- 122 - 148
- 149 - 200
- 201 - 265
- 266 - 366
- Parks, Cemeteries, Airports

Source: NYC DOHMH Bureau of Vital Statistics;
NYC Planning Population Estimates Adapted from the American Community Survey 2009-2013.

Premature Mortality Rates by Neighborhood Tabulation Area (NTA) in New York City, 2009-2013

Premature Mortality (NTA)
Age adjusted rate per 100,000
- +121
- 122 - 148
- 149 - 200
- 201 - 265
- 266+
- Parks, Cemeteries, Airports
- Community District boundary (provided for comparison)

Source: NYC DOHMH Bureau of Vital Statistics;
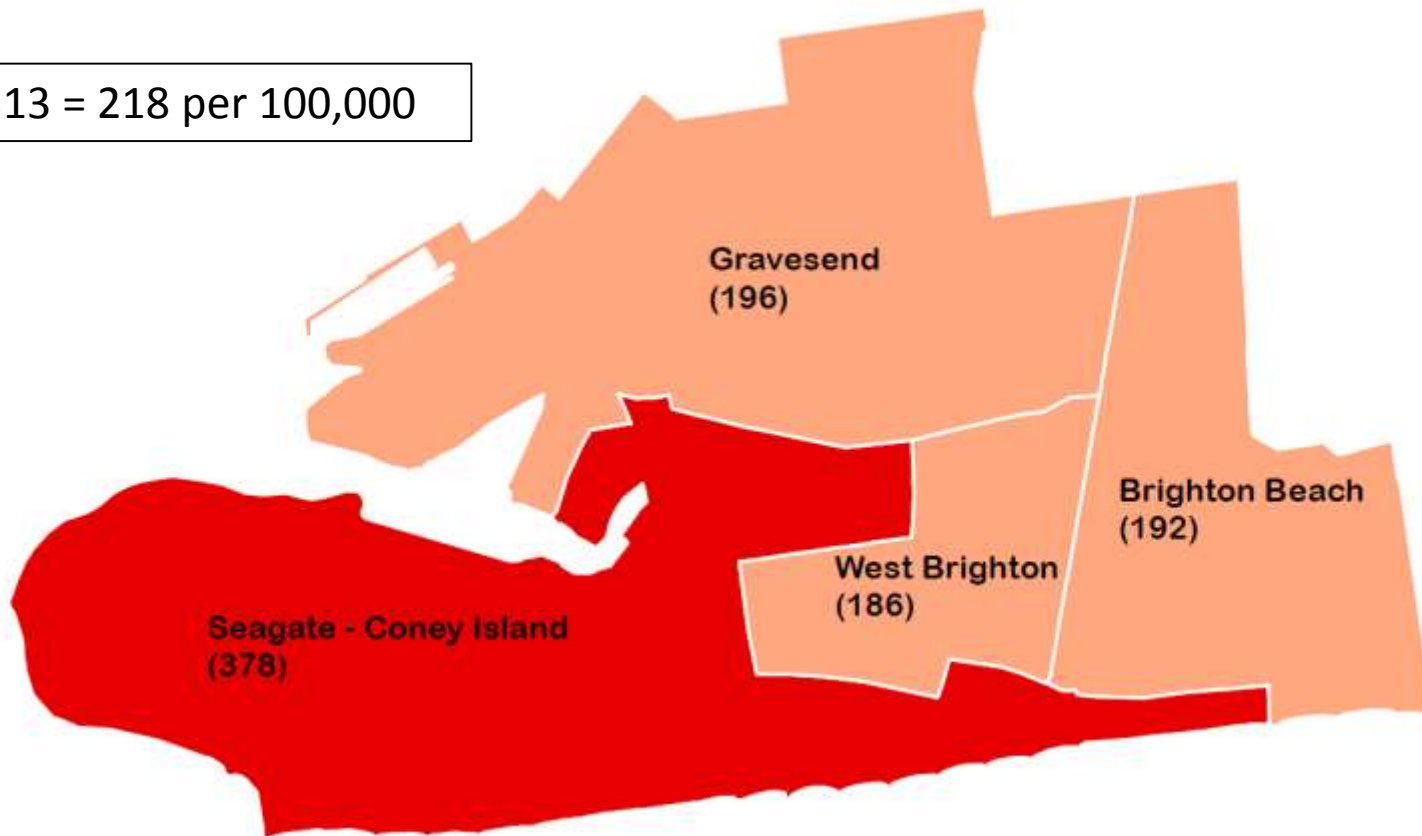NYC Planning Population Estimates Adapted from the American Community Survey 2009-2013.

