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# Policing the pandemic: estimating spatial and racialized inequities in New York City police enforcement of COVID-19 mandates

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## ABSTRACT

The use of policing to enforce public health guidelines has historically produced harmful consequences, and early evidence from the police enforcement of COVID-19 mandates suggested Black New Yorkers were disproportionately represented in arrests. The over-policing of Black and low-income neighborhoods during a pandemic risks increased transmission, potentially exacerbating existing health inequities. To assess racialized and class-based inequities in the enforcement of COVID-19 mandates at the ZIP-code-level, we conducted a retrospective spatial analysis of demographic factors and public health policing in New York City from 12 March–24 May 2020. Policing outcomes (COVID-19 criminal court summonses and public health and nuisance arrests) were measured using publicly available police administrative data. After controlling for two measures of social distancing compliance, a standard deviation increase in percentage of Black residents was associated with a 73% increase (95% CI: 35%, 123%) in the COVID-19-specific summons rate and a 34% increase (95% CI: 17%, 53%) in the public health and nuisance arrest rate. Percentage of Black residents and historical stop-and-frisk rates had stronger associations with COVID-19 summons rates than multiple measures of social distancing compliance. Findings demonstrate pronounced spatial and racialized inequities in pandemic policing of public health that mimic historical policing practices deemed racially discriminatory. If the field of public health supports criminalization and punishment as public health strategies, it risks reinscribing racialized health inequities.

## ARTICLE HISTORY

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COVID-19; coronavirus; police; law enforcement; race/ethnicity

## Introduction

In New York City, the first reported case of COVID-19 was documented on 1 March 2020, followed by rapid community transmission over the subsequent 3 weeks. On March 12, Mayor de Blasio declared a state of emergency followed by citywide restrictions on non-essential business, gatherings, and travel (The New York Times, 2020). By March 22, the city and its suburbs accounted for 5% of the world's confirmed cases, making it a global epicenter of the pandemic (McKinley, 2020). On that day, Governor Cuomo introduced a social distancing mandate, followed by a mandate to wear masks in public on April 17. State and city officials tasked police with enforcing those policies (NBC New York, 2020a).

These public health mandates sent a powerful message to the public, demonstrating the necessity of social distancing and wearing masks to control the spread of SARS-CoV-2 (coronavirus) and save lives. Additionally, the mandates were enacted early in the pandemic when the differential

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risk of transmission in outdoor vs. indoor settings was not yet well understood, thus outdoor mask wearing was considered an important preventative measure at that time. However, the use of the New York City Police Department (NYPD) to enforce the COVID-19 mandates raised concerns about whether policing and criminalization would be a safe and effective strategy for pandemic control, or instead pose novel threats to public health and civil rights.

In the past, the use of law enforcement to enforce public health regulations has had harmful public health consequences. Throughout history, numerous public health problems have been criminalized in New York City, such as substance use (through New York's infamous Rockefeller drug laws) and the transmission of HIV, gonorrhea, and syphilis (Burriss et al., 2007; Kohler-Hausmann, 2010). Policing-based public health strategies have discouraged people from seeking care out of fear of being criminalized and, with respect to substance use, these strategies have increased risk of overdose deaths (Beletsky et al., 2015). At the same time, using police to enforce public health mandates expands police presence in communities of color and redirects public funding into carceral infrastructures at the expense of social services, ultimately, contributing to mass incarceration (Drucker, 2002).

There are a number of reasons to believe that using the NYPD to enforce social distancing and mask wearing mandates may have negative consequences for public health and civil rights, particularly given the discretionary nature of enforcing these mandates. Specifically, police enforcement of COVID-19 mandates could have in fact increased the spread of the coronavirus by increasing the number of close physical interactions between police officers and community members at a time when community transmission of the virus was high in New York City, thousands of police officers had tested positive, and thousands more reported symptoms (Speri, 2020). In cases of arrest as a result of COVID-19 enforcement, risk of infection was exacerbated by the high risk of virus exposure in jails (in late March 2020, New York City's Rikers Island jail had a coronavirus infection rate seven times higher than the rest of the city) (Legal Aid Society, 2020a). Furthermore, police enforcement of these mandates was likely to exacerbate economic precarity in an environment of mass unemployment and underemployment through detainment and fines (Foster, 2020). Finally, this approach placed pandemic control and transmission reduction under the purview of a punitive institution that has historically over-policed and criminalized Black communities (Scheidlin, 2013).

