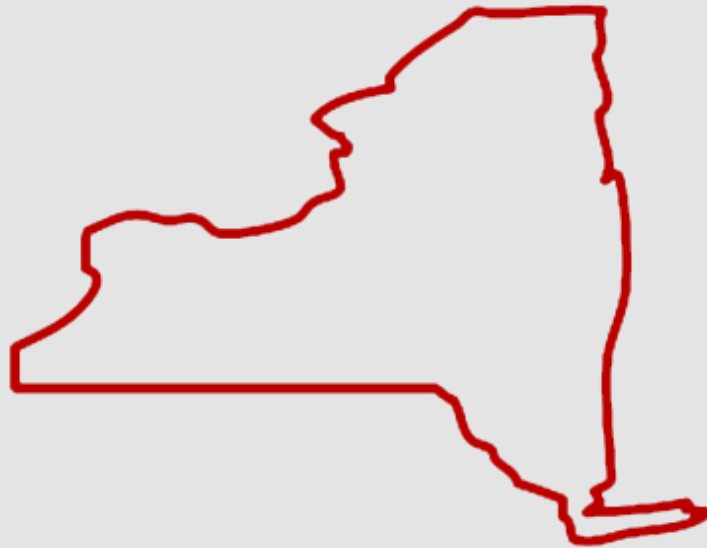# Inequitable Marijuana Criminalization, COVID-19, and Socioeconomic Disparities:

The Case for Community Reinvestment in New York

PSP
the public
science project

We are
the Drug
Policy
Alliance.

FOREWORD

New York has the opportunity to pass the most ambitious marijuana legalization bill in the U.S., setting the national model for marijuana legalization by centering reinvestment, equity, and justice within our comprehensive reform.

The enforcement of marijuana prohibition has devastated communities across New York State, primarily communities of color and low-income communities. There have been more than 800,000 arrests for low-level marijuana just in the last 25 years alone in New York, with extreme racial disparities – despite data showing similar rates of use and sale across racial and ethnic populations.

The extreme racial disparities in New York's marijuana arrest crusade, as detailed in these case studies in this report, are the result of targeted criminalization and structural racism – and the same factors that have driven the marijuana arrest crusade have also resulted in generational wealth impacts and now, as this report shows, extreme disparities in the impact of COVID-19 in the same neighborhoods.

We know that decades of criminalization during New York's marijuana arrest crusade have impacted people's ability to secure housing, employment, and higher education, further exacerbating challenges marginalized communities faced before the pandemic and compounding efforts to survive amid the COVID-19 crisis. The same communities targeted by the war on drugs are the ones with the least access to healthcare right now, the ones grappling with decades of the economic toll from criminalization, with low wages, unstable housing, and the ones losing jobs and loved ones at the same time. The structural factors at play are wholly intertwined.

Legalization provides an opportunity to invest a significant portion of marijuana tax revenue in the communities that bore the worst of marijuana criminalization and are now doubly pummeled by COVID-19.

New Yorkers are more ready than ever to create a new paradigm for marijuana legalization that centers reinvestment, equity, and justice. Given New York's appalling history with racially biased marijuana enforcement, we need responsible legalization that doesn't leave out the New Yorkers targeted by marijuana overpolicing and is as comprehensive as the damage that has been done to communities.

To legalize the right way, a significant portion of marijuana tax revenue must be reinvested in the communities that bore the worst of the arrest crusade and are now doubly ravaged by COVID-19 deaths, job losses, and business closures. Such a move would also be responsive to budget shortfalls as a result of COVID-19 and the resounding calls to shift resources away from criminalization and instead invest in building up communities holistically, including supporting community health initiatives.

Legalization must be centered in providing comprehensive restitution to New Yorkers across the state who have been deeply harmed by prohibition.

EXECUTIVE SUMMARY

Introduction

The prevalence of substantial racial disparities in marijuana arrests is well established.[1] In 2018, New York City Comptroller Stringer released a report documenting how disparities in marijuana policing fall along both racial and socioeconomic lines.

This research expands upon that work in two important ways:

1. We explore whether the same disparities occurred in other areas of New York State, including Syracuse, New Rochelle, and Buffalo.

2. We additionally analyzed social vulnerability and COVID-19 rates to assess whether the communities who have been most impacted by marijuana policing are also disproportionally impacted by COVID-19.

New York City, New Rochelle, Syracuse, and Buffalo were selected to present a holistic picture of marijuana prohibition, racial inequities in arrests, and health disparities across the state. The four case studies are all in the top seven largest cities in New York State[2] and were chosen to represent different regions within the state, as well as economic, educational, and racial diversity.

In each city we identified the zip codes with the highest and lowest rates of marijuana-related arrests[3] and compared averages between the two groups on a number of indicators. For ease of reading, we use the terms "high marijuana arrest zip codes" and "low marijuana arrest zip codes" to refer to these groupings. However, there were two exceptions to this procedure. First, due to New Rochelle's small size, there were not enough zip codes to generate averages, so the data presented reflects the single zip codes with the highest and lowest arrest rate. Second, as the NYPD data on marijuana arrests is organized by precinct rather than zip code, we analyzed the data for New York City by precinct.[4]

Arrests and Race

The analysis suggests that similar disparities in marijuana policing are occurring in New York City, Syracuse, New Rochelle, and Buffalo. In all four cities, marijuana arrests are disproportionately concentrated in communities of color. In Syracuse, which reports the home zip code of those arrested, rather than where the arrest occurred, marijuana arrests disproportionately affect those who live in communities of color.[5] **People of color are consistently over-represented in marijuana arrests, and areas with the highest marijuana arrest rates also tend to have proportionally larger populations of color.**

Social Vulnerability Index[6]

The Social Vulnerability Index (SVI) is a measure created by the Centers for Disease Control that uses 15 social factors (e.g. poverty, lack of vehicle access, crowded housing) in order to assess the ability of a community to prevent suffering and loss in the wake of disaster and disease. As it is difficult to assess the numerous impacts of COVID-19 on a community, we compared SVI scores for the high and low marijuana arrest zip codes in each city. **High marijuana arrest areas consistently ranked higher on SVI scores than low marijuana arrest zip codes, indicating increased vulnerability during public health emergencies.**

Median Household Income, Poverty, and SNAP

Across all four cities, the high marijuana arrest zip codes demonstrate more socioeconomic deprivation compared to the low marijuana arrest zip codes. In each city, the average poverty rate was notably higher among the high marijuana arrest zip codes. High marijuana arrest zip codes consistently have

nearly half the median household income of the low marijuana arrest zip codes (except for New Rochelle, where the disparity is even greater). **Across all four cities, the average percentage of families receiving SNAP (Supplemental Nutrition Assistance Program) in high marijuana arrest zip codes was at least 3 times greater than in low marijuana arrest zip codes.**

Homeownership, and Median Home Value

Socioeconomic disparities were also evident in housing. **In every city, we observed that high marijuana arrest zip codes had both lower rates of home ownerships and lower median home values than low marijuana arrest zip codes.**

COVID-19 Rates and Health Insurance

Across all cities, we found higher average COVID-19 positivity rates among the high marijuana arrest zip codes compared to the low marijuana arrest zip codes.[7] However, it should be noted that we were unable to find data for three zip codes in Syracuse due to the lack of standardized reporting of COVID-19 data across New York State. Even so, the connection between racial and social inequities and COVID-19 has been thoroughly documented elsewhere.[8] We also found that, on average, a slightly larger percentage of people under 65 are uninsured among the high marijuana arrest areas than the low marijuana arrest zip codes.[9]

Conclusion

Despite regional differences, New York City, New Rochelle, Syracuse, and Buffalo demonstrate similar trends. **People of color are over-represented in marijuana arrests, and high marijuana arrest zip codes are characterized by larger communities of color and greater socioeconomic deprivation. There is also evidence to suggest that high marijuana arrest zip codes are more severely impacted by COVID-19.**

To follow, we provide a more detailed picture of each of these cities and the disparities between high and low marijuana arrest zip codes.
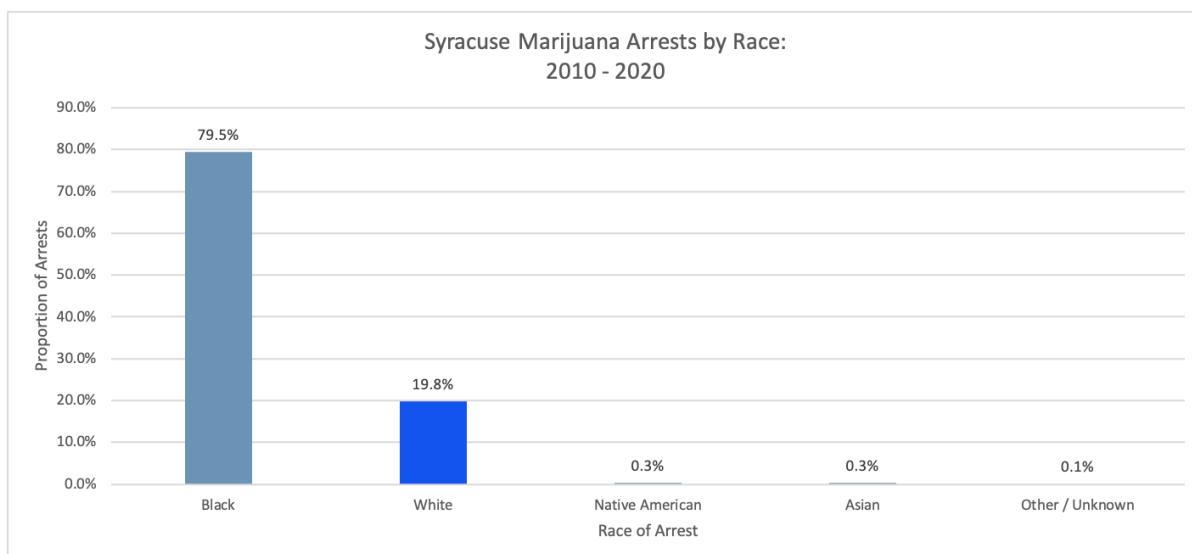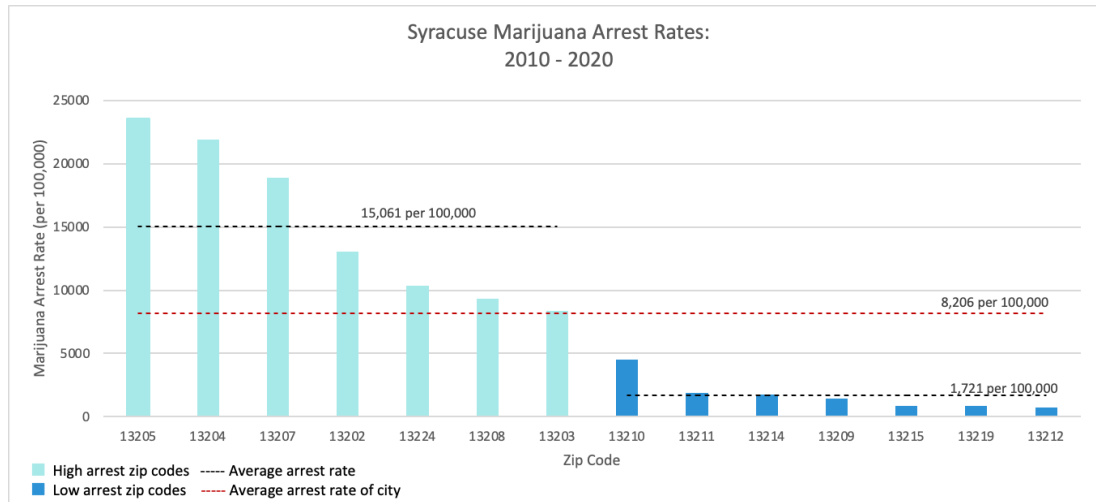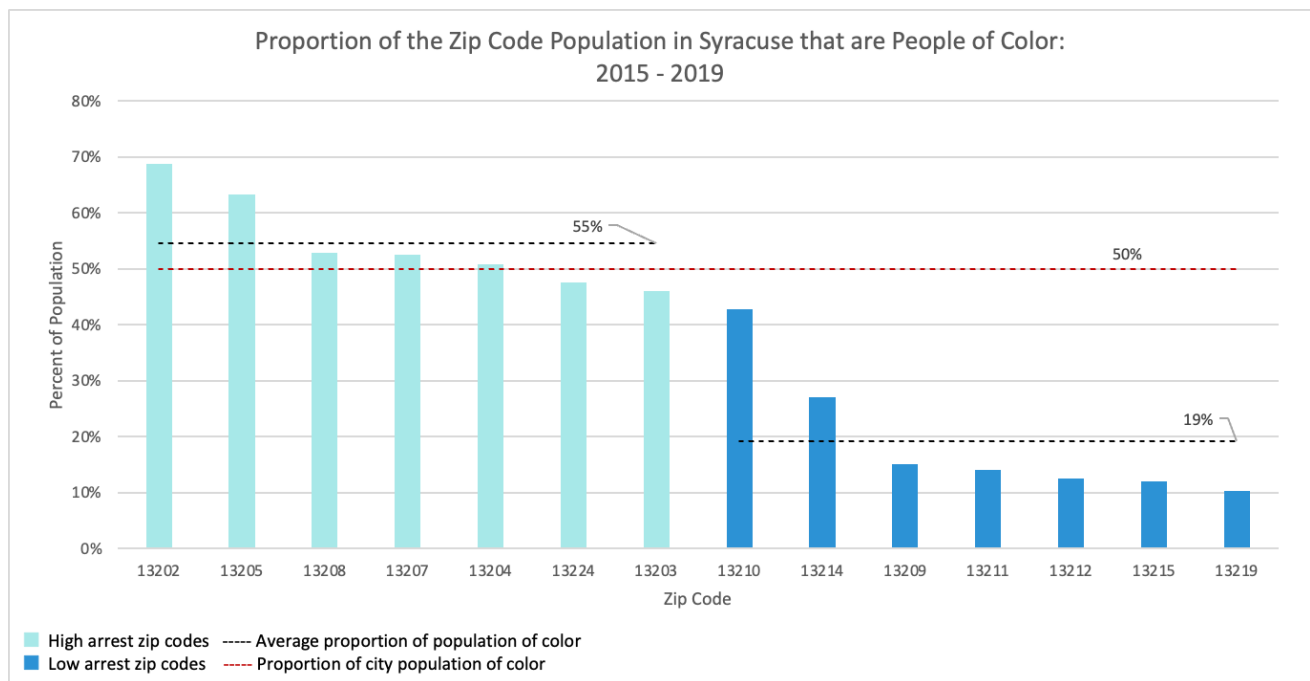
SYRACUSE

Black people were disproportionately arrested on marijuana-related charges in Syracuse over the past ten years. Marijuana arrests were also concentrated among people who live in zip codes with more people of color, severe socioeconomic deprivation and health disparities.[10]

Arrest Rate

In Syracuse, marijuana enforcement is disproportionately impacting people who reside in certain zip codes, and Black residents comprise the vast majority of arrests.

- The average marijuana arrest rate among the high marijuana arrest zip codes is 8.8 times higher than that of the low marijuana arrest zip codes (15,061 versus 1,721 per 100,000 respectively).

- There were 4 times as many arrests of Black, Asian, and Native American people as there were of white people between 2010-2020, with Black people comprising 80% of all marijuana arrests.

