Review of "Variation in COVID-19 Hospitalizations and Deaths across New York City Boroughs"

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One-Minute Summary

- This study examined differences in rates of coronavirus disease 2019 (COVID-19) testing, hospitalizations and deaths among the five boroughs of New York City (i.e., the Bronx, Brooklyn, Manhattan, Queens, and Staten Island) in the United States (US).
- **Demographic variables** (highest vs. lowest borough):
    - **Population density (per square mile):** Manhattan (71,434) vs. Staten Island (8,112)
    - **Proportion of population ≥ 65 years:** Manhattan (16.5%) vs. Bronx (12.8%)
    - **Proportion of population Black or African American:** Bronx (38.3%) vs. Staten Island (11.5%)
    - **Proportion of population Hispanic:** Bronx (56.4%) vs. Staten Island (18.7%)
    - **Household median annual income:** Manhattan (US$85,066) vs. Bronx (US$38,467)
    - **Proportion of population with bachelor's degree or higher:** Manhattan (61.4%) vs. Bronx (20.7%)
    - **Hospital beds per 100,000 population:** Manhattan (534) vs. Queens (144)
- **Study outcomes, rates per 100,000 population** (highest vs. lowest borough):
    - **Testing:** Staten Island (5,603) vs. Manhattan (2,844)
    - **Hospitalizations:** Bronx (634) vs. Manhattan (331)
    - **Death:** Bronx (224) vs. Manhattan (122)
- Of the five boroughs, **the Bronx has experienced the highest rates of hospitalizations and deaths** due to COVID-19, and **Manhattan has experienced the lowest rates of hospitalizations and deaths**.
- In comparing these two boroughs by characteristics, the Bronx has the highest proportion of persons living in poverty and the largest proportion overall of people identifying as either Black/African American, Hispanic or other race. Manhattan has the highest median household income and most hospital beds for the population.
- The authors suggest that COVID-19 outcomes may be explained by inter-borough variability in 1) underlying comorbidities of the population, 2) occupational exposures, 3) socioeconomic determinants and 4) race-based structural inequalities.

Additional Information

- The authors used patient data on all COVID-19 cases reported to the New York City Department of Health and Mental Hygiene (up to April 25, 2020).
- The authors obtained demographics for each borough from the 2018 American Community Survey.
- The authors used hospital information from the American Hospital Association file for 2016 and manual search of hospital websites.
- The authors acknowledge several **limitations** to their work 1) an ecological study design, 2) demographics of patients who died were not available (i.e., to determine if patients who died in a borough reflect the demographics of that borough) and 3) COVID-19 infection rates were not calculated (due to high variability in testing).

PHO Reviewer's Comments

- None.

Citation

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