In the weeks following New York's COVID-19 mandates, reports of arrests for public health violations increased. Data from early May 2020 showed that 35 of the 40 people arrested for social distancing violations in Brooklyn were Black (Southall, 2020b), reflecting a stark racialized inequity in the police enforcement of public health mandates. On 26 May 2020, a group of legal advocates filed an emergency motion against the city of New York demanding a moratorium on, and federal investigation into, the NYPD's COVID-19 enforcement (Floyd et al., 2020). These advocates were the plaintiffs in two previous lawsuits against the city regarding the NYPD's controversial Stop, Question, and Frisk program (stop-and-frisk), which was deemed unconstitutional due to racially discriminatory practices (Scheidlin, 2013). In the emergency motion, the legal advocates argued that the enforcement of COVID-19 mandates mirrored the unconstitutional practices of stop-and-frisk given that police could use COVID-19 mandate enforcement as a pretense to stop and search anyone (Floyd et al., 2020).

In response, city lawmakers pressured the NYPD to release complete data on the enforcement of COVID-19 mandates. The NYPD later released data on criminal court summonses related to COVID-19; however, the NYPD has not released data on COVID-19-specific arrests. Criminal court summonses are tickets issued by police officers for the violation of a law that typically do not result in arrest but require that the person report to court at a scheduled time (NYCourts.gov, 2021). The Legal Aid Society descriptively analyzed the summons data through May 5 and found higher rates of summonses in majority Black and Latino precincts (Legal Aid Society, 2020b). We build upon that analysis in the present investigation by complementing those summons data with routinely released arrest data and employing more sophisticated multivariable modeling techniques to assess spatial and racialized inequities in the enforcement of COVID-19 mandates at the ZIP-code-level. We also

integrate novel cell phone data and 311 data as ZIP-code-level measures of social distancing compliance. Taken together, these data sources allow us to estimate spatial and racialized inequities in New York City police enforcement of COVID-19 mandates in the early months of the pandemic. Specifically, we aim to answer the research question: were rates of police enforcement of COVID-19 mandates higher in neighborhoods with higher percentages of Black residents and low-income residents, after adjusting for social distancing compliance?

## Methods

### *Study design and setting*

This study focused on summonses and arrests related to the enforcement of COVID-19 mandates in New York City from 12 March–24 May 2020. The study period ends immediately before the police murder of George Floyd and the start of nationwide protests, which resulted in dramatic shifts in policing patterns and arrests.

### *Dependent variables*

Data on every criminal court summons and arrest occurring in New York City were obtained from the NYC Open Data portal (City of New York, 2020a). Files include incident-level information on the geolocation of the summons or arrest and the alleged offense. The two measures of public health policing were constructed using existing NYPD offense categories.

The first measure of public health policing was COVID-19-specific criminal court summonses. The offense descriptions for these summonses were ‘prohibits violations of any emergency measures established by the Mayor’ and ‘prohibits acts likely to spread disease’.

A second measure was a category of arrests labeled ‘public health and nuisance arrests’, which included arrests with offense descriptions of disorderly conduct; criminal mischief; criminal trespass; offenses against public order, public sensibilities, and the right to privacy; and violations of public health law. We selected these offense types after conducting a search for news articles published between 26 March and 10 May 2020, describing the offenses filed for COVID-19-specific arrests in the U.S. We selected and closely reviewed the 25 articles that provided the highest level of detail about the COVID-19-specific arrest incident(s). Still, many of the articles did not include the precise offense category of the charge and most covered incidents in jurisdictions other than New York City, thus it is likely that we have missed offense categories the NYPD may have used to charge COVID-19-specific arrests. It is also likely that some of the public health and nuisance arrests captured through this measure were not directly related to public health guideline violations. However, it was necessary to use this more inclusive categorization given the discretionary nature of public health policing and the wide range of offenses recorded for known COVID-19-specific arrests, and also because the NYPD has not released COVID-19-specific arrest data. We hypothesized that trends in this category of arrests reflect underlying arrest trends in COVID-19 enforcement and serve as a secondary measure of pandemic policing to complement COVID-19-specific criminal court summonses.