- The percentage of the population of color was 2.9 times larger in the high marijuana arrest zip codes compared to the low marijuana arrest zip codes (54.5% versus 19.1%, respectively).[11]

Syracuse Marijuana Arrest Rates: 2010 - 2020

Syracuse Marijuana Arrests by Race: 2010 - 2020

Proportion of the Zip Code Population in Syracuse that are People of Color: 2015 - 2019

Legend:
- High arrest zip codes
- Low arrest zip codes
- ----- Average proportion of population of color
- ----- Proportion of city population of color
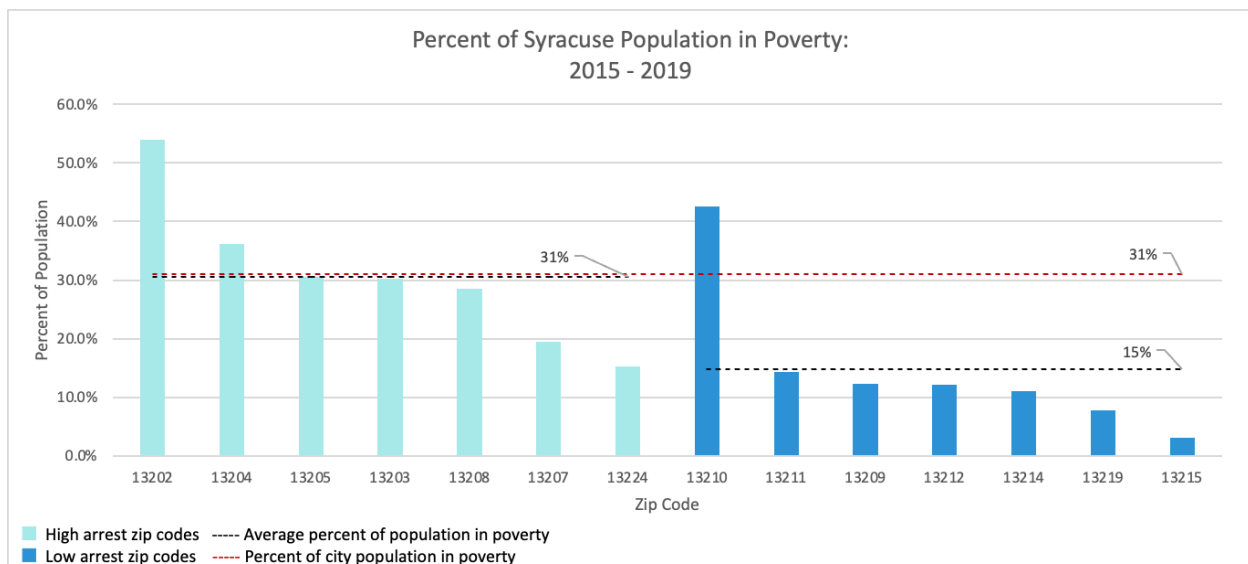
Social Vulnerability Index (SVI)[12]

There was a pronounced difference in SVI scores between high and low marijuana arrest zip codes. The average SVI Score was 0.76 (High Vulnerability) among the high marijuana arrest zip codes, compared to an average of 0.44 (Low-to-Moderate Vulnerability) among the low marijuana arrest zip codes, suggesting that the high marijuana arrest zip codes may be more vulnerable to the widespread impacts of COVID-19.

Syracuse Social Vulnerability Index Score: 2018

Legend:
- High arrest zip codes
- Low arrest zip codes
- ----- Average SVI score
- ----- Combined average SVI score
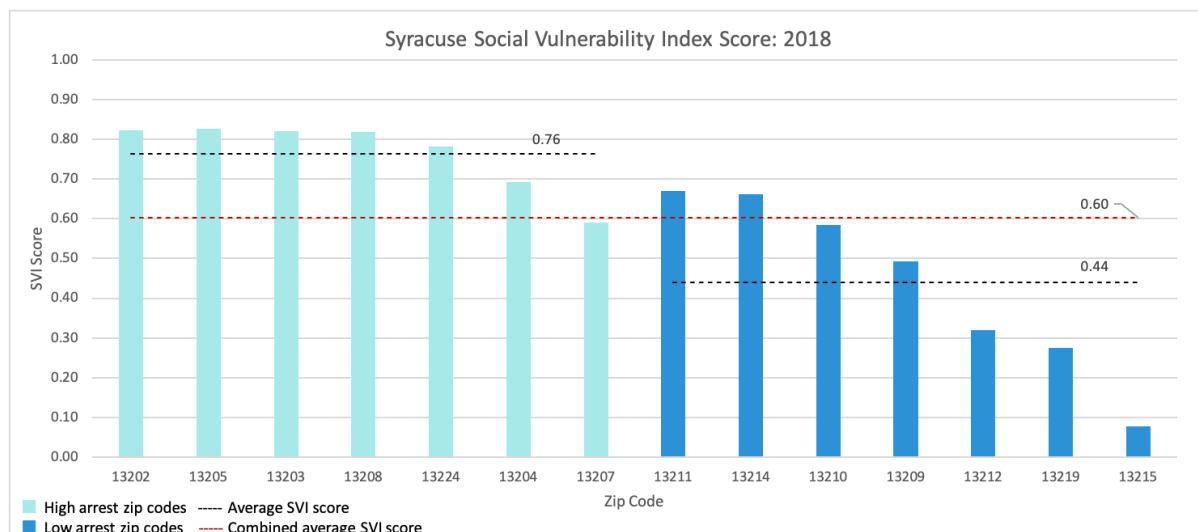
Income, Poverty, and SNAP

High marijuana arrest zip codes have notably lower median household incomes, as well as far higher percentages of people in poverty and families receiving SNAP, than low marijuana arrest zip codes.

- The median household income in the high marijuana arrest zip codes is over $20,000 less than the median income in the low marijuana arrest zip codes ($36,475 versus $59,932, respectively).

- The average poverty rate among the high marijuana arrest zip codes is more than double the poverty rate among the low marijuana arrest zip codes (31% versus 15%, respectively).
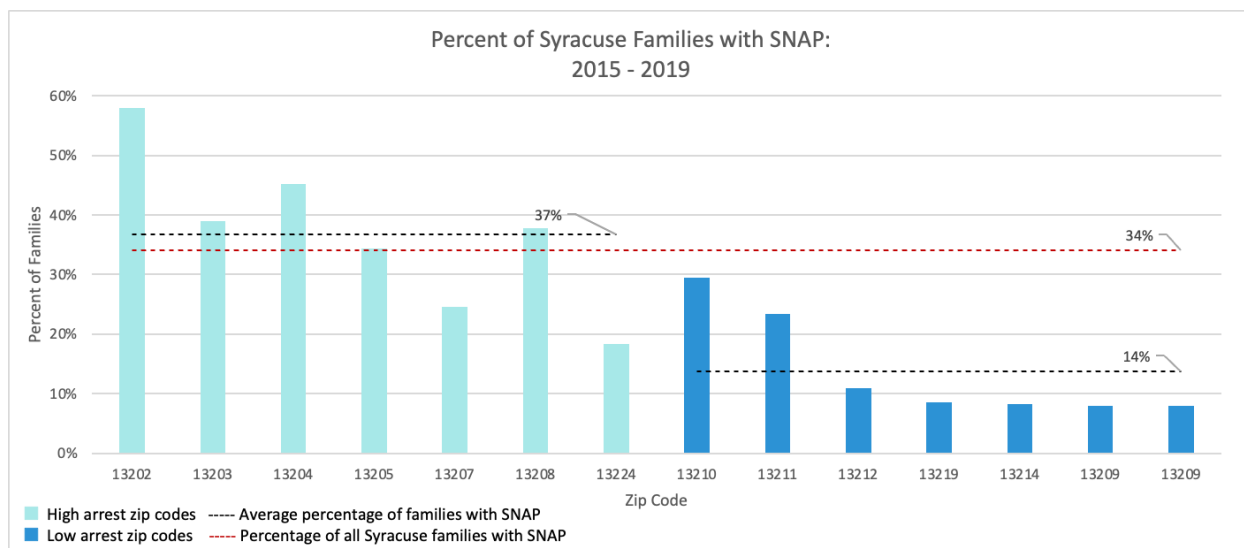
- The average percentage of families receiving SNAP among the high marijuana arrest zip codes is 2.5 times higher than among the low marijuana arrest zip codes (37% versus 14%, respectively).

Median Household Income of Syracuse Zip Codes: 2015 - 2019

Y-axis: Median Household Income (0 to 100,000)
X-axis: Zip Code (13224, 13207, 13203, 13208, 13204, 13205, 13202, 13215, 13214, 13219, 13212, 13209, 13211, 13210)

$59,932 (Median household income)
$38,276 (Median household income of city)
$36,475

Legend:
- High arrest zip codes — ----- Median household income
- Low arrest zip codes — ----- Median household income of city

Percent of Syracuse Population in Poverty: 2015 - 2019

Y-axis: Percent of Population (0.0% to 60.0%)
X-axis: Zip Code (13202, 13204, 13205, 13203, 13208, 13207, 13224, 13210, 13211, 13209, 13212, 13214, 13219, 13215)

31% (Percent of city population in poverty)
31% (Average percent of population in poverty)
15%

Legend:
- High arrest zip codes — ----- Average percent of population in poverty
- Low arrest zip codes — ----- Percent of city population in poverty

**Percent of Syracuse Families with SNAP:**
2015 - 2019

Housing

A comparison of high and low marijuana arrest zip codes in Syracuse suggests that socioeconomic disparities are also prevalent in housing.

- The median home value among the high marijuana arrest zip codes is $88,100 compared to $133,600 among the low marijuana arrest zip codes.

- Only 4 out of 10 homes are owner-occupied in high marijuana arrest zip codes, while 7 out of 10 homes are owner-occupied in low marijuana arrest zip codes.

Median Home Value in Syracuse by Zip Code:
2015 - 2019

Homeownership Rate of Syracuse Zip Codes:
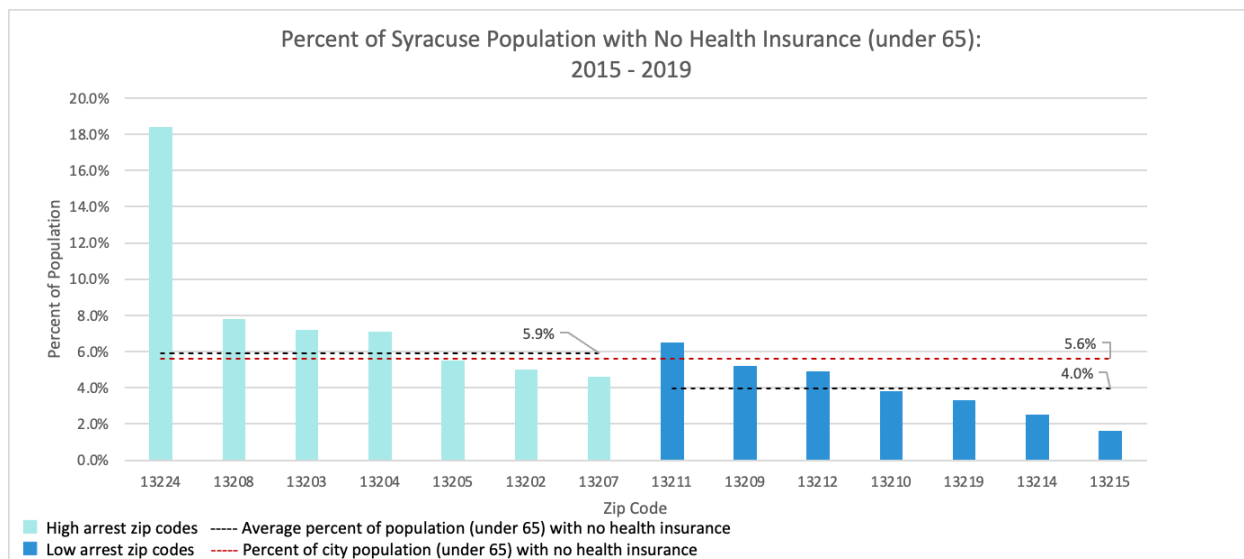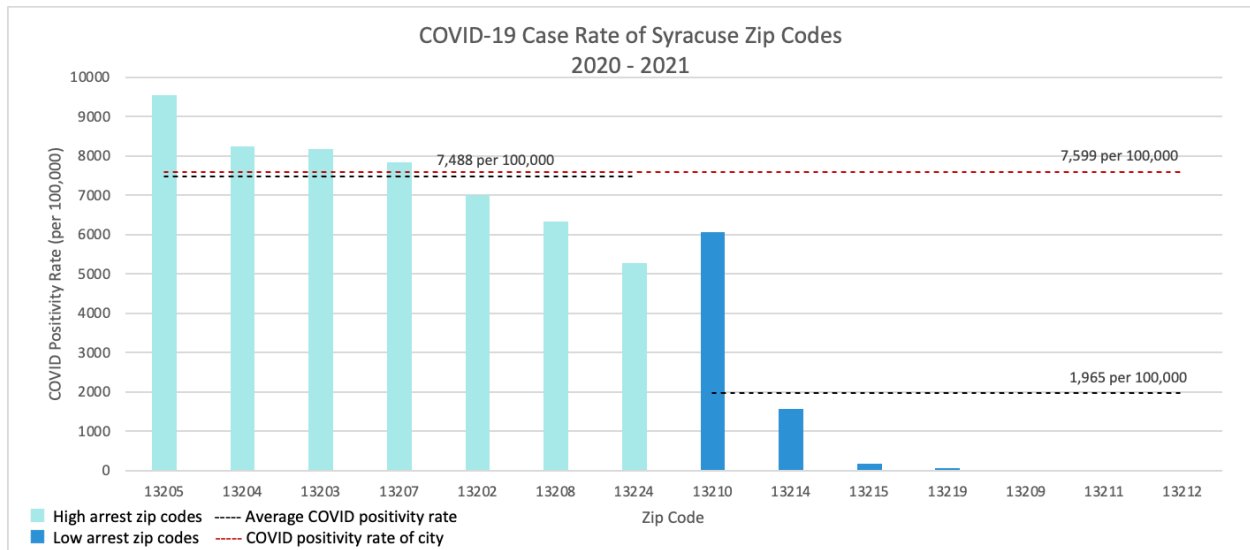2015 - 2019
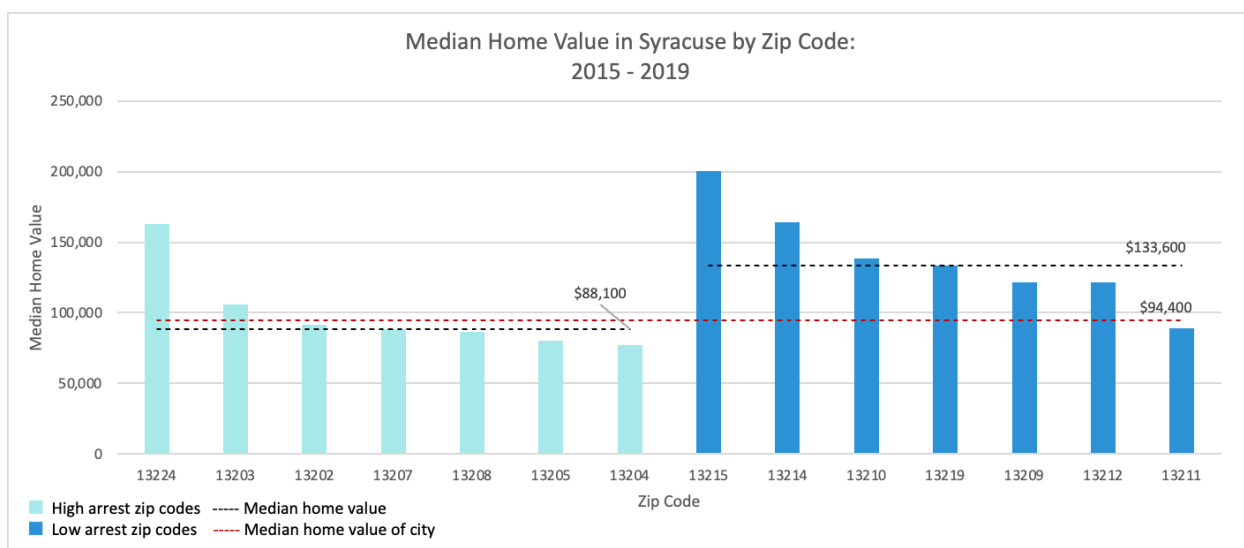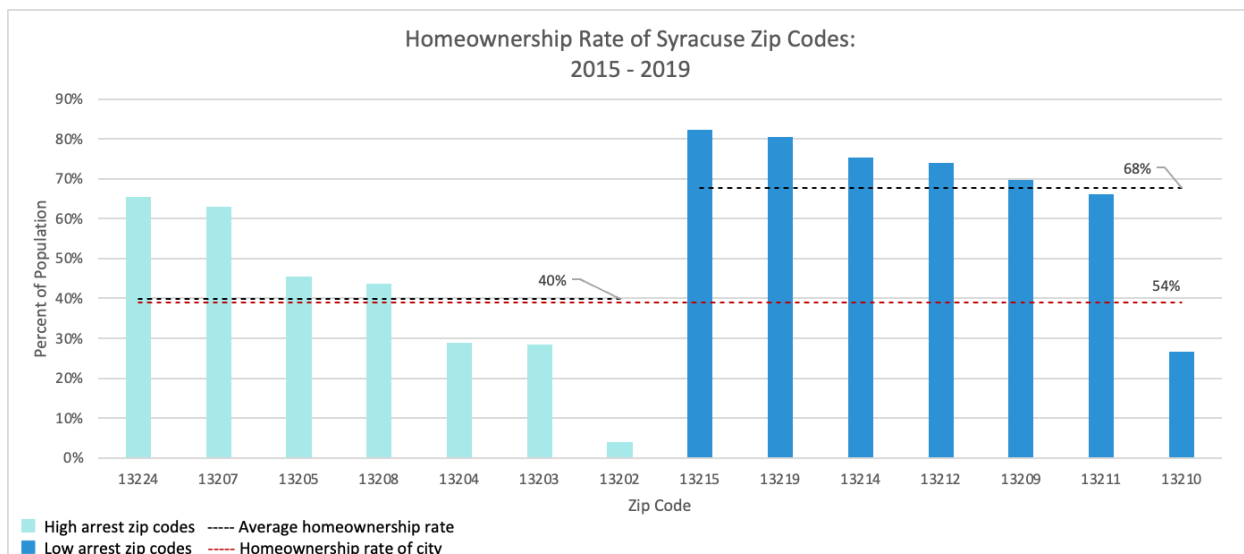
COVID-19 and Health Insurance

We also found evidence of disparities in COVID-19 case rates and insurance coverage between high and low marijuana arrest zip codes, suggesting potential health disparities.

