

## Background

There are currently 61 urgent care centers in Manhattan, New York. Urgent care centers, in contrast with walk-in and retail clinics, have at least one medical doctor on staff, such as a doctor, nurse practitioner, or physician assistant. Most have on-site x-ray equipment, which enables them to be able to handle more severe services such as broken bones.

The purpose of this study is to analyze the distribution and accessibility of urgent care centers in the borough of Manhattan, and understand whether they are placed effectively. From the analysis, this study also determines the best locations for urgent care centers according to the surrounding population and its health insurance coverage.

The data used includes the list of Urgent Care Centers in Manhattan from [www.urgentcarelocations.com](http://www.urgentcarelocations.com) and the 2016 census estimates for population and health insurance coverage per census tract from American FactFinder.

The image on the left shows the current distribution of urgent care centers and the census tracts that are within the 0.25 mile buffer of the center.

## Methods

Obtain Data

Geocode

Create Features

Create Buffers

Create Thiessen Polygons

Near Function

Analyze Distributions

After the data was obtained, aggregated, and geocoded, it was projected on the Manhattan census tracts.

Using the *Buffer* tool, 0.25 mile buffers were created to visualize the extent of the surrounding area each urgent care center covered. The *Thiessen Polygons Creation* function was used to determine the effectiveness of distribution of urgent care centers prior to any additional centers. The *Near* tool was used to determine the distance from the centroids of each census tract to the nearest urgent care center. From the results, averages were taken to better understand the extent of the effectiveness of the urgent care centers' locations.

To determine the best locations for new urgent care centers, careful consideration was taken after analyzing the spread of current centers, the population per census tract, and the percentages of those with and without health insurance coverage. Once these new features were created, a similar procedure done on the current urgent care centers was performed (creating a 0.25 mile buffer, creating Thiessen polygons, and utilizing the near function to calculate averages). There is a total of 18 newly proposed urgent care centers.

## Results

The census tract coverage from the 61 urgent care centers currently in place is 44%. The proposed census tracts would create an additional 20% of coverage, as depicted in the map on the right.

The choropleth maps below depict the population and the percentage of the amount of people with health insurance coverage distribution of Manhattan. When choosing the locations for the new urgent care centers, areas with high population and low health insurance coverage percentage were prioritized. In addition, ensuring that the new buffer zones do not intersect with the already existing ones allows for a more inclusive distribution of centers.

As the chart on the right indicates, urgent care centers are currently serving 43.13% of the population, and similarly, 43.91% of those with health insurance live within proximity of the centers. With the 18 newly proposed urgent care centers, an additional 23.80% and 23.35% of the population and those with health insurance respectively will gain access.