### *Independent variables*

ZIP code tabulation area (ZCTA)-level demographic measures from the 2018 American Community Survey (ACS) 5-year estimates included total population (for the population offset term), percentage of residents self-identifying as Black, and percentage of residents with an income below the federal poverty level (\$25,100 USD for a family of four) (ASPE, 2019). The two key independent variables of interest were ZCTA percentage of Black residents and ZCTA percentage below the poverty level. ZCTAs are generalized representations of ZIP codes used by the Census Bureau; we therefore refer to

ZCTA as ZIP code. In sensitivity analyses, we repeated the analyses using demographic data drawn from the 2010 Decennial Census as ACS estimates may be less reliable than full census enumeration counts for granular levels of geography (Spielman et al., 2014).

## **Covariates**

### ***ZIP-code-level 311 social distancing service requests***

311 is New York City's non-emergency government services line. Following the COVID-19 emergency orders, New Yorkers used 311 to report social distancing violations. Data on 311 service requests, including geographic coordinate data, were available through the NYC Open Data portal (City of New York, 2020b). Incident-level social distancing service requests were aggregated at the ZIP-code-level based on geolocation. There were 42,223 social distancing service requests in New York City over the study period.

### ***ZIP-code-level non-home dwell time***

Median non-home dwell time, a proxy for non-adherence to social distancing order (Gao et al., 2020), was captured using cell phone mobility data provided by SafeGraph (SafeGraph, 2020). Data are generated based on pings from anonymous mobile devices. For each device, SafeGraph identifies a common nighttime location at Geohash-7 granularity (~153 m x ~ 153 m) over a 6-week period. The total number of minutes outside of this 'home area' is summed to obtain the total number of non-home dwell time minutes per device per day. Data from devices that are powered off, lack tracking functionality, or have opted out of location services are not included. The median of all eligible devices is calculated at the census block group level. We aggregated this measure to the ZIP-code-level using a population weighting factor to assign block groups belonging to multiple ZIP codes. Median non-home dwell time was missing for 12 (6.8%) ZIP codes.

### ***ZIP-code-level historical stop-and-frisk incidents***

Stop-and-frisk is a policing practice of detaining and searching civilians based on 'reasonable suspicion' alone rather than probable cause (Berry, 2000). In New York City, the stop-and-frisk program was eventually deemed unconstitutional due to evidence of racially discriminatory practices, though the NYPD continues to use stop-and-frisk today at far lower rates (Scheidlin, 2013). We obtained historical data on stop-and-frisk incidents to serve as a comparison for the spatial patterning of COVID-19 policing. The height of the stop-and-frisk program was in 2011 (Dunn & Shames, 2019); we thus obtained data for all 2011 stop-and-frisk incidents through the NYPD Stop, Question, and Frisk database to reflect the spatial patterning of stops at the height of the program (New York City Police Department, 2020). There were 685,724 stop-and-frisk incidents in New York City in 2011, and geographic coordinate data were available for 660,697 incidents. Individual stop-and-frisk incidents were aggregated to the ZIP-code-level.

## **Statistical analysis**

We fit a series of ZIP-code-level models to examine spatial patterns in public health policing over the study period. Because our outcomes of interest were summons and arrest rates, we used quasi-Poisson regression. We used quasi-Poisson rather than Poisson models due to the presence of overdispersion in initial Poisson models. Quasi-Poisson models hold the same distributional assumptions of Poisson models, except that they allow for a flexible dispersion parameter (Ver Hoef & Boveng, 2007). All models included an offset term (natural log of the ZIP code population) to model rates and borough-fixed effects to account for spatial clustering. We excluded three ZIP codes with fewer than 200 residents.