- On average, a slightly higher percentage of the population under 65 is without health insurance in the high marijuana arrest zip codes (6%) compared to the low marijuana arrest zip codes (4%), with one zip code (13224) substantially more likely to be uninsured than the rest.

- While the lack of COVID-19 data for three zip codes makes it difficult to state with certainty, based on the current available data, the average COVID-19 case rate among the high marijuana arrest zip codes is nearly 4 times higher than among the low marijuana arrest zip codes (7,488 versus 1,965 per 100,000, respectively).
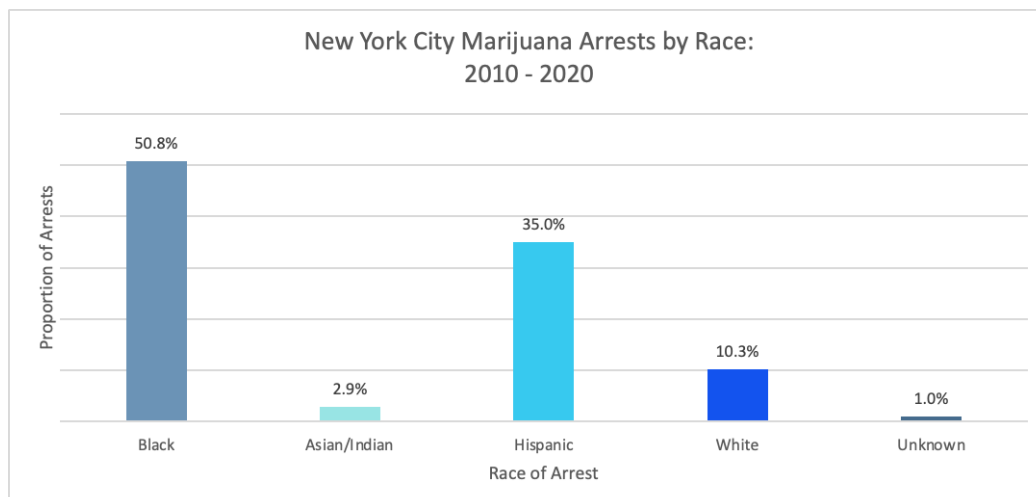

Percent of Syracuse Population with No Health Insurance (under 65):
2015 - 2019

COVID-19 Case Rate of Syracuse Zip Codes
2020 - 2021

Legend:
- High arrest zip codes (light blue)
- Low arrest zip codes (dark blue)
- ----- Average COVID positivity rate
- ----- COVID positivity rate of city

Annotations on chart:
- 7,488 per 100,000
- 7,599 per 100,000
- 1,965 per 100,000

Y-axis: COVID Positivity Rate (per 100,000)
X-axis: Zip Code
Zip codes: 13205, 13204, 13203, 13207, 13202, 13208, 13224, 13210, 13214, 13215, 13219, 13209, 13211, 13212
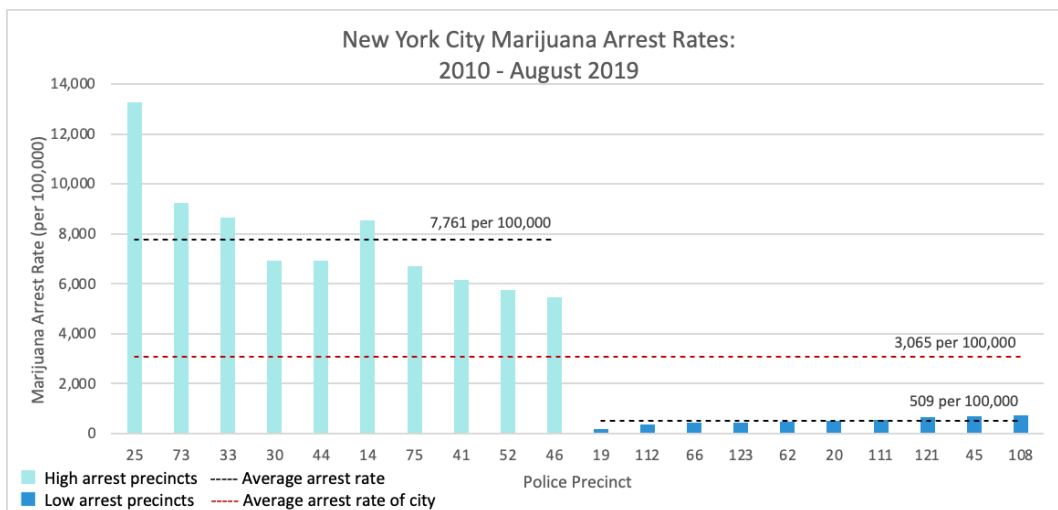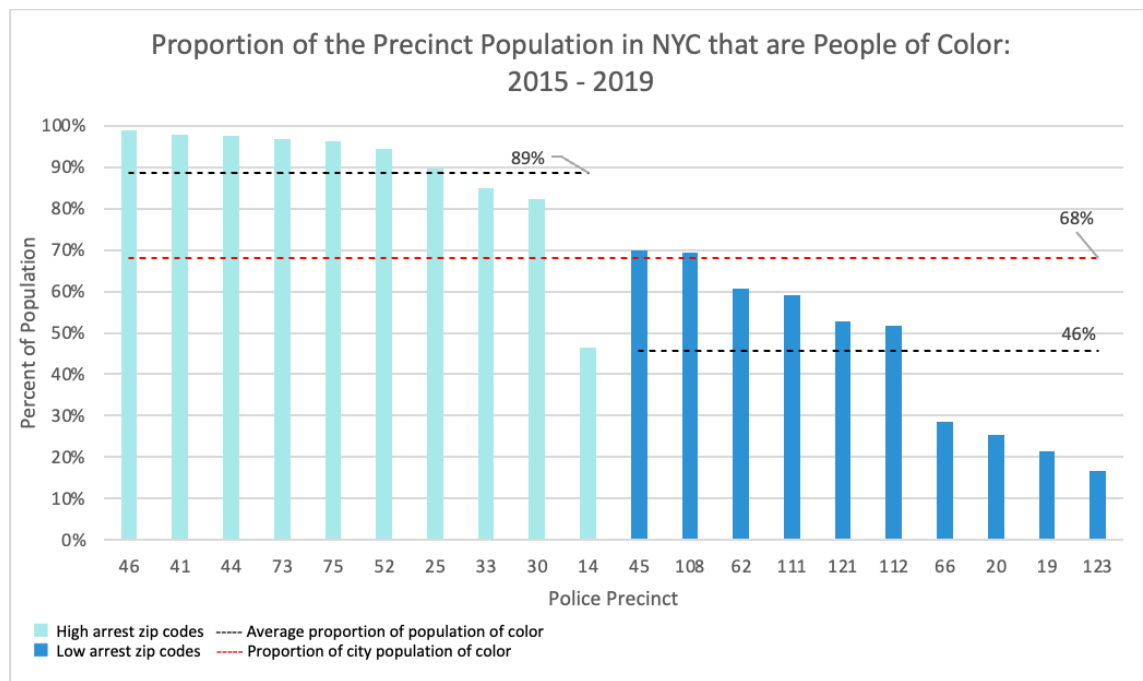
NEW YORK CITY

Our findings are consistent with the report by Comptroller Stringer on which the present study was based.[13] The disparities in how marijuana laws are enforced in New York City reflects both racial and socioeconomic marginalization. Additionally, we found evidence that the areas that are disproportionately impacted by marijuana arrests are also experiencing health disparities and may have been more severely impacted by COVID-19.

Arrest Rate

Marijuana enforcement is heavily concentrated in certain New York City police precincts, and Black residents comprise the vast majority of arrests.
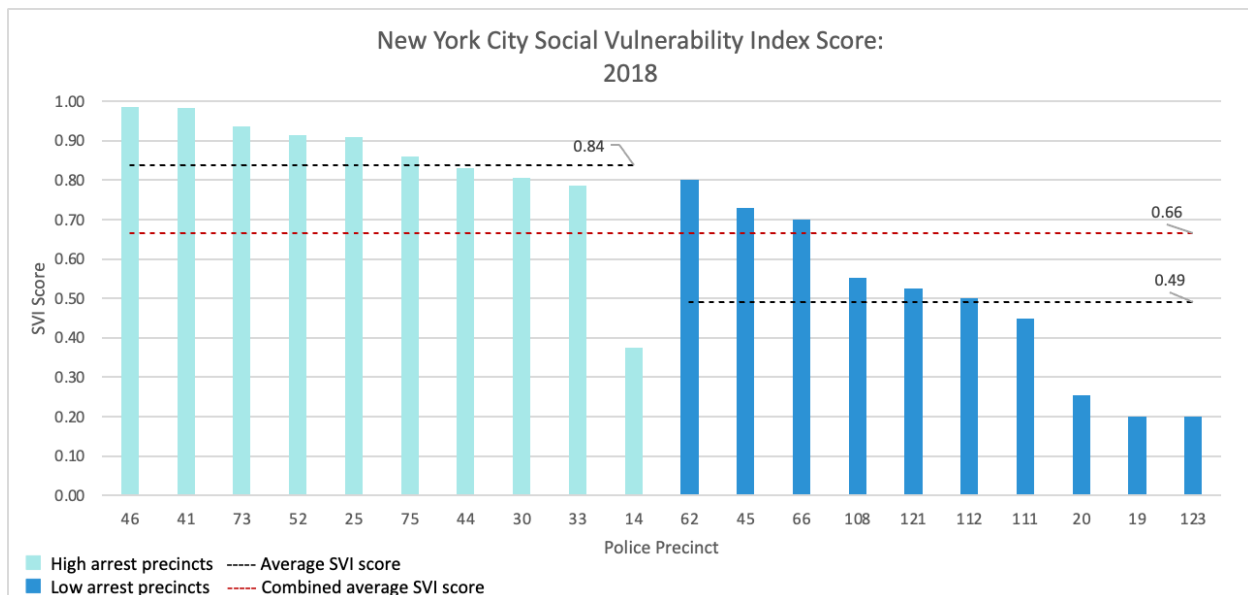
- The average marijuana arrest rate among the high marijuana arrest precincts is 15 times higher than that of the low marijuana arrest precincts (7,761 versus 509 per 100,000 respectively).

- In marijuana arrests between 2010 and August of 2019, there were 8 times as many arrests of Black and Latinx people as there were of white people.

- The percentage of the population of color in high marijuana arrest precincts nearly doubles low marijuana arrest precincts (89% versus 46%, respectively).[14]

Proportion of the Precinct Population in NYC that are People of Color: 2015 - 2019

Percent of Population

- 100%
- 90%
- 80%
- 70%
- 60%
- 50%
- 40%
- 30%
- 20%
- 10%
- 0%

89%

68%

46%

Police Precinct: 46, 41, 44, 73, 75, 52, 25, 33, 30, 14, 45, 108, 62, 111, 121, 112, 66, 20, 19, 123

■ High arrest zip codes ----- Average proportion of population of color
■ Low arrest zip codes ----- Proportion of city population of color

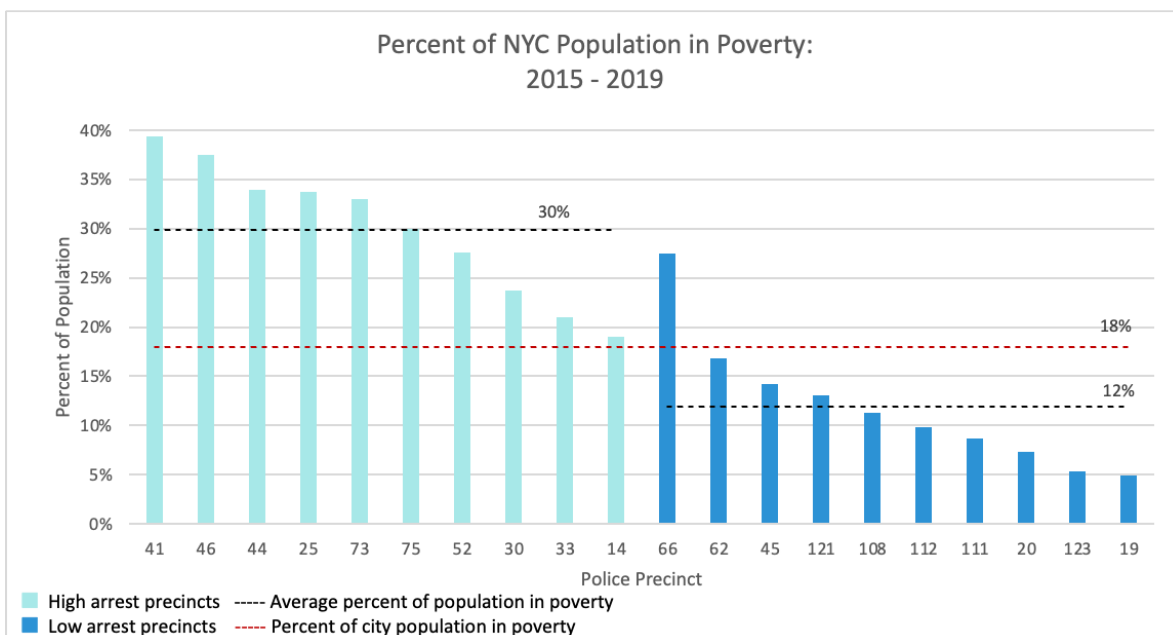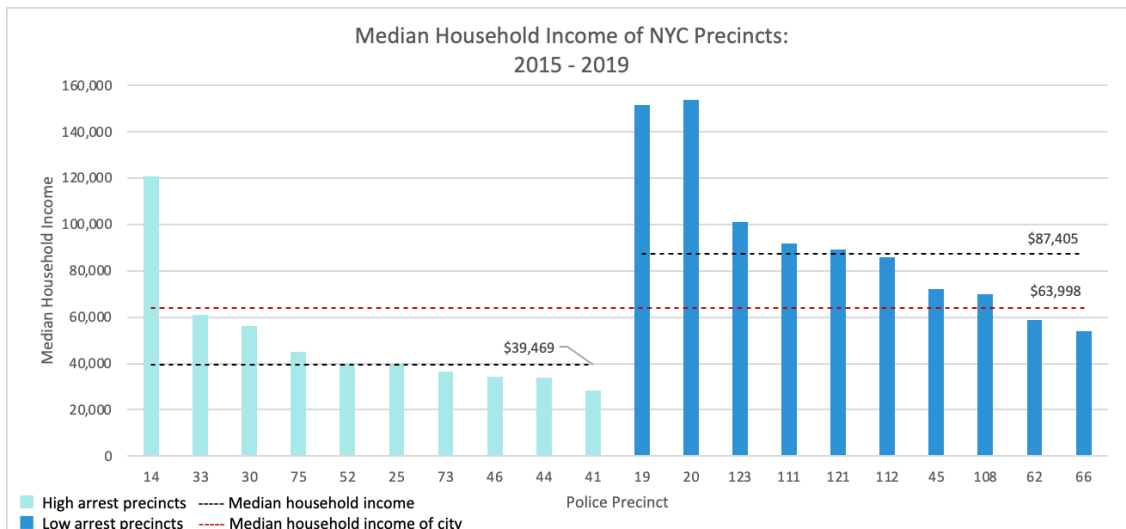## Social Vulnerability Index (SVI)[15]

The average SVI Score was 0.84 (High Vulnerability) among the high marijuana arrest precincts, compared to an average of 0.49 (Low-to-Moderate Vulnerability) among the low marijuana arrest precincts, suggesting that high marijuana arrest precincts experience more social vulnerability, and thus may be more vulnerable to the widespread impacts of COVID-19.

