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GIS Final Project Proposal

Due: April 30, 2019

Effect of Income and Health Insurance Coverage on Access to Substance Abuse Treatment Centers

Project Summary

This research project will analyze the relationship between income and/or health insurance coverage on access to treatment at Substance Abuse Centers in NYS and specifically NYC in 2011.

Statement of Purpose and Description

For this project, I will research the effect of income and health insurance coverage on access to Substance Abuse Treatment Centers. My main focus will be to identify whether or not there is a correlation between health insurance coverage and income on an individual's ability to receive treatment for drug-related issues. Previous research has shown that individuals from a low-income area are less likely to have health insurance coverage as well as attend rehab centers to treat their addictions. This is because many low-income people work in occupations that are less likely to provide coverage and/or cannot afford to pay the copay that comes along with having health insurance coverage.

In this project I hope to focus on the location of Treatment Centers as well as the number of people uninsured by county in NYS in 2011. Furthermore, I will map the percentage of people who have health insurance coverage and the average median income by census tract in NYC boroughs. I hope by mapping this information I will be able to see if a relationship exists

between the location of treatment centers and the people who have access to them. By analyzing such data I hope to shed light on one of the many factors that affect health care disparities and potentially propose one or more solutions that can help close the gap of access to treatment centers.

Literature Review

According to Beau Kilmer and his peers, it was not until 2010 that the passage of The Patient Protection and Affordable Care Act required health insurance companies to cover substance use disorders in part. Yet, some insurers still refused to provide any coverage. Beau and his peers then go on to describe how limited access to treatment centers can lead to many drug-addicts going untreated. For example, he highlights how some areas do not have enough treatment providers while others areas are overpopulated (Kilmer et.al, 2016). Thus, this paper already reveals some of limitations in the study I performed. This is because the maps I will present do not take into account the people who are on a waitlist to a treatment center, the people who want to receive treatment but have been unsuccessful, and the quality of care. These factors are important to acknowledge when analyzing this data because they maybe alternative explanations for the trends we observe and not merely a result of the risk or dependence of a drug.

Furthermore, low-income individuals are less likely to receive health insurance coverage than their wealthier counterparts. Some reasons may include whether their job offers employees health benefits, if the individual is self-employed or even too low-income to afford coverage (Institute of Medicine, 2001). According to the Institute of Medicine, insured status correlates with income level, occupation, educational attainment and other factors. “ Two-thirds of all

insured persons are members of lower-income families. One-third of all members of lower-income families are uninsured.” Using a bivariate analyses, the authors were able to see how various socioeconomic factors affect the probability that a person will be uninsured. This method is imperative for determining whether there is a correlation between income and insurance coverage and how that might relate to where treatments are located as well as who has access to them.

Data

Types of Spatial Data Needed:

1. Location of Substance Abuse Treatment Centers in NYS for NYS Counties and Census Tracts.

This information will be retrieved from the Office of Alcoholism and Substance Abuse Services.

2. Number of people uninsured by County in 2011 for NYS Counties and Census Tracts.

3. Average household income by County in 2011 for Census Tracts.

This information will be retrieved from American FactFinder.

4. Shapefile of NYS by counties.

5. Shapefile of NYC by census tract.

This information will be retrieved from the United States Census Bureau.