We first fit a set of unadjusted models (adjusted only for borough-fixed effects) assessing the ZIP-code-level associations between the two key independent variables (percentage of Black residents and percentage of residents below the poverty level) and the two public health policing outcomes. The two independent variables were tested individually in separate sets of models. We then fit a set of adjusted models in which the two measures of social distancing compliance were added to each model as controls: rate of 311 social distancing service requests and median non-home dwell time minutes.

Lastly, we fit a series of quasi-Poisson models to identify ZIP-code-level factors correlated with public health policing. Independent variables included: (1) percentage of Black residents, (2) percentage of residents below the poverty level, (3) rate of social distancing 311 complaints, (4) median non-home dwell time, and (5) rate of 2011 stop-and-frisk incidents, captured at the ZIP-code-level.

All independent variables were standardized so that models estimated changes in rates associated with a one standard deviation increase in each independent variable.

### **Sensitivity analyses**

As described above, we conducted sensitivity analyses in which we repeated all statistical procedures described above but used demographic data drawn from the 2010 Decennial Census in place of 2018 ACS estimates.

We performed all statistical analyses in R version 4.0 (R Foundation for Statistical Computing, Vienna, Austria).

### **Results**

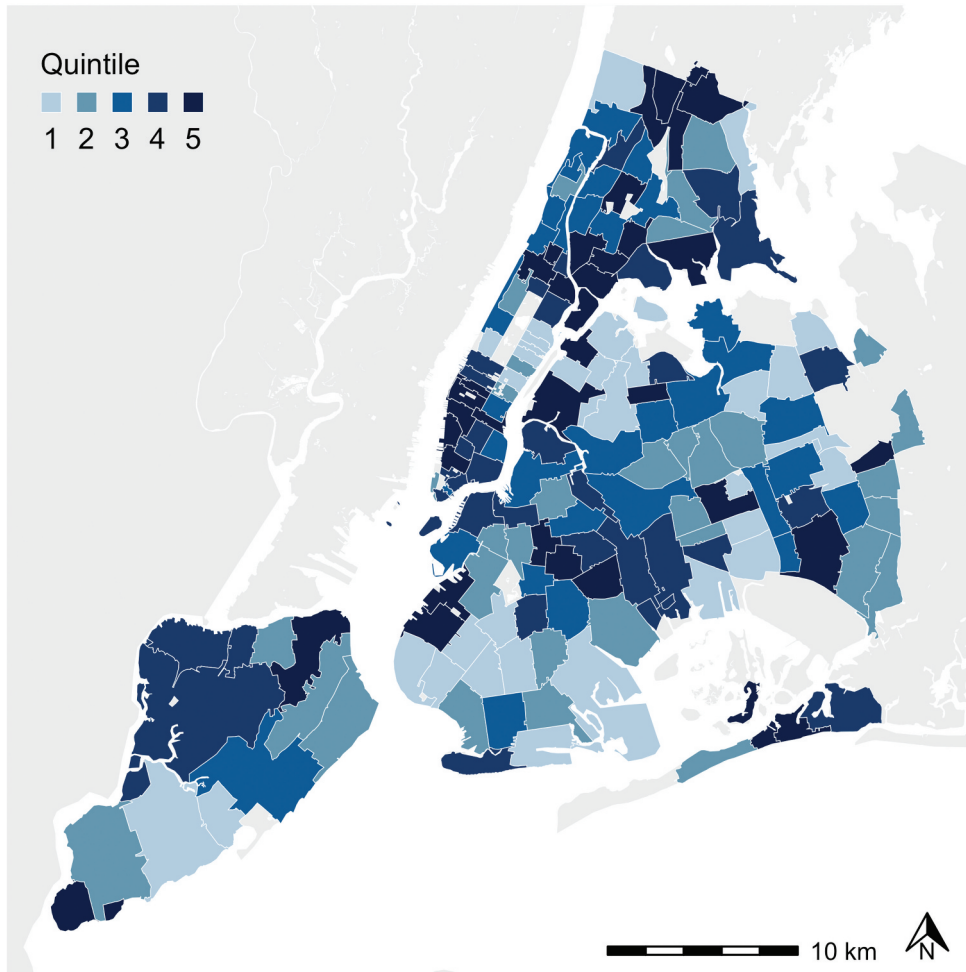
Over the study period, there were 458 COVID-19-specific criminal court summonses and 2,322 public health and nuisance arrests. While these are small numbers (5% of all criminal court summonses and 9% of all arrests over this time period), they represent a notable shift in policing: public health and nuisance arrests increased as a proportion of total arrests compared to pre-pandemic figures and no criminal court summonses for these offense categories were issued prior to this time period. [Figure 1](#) shows a map of the ZIP-code-level public health and nuisance arrest rate over the study period, displaying the spatial distribution of this outcome measure across the city.