New York City Social Vulnerability Index Score: 2018

SVI Score

- 1.00
- 0.90
- 0.80
- 0.70
- 0.60
- 0.50
- 0.40
- 0.30
- 0.20
- 0.10
- 0.00

0.84

0.66

0.49

Police Precinct: 46, 41, 73, 52, 25, 75, 44, 30, 33, 14, 62, 45, 66, 108, 121, 112, 111, 20, 19, 123

■ High arrest precincts ----- Average SVI score
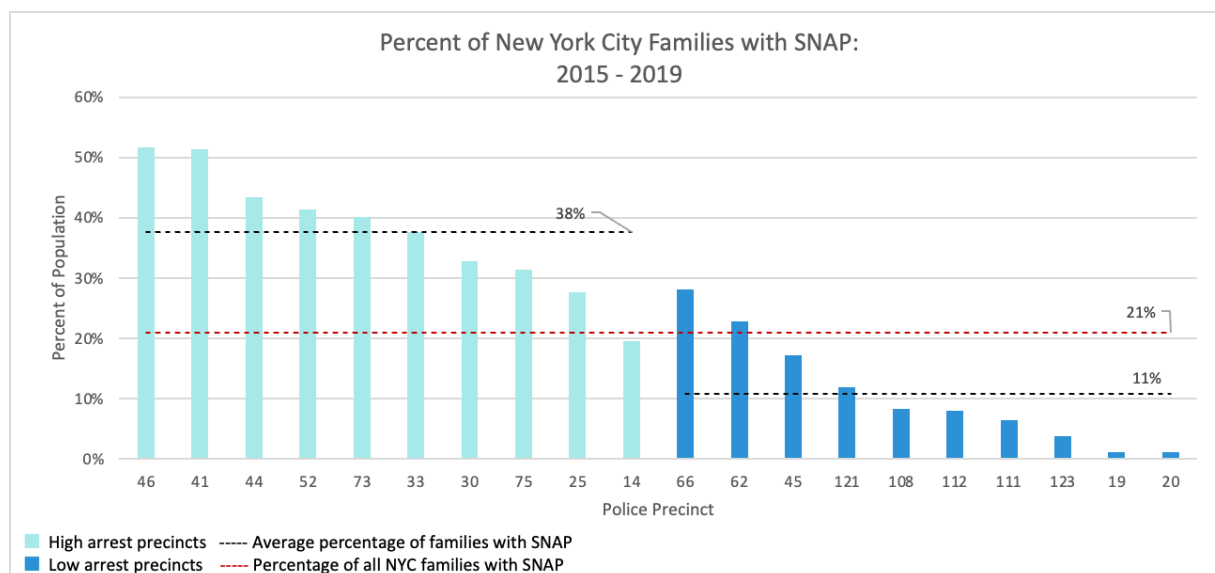■ Low arrest precincts ----- Combined average SVI score

Income, Poverty, and SNAP

High marijuana arrest precincts have notably lower median household income on average, as well as far higher percentages of people in poverty and families receiving SNAP, than low marijuana arrest precincts.

- The median household income in the high marijuana arrest precincts is half that of the median income in the low marijuana arrest precincts ($39,469 versus $87,405, respectively).[16]

- The average poverty rate among the high marijuana arrest precincts is more than double the poverty rate among the low marijuana arrest precincts (30% versus 12% respectively).

- The average percentage of families receiving SNAP among the high marijuana arrest precincts is more than 3 times higher than among the low marijuana arrest precincts (38% versus 11%, respectively).[17]

Median Household Income of NYC Precincts: 2015 - 2019

Percent of NYC Population in Poverty: 2015 - 2019

Percent of New York City Families with SNAP: 2015 - 2019

Housing

As expected, home values were generally elevated in New York City, though disparities still existed between high and low marijuana arrest precincts. The disparity in the rate of home ownership in high marijuana arrest precincts also suggests ongoing housing inequality.

- The median home value among the high marijuana arrest precincts is $531,956 compared to $682,939 among the low marijuana arrest precincts.[18]

- Only 1 out of 10 homes are owner-occupied in high marijuana arrest precincts, while 5 out of 10 homes are owner-occupied in low marijuana arrest precincts.[19]

Median Home Value in NYC by Precinct: 2015 - 2019

Homeownership Rate of NYC Precincts:
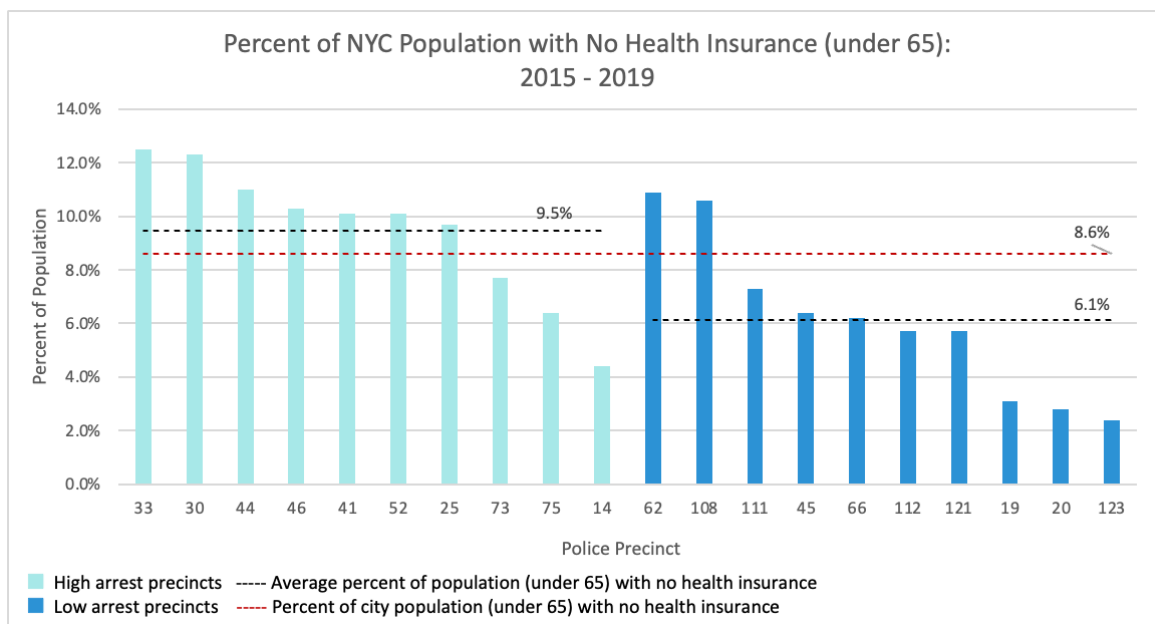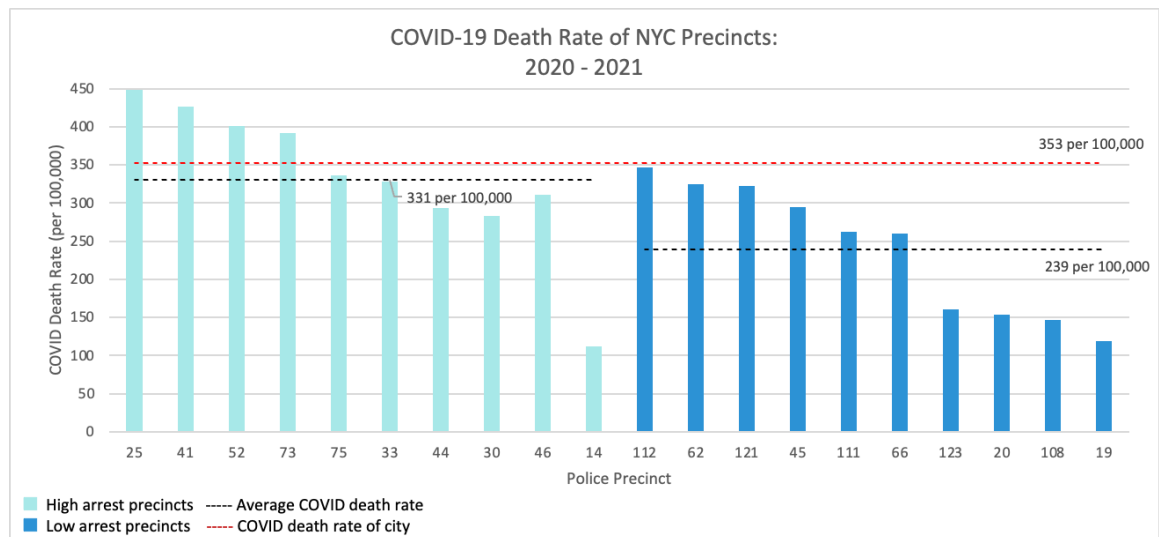2015 - 2019
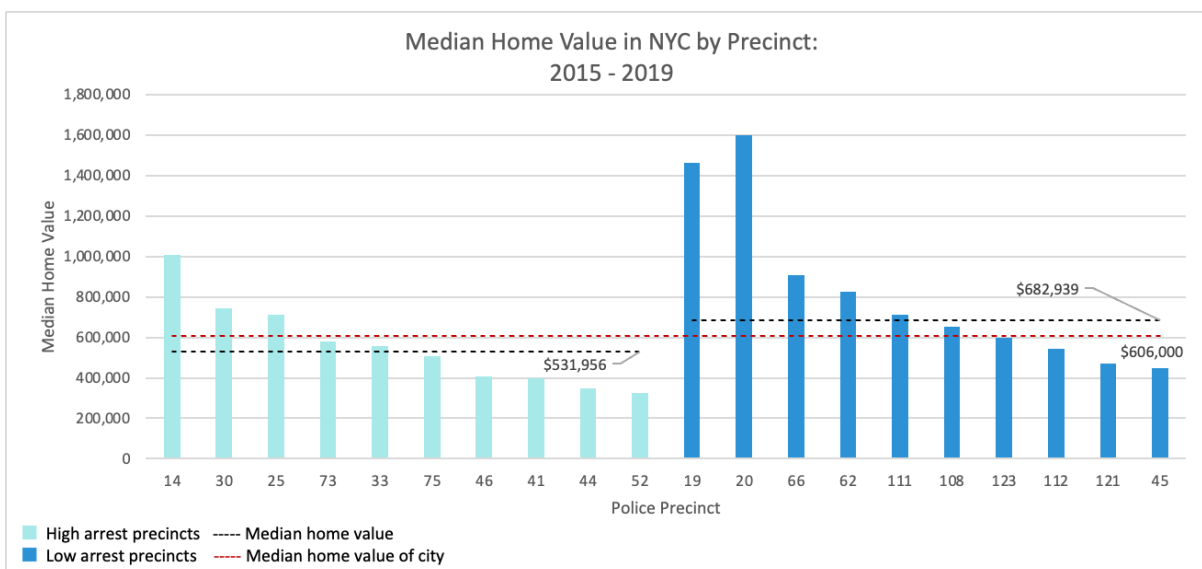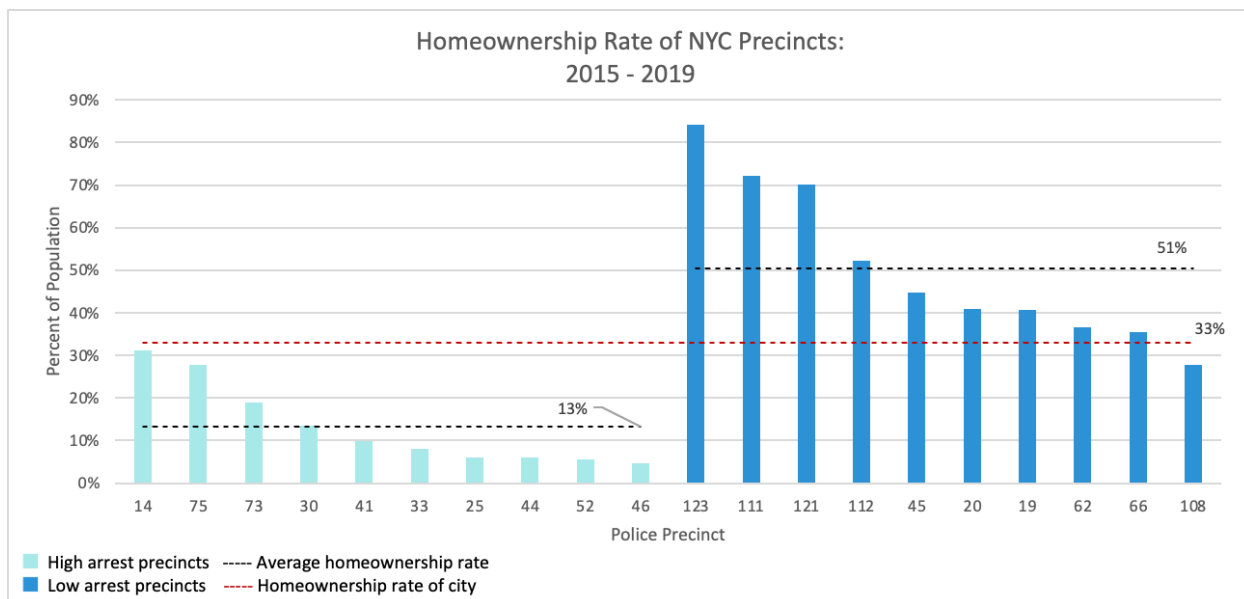
COVID-19 and Health Insurance

We also found evidence of disparities in COVID-19 positivity and death rates, and insurance coverage between high and low marijuana arrest precincts, suggesting potential health disparities.

- On average, a slightly higher percentage of the population under 65 is without health insurance in the high marijuana arrest precincts (9.5%) compared to the low marijuana arrest precincts (6.1%).[20]

- Based on the current available data, high marijuana arrest precincts had, on average, slightly higher COVID-19 positivity rates and notably higher death rates than among the low marijuana arrest precincts.