Age-adjusted Premature Mortality Rate in CD 313 (Brighton Beach & Coney Island)
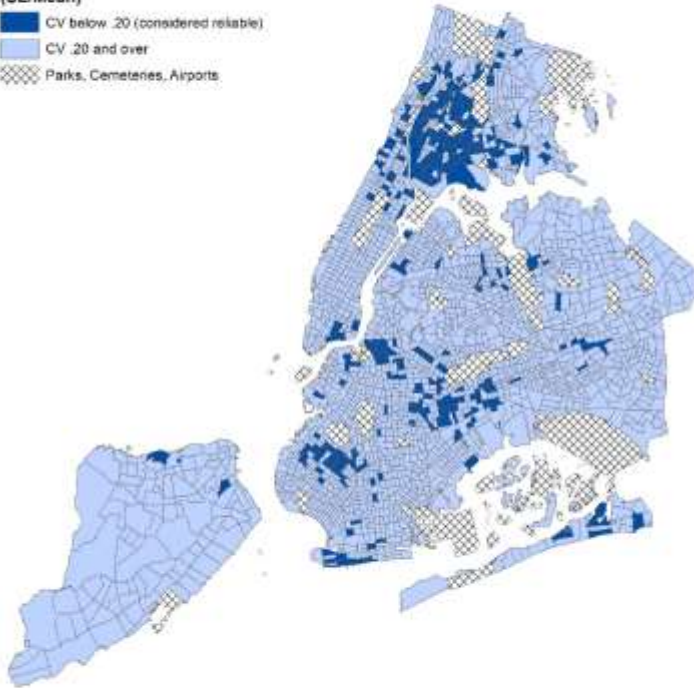
CD 313 = 218 per 100,000

Gravesend (196)

Brighton Beach (192)

West Brighton (186)

Seagate - Coney Island (378)
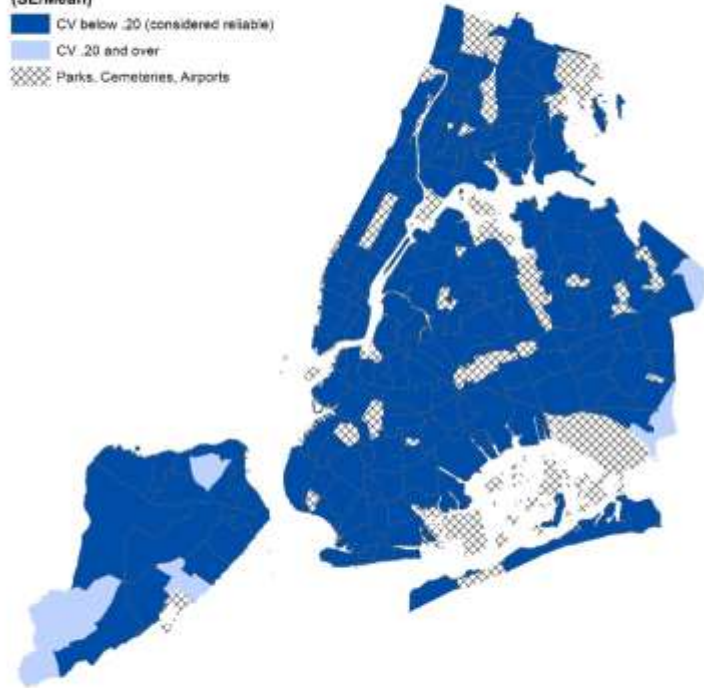
Reliability of NTA Estimates

