

## Supplement

Physical Distancing, Violence, and Crime in US Cities during the Coronavirus Pandemic

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Supplementary Table 1. City open data portals, data sources for police-reported crime incidents

City	Source	Date of access	Notable exclusions and inclusions
Baltimore, MD	<a href="https://data.baltimorecity.gov/datasets/part-1-crime-data-3">https://data.baltimorecity.gov/datasets/part-1-crime-data-3</a>	November 2020	Data exclude incidents for which an address could not be geocoded (by Baltimore Police Department)
Boston, MA	<a href="https://data.boston.gov/dataset/crime-incident-reports-august-2015-to-date-source-new-system">https://data.boston.gov/dataset/crime-incident-reports-august-2015-to-date-source-new-system</a>	November 2020	
Chicago, IL	<a href="https://data.cityofchicago.org/Public-Safety/Crimes-2001-to-present-Dashboard/5cd6-ry5g">https://data.cityofchicago.org/Public-Safety/Crimes-2001-to-present-Dashboard/5cd6-ry5g</a>	November 2020	
Cincinnati, OH	<a href="https://data.cincinnati-oh.gov/Safety/PDI-Police-Data-Initiative-Crime-Incidents/k59e-2pvf">https://data.cincinnati-oh.gov/Safety/PDI-Police-Data-Initiative-Crime-Incidents/k59e-2pvf</a>	November 2020	
Dallas, TX	<a href="https://www.dallasopendata.com/Public-Safety/Police-Incidents/qv6i-rri7">https://www.dallasopendata.com/Public-Safety/Police-Incidents/qv6i-rri7</a>	November 2020	Data exclude: 1) sexually oriented offenses and 2) offenses where juveniles or children (individuals under 17 years of age) are the victim or suspect
Denver, CO	<a href="https://www.denvergov.org/opendata/dataset/city-and-county-of-denver-crime">https://www.denvergov.org/opendata/dataset/city-and-county-of-denver-crime</a>	November 2020	Data exclude child abuse cases, and other crimes which by their nature involve juveniles, or which the reports indicate involve juveniles as victims, suspects, or witnesses
District of Columbia	<a href="https://opendata.dc.gov/search?categories=crimes%20and%20incidents&amp;q=crime%20incidents">https://opendata.dc.gov/search?categories=crimes%20and%20incidents&amp;q=crime%20incidents</a>	November 2020	
Detroit, MI	<a href="https://data.detroitmi.gov/datasets/rms-crime-incidents?geometry=-83.471%2C42.264%2C-82.727%2C42.442">https://data.detroitmi.gov/datasets/rms-crime-incidents?geometry=-83.471%2C42.264%2C-82.727%2C42.442</a>	November 2020	
Los Angeles, CA	<a href="https://data.lacity.org/A-Safe-City/Crime-Data-from-2010-to-2019/63jg-8b9z">https://data.lacity.org/A-Safe-City/Crime-Data-from-2010-to-2019/63jg-8b9z</a> ; <a href="https://data.lacity.org/A-Safe-City/Crime-Data-from-2020-to-Present/2nrs-mtv8">https://data.lacity.org/A-Safe-City/Crime-Data-from-2020-to-Present/2nrs-mtv8</a>	November 2020	

Milwaukee, WI	<a href="https://data.milwaukee.gov/dataset/wibr">https://data.milwaukee.gov/dataset/wibr</a> ; <a href="https://data.milwaukee.gov/dataset/wibrarchive">https://data.milwaukee.gov/dataset/wibrarchive</a>	November 2020	Assault includes simple and homicide includes justifiable (these categories cannot be separated).
Philadelphia, PA	<a href="https://www.opendataphilly.org/dataset/crime-incidents">https://www.opendataphilly.org/dataset/crime-incidents</a>	November 2020	
Phoenix, AZ	<a href="https://www.phoenixopendata.com/dataset/crime-data">https://www.phoenixopendata.com/dataset/crime-data</a>	November 2020	
Riverside, CA	<a href="https://riversideca.gov/transparency/data/dataset/show/27/Crime_Reports">https://riversideca.gov/transparency/data/dataset/show/27/Crime_Reports</a>	November 2020	
Sacramento, CA	<a href="http://data.cityofsacramento.org/datasets/64279ca193a54189aa9214a29d32520c0">http://data.cityofsacramento.org/datasets/64279ca193a54189aa9214a29d32520c0</a> ; <a href="http://data.cityofsacramento.org/search?q=crime%20data&amp;tags=public%20safety">http://data.cityofsacramento.org/search?q=crime%20data&amp;tags=public%20safety</a>	November 2020	
San Francisco, CA	<a href="https://data.sfgov.org/Public-Safety/Police-Department-Incident-Reports-2018-to-Present/wg3w-h783">https://data.sfgov.org/Public-Safety/Police-Department-Incident-Reports-2018-to-Present/wg3w-h783</a>	November 2020	
Seattle, WA	<a href="https://data.seattle.gov/Public-Safety/SPD-Crime-Data-2008-Present/tazs-3rd5">https://data.seattle.gov/Public-Safety/SPD-Crime-Data-2008-Present/tazs-3rd5</a>	November 2020	