Percent of NYC Population with No Health Insurance (under 65):
2015 - 2019

COVID-19 Positivity Rate of NYC Precincts:
2020 - 2021

8,913 per 100,000

7479 per 100,000

6,990 per 100,000

COVID Positivity Rate (per 100,000)

Police Precinct

- High arrest precincts ----- Average COVID positivity rate
- Low arrest precincts ----- COVID positivity rate of city

COVID-19 Death Rate of NYC Precincts:
2020 - 2021

353 per 100,000

331 per 100,000

239 per 100,000

COVID Death Rate (per 100,000)

Police Precinct

- High arrest precincts ----- Average COVID death rate
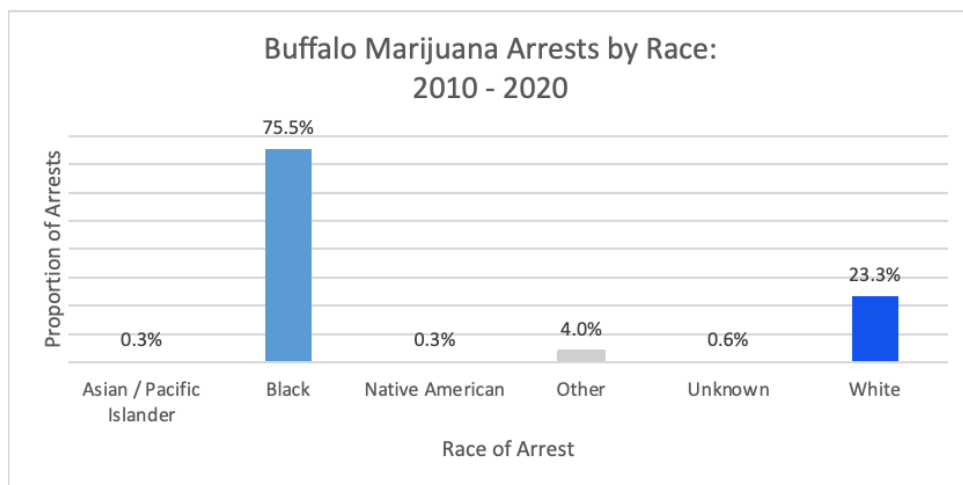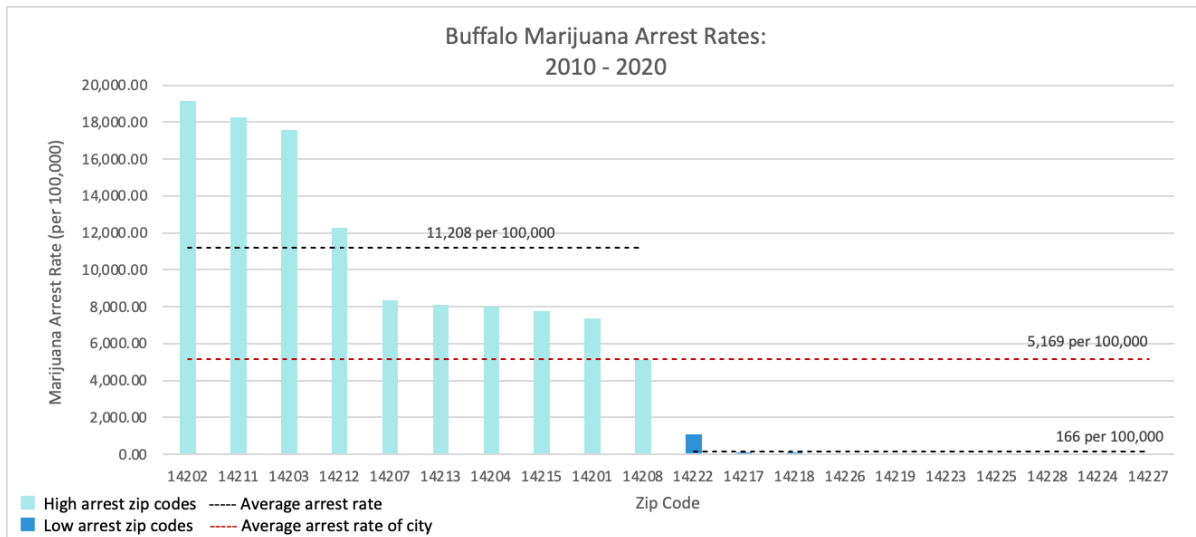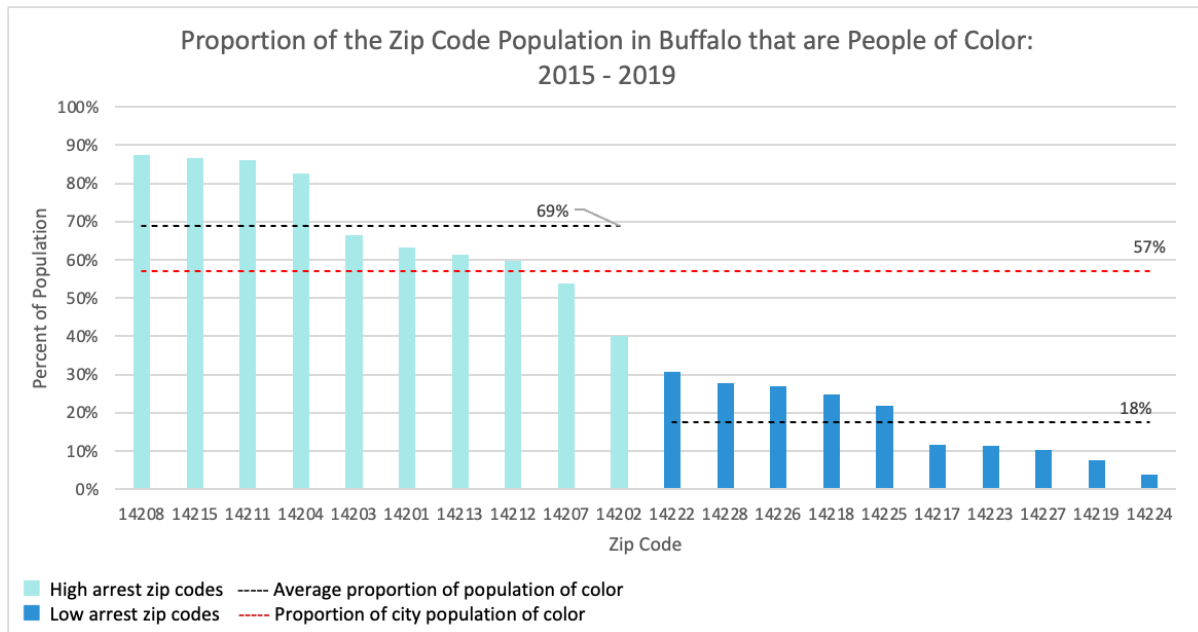- Low arrest precincts ----- COVID death rate of city

BUFFALO

Marijuana related arrests in Buffalo over the past decade have overwhelmingly impacted Black people and communities. Over the past decade, a disproportionately high number of Black people have been arrested on marijuana-related charges. Marijuana arrests have primarily occurred in just a few zip codes, each with large populations of color, and each experiencing financial precarity and health disparities.

Arrest Rate

In Buffalo, marijuana related arrests occurred disproportionately in certain zip codes, and Black residents comprised the vast majority of arrests.

- The average marijuana arrest rate among the high marijuana arrest zip codes is 68 times higher than that of the low marijuana arrest zip codes (11,208 versus 166 per 100,000 respectively).

- Between 2010 and 2020, there were 3 times as many marijuana arrests of Black people as there were of white people.

- The percentage of the population of color in high marijuana arrest zip codes is nearly four times greater than in the low marijuana arrest zip codes (69% versus 18%, respectively).

Buffalo Marijuana Arrest Rates: 2010 - 2020

Buffalo Marijuana Arrests by Race: 2010 - 2020

Proportion of the Zip Code Population in Buffalo that are People of Color: 2015 - 2019

Social Vulnerability Index (SVI)[21]

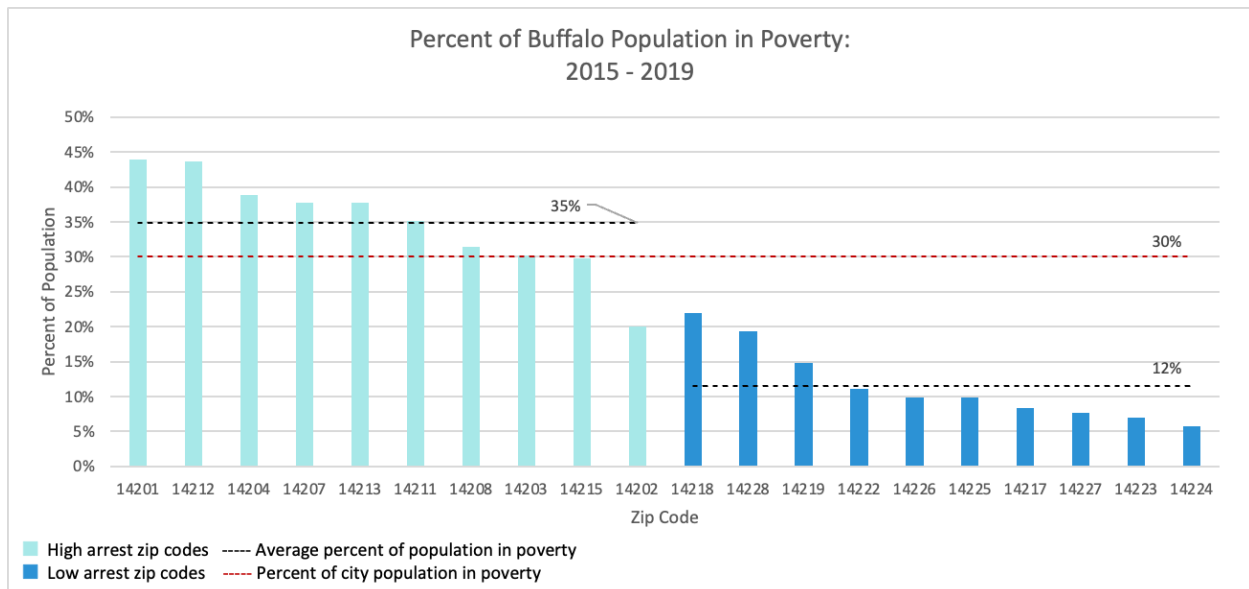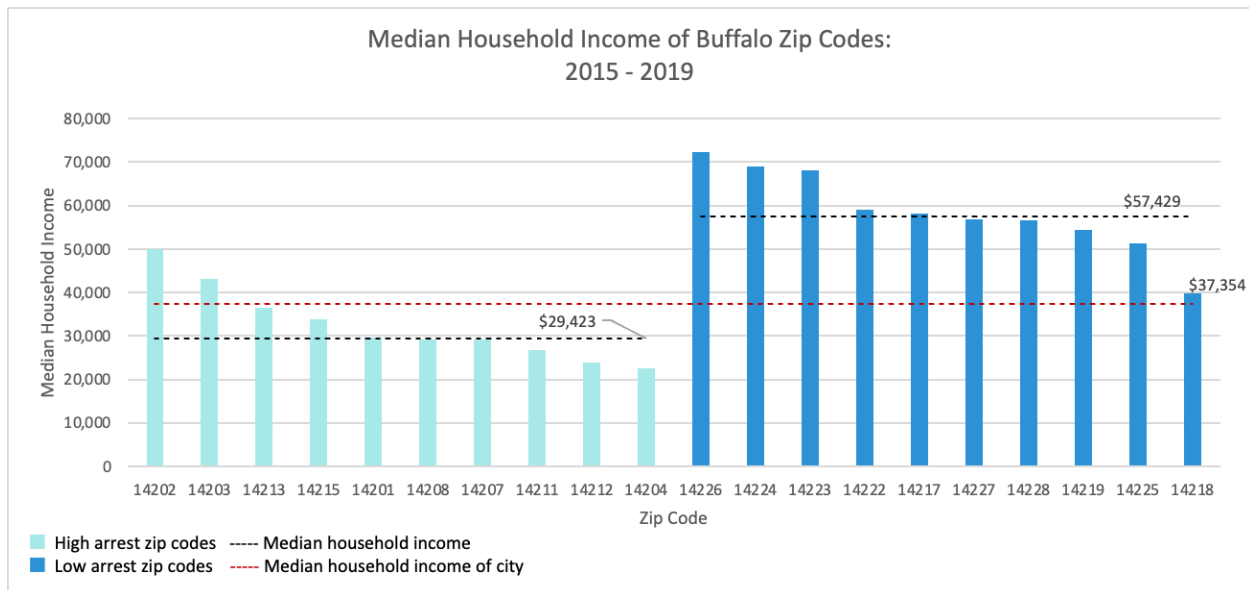High marijuana arrest zip codes appear to experience more social vulnerability, and thus may be more vulnerable to the widespread impacts of COVID-19. The average SVI Score was 0.76 (High Vulnerability) among the high marijuana arrest zip codes, compared to an average of 0.35 (Low-to-Moderate Vulnerability) among the low marijuana arrest zip codes.
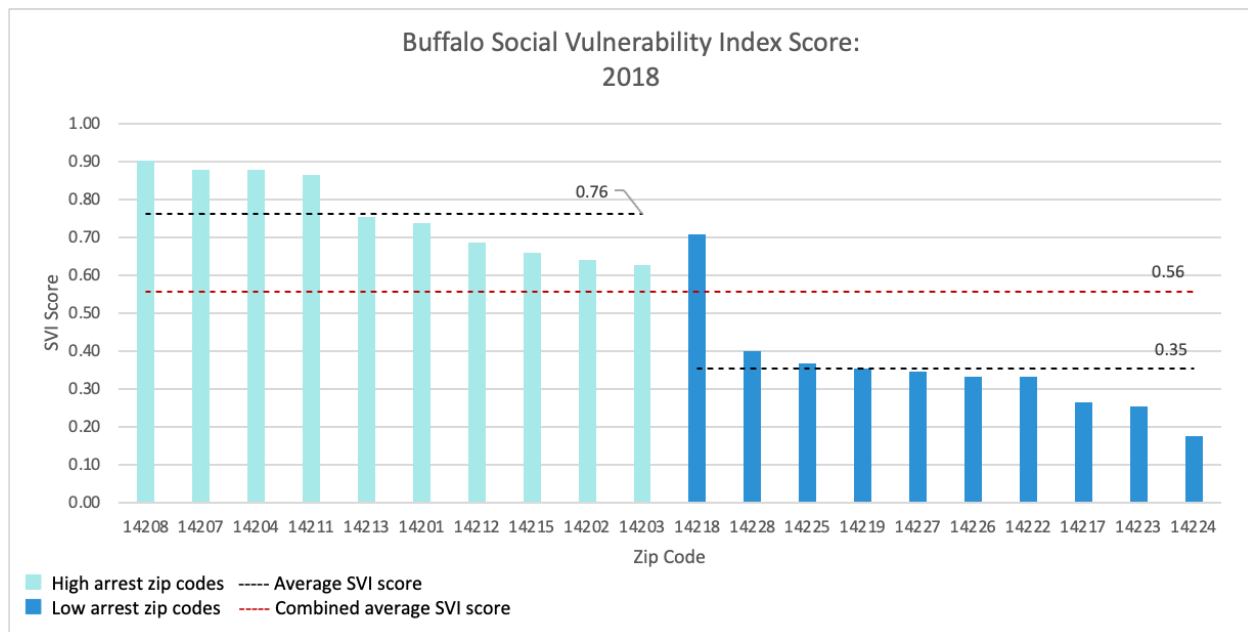
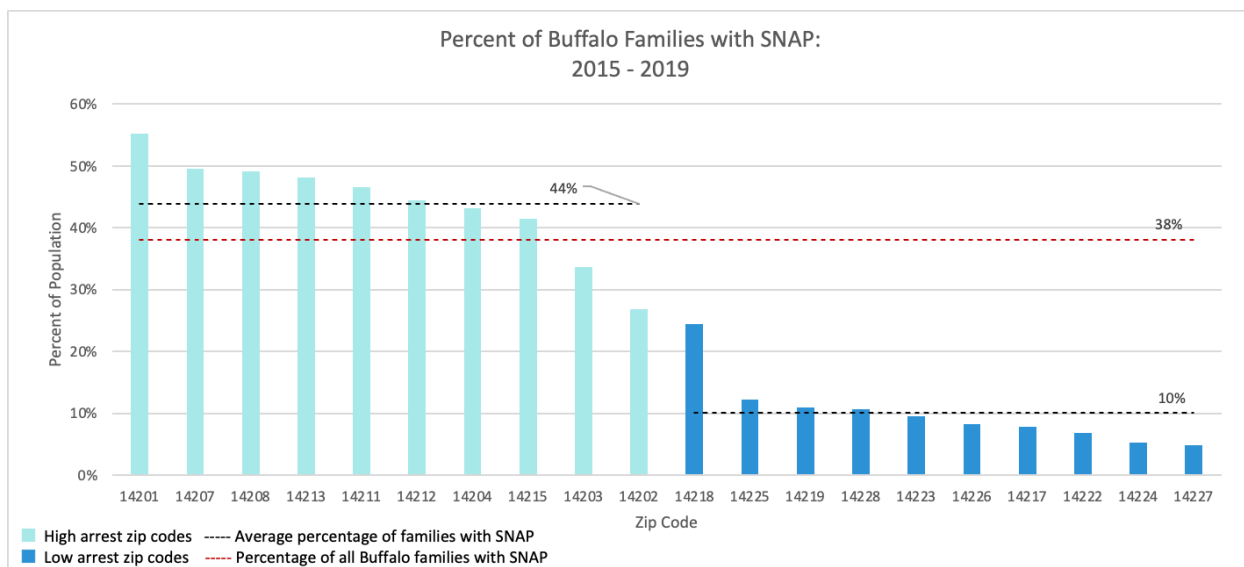**Buffalo Social Vulnerability Index Score: 2018**

Income, Poverty, and SNAP

High marijuana arrest zip codes have notably lower median household income, as well as far higher average percentage of people in poverty and families receiving SNAP, than low marijuana arrest zip codes.

- The median household income in the high marijuana arrest zip code is half that of the median household income in the low marijuana arrest zip codes ($29,423 versus $57,429, respectively).

- The average poverty rate among the high marijuana arrest zip codes is triple the poverty rate among the low marijuana arrest zip codes (34.9% versus 11.6% respectively).

- The average percentage of families receiving SNAP among the high marijuana arrest zip codes is over 4 times higher than among the low marijuana arrest zip codes (44% versus 10%, respectively).

