



National Commission  
on COVID-19 and  
Criminal Justice

# COVID-19 Testing in State Prisons

*PREPARED FOR THE COMMISSION BY*

**KEVIN T. SCHNEPEL**

Assistant Professor of Economics  
Simon Fraser University

**JOANNA ABAROA-ELLISON**

Policy Analyst  
Crime and Justice Institute

**ERIN JEMISON**

Manager  
Crime and Justice Institute

**LEN ENGEL**

Director of Policy and Campaigns  
Crime and Justice Institute

Council on Criminal Justice  
April 2021

## ABOUT THE COUNCIL

The Council on Criminal Justice is a nonpartisan criminal justice think tank and national invitational membership organization. Its mission is to advance understanding of the criminal justice policy choices facing the nation and build consensus for solutions based on facts, evidence, and fundamental principles of justice.

The Council does not take policy positions. As part of its array of activities, the Council conducts research and convenes independent task forces composed of Council members who produce reports with findings and policy recommendations on matters of concern. The findings and conclusions in this research report are those of the authors alone. They were not subject to the approval of the Council's Board of Directors or its Board of Trustees.

For more information about the Council, visit [counciloncj.org](https://counciloncj.org).

## ABOUT THE AUTHOR

**Kevin T. Schnepel** is an assistant professor of economics at Simon Fraser University. Kevin is a research affiliate of the IZA Research Institute of Labor Economics and an honorary associate of the School of Economics at the University of Sydney. His research primarily focuses on crime, health, labor, and environmental economics.

The **Crime and Justice Institute**, working with local, state and federal entities, provides nonpartisan policy analysis and implementation support, consulting, and research services to improve public safety and the delivery of justice. **Joanna Abaroa-Ellison** is a Policy Analyst, **Erin Jemison** is a Manager, and **Len Engel** is a Director.

## ACKNOWLEDGEMENTS

This paper was produced with support from Arnold Ventures, the Justice and Mobility Fund, the John D. and Catherine T. MacArthur Foundation, Microsoft, the Charles and Lynn Schusterman Family Foundation, and other contributors.

This paper benefited from the contributions of **Alex R. Piquero, Ph.D.**, Chair and Professor of the Department of Sociology and Arts & Sciences Distinguished Scholar at the University of Miami and Professor of Criminology at Monash University in Melbourne Australia, and research assistance from Andrew Hicks and Bryce Balanuik at Simon Fraser University.

### Suggested Citation

Schnepel, Kevin T., Joanna Abaroa-Ellison, et al. COVID-19 Testing in State Prisons. Washington, D.C.: Council on Criminal Justice, April 2021.

# Highlights

- + **As of February 16, 2021, one of every three prisoners in 32 states with available testing data tested positive for COVID-19** – more than four times the rate outside of prisons. Additionally, the COVID-19 death rate inside prisons is more than three times the community rate.
- + **There was substantial variation across state prison systems in testing rates.** Of the 32 states, three had testing rates of 1,000 per 1,000 individuals incarcerated, or lower (less than one test per person), while six had rates of 10,000 or higher (10 or more tests per individual).
- + **Higher testing rates and, in particular, mass testing, especially in states that implemented this strategy early in the pandemic, likely resulted in lower rates of COVID-19 mortality behind bars.** It is possible that early detection of coronavirus infections led to more and better prevention and treatment measures that improved outcomes.
  - States with lower disparities between prison and community death rates tested prison residents at rates that were **nearly double** those of states with higher prison/community disparities. Positivity rates for lower-disparity states were **almost half** as high.
  - States that did not use a mass-testing strategy for their incarcerated populations had COVID-19 death rates among incarcerated people that were nearly **eight times** the death rate for non-incarcerated populations similar in age, gender, and race/ethnicity. This disparity was cut in half in states that implemented a mass testing strategy.
- + Four states that carried out mass testing – Colorado, Connecticut, Michigan, and Vermont – varied in their specific protocols but had relatively good COVID-19 outcomes compared to other state prison systems.
- + Taken together, the evidence suggests that **more testing, early testing, and early mass testing may have been strategies that helped states achieve lower rates of COVID-19 mortality behind bars**, although causality cannot be conclusively established.

# Introduction

*Throughout the United States, health outcomes from the COVID-19 pandemic have differed from state to state and town to town.*

Measures taken to reduce the spread have varied, as have case and mortality rates. Some jurisdictions have implemented strict mask and stay-at-home orders and closed public gathering places, while others have been more reluctant to take such measures, relying instead on mostly voluntary guidance.

