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# Distribution of access to endovascular stroke therapy in New York City

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## Introduction

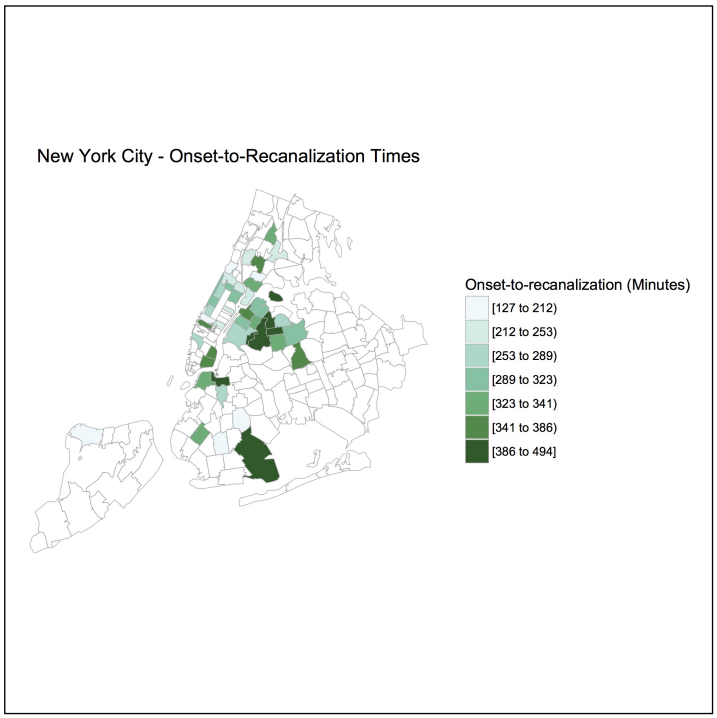
- The complexity of neurointervention for stroke limits the number of hospitals that are able to provide this therapy.
- The borough of Queens in NYC has a population of 2.3 million and does not have a CSC.
- Previous studies on larger geographical regions have found that distance to a comprehensive stroke center (CSC) is associated with longer times to treatment. [1]

## Our aim

- To examine the availability of endovascular treatment across boroughs in New York City for a single hospital network.
- To investigate the impact of distance to a CSC on time to treatment and clinical outcomes within a dense, urban environment.

## Methods

- We performed a retrospective analysis on 92 stroke patients who presented to a hospital in New York City and ultimately received endovascular treatment for acute stroke at four hospitals in Manhattan.
- A subanalysis was performed on 39 patients from Queens and on 36 patients from Manhattan.
- Mean income of the zip code each patient is from, last-known-well, groin puncture time, recanalization time, baseline NIHSS, and discharge NIHSS were collected.




## Learning Objectives

By the conclusion of this session, participants should be able to:

- Describe the importance of determining access to endovascular care
- Discuss, in small groups, differences between Manhattan and Queens with respect to access to endovascular care

## Results

- Onset-to-recanalization times were significantly different between the five boroughs of New York City (P=0.0062).
- 42% of patients were from Queens and 39% were from Manhattan.
- The mean income of the zip code patients were from was $63,608.70 for Queens and $98,446.59 for Manhattan (P=0.0014).
- Mean onset-to-recanalization time was 352 minutes for patients from Queens and 275 minutes for patients from Manhattan (P=0.0009).
- Similarly, onset-to-puncture time was 301 minutes for patients from Queens and 222 minutes for patients from Manhattan (P=0.0011).
- Change in NIHSS from admission to discharge was -2.5 for Queens patients and -5.4 for Manhattan patients, but this difference was not statistically significant (P=0.4292).

## Conclusions

- Our findings suggest that patients in Queens have less access to endovascular stroke treatment than patients in Manhattan as seen in longer onset-to-recanalization and onset-to-puncture times.
- The lack of a hospital with endovascular stroke facility in Queens translates to patient treatment times.
- Even within dense, urban environments with extensive hospital networks such as New York City, there are significant disparities in access to endovascular stroke treatment.

### References

1. Pérez, de la Ossa N., et al. "Access to Endovascular Treatment in Remote Areas: Analysis of the Reperfusion Treatment Registry of Catalonia." Stroke; a journal of cerebral circulation 47.5 (2016): 1381-1384.