Median Household Income of Buffalo Zip Codes: 2015 - 2019

Legend:
- High arrest zip codes ----- Median household income
- Low arrest zip codes ----- Median household income of city

Percent of Buffalo Population in Poverty: 2015 - 2019

Legend:
- High arrest zip codes ----- Average percent of population in poverty
- Low arrest zip codes ----- Percent of city population in poverty

Percent of Buffalo Families with SNAP: 2015 - 2019

Chart showing percent of population (y-axis, 0%–60%) by Zip Code (x-axis): 14201, 14207, 14208, 14213, 14211, 14212, 14204, 14215, 14203, 14202, 14218, 14225, 14219, 14228, 14223, 14226, 14217, 14222, 14224, 14227. Average percentage of families with SNAP = 44%. Percentage of all Buffalo families with SNAP = 38%. Low arrest zip code average = 10%.

Legend:
- High arrest zip codes ----- Average percentage of families with SNAP
- Low arrest zip codes ----- Percentage of all Buffalo families with SNAP
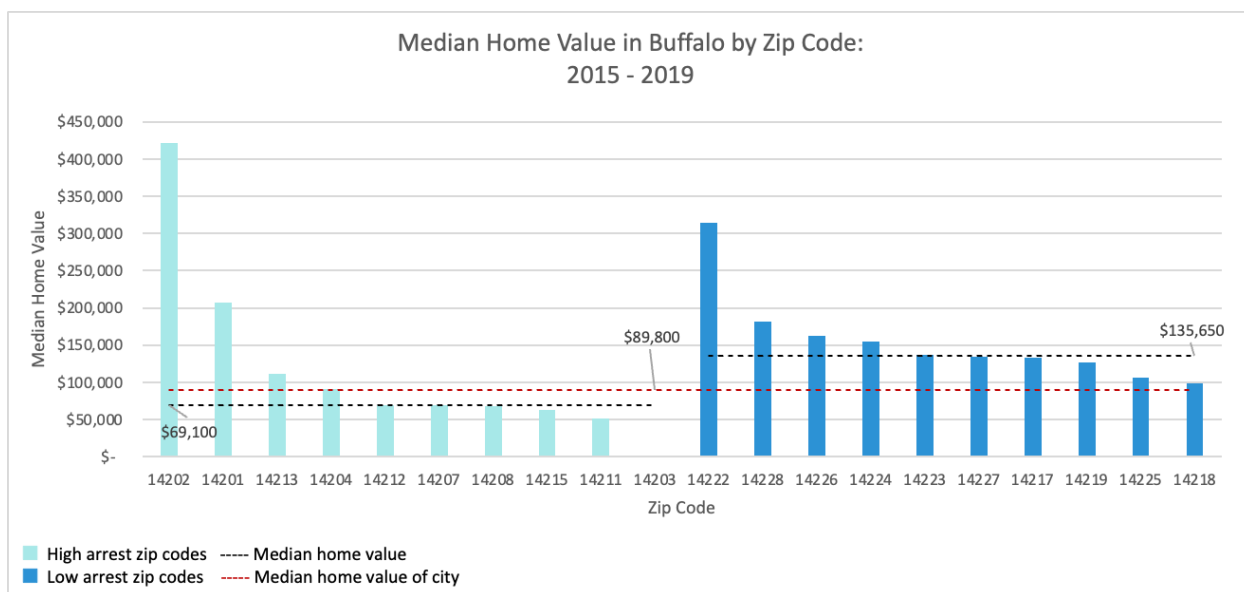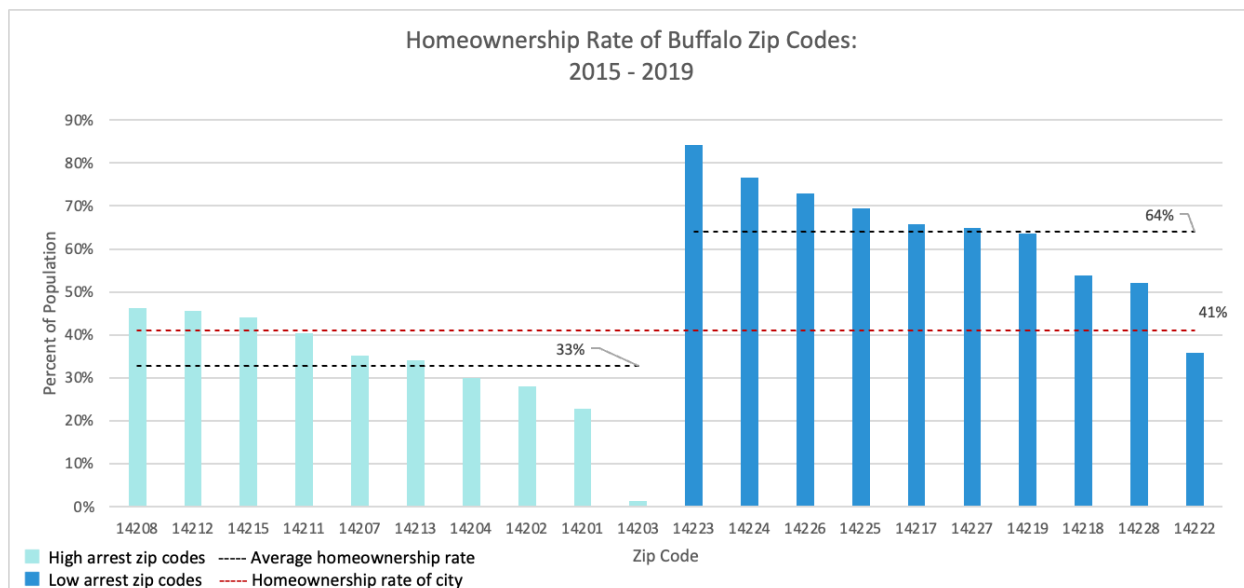
Housing

There is evidence of housing inequality between high and low marijuana arrest precincts, particularly in terms of home-ownership rates.

- The median home value among the high marijuana arrest zip codes is $69,100 compared to $135,650 among the low marijuana arrest zip codes.

- Only 3 out of 10 homes are owner-occupied in high marijuana arrest zip codes, while 6 out of 10 homes are owner-occupied in low marijuana arrest zip codes.

Median Home Value in Buffalo by Zip Code: 2015 - 2019

Chart showing Median Home Value (y-axis, $- to $450,000) by Zip Code (x-axis): 14202, 14201, 14213, 14204, 14212, 14207, 14208, 14215, 14211, 14203, 14222, 14228, 14226, 14224, 14223, 14227, 14217, 14219, 14225, 14218. High arrest median home value = $69,100. Median home value of city = $89,800. Low arrest median home value = $135,650.

Legend:
- High arrest zip codes ----- Median home value
- Low arrest zip codes ----- Median home value of city

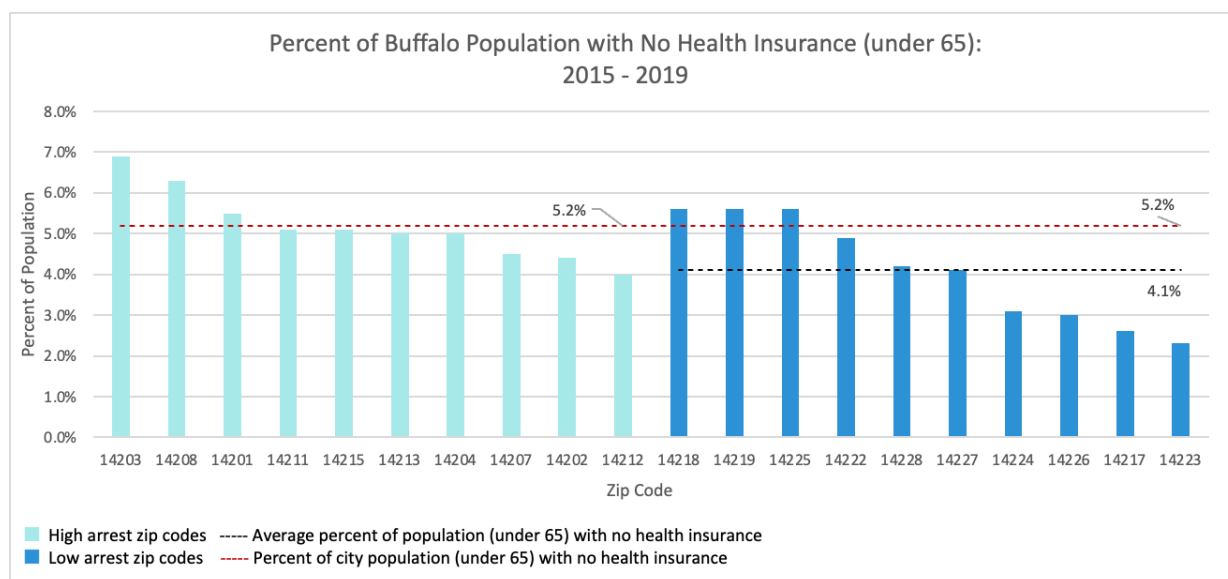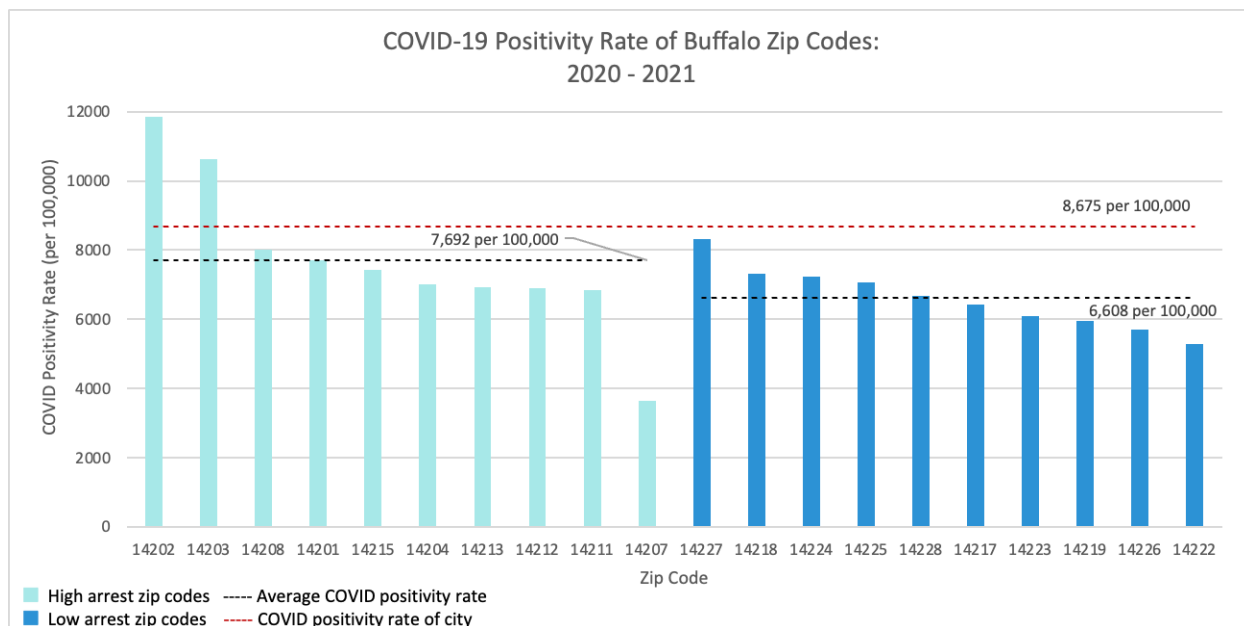**Homeownership Rate of Buffalo Zip Codes: 2015 - 2019**

COVID-19 and Health Insurance

We also found some evidence of potential health disparities in both insurance coverage and COVID-19 rates between high and low marijuana arrest zip codes.

- On average, only a slightly higher percentage of the population under 65 is without health insurance in the high marijuana arrest zip codes (5.2%) compared to the low marijuana arrest precincts (4.1%).

- Based on the current available data, the average COVID-19 positivity rate among the high marijuana arrest zip codes is higher than among the low marijuana arrest zip codes.

Percent of Buffalo Population with No Health Insurance (under 65): 2015 - 2019

COVID-19 Positivity Rate of Buffalo Zip Codes:
2020 - 2021

8,675 per 100,000

7,692 per 100,000

6,608 per 100,000

COVID Positivity Rate (per 100,000)

Zip Code

High arrest zip codes   ----- Average COVID positivity rate
Low arrest zip codes   ----- COVID positivity rate of city
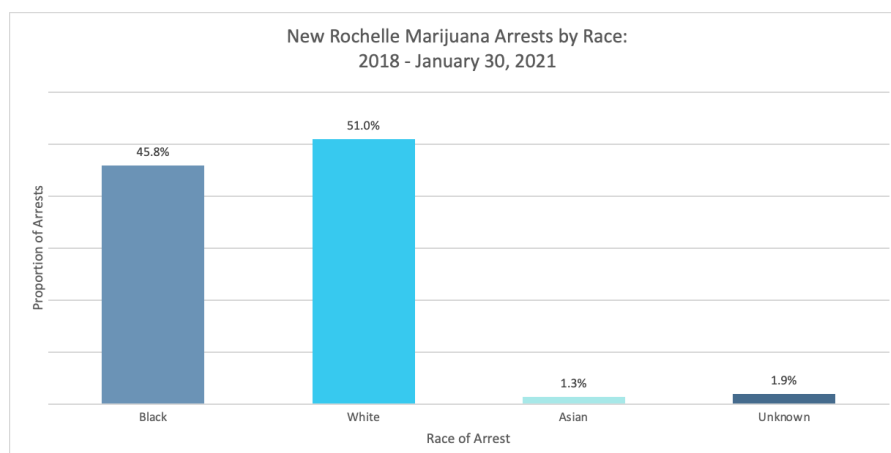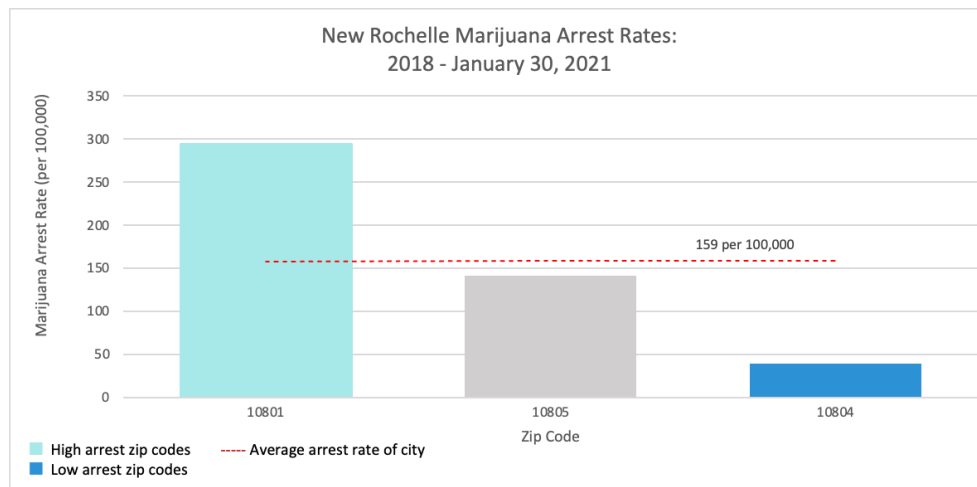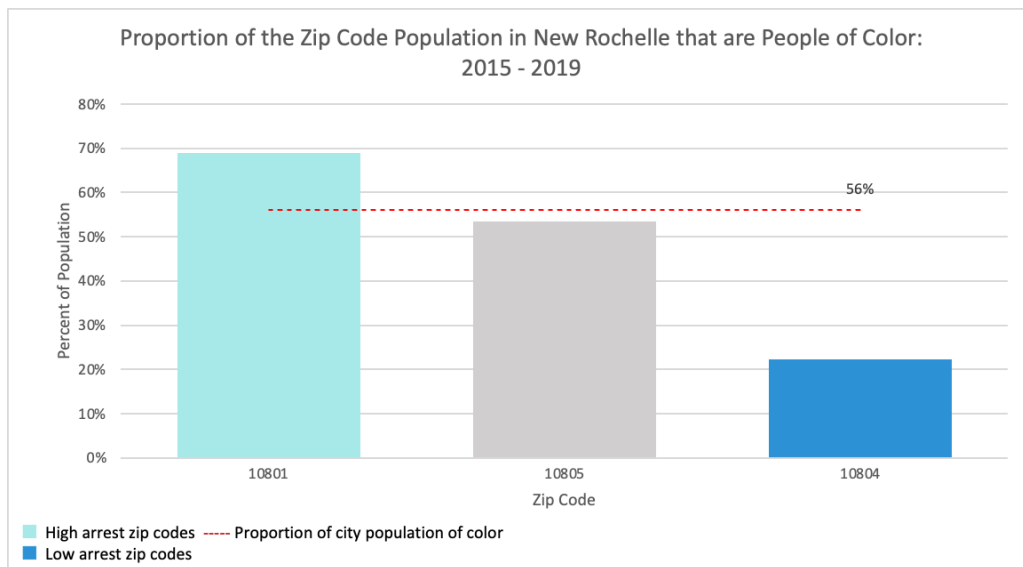
Despite its relatively small size, socioeconomic disparities and disparities in marijuana arrests were also found in New Rochelle.[23] We found considerable differences between the zip code with the highest and lowest marijuana arrests, even though they directly adjoin each other. New Rochelle is largely composed of only three populated zip codes and so, we also included each in our analysis though primarily focus on the high and low marijuana arrest neighborhoods.