The coronavirus pandemic has severely affected incarcerated populations (National Academies of Sciences, 2020). This effect stems largely from the inability of correctional institutions to implement mitigation strategies such as physical distancing. Like states and cities, state departments of corrections (DOCs) have varied in their responses to the pandemic as well.

Approximately half of the DOCs in the U.S. attempted to test the full population of incarcerated individuals through some form of mass, or universal, testing program. This report defines a mass testing strategy as one in which a DOC explicitly intends to test all incarcerated people. The timing and scope of these programs have varied widely. DOCs also adopted a wide range of other strategies to mitigate the spread of the coronavirus, including isolating those who display symptoms, suspending visits and intakes, increasing sanitation measures, providing personal protective equipment (PPE), and prioritizing access to vaccines.

This report explores the potential relationship between COVID-19 testing rates and COVID-19 infection and mortality outcomes across the 32 state prison systems where information necessary to conduct such an analysis was publicly available. The report also describes how four state DOCs (Colorado, Connecticut, Michigan, and Vermont) implemented mass testing, and details the steps that accompanied or followed testing.

## METHODS

Many DOCs provide information and data concerning the coronavirus pandemic on their websites. The authors of this report obtained publicly available information on the total number of tests, cases, and deaths among incarcerated individuals from a database tracking state prison cases created by The Marshall Project and the Associated Press (The Marshall Project 2021). This report uses data from the 32 state DOCs for which the total

number of tests among inmates was available as of February 16, 2021. The authors also draw upon data from the Johns Hopkins Coronavirus Resource Center to capture the total number of tests, cases, and deaths for state populations (Johns Hopkins 2021). Finally, in the four states identified above, information on testing strategies was collected from websites and news articles as well as e-mail and phone conversations with state officials.

This report focuses on an overview of COVID tests, cases, and deaths, rather than the dynamic changes throughout the pandemic. At the time this report was written, information on tests, cases and deaths among incarcerated individuals was only available for 32 state prison systems, so the overview provided in this report may not be representative of all 50 systems. In addition, all findings presented in this report are based on publicly reported data; therefore, questions about the accuracy of such data are beyond our ability to assess. Finally, because of difficulties in obtaining consistent information on testing, cases, and deaths for correctional staff, this report focuses on incarcerated individuals only.

## Comparing Testing, Case, and Death Rates in Prisons and Statewide Populations

This section compares COVID-19 test, case, and death rates among incarcerated individuals to statewide statistics for 32 states where this information was available from DOCs as of February 16, 2021 (The Marshall Project 2021).

The top row of Figure 1 compares COVID-19 cases and deaths per 1,000 individuals statewide and in prison. As previously documented in two earlier reports to the National Commission on COVID-19 and Criminal Justice (Schnepel 2020a and Schnepel 2020b), case and death rates remain substantially higher among incarcerated populations. As of February 16, 2021, one of every three people in prison in these 32 states tested positive – 4.3 times the rate outside of prisons. The number of COVID-19 related deaths per 1,000 people in prison is 3.2 times as high as the rate for the statewide population, after adjusting for the gender, age, and race/ethnicity of the incarcerated population (Schnepel 2020b).

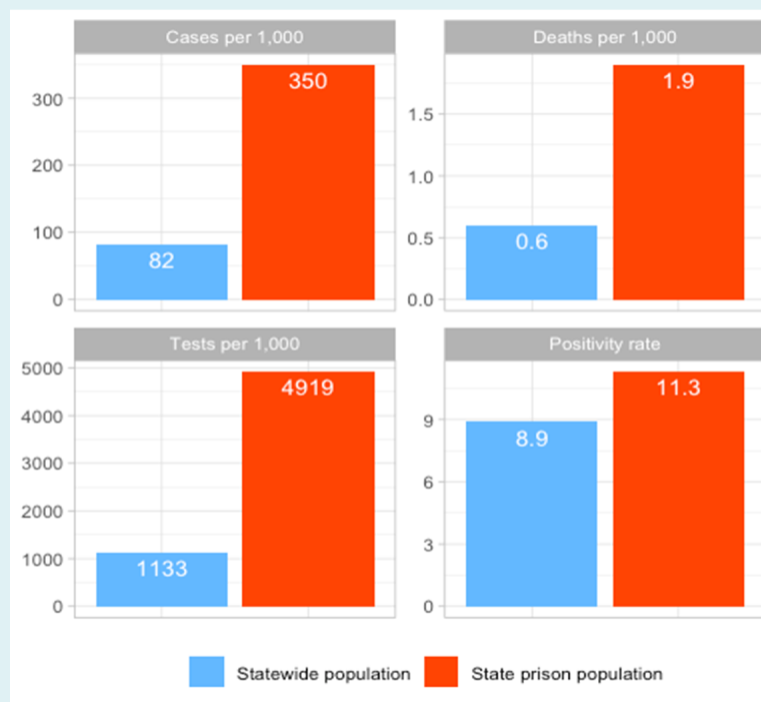
The bottom row of Figure 1 describes testing and positivity rates for statewide populations and for incarcerated individuals. According to public health experts at Johns Hopkins University, “A higher percent positive suggests higher transmission and that there are likely more people with coronavirus in the community who have not been tested