At the ZIP-code-level, unadjusted analyses (adjusted only for borough-fixed effects) show that a standard deviation increase in percentage of Black residents was associated with a 56% increase (95% CI: 25%, 95%) in the rate of COVID-19-specific summonses and a 24% increase (95% CI: 9%, 39%) in the rate of public health and nuisance arrests ([Table 1](#)). A standard deviation increase in percentage of residents below the poverty level was associated with a 43% increase (95% CI: 26%, 63%) in the rate of public health and nuisance arrests. The percentage of residents below the poverty level showed a similar relationship with the rate of summonses, but the 95% CI included the null.

After additionally controlling for the two measures of social distancing compliance, rate of social distancing 311 service requests and median non-home dwell time, these estimates increased. In adjusted models, a standard deviation increase in percentage of Black residents was associated with a 73% increase (95% CI: 35%, 123%) in the COVID-19-specific summons rate and a 34% increase (95% CI: 17%, 53%) in the public health and nuisance arrest rate. A standard deviation increase in percentage below the poverty level was associated with a 50% increase (95% CI: 30%, 73%) in the public health and nuisance arrest rate.

Finally, results from the models assessing bivariate relationships between ZIP-code-level variables and public health policing rates showed that the percentage of Black residents and the 2011 stop-and-frisk rate had stronger associations with the COVID-19-specific summons rate than both measures of social distancing compliance ([Table 2](#)). The 2011 stop-and-frisk rate also had a stronger association with the public health and nuisance arrest rate than both measures of social distancing compliance ([Table 2](#)). A standard deviation increase in the 2011 stop-and-frisk

## Public health and miscellaneous arrest rate



**Figure 1.** Map of ZIP-code-level public health and nuisance arrest rate in New York City (12 March–24 May 2020). Quintiles: [2.61, 9.51]; (9.51, 19.3]; (19.3, 27.4]; (27.4, 43.2]; (43.2, 179] per 100,000

rate was associated with a 43% increase (95% CI: 14%, 77%) in the COVID-19-specific summons rate and a 41% increase (95% CI: 27%, 56%) in the public health and nuisance arrest rate over the study period. [Figure 2](#) shows descriptive maps of the ZIP-code-level distribution of each independent variable in the bivariate analyses along with plots of the quasi-Poisson model-predicted values of their individual associations with public health and nuisance arrest rates, which are presented numerically in [Table 2](#).

### **Sensitivity analysis**

Results from the sensitivity analysis using demographic data drawn from the 2010 Decennial Census were consistent with presented findings using demographic data from the 2018 ACS (Tables A1 and A2).



**Table 1.** Associations between ZIP-code-level demographics and rates of COVID-19-specific criminal court summonses and public health and nuisance arrests in New York City (March 12–24 May 2020).