Supplementary Table 2. Data sources for exposure, outcomes, and covariates

Variable	Source & Notes	Date of access
<i>Exposure</i>		
Physical distancing	Anonymized, aggregated smartphone data from Safegraph measuring change in the percentage of the city population staying completely at home (compared to the week ending February 12, 2020). <sup>1</sup> A smartphone device was considered completely at home in a given day if it did not leave the location (~153m x ~153m cell) in which it spent the majority of nights in the prior 6-week period. <sup>1</sup> Data were provided at the census block group level and we aggregated them to cities. We adjusted for sampling bias using the recommended post-stratification weighting approach. <sup>2</sup>	September 2020
<i>Outcomes</i>		
Incidents of intentional, interpersonal firearm violence	Gun Violence Archive, which compiles incidents of firearm violence from approximately 7,500 sources, including the news media, police, and government. <sup>3</sup> We included incidents of intentional, interpersonal violence in which at least one person was injured or killed.	August 2020
Police-reported crime incidents	See Supplementary Table 1. We included eight crime types which make up the Federal Bureau of Investigation's Uniform Crime Reporting Part I offenses: criminal homicide, rape, robbery, aggravated assault, burglary, larceny-theft, motor vehicle theft, and arson.	November 2020
<i>Covariates</i>		
Incidents of police violence at protests against the killing of George Floyd, per city population	Crowdsourced database of police brutality during the 2020 protests against the killing of George Floyd. <sup>4</sup>	August 2020
Attendees at protests related to racial justice and policing per city population	Count love, <sup>5</sup> which compiles data on protests from local newspaper and television sites. We included events in support of racial justice and greater police accountability and, separately, events in support of white supremacy, other far-right causes, and police.	August 2020
COVID-19 cases and deaths per county population	Johns Hopkins University Center for Systems Science and Engineering time series of cumulative cases and deaths <sup>6</sup> (data are at the county level).	August 2020
Temperature (degrees Fahrenheit) and precipitation (inches)	PRISM Climate Group, Oregon State University. <sup>7</sup> Bulk download requires latitude and longitude; we used the latitude and longitude of city capitals.	August 2020
Stay-home orders	National league of cities' COVID-19: Local Action Tracker <sup>8</sup> and other local news outlets. State orders were used in the absence of city orders or information on their dates.	August 2020
City population size	US Census City and Town Population Totals: 2010-2019. Estimates for 2020 were extrapolated with cubic regression.	May 2020

Supplementary Table 3. Average weekly rates of violence and crime prior to and during the coronavirus pandemic, 16 US cities<sup>a</sup> January 2018 through July 2020

<b>Outcome (weekly rate per 100,000 city population), mean (SD)</b>	<b>Pre-Pandemic<sup>b</sup></b>	<b>Pandemic<sup>c</sup></b>
Aggravated Assault	9.5 (8.8)	10.2 (10.0)
Arson <sup>d</sup>	0.5 (0.5)	0.6 (0.6)
Burglary	12.6 (6.3)	11.9 (7.5)
Homicide	0.3 (0.3)	0.4 (0.4)
Interpersonal firearm violence	0.7 (0.8)	1.0 (1.2)
Larceny-theft	46.0 (22.5)	34.8 (14.0)
Motor vehicle theft	9.2 (4.6)	9.5 (4.8)
Rape <sup>e</sup>	1.0 (0.7)	0.7 (0.5)
Robbery	5.6 (3.5)	4.2 (2.4)

<sup>a</sup>Cities included: Baltimore, MD; Boston, MA; Chicago, IL; Cincinnati, OH; Dallas, TX; Denver, CO; Detroit, MI; District of Columbia; Los Angeles, CA; Milwaukee, WI; Philadelphia, PA; Phoenix, AZ; Riverside, CA; Sacramento, CA; San Francisco, CA; and Seattle, WA.