yet. The percent positive is a critical measure because it gives us an indication how widespread infection is in the area where the testing is occurring—and whether levels of testing are keeping up with levels of disease transmission.”

On average, the testing rate within prisons is five times the rate among the statewide population. Despite this disparity, the ratio of confirmed COVID-19 cases to the number of tests (the positivity rate) is 11% in prisons, which is approximately 25% higher than the positivity rate for the statewide population as shown in the bottom-right panel of Figure 1.

**FIGURE 1:**

**Average COVID-19 testing, positivity, cases, and deaths in 32 state prison systems as of February 16, 2021, compared to average statewide statistics**



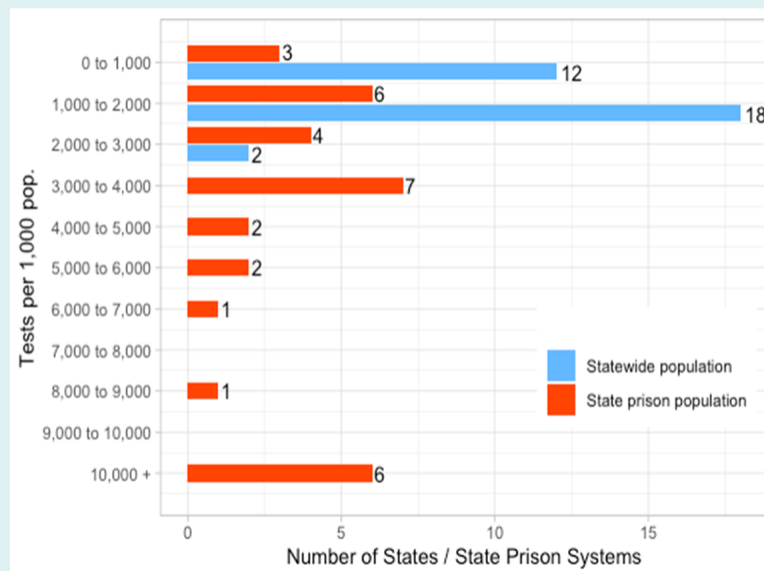
This figure plots the number of COVID-19 tests per 1,000 people, positivity rates (number of confirmed cases to tests), confirmed cases per 1,000 people, and deaths per 1,000 people for both the statewide (blue) and incarcerated population (red) for 32 states as of February 16, 2021. The state death rate in the bottom right panel is adjusted to match the gender, age, and race/ethnicity of people in prison as described in Schnepel (2020b). COVID-19 tests, cases and deaths among people in prison by state were obtained from The Marshall Project (2021). Statewide COVID-19 tests, cases and deaths were collected from the Coronavirus Resource Center as of February 23, 2021 (Johns Hopkins 2021).

Figure 2 displays the distribution of states and state prison systems across ten levels of testing. Over 90% of states (30 of 32) covered in the report conducted fewer than 2,000 tests per 1,000 residents, e.g., fewer than two tests per person. In contrast, almost 20% of state prison systems (six of 32) conducted more than 10,000 tests per 1,000 incarcerated individuals, e.g., ten tests per person. The highest testing rate for any statewide population is between two and three tests per person. It is clear that, in general, DOCs conduct substantially more tests than states do for the general population, but also have higher positivity rates.<sup>1</sup>

Four states (IN, NH, OK, and SD) report alarming positivity rates of over 20% (see Appendix Figure 1). These high positivity rates suggest that many individuals incarcerated within these states were infected with the coronavirus but were not tested.