Coefficients of Variation for Census Tract Poverty Estimates (SE/Mean)
- CV below .20 (considered reliable)
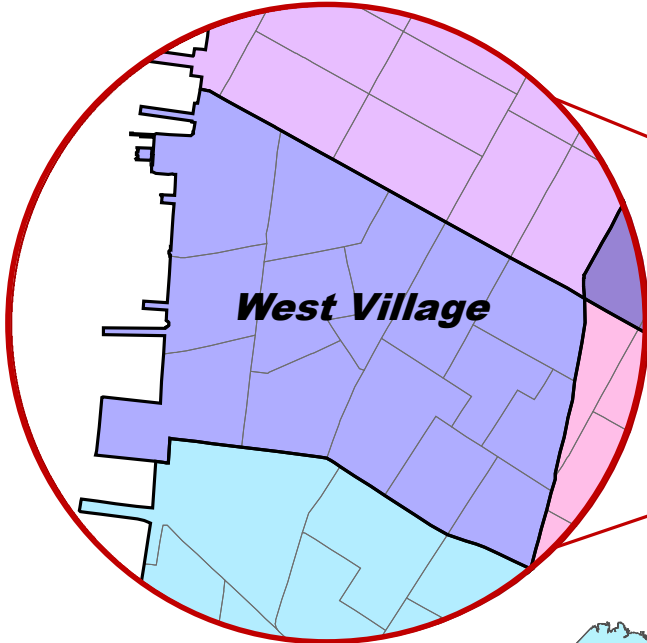- CV .20 and over
- Parks, Cemeteries, Airports

Coefficients of Variation for NTA Poverty Estimates (SE/Mean)
- CV below .20 (considered reliable)
- CV .20 and over
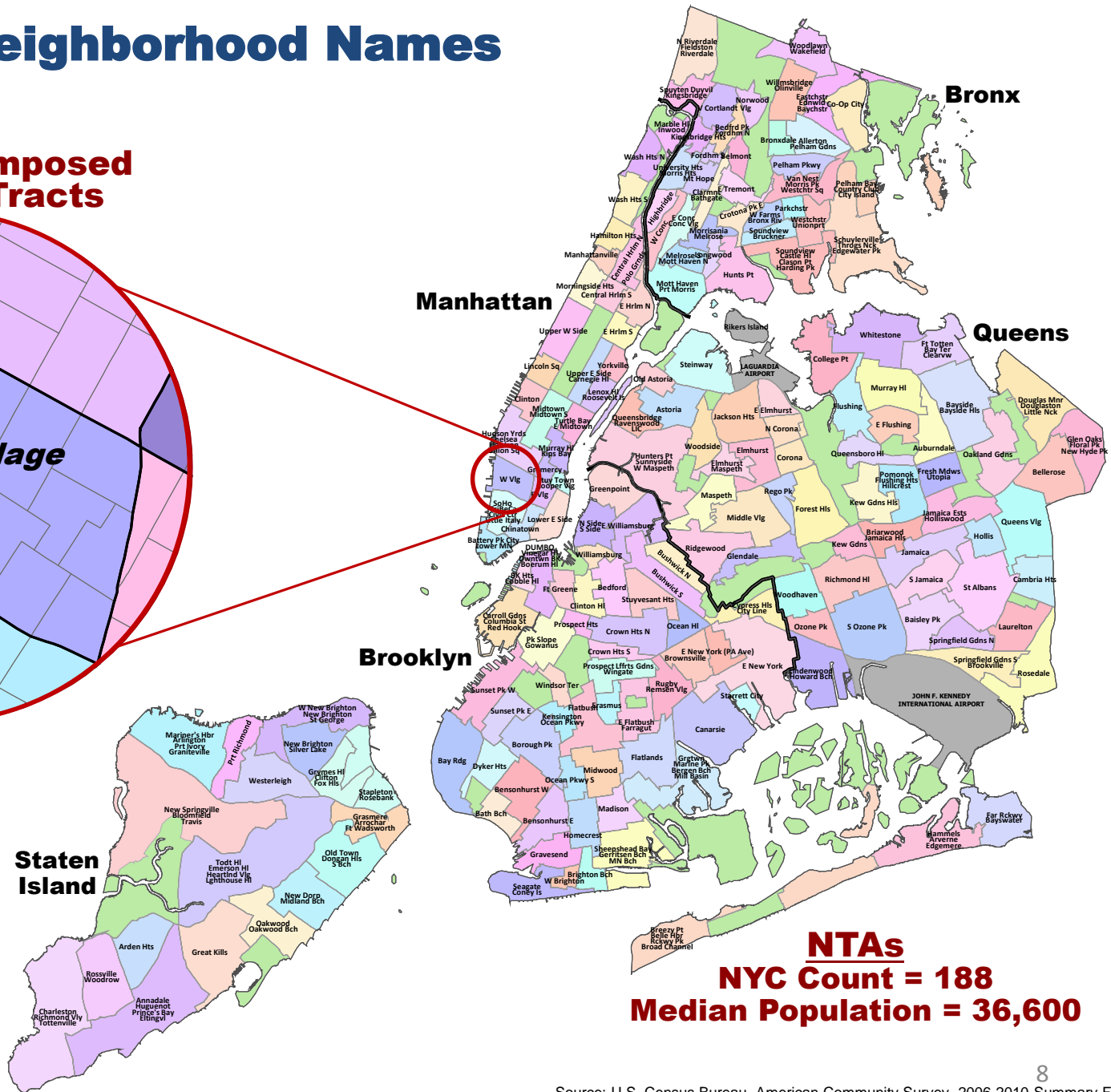- Parks, Cemeteries, Airports