	COVID-19-specific criminal court summonses		Public health and nuisance arrests	
	Rate ratio	95% CI <sup>a</sup>	Rate ratio	95% CI
Unadjusted <sup>b</sup>				
Percentage Black	1.56	1.25, 1.95	1.24	1.09, 1.39
Percentage below poverty level	1.20	0.89, 1.62	1.43	1.26, 1.63
Adjusted <sup>c</sup>				
Percentage Black	1.73	1.35, 2.23	1.34	1.17, 1.53
Percentage below poverty level	1.20	0.84, 1.71	1.50	1.30, 1.73

<sup>a</sup>Confidence interval<sup>b</sup>Unadjusted model adjusted for borough fixed effects only<sup>c</sup>Adjusted model additionally adjusted for weighted median non-home dwell time and rate of social distancing 311 complaints  
Independent variables not included in same model

Unit for all independent variables: 1 standard deviation

Models include population offset term

**Table 2.** Bivariate associations between ZIP-code-level variables and rates of COVID-19-specific criminal court summonses and public health and nuisance arrests in New York City (March 12–24 May 2020).

	COVID-19-related criminal court summonses		Public health and nuisance arrests	
	Rate ratio	95% CI <sup>a</sup>	Rate ratio	95% CI
Percentage Black	1.56	1.25, 1.95	1.24	1.09, 1.39
Percentage below poverty level	1.20	0.89, 1.62	1.43	1.26, 1.63
Weighted median non-home dwell time	0.59	0.29, 1.00	0.96	0.79, 1.15
Rate of social distancing 311 complaints	0.91	0.60, 1.34	1.25	1.08, 1.44
2011 rate of stop-and-frisk incidents	1.43	1.14, 1.77	1.41	1.27, 1.56

Adjusted for borough fixed effects

Unit for all independent variables: 1 standard deviation

<sup>a</sup>Confidence interval

Models include population offset term

## Discussion

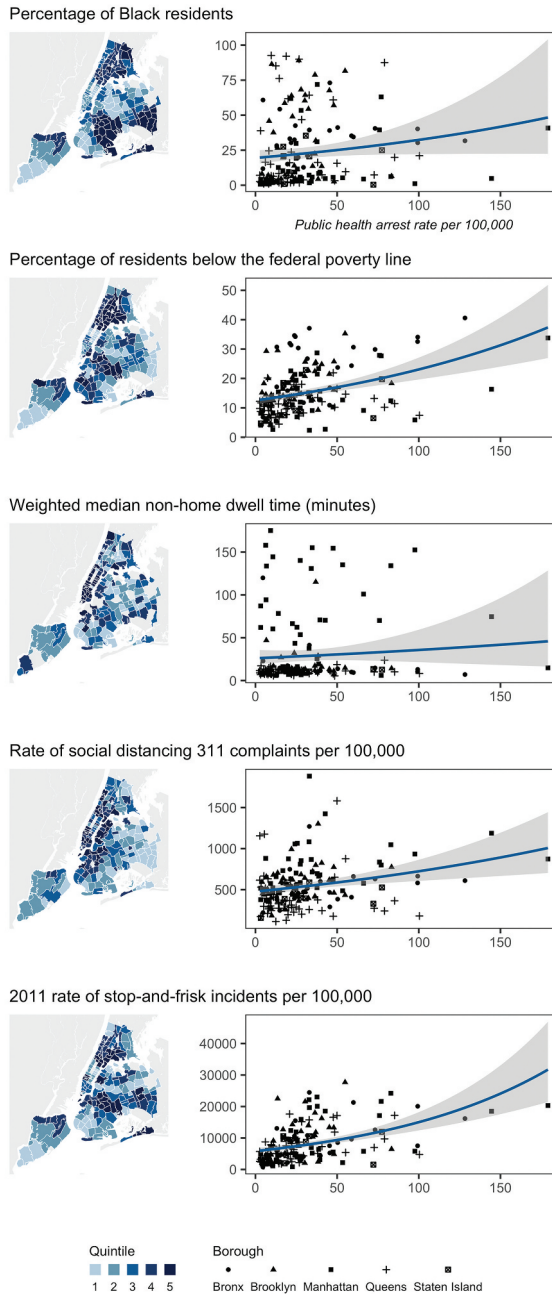
The results of this investigation demonstrate stark racialized inequities in the spatial distribution of the policing of public health and other non-violent offenses in the early months of the COVID-19 pandemic. At the ZIP-code-level, areas with higher percentages of Black residents and residents below the poverty level had significantly higher public health and nuisance arrest rates, even after controlling for measures of social distancing compliance. ZIP codes with a higher percentage of Black residents also had significantly higher rates of COVID-19-specific criminal court summonses in adjusted models. Further, the 2011 ZIP-code-level stop-and-frisk rates had stronger associations with the public health policing outcome measures than indicators of poor social distancing compliance.