Methodology

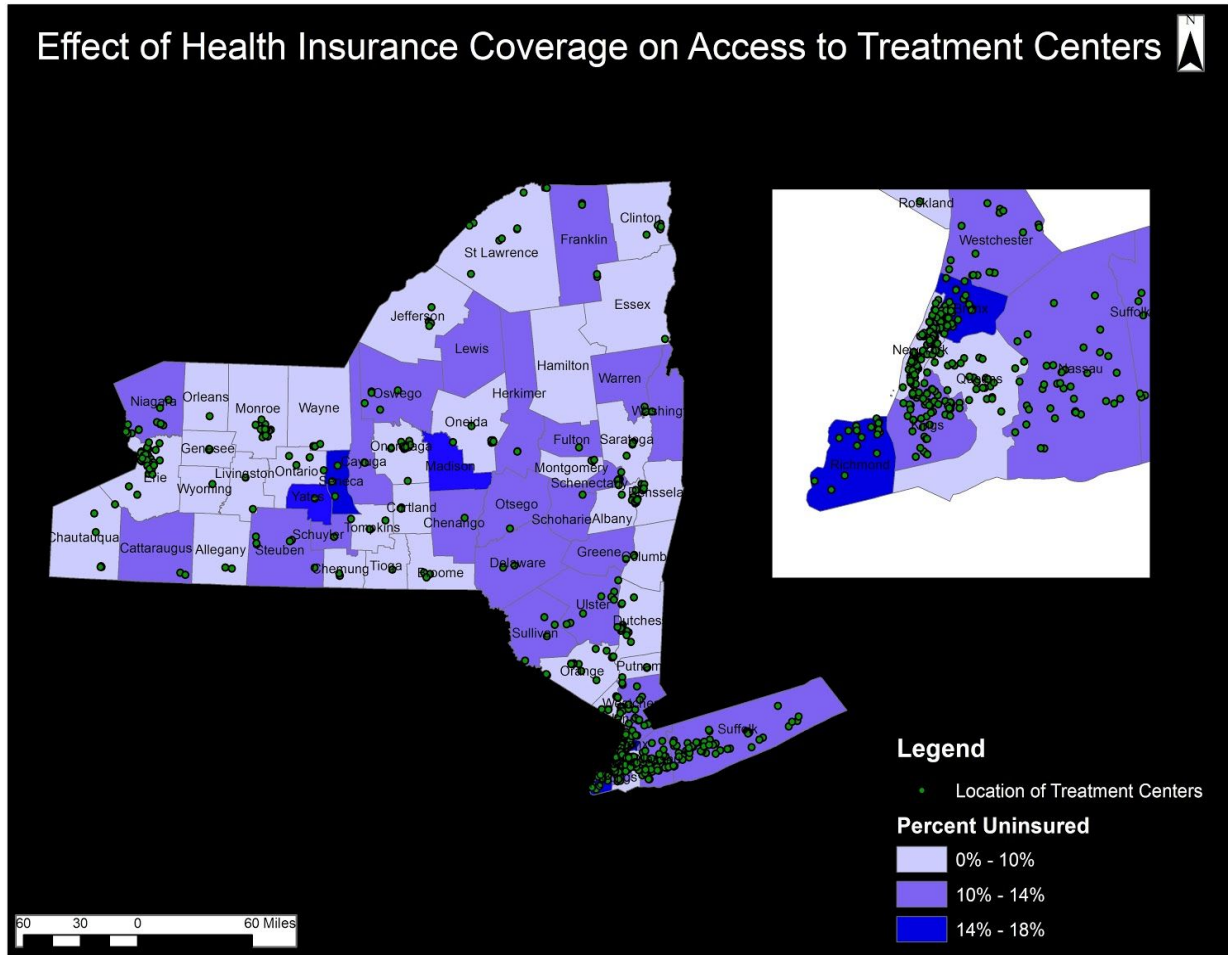
My first map looks at the relationship between health insurance coverage and the location of treatment centers in NYS by county. In order to make this map I first had to modify the excel sheet that contained all the health insurance information to only include the number of people

uninsured divided by the total number of people in that county. I then joined this sheet to ARCMAP and used the symbology tool to visualize the percent uninsured as three categories. Next, I geocoded the location of the treatment centers by addresses and displayed them as points. After creating this map, I was able to see that New York State had one of the highest percentages of uninsured as well as Treatment Centers so I decided to look further into NYS. I then created a separate map that zoomed into NYS specifically in order to show the variations with the state itself.

For my next two maps, I decided to look at NYC through the lens of census tract. My first map from this collection looked at the relationship between average median income and the location of treatment centers. I was able to find the average median income by census tract in NYC in 2011 and used this information to join to my map in ARCMAP. I then used the same technique as before and geocoded the locations by addresses. Because the excel sheet contained the addresses of all treatment centers in NYS, I had to filter out all the locations that did not fall within NYC. I then created a second map that showed the correlation between health insurance coverage and the location of treatment centers in NYC. Lastly, I created a side by side display of these two maps in order to show the relationship between income and health insurance coverage on access to substance abuse treatment centers.