Identifiable Neighborhood Names for NTAs

NTAs are composed of Census Tracts

West Village

Manhattan

Bronx

Queens

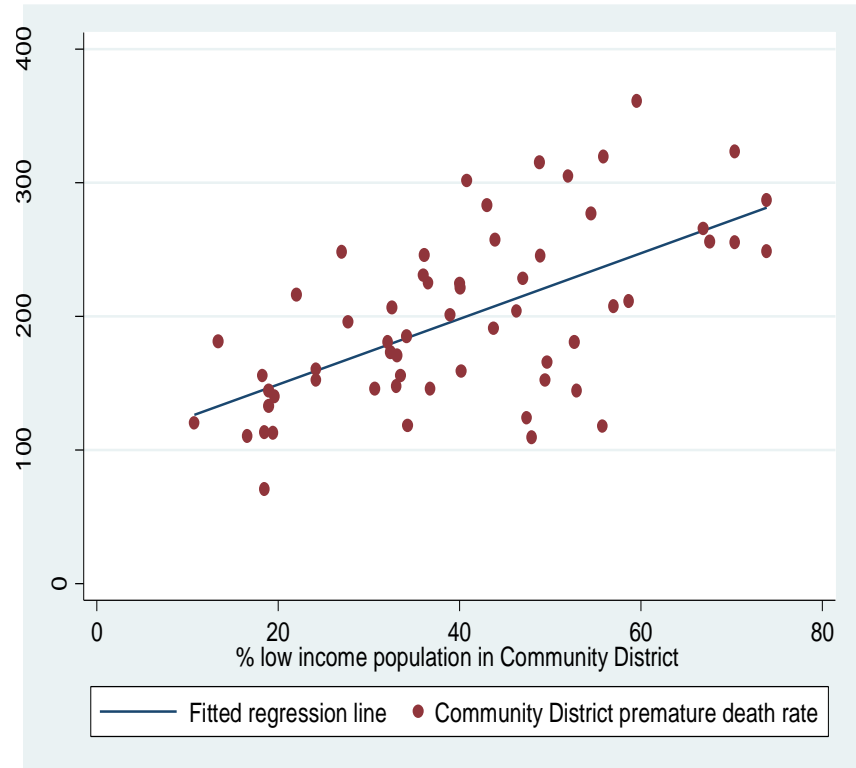**Brooklyn**

Staten Island

NTAs
NYC Count = 188
Median Population = 36,600

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.

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
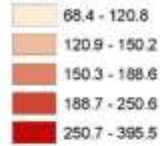- Data from other city agencies, including ACS, DHS, DFTA and HRA