Findings suggest that ZIP codes with higher percentages of lower income and Black residents experienced disproportionately high rates of policing during the COVID-19 pandemic in the name of public health. Moreover, findings lend empirical support to claims made by legal advocates that COVID-19 policing mirrored the racially discriminatory practices of the stop-and-frisk program that were deemed unconstitutional (Floyd et al., 2020).

According to published reports, some COVID-19-related police stops were violent in nature, placing individuals at risk of physical harm. For example, in New York City, videos have shown NYPD officers arresting a mother and forcing her to the ground in front of her child for purportedly wearing a mask improperly and officers kneeling on the neck of a man during a social distancing arrest (Harding, 2020; NBC New York, 2020b).

In addition to the potential for direct physical harm, the use of police to enforce public health mandates could be especially dangerous during an infectious disease pandemic. At the start of the pandemic in New York City, the NYPD had a particularly high rate of infection. In April, one in six





**Figure 2.** Maps of ZIP-code-level variables and corresponding plots with quasi-Poisson model-predicted values of associations with public health and nuisance arrest rate in New York City (12 March–24 May 2020). Quintiles: Percentage of Black residents: [0.4, 2.6]; (2.6, 6.2); (6.2, 16.2); (16.2, 40.0); (40.0, 92.7); Percentage of residents below the federal poverty line: [2.1, 7.7]; (7.7, 11.1); (11.1, 14.5); (14.5, 21.5); (21.5, 40.6); Weighted median non-home dwell time: [3.4, 8.3]; (8.3, 11.2); (11.2, 13.7); (13.7, 30.4); (30.4, 175.1); Rate of social distancing 311 complaints per 100,000: [112.2, 296.8]; (296.8, 435.4); (435.4, 551.5); (551.5, 700.7); (700.7, 3247.6); 2011 rate of stop-and-frisk incidents per 100,000: [51.5, 2394.0]; (2394.0, 4695.3); (4695.3, 7524.7); (7524.7, 12,074.6); (12,074.6, 27,695.9)

officers was out sick or in quarantine due to COVID-19 (Southall, 2020a). At that time, the NYPD was also reportedly low on personal protective equipment such as masks (Southall, 2020a). Thus, there was an increased risk of infection for those who came into contact with NYPD officers. In addition, many of those arrested were detained in jail where the risk of infection is disproportionately high due to high case counts, poor ventilation, and the inability to social distance (Okano & Blower, 2020; Wurcel et al., 2020). After being released from jail, those individuals returned to their communities, further compromising the health and safety of communities already disproportionately impacted by the COVID-19 pandemic (Van Dorn et al., 2020).

In addition to these individual mechanisms through which public health policing can have negative health consequences, there are community-level pathways through which public health policing is likely to impact population health. For example, given the high rates of coronavirus infection and low rates of mask wearing among NYPD officers, increased police presence in a neighborhood is expected to increase the overall risk of transmission in that area. With respect to public health consequences beyond infectious disease risk, there is a growing body of evidence demonstrating the harmful community-level health effects of police surveillance and criminalization. Research shows that there are collateral consequences of police contact that spill over beyond the individual being stopped, impacting entire neighborhoods: Living in a neighborhood with high rates of police stops is associated with increased psychological distress, anxiety, post-traumatic stress, and asthma episodes among residents (Asad & Clair, 2018; Geller et al., 2014; Sewell & Jefferson, 2016; Sewell et al., 2016). This research also suggests that these spillover effects can be more pronounced among Black residents than white residents, thereby potentially producing and exacerbating racialized health inequities (Sewell & Jefferson, 2016).