Census Tract Coverage

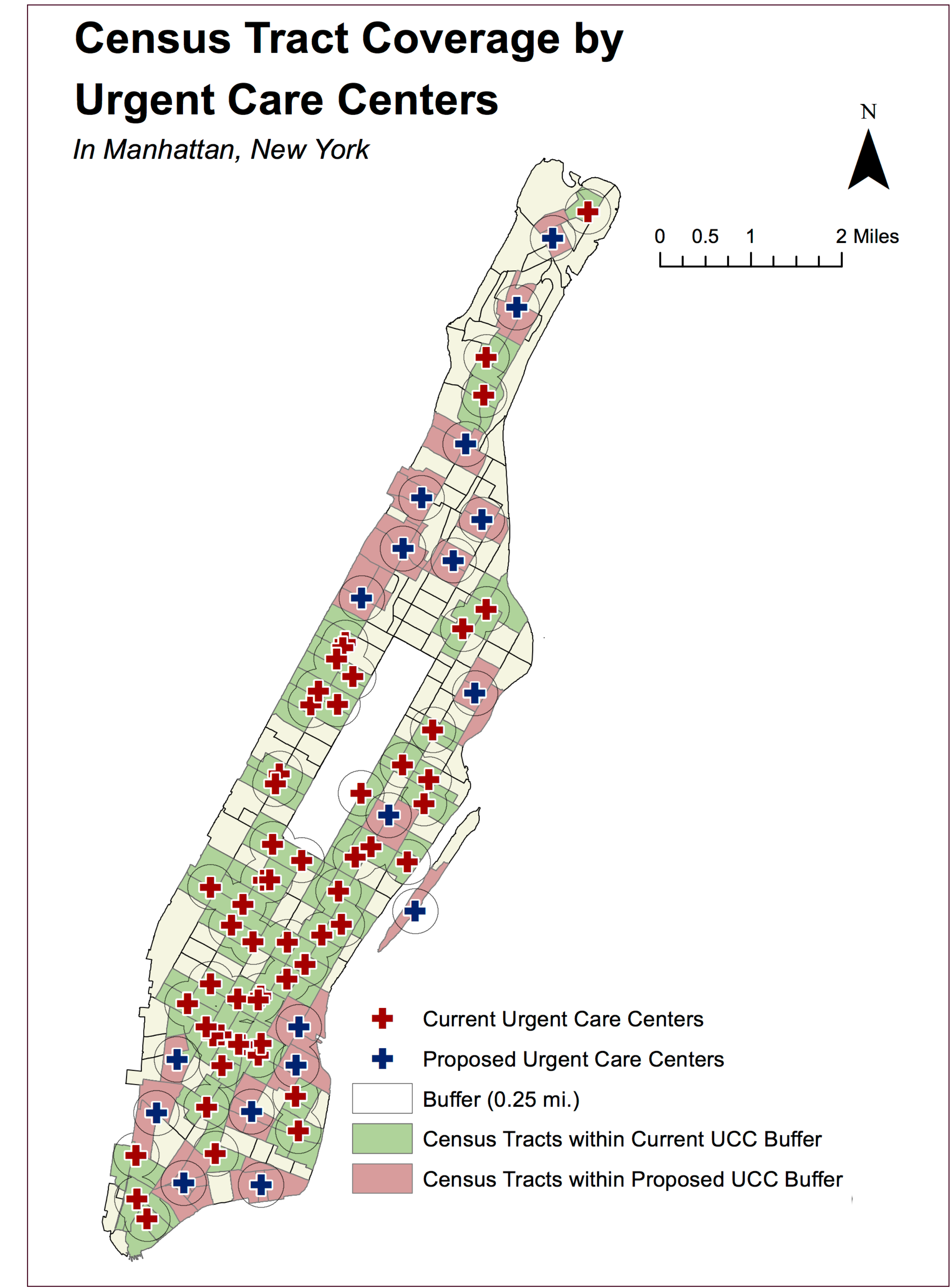
With Proposed	Current	Uncovered
20%	44%	26%

Population

With Proposed	Current	Uncovered
23.80%	43.13%	33.06%

Health Insurance Coverage

With Proposed	Current	Uncovered
23.35%	43.91%	32.74%



## Figures



## Discussion and Conclusion

The current coverage of census tracts of the urgent care centers is 44%; with the additional 18 centers, it would be increased to 64%. Although it would just be a 20% increase, opening up the centers in areas that do not have any clusters at the moment would be beneficial for those without access to the urgent care centers.

As indicated from the *Average Distance from Census Tract to Nearest Urgent Care Center* figure, the average distances decreased tremendously with the additional centers. The averages (in miles) decreased from 0.62, 0.40, and 0.21 to 0.29, 0.24, and 0.21 respectively.

Factors to take into consideration when opening up an Urgent Care Center would include:

- Proximity to other UCC's
- Population of area
- Whether or not the population has health insurance coverage

As urgent care centers are becoming more prominent, the need for accessibility has increased to accommodate those living in surrounding areas.

## References

"Health Insurance Coverage Status by Sex by Age 2016 American Community Survey 5-Year Estimates." American FactFinder. Accessed 22 May 2018. [https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_16\\_5YR\\_B27001&prodType=table](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B27001&prodType=table).

"Total Population 2016 American Community Survey 5-Year Estimates." American FactFinder. Accessed 22 May 2018. [https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_16\\_5YR\\_B01003&prodType=table](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B01003&prodType=table).

"Urgent Care Locations." SolvHealth. Accessed 22 May 2018. [www.urgentcarelocations.com](http://www.urgentcarelocations.com).