Arrest Rate and Race

In New Rochelle, marijuana enforcement is occurring disproportionately in one zip code, and Black residents are disproportionately arrested compared to the rest of the population.

- The arrest rate in the high marijuana arrest zip code was 7.5 times more than the low marijuana arrest zip code (295 versus 39 per 100,000, respectively).

- Though it is substantially lower than the arrest rate in the high marijuana arrest zip code, the middle marijuana arrest rate zip code also demonstrated disparities, with the arrest rate being 3.6 times higher than the low marijuana arrest rate zip code.

- White people comprise 51% of all marijuana arrests. However, Black people are only 20.1% of New Rochelle's population but were 45.8% of all marijuana arrests between 2018-Jan 2021.[24]

- The percentage of the population of color in high marijuana arrest zip codes is three times greater than in the low marijuana arrest zip codes (69% versus 22%, respectively).

New Rochelle Marijuana Arrest Rates:
2018 - January 30, 2021

159 per 100,000

- High arrest zip codes
- Low arrest zip codes
- ----- Average arrest rate of city

New Rochelle Marijuana Arrests by Race:
2018 - January 30, 2021

Black	White	Asian	Unknown
45.8%	51.0%	1.3%	1.9%

Proportion of the Zip Code Population in New Rochelle that are People of Color: 2015 - 2019

Social Vulnerability Index (SVI)[25]

Notably, the SVI scores did not vary widely between the high marijuana arrest (.74, Moderate-to-High Vulnerability) and middle arrest zip codes (.77, High Vulnerability), though both scored much higher than the low marijuana arrest zip code (.18, Low Vulnerability), suggesting both high and middle arrest zip codes may be more vulnerable to the widespread impacts of COVID-19.

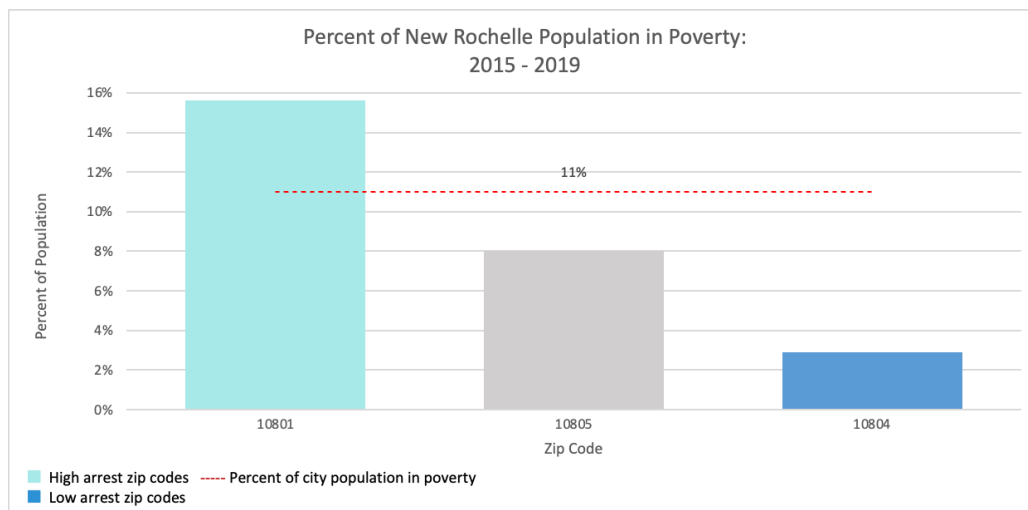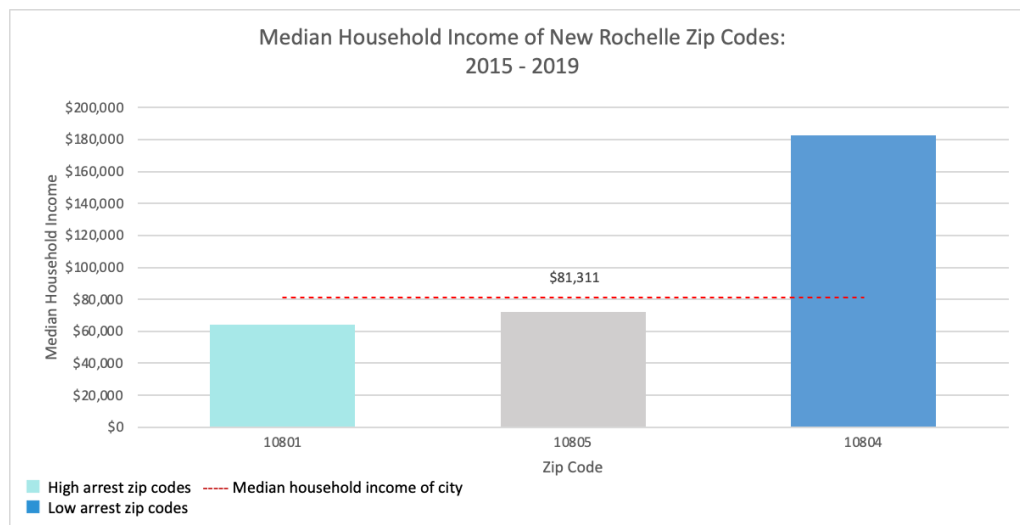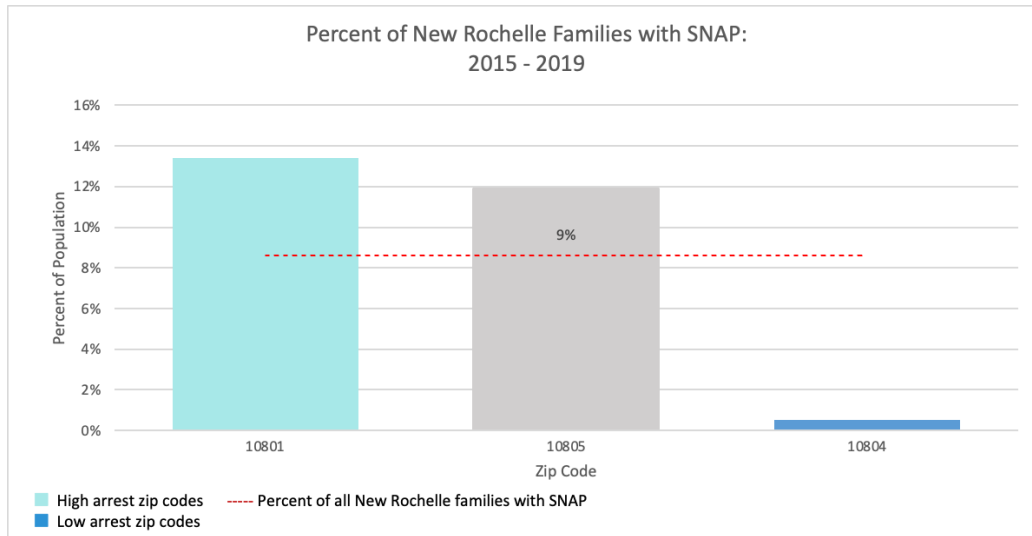New Rochelle Social Vulnerability Index Score: 2018
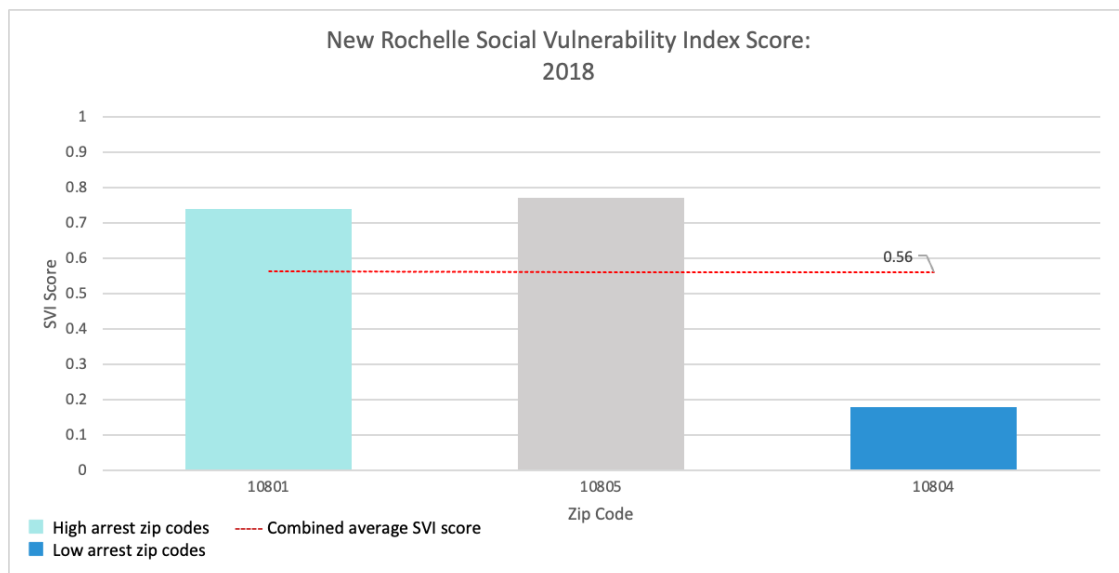
Income, Poverty, and SNAP

High and low marijuana arrest zip codes show clear disparities in terms of income and economic insecurity, with notable differences in median household income, the percentage of people in poverty, and the percentage of families receiving SNAP.

- Median household income in the low marijuana arrest zip code is 2.8 times higher than the high marijuana arrest rate zip code ($182,396 versus $64,043).

- The percent of people living in poverty is 5 times higher in the high marijuana arrest zip code compared to the low marijuana arrest zip code (16% compared to 3%, respectively).

- 26.8 times as many families living in the high marijuana arrest zip code receive SNAP than those living in the low marijuana arrest zip code (13.4% compared to .5%, respectively).

**Median Household Income of New Rochelle Zip Codes:
2015 - 2019**

(Bar chart: Median Household Income by Zip Code. Y-axis ranges from $0 to $200,000. Zip code 10801 (High arrest, light teal) ≈ $64,000; 10805 (gray) ≈ $72,000; 10804 (Low arrest, blue) ≈ $182,000. Red dashed line at $81,311 = Median household income of city.)

Legend: ■ High arrest zip codes ----- Median household income of city ■ Low arrest zip codes

**Percent of New Rochelle Population in Poverty:
2015 - 2019**

(Bar chart: Percent of Population by Zip Code. Y-axis ranges from 0% to 16%. Zip code 10801 (High arrest, light teal) ≈ 15.6%; 10805 (gray) ≈ 8%; 10804 (Low arrest, blue) ≈ 3%. Red dashed line at 11% = Percent of city population in poverty.)

Legend: ■ High arrest zip codes ----- Percent of city population in poverty ■ Low arrest zip codes

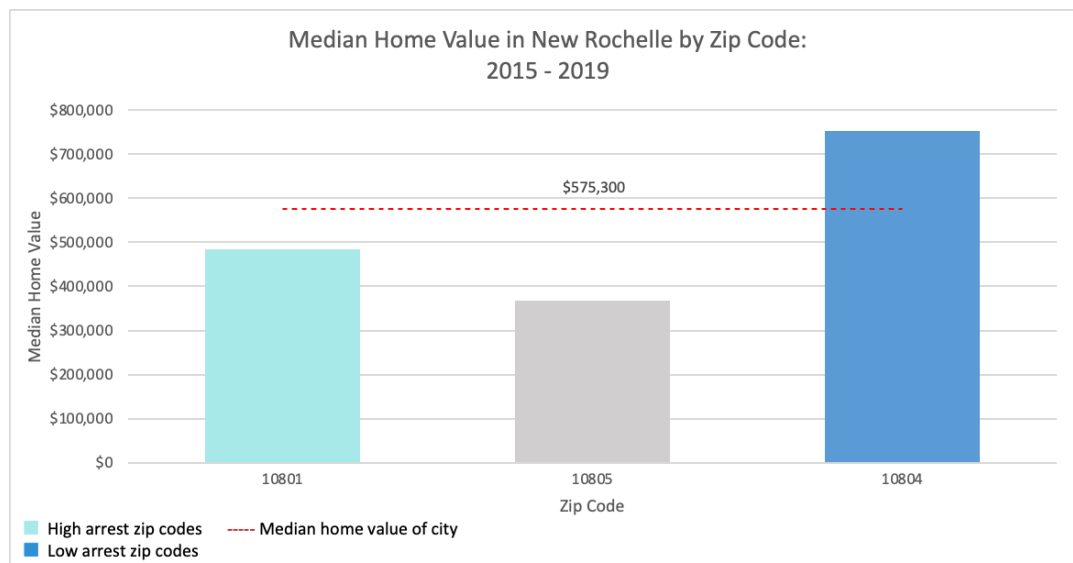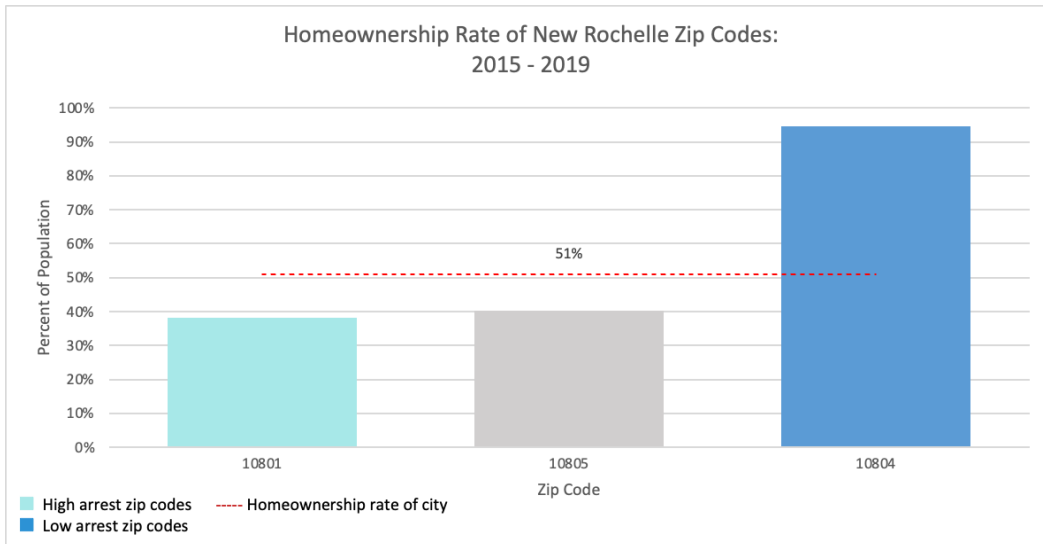Percent of New Rochelle Families with SNAP: 2015 - 2019

Housing

While differences between the high marijuana arrest zip code and the middle arrest zip code in terms of home ownership and home value are relatively small, there is a substantial disparity between these zip codes and the low marijuana arrest zip code.

- The median home value in the high marijuana arrest zip code ($484,800) is higher than the median home value in the middle arrest zip code ($368,500), though both are substantially lower than the median home value in the low marijuana arrest zip code ($751,500).