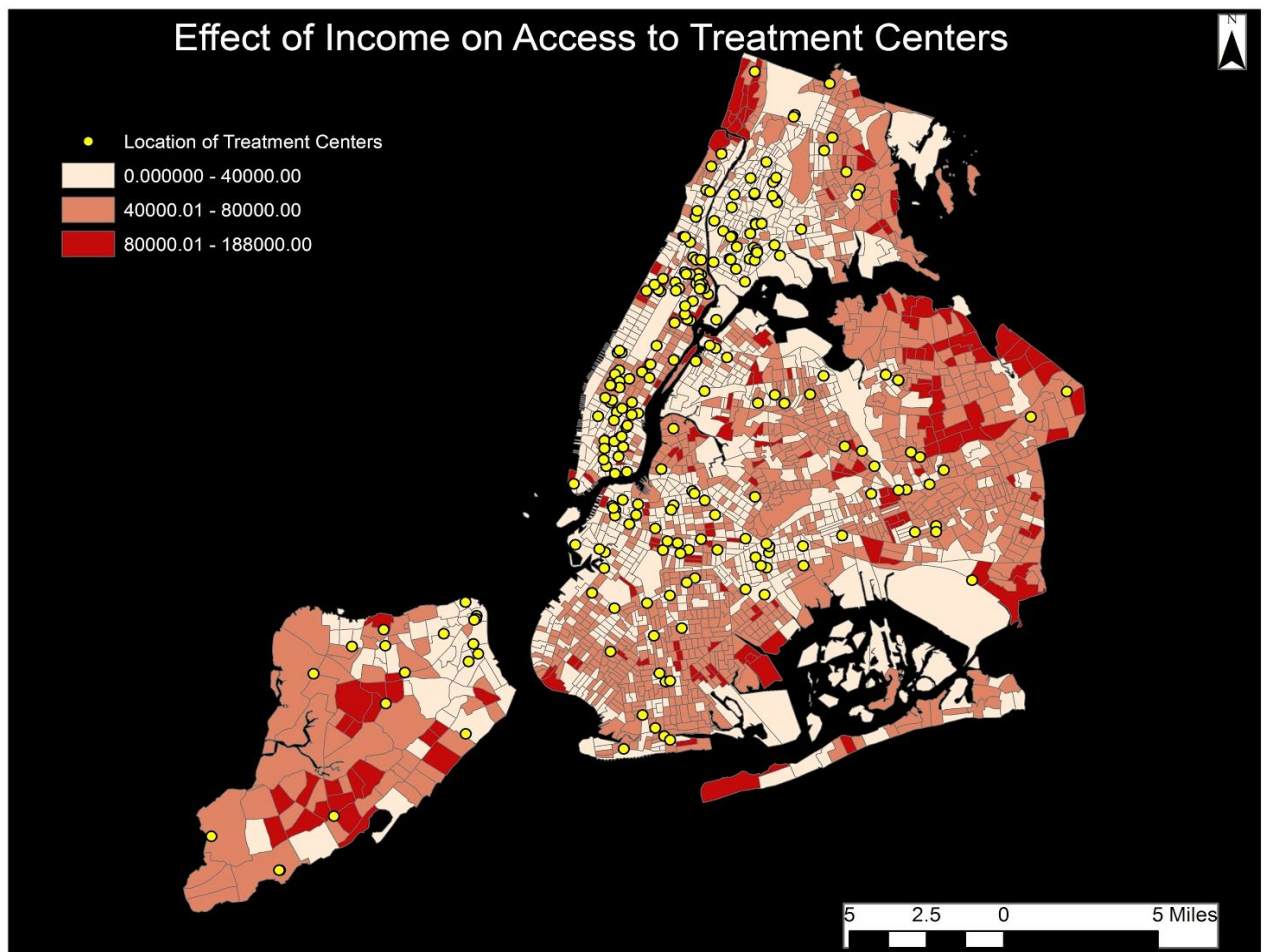
Findings

Map 1



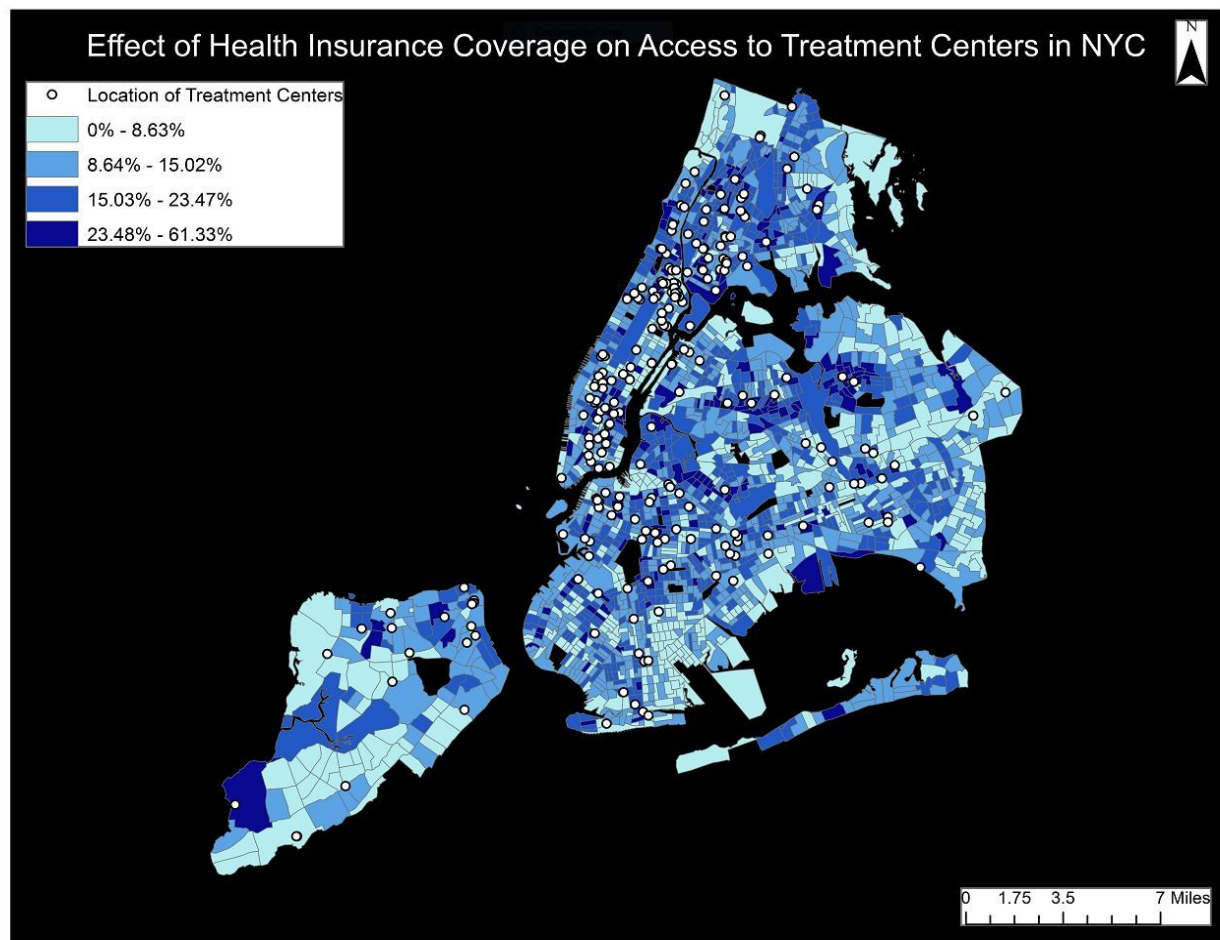
Author: Hajirah Gumanneh Date: May 2, 2019 Source: Office of Alcoholism and Substance Abuse Services; American Factfinder

Map 2



Author: Hajirah Gumanneh Date: May 2, 2019 Source: Office of Alcoholism and Substance Abuse Services; American Factfinder