The summonses and many of the arrests analyzed in this study occurred in the name of public health. Our findings suggest, however, that tasking police to enforce public health mandates may have contributed to the reproduction of over-policing of Black communities and the dangers to health and safety that practice poses. These findings add to a growing body of evidence that even when police are tasked with activities outside traditional law enforcement, such as public health activities during the COVID-19 pandemic or counseling activities in school settings, the results reflect similar patterns of racialized criminalization and punishment (Finn & McDevitt, 2005; Javdani, 2019; Na & Gottfredson, 2013; Price, 2009). This body of evidence has implications beyond the COVID-19 pandemic, suggesting that using policing as a tool for social service provision or public health promotion in any context risks perpetuating racialized criminalization and exacerbating racialized health inequities.

Social distancing and mask wearing mandates powerfully convey the importance of collective behavioral change to combat the pandemic, and there are numerous public health strategies to motivate and encourage compliance that do not rely on policing and arrest (Bonell et al., 2020; Eaton & Kalichman, 2020). If instead the field of public health supports – tacitly or otherwise – criminalization and punishment as appropriate public health strategies, it risks complicity in reinscribing racialized health inequities and structural racism (Jeffers et al., 2020; Krieger, 2020; Laurencin & Walker, 2020).

The present study has a number of strengths including the triangulation of multiple policing data sources and the integration of estimates of social distancing compliance as controls. This is the first study to our knowledge to use both 311 service requests and non-home dwell time via cell phone data as two control measures of social distancing behavior. These approaches address many of the common methodological challenges in assessing racialized inequities in policing (Neil & Winship, 2019). Yet the study has important limitations. First, we used a broad category of arrests to reflect public health arrests because the NYPD has not released official data on COVID-19-specific arrests. However, we believe that this imprecise arrest measure accurately reflects the imprecise nature of public health policing because: 1) the category was defined using offense descriptions from a review of documented COVID-19-specific arrests and 2) findings were consistent between this secondary outcome and the primary outcome of COVID-19-specific summonses. An additional limitation is that 311 service request data for social distancing offer an imperfect measure of social distancing compliance given that some

neighborhoods may be more likely to call 311 for complaints. Research suggests that there are racialized and class differences in the extent to which communities rely on government service lines (Desmond et al., 2016). Non-home dwell time minutes based on cell phone mobility data may provide a more objective measure of social distancing compliance but are also associated with some limitations. For example, we cannot distinguish individuals who may have been required to continue working outside of the home despite the stay-at-home order, such as essential services workers. Data from the pandemic show that the privilege of working from home is inequitably distributed along racialized and class lines (Huang et al., 2021). Additionally, neighborhoods with a higher percentage of older residents or residents below the poverty level may be less likely to have cell phones with location services, resulting in lower data quality in those neighborhoods. We also cannot identify individuals who spent time outside of the home but were appropriately masked and observing distancing guidelines. However, we believe that, together, these two measures reflect the best available estimate of compliance (or lack thereof) with COVID-19 social distancing mandates. A final limitation of the present analysis is the integrated use of ZIP code resident population data with arrest data, given that people may be arrested outside of the ZIP code in which they reside. This is a common challenge for spatial analyses given that the population of a geographic unit is not fixed over time. For the present analysis, we determined that resident population was the most reliable measure of ZIP code-level population available.

## Conclusions

In the early months of the COVID-19 pandemic, New York City ZIP codes with a higher percentage of Black residents had significantly higher rates of COVID-19-specific criminal court summonses and public health and nuisance arrests, even after adjusting for ZIP-code-level measures of social distancing compliance. Additionally, the 2011 ZIP-code-level stop-and-frisk rates had stronger associations with the public health policing measures than indicators of poor social distancing compliance, suggesting pandemic policing mirrored the imprecise and discretionary nature of the stop-and-frisk program, which was deemed unconstitutional due to racially discriminatory practices.

## Author contributions

SK conceptualized the study. SK, EB, and JZH conducted the data analysis with guidance from SJP as senior author. All authors contributed to manuscript writing and reviewed, edited, and approved the final article

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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