- In both the high and middle marijuana arrest zip codes, roughly 4 in 10 homes are owner-occupied (homeownership rate of 38.3% and 40.3% respectively), compared to roughly 9 in 10 homes in the low marijuana arrest zip code (homeownership rate of 94.7%)
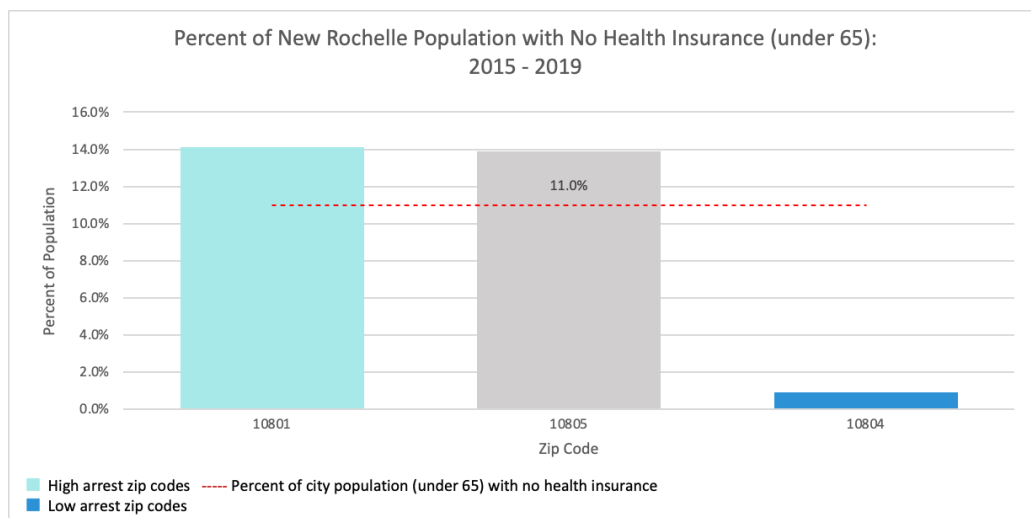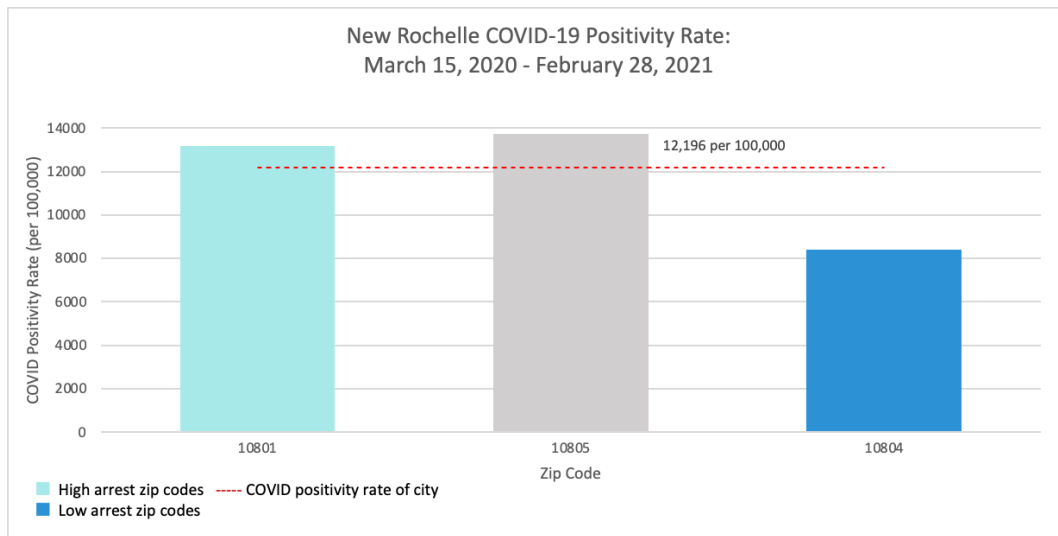

Median Home Value in New Rochelle by Zip Code: 2015 - 2019

Homeownership Rate of New Rochelle Zip Codes:
2015 - 2019

[Bar chart showing Percent of Population (y-axis, 0% to 100%) by Zip Code (x-axis). 10801 approximately 38% (High arrest zip codes, teal). 10805 approximately 40% (Middle, gray). 10804 approximately 95% (Low arrest zip codes, blue). Red dashed line at 51% labeled "Homeownership rate of city".]

Legend:
- High arrest zip codes
- Low arrest zip codes
- Homeownership rate of city

COVID-19 and Health Insurance

We found evidence that high and middle marijuana arrest zip codes have higher COVID-19 positivity rates and a larger percentage of the population that is uninsured compared to the low marijuana arrest zip code.

- The percentage of the population under 65 without health insurance was considerably higher in the high marijuana arrest zip code (14.1%) and in the middle marijuana arrest zip code (13.7%) than in the low marijuana arrest zip code (.9%).

- The COVID-19 positivity rates of both the high marijuana arrest and middle marijuana arrest zip codes are roughly 1.6 times that of the low marijuana arrest zip code (13,176, 13,725, and 8,412, per 100,000, respectively).

Percent of New Rochelle Population with No Health Insurance (under 65):
2015 - 2019

[Bar chart showing Percent of Population (y-axis, 0.0% to 16.0%) by Zip Code (x-axis). 10801 approximately 14.1% (High arrest zip codes, teal). 10805 approximately 13.7% (Middle, gray). 10804 approximately 0.9% (Low arrest zip codes, blue). Red dashed line at 11.0% labeled "Percent of city population (under 65) with no health insurance".]

Legend:
- High arrest zip codes
- Low arrest zip codes
- Percent of city population (under 65) with no health insurance

New Rochelle COVID-19 Positivity Rate:
March 15, 2020 - February 28, 2021

CONCLUSION

Despite regional differences, New York City, New Rochelle, Syracuse, and Buffalo demonstrate similar trends. In all four cities, people of color are consistently over-represented in marijuana arrests, and areas with the highest marijuana arrest rates also tend to have proportionally larger populations of color.

Additionally, when compared using the Social Vulnerability Index (SVI) – a measure created by the Centers for Disease Control that uses 15 social factors (e.g. poverty, lack of vehicle access, crowded housing) in order to assess the ability of a community to prevent suffering and loss in the wake of disaster and disease – high marijuana arrest areas consistently ranked higher on SVI scores than low marijuana arrest zip codes, indicating increased vulnerability during public health emergencies.

When looking at metrics that indicate community financial stability, in each city the average poverty rate was notably higher among the high marijuana arrest zip codes and the high marijuana arrest zip codes consistently have nearly half the median household income of the low marijuana arrest zip codes (except for New Rochelle, where the disparity is even greater). Across all four cities, the average percentage of families receiving SNAP (Supplemental Nutrition Assistance Program) in high marijuana arrest zip codes was at least 3 times greater than in low marijuana arrest zip codes. Additionally, in every high marijuana arrest zip codes had both lower rates of home ownerships and lower median home values than low marijuana arrest zip codes.

Finally, across all cities, this analysis found higher average COVID-19 positivity rates among the high marijuana arrest zip codes compared to the low marijuana arrest zip codes.[26]

APPENDIX

Data Sources

Marijuana-Related Arrests

Marijuana arrest data were either publicly available, received through freedom of information law (FOIL) requests submitted by the research team or through direct conversations with the police department. Marijuana arrest data from Buffalo and New Rochelle was obtained through FOIL requests, data from Syracuse was sent directly from the Syracuse police department, and data for New York City was provided by the Drug Policy Alliance. The Buffalo Police Department provided marijuana arrest data between 2010 - 2020, the New Rochelle Police Department provided marijuana data between 2018 - January, 2021, New York Police Department provided marijuana arrest data between 2010 - August 2019, and the Syracuse Police Department provided marijuana arrest data between 2010 - 2020.

 Marijuana related arrests were defined as penal codes **PL 221.05**, **221.10**, **221.15**, **221.20**, **221.25**, **221.30**, **221.35**, **221.40**, **221.45**, **221.50**, **221.55**.

City arrest data were available in differing spatial units. While New York City arrest data provided the precinct responsible for the arrest, Syracuse provided the zip code of the arrested individual's home address. Buffalo provided either the exact location or cross streets where the arrest took place, but not the zip code, and New Rochelle provided the zip code of where the arrest took place. Google's Maps application-program interface (API) was used to geocode either partial or complete addresses provided by the Buffalo Police Department to determine zip code location of arrest. Buffalo marijuana arrests were excluded from the analysis when the arrest zip code was unable to be determined.

Social Vulnerability Index

The SVI, created by the Center for Disease Control (CDC), is available at both census tract and county levels. It is an aggregated indicator of community resilience using 15 different social factors including, percent below poverty, percent unemployed, per capita income, percent age 25 or older with no high school diploma, percent aged 65 and older, percent aged 17 or younger, percent with a disability, percent single parent household, percent minority, percent aged 5 or older speak English "less than well," percent multi-unit structures, percent mobile homes, percent crowding (more people than rooms), percent households without a vehicle, and percent in institutionalized group quarters.[27] For the purpose of this analysis, SVI scores for census tracts were matched and then averaged to calculate scores specific to relevant zip codes and precincts.[28] 2018 SVI data, the most recent available, were used.

Income, Poverty, Family Recipients of SNAP, Homeownership, Home Value, and Health Insurance Coverage

All related socioeconomic indicators were extracted from PolicyMap and are sourced from the U.S. Bureau of the Census' American Community Survey, years 2015 - 2019.[29]

COVID-19 Positivity and Death Rates

COVID-19 data were accessed through a variety of sources. Buffalo's COVID data were accessed through the Erie County COVID-19 Dashboard.[30] In addition to total cases throughout the city, the dashboard also provides the total number of COVID cases per Buffalo zip code. COVID-19 data for New York City were accessed through the New York City Department of Health portal.[31] The portal provides total positivity cases and deaths, as well as rates by zip code and borough throughout the city. New York City was the only city for which we could find COVID-19 death rates and hospital rates. The total number of New Rochelle COVID cases was provided by the New Rochelle Mayor's office upon request. Syracuse COVID data were accessed through an Onondaga County COVID-19 dashboard, which displays cases by ZIP

code within the city of Syracuse.[32] However, please note the Syracuse ZIP code dashboard includes only cases that fall within the boundary of the City of Syracuse and does not reflect all cases within that zip code. As such, three of the fourteen zip codes we analyzed for marijuana arrest rates were not included in the dashboard.

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[1] See ACLU reports "The War on Marijuana in Black and White" (2013) and "A Tale of Two Countries: Racially Targeted Marijuana Arrests in the Era of Marijuana Reform" (2020).

[2] New York City is the first largest city, Buffalo is the second largest, Syracuse is the fifth largest, and New Rochelle is the seventh largest.

[3] The number of zip codes included in the high and low marijuana arrest groups varied somewhat by city. In the case of Buffalo and NYC, which each have over 30 zip codes, we took the 10 zip codes with the highest arrest rates and the 10 zip codes with the lowest arrest rates. Syracuse and New Rochelle do not have enough zip codes to be split into groups of 10, so Syracuse was divided evenly into two groups of 7, while only the single highest and lowest zip code were analyzed for New Rochelle (as arrests were only associated with 3 zip codes total).

[4] The NYPD website outlines the exact boundaries that fall under each precinct. We were not able to report marijuana arrest data at the zip code level because NYPD marijuana arrest data reports which precincts are responsible for marijuana arrests, rather than the exact location of those arrests. Furthermore, we refrained from using zip codes as an indicator for location because precincts often cover multiple zip codes. To map NYPD marijuana arrests, we created custom zones on PolicyMap that reflected those same boundaries on the NYPD website and extracted all relevant data of the census tracts and/or block groups that comprise the precincts.

[5] Please see appendix for more information about how Syracuse reports their marijuana arrests.

[6] Please see the appendix for more information on Social Vulnerability Index (SVI).

[7] While we were not able to find COVID-19 death rates or hospital rates for all cities, the trends observed in the New York City COVID-19 death rates and hospital rates demonstrate that these are important indicators that should be examined in other cities.

[8] Sources: Oppel et al. "The Fullest Look Yet at the Racial Inequality of Coronavirus". NY Times, July, 2020. https://www.nytimes.com/interactive/2020/07/05/us/coronavirus-latinos-african-americans-cdc-data.html
Ogedegbe, G., Ravenell, J., Adhikari, S., et al. (2020). Assessment of Racial/Ethnic Disparities in Hospitalization and Mortality in Patients with COVID-19 in New York City. JAMA Network Open, 3(12), doi:10.1001/jamanetworkopen.2020.26881

[9] Our analysis focused on rates of people with no insurance. However, it should be considered that underinsurance can also result in people avoiding the doctor due to high out-of-pocket costs. Gaffney, A., Himmelstein, D.U., & Woolhandler, S. (2020). COVID-19 and US health financing: Perils and possibilities. *International Journal of Health Services, 50*(4), 396-407.

[10] Given that Syracuse reports only the zip code of where those arrested live, rather than where the arrests took place, all information in the Syracuse section refers to the home zip codes of those arrested. See Appendix for more information.

[11] 'People of color' is defined here as anyone who identifies as Hispanic or Latinx, multiracial, or any race other than white.

[12] The Social Vulnerability Index (SVI) captures multiple factors that impact a community's ability to mitigate suffering and financial loss in the face of disaster and disease. The scale is as follows: Low Vulnerability (0 - .25), Low-to-Moderate (.26 - .50), Moderate-to-High (.51 - .75), and High (.76 - 1). See Appendix for a more detailed explanation of SVI. https://www.atsdr.cdc.gov/placeandhealth/svi/fact_sheet/fact_sheet.html

[13] Comptroller Scott Stringer (2018). "Addressing the Harms of Prohibition". Bureau of Policy and Research.

[14] Precinct 14 is frequently of an outlier among the high marijuana arrest precincts – the area consists of many tourist destinations, such as the Empire State Building, Bryant Park, Grand Central Station, and Penn station, and clothing retail stores. Although people of color account for only 46% of residents in Precinct 14, 62% of Precinct 14 marijuana arrests are people of color.

[15] The SVI captures multiple factors that impact a community's ability to mitigate suffering and financial loss in the face of disaster and disease.

[16] Precinct 14 has a median household income of $120,739, twice as much as the next highest median household income among the highest ranking precincts (Precinct 33, $61,000). Precinct 14 is also distinct from the other high marijuana arrest precincts in that contained within its boundaries are sites that attract high levels of tourists including the Empire State Building, Times Square, Pennsylvania Station, and Bryant Park. Excluding the median household income of Precinct 14 among the highest-ranking precincts only brings the household income down from $39,469 to $39,335.

[17] The percentage of families receiving SNAP increased slightly when excluding Precinct 14 (Midtown South), from 37.7% to 39.7%.

[18] Precinct 14 (Midtown South) considerably skews the median home value for the highest marijuana arrest rate precincts. Precinct 14 has a median home value of $1,007,069, over $250,000 greater than the next highest median home value among the highest-ranking precincts (Precinct 30, $745,386). Excluding the median home value of Precinct 14 among the highest ranking precincts brings the home value down $25,000, from $531,956 to $505,298.

[19] Homeownership rate decreased slightly when excluding Precinct 14 (Midtown South), from 13.2% to 11.2%.

[20] Percentage of the population without health insurance increased very slightly when excluding Precinct 14 (Midtown South), from 9.5% to 10.0%.

[21] The SVI captures multiple factors that impact a community's ability to mitigate suffering and financial loss in the face of disaster and disease. See Appendix for more detailed explanation of SVI measure.

[22] Although there are more than three zip codes associated with New Rochelle, these are the zip codes primarily associated with the city and were the only three associated with arrests. Therefore, we focused exclusively on these.

[23] As New Rochelle is primarily constituted by only three populated zip codes, all three are depicted in the subsequent graphs.

[24] US Census Bureau (2019). "Quick Facts New Rochelle City, New York" https://www.census.gov/quickfacts/newrochellecitynewyork

[25] The SVI captures multiple factors that impact a community's ability to mitigate suffering and financial loss in the face of disaster and disease.

[26] While we were not able to find COVID-19 death rates or hospital rates for all cities, the trends observed in the New York City COVID-19 death rates and hospital rates demonstrate that these are important indicators that should be examined in other cities.

[27] CDC, 2020. "CDC SVI 2018 Documentation". https://www.atsdr.cdc.gov/placeandhealth/svi/documentation/pdf/SVI2018Documentation-H.pdf

[28] SVI scores were extracted from PolicyMap. See: https://www.policymap.com/data/our-data-directory/#CDC%20Social%20Vulnerability%20Index

[29] https://www.policymap.com/data/our-data-directory/#Census:%20Decennial%20Census%20and%20American%20Community%20Survey%20(ACS)

[30] https://covid19-buffalony.hub.arcgis.com

[31] https://www1.nyc.gov/site/doh/covid/covid-19-data.page#aboutthedata

[32] https://socpa.maps.arcgis.com/apps/opsdashboard/index.html#/572c8870e2cf49c9a9ea1ea488e4fb0d