Map 3

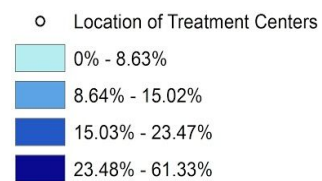
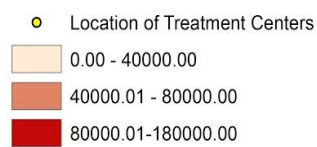
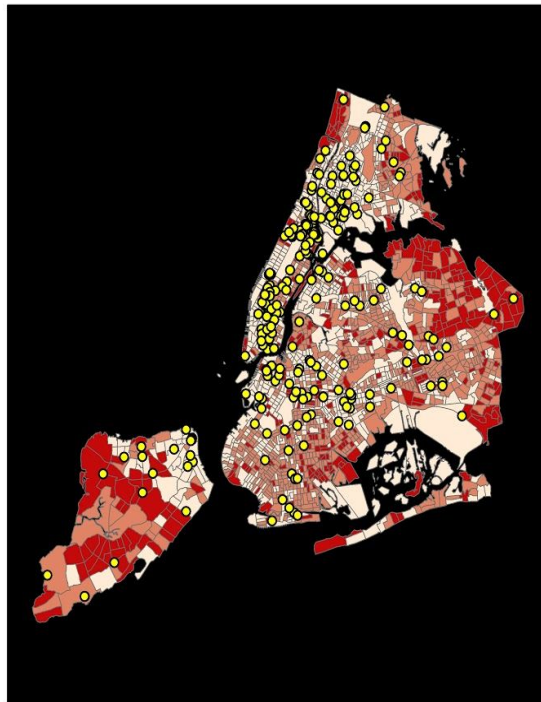


Author: Hajirah Gumanneh Date: May 2nd, 2018 Source: Office of Alcoholism and Substance Abuse Services; American Factfinder

Note. Information represents percent uninsured.

Map 4

Effect of Income and Health Insurance Coverage on Access to Treatment Centers in NYC



Author: Hajirah Gumanneh Date: May 2nd, 2018 Source: Office of Alcoholism and Substance Abuse Services; American Factfinder

0 2.5 5 10 Miles

Analysis of Maps

The results from my first map show that NYS has one of the highest rates of percent uninsured and location of treatment centers. In order to see which population was most affected by the lack of health insurance coverage and access to treatment centers I decided to zoom in to NYS. From this small, separate map I was able to see that Richmond, Staten Island and The Bronx had the highest rates of insured while Queens and Manhattan had the lowest. This finding was interesting to observe because even though Manhattan had one of the lowest rates of percent uninsured it had a greater number of treatment centers than Richmond and the Bronx who had the highest percent uninsured. Thus this map already shows the limited access that these counties have to treatment.

In Map 2, it is evident that substance abuse treatment centers are predominantly located in middle-income areas. For example, majority of the treatment centers in Manhattan are located in the areas with higher income leaving the lower income areas almost empty. This pattern is also apparent in some of the more affluent areas of Queens as well as Brooklyn. Furthermore, there seem to be decreased number of treatment centers in East Bronx and North Queens specifically Flushing which are relatively low-income areas. This trend then carries on to Map 3 where even though Flushing, Queens has a high percentage of uninsured it has a smaller portion of treatment centers. However, if you were to judge Queens access to treatment centers using Map 1 you would think that all the areas in Queens had a relatively low rate of insured even though there is an apparent biased towards certain neighborhoods. Lastly, if you compare both maps side by side there is apparent correlation between income and health insurance coverage. Areas with higher incomes tend to lower rates of insured while areas with lower-median incomes

seem to have higher rates of uninsured. Thus, these results support my original hypothesis that lower income individuals are less likely to have health insurance coverage and therefore less likely to have access to substance abuse treatment centers.

Limitations

One limitation of my study is a lack of available data for certain census tracts in NYC. Because this data is missing, I am unable to display the effect of income and health insurance coverage on NYC as a whole. One improvement I could have made when creating this project was separating the treatment centers into public or private. This distinction would have allowed me to further analyze what type of facilities were available, the type of insurances they accepted, and whether or not the people in those region would have had access to those services based on the following criterias. Furthermore, it would have been interesting to look at the amount of people who were enrolled in a treatment center in 2011, the amount of people who needed treatment but did not receive any and lastly, the amount of people who were waitlisted. Such further examination would have allowed me to further explore the limitation people may face when wanting to seek treatment for their drug use problems.

Recommendations/Conclusions

One implication from my findings is more efforts should be made to increase the percent insured in low-income areas. This can be done by creating more programs that help cover the cost for health-related issues or expanding medicaid to anyone who is uninsured. Another possible solution is reinstating the Affordable Care Act, which gave universal healthcare to all. Under the Trump Administration such services have been revoked leading to many people being uninsured once again. Another implication from my study is that new treatment centers should be created in

low-income areas as well as more evenly distributed amongst the five boroughs. For example, although Staten Island and The Bronx have some of the highest rates of uninsured they have less treatment centers than Manhattan, which has a low rate of uninsured. Therefore, more initiatives/efforts should be made to close such gaps.

Bibliography

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