<sup>b</sup>January 1, 2018 through February 12, 2020

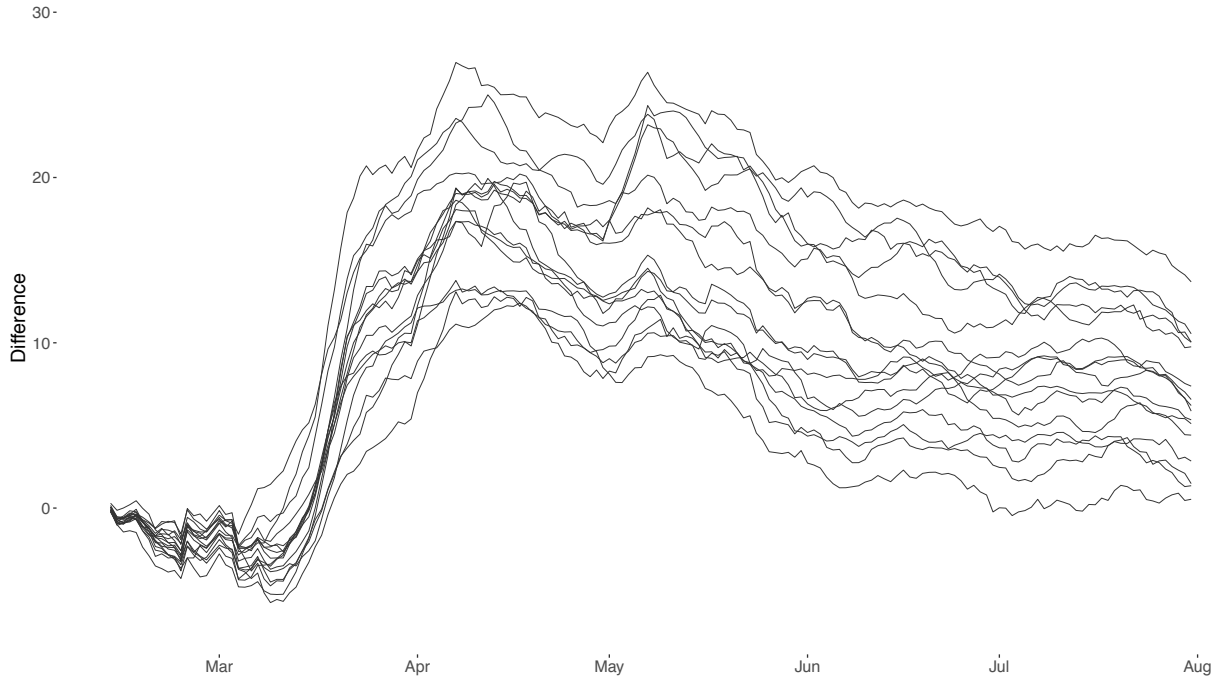
<sup>c</sup>February 13, 2020 through July 31, 2020

<sup>d</sup>Riverside, CA and Cincinnati, OH are excluded due to missing outcome data.

<sup>e</sup>Boston, MA; Dallas, TX; Detroit, MI; District of Columbia; Milwaukee, WI; Riverside, CA; and Sacramento, CA are excluded due to missing outcome data.

All outcomes reflect incidents (rather than victims).

Supplementary Figure 1. Change in the percentage of the city population staying “completely at home,” 16 US cities<sup>a</sup> February 13, 2020 through July 31, 2020



Data source: SafeGraph. Estimates reflect the change in the city population staying “completely at home” compared to the week ending February 12, 2020.<sup>1</sup> Trends are 7-day moving averages.

<sup>a</sup>Cities include: Baltimore, MD; Boston, MA; Chicago, IL; Cincinnati, OH; Dallas, TX; Denver, CO; Detroit, MI; District of Columbia; Los Angeles, CA; Milwaukee, WI; Philadelphia, PA; Phoenix, AZ; Riverside, CA; Sacramento, CA; San Francisco, CA; and Seattle, WA.

## References

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