Potential Data Uses

- Identify health concerns and disparities in small areas

- Uncover multiple determinants of heath in NYC communities

- Help drive community prevention planning and investments

Use Case: TCNY 2020 Community Heath Planning Funding Decisions
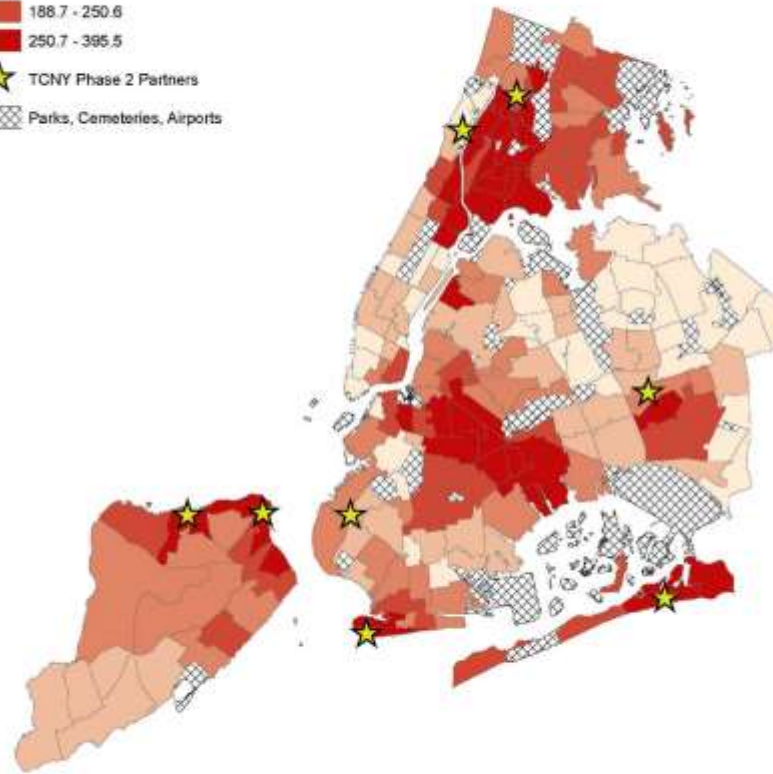

Age-Adjusted Premature Mortality Rate by Neighborhood Tabulation Area, 2009-2013

Age-Adjusted Rate
- 68.4 - 120.8
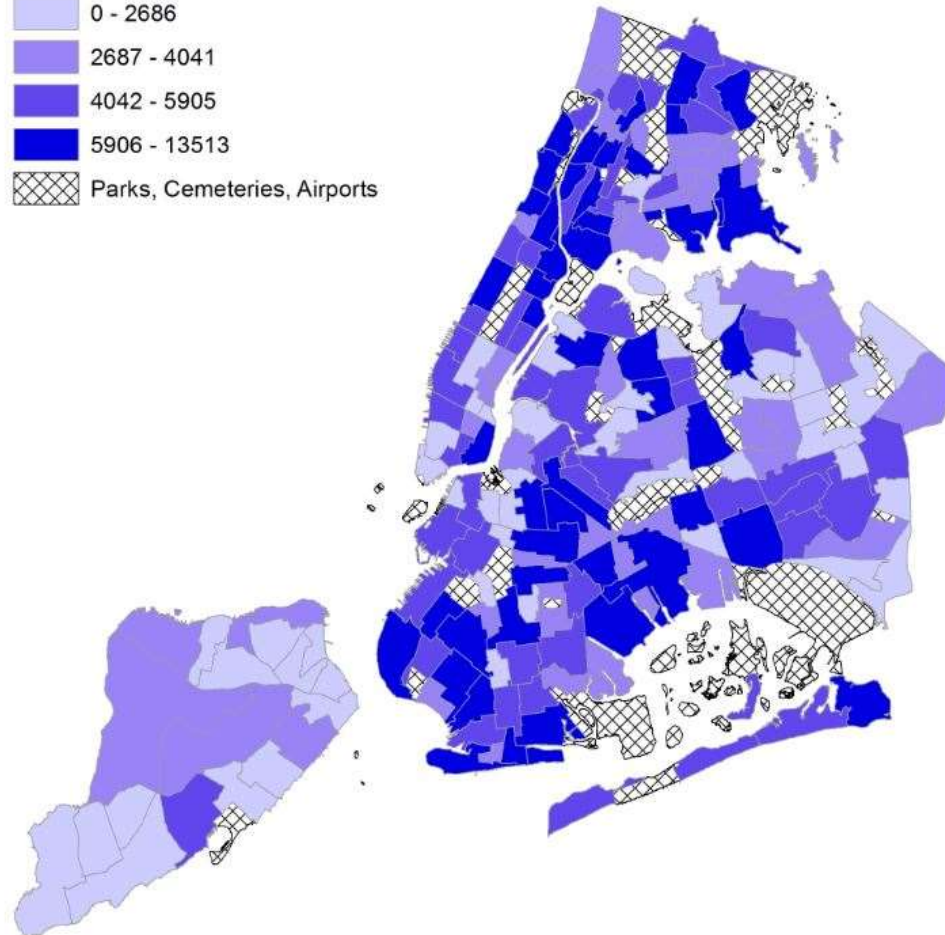- 120.9 - 150.2
- 150.3 - 188.6
- 188.7 - 250.6
- 250.7 - 395.5
- ☆ TCNY Phase 2 Partners
- Parks, Cemeteries, Airports

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

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

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