**FIGURE 2:**

**Distribution of testing rates in 32 states and their prison systems  
as of February 16, 2021**



This figure plots the distribution of COVID-19 test rates among incarcerated individuals and the statewide population for 32 states as of February 16, 2021 in bins of 1,000 tests per 1,000 people. The numbers at the end of each bar count the number of states (or state prison systems) in each bin. COVID-19 tests among people in prison by state were obtained from The Marshall Project (2020). State COVID-19 cases and tests were collected from the Coronavirus Resource Center as of February 23, 2021 (Johns Hopkins 2021).

<sup>1</sup> Data for all 50 states and the Federal Bureau of Prisons is provided in Appendix Table 1.

# Examining the Relationship Between Testing and COVID-19 Outcomes

The following section describes the observed correlation between testing and outcomes within prisons, with a particular focus on COVID-19-related deaths. While this correlation may indicate a protective effect of testing, it is critical to note that such patterns do not necessarily represent causal relationships.

Table 1 presents average rates of testing, cases, and deaths per 1,000 people in prison and in the statewide populations in two ways. First, outcomes are compared across the 32 state systems according to whether they are above or below the median prison-to-state COVID-19 death ratio. Second, outcomes among the 17 states that implemented a mass testing strategy are compared with those for the 15 states that did not implement such a strategy.

The median prison-to-state death ratio among the 32 states evaluated is 3.5. In other words, states above the median experienced more than three and a half times as many COVID-19 deaths in prisons as they did statewide, and states below the median experienced a ratio lower than that.<sup>2</sup> Splitting states into two groups using this ratio allows for a comparison between states that performed better in reducing death rates to others, taking into account the prevalence and severity of COVID-19 rates statewide.

Among the 17 states below the median prison-to-state death ratio, the average death ratio of states is just over two, which is substantially lower than the average ratio of 9.48 for states above the median ratio. Importantly, among those 17 states, the prison testing rate is nearly double (6,218 tests per 1,000 compared with 3,447 tests per 1,000) and the positivity rate almost half (8.6% compared with 14.4%) that of states above the median ratio. These 17 states were also more likely to implement a mass testing strategy (65% compared with 40%).

Not surprisingly, the last two columns of Table 1 indicate that the average number of tests per 1,000 people incarcerated is much higher in states that implemented a mass testing strategy (6,645 compared with 2,962). While the number of cases is also much higher in mass testing states (399 per 1,000 compared with 295 per 1,000), the death rate is lower. Testing everyone in a given facility or system will likely increase confirmed case numbers, but it may also help prevent deaths.

---

<sup>2</sup> Statewide death rates in Table 1 are adjusted to match the gender, age, and race/ethnicity of people in prison, as described in Schnepel (2020b).

TABLE 1:

## Average testing, case, and death rates for incarcerated and statewide populations

	All States	States below median prison-state death ratio	States above median prison-state death ratio	States with a mass testing policy	States without a mass testing policy
	(1)	(2)	(3)	(4)	(5)
<u>People in Prison</u>					
Tests per 1,000	4,919	6,218	3,447	6,645	2,962
Cases per 1,000	350	342	360	399	295
Positivity rate (cases/tests)	11.3%	8.6%	14.4%	9.4%	13.6%
Deaths per 1,000	1.86	1.73	2.01	1.65	2.1
<u>Statewide Population</u>					
Tests per 1,000	1,133	1,166	1,096	1,174	1,086
Cases per 1,000	82	88	75	84	80
Positivity rate (cases/tests)	8.9%	9.4%	8.3%	8.6%	9.2%
Deaths per 1,000	1.31	1.52	1.07	1.4	1.21
Deaths per 1,000 adjusted	0.60	0.85	0.31	0.58	0.62
Ratio of prison deaths to adjusted state deaths	5.54	2.07	9.48	3.46	7.9
Fraction of states with mass/universal testing in state prison system	53% (17/32)	65% (11/17)	40% (6/15)	100% (17/17)	0% (0/15)
Average begin date for start of mass/universal testing		May 9, 2020	June 29, 2020	May 27, 2020	
States with mass/universal testing (start month)		CO (Apr) CT (May) MD (May) MI (Apr) MN (May) MO (May) ND (May) TN (May) TX (May) VT (May) WI (May)	MA (June) NC (June) SD (Oct) VA (May) WV (June) WY (July)	<i>See states listed in cols (2) and (3)</i>	<i>N/A</i>

This table summarizes test, case, and death rates for all 32 states evaluated in column (1). Columns (2) and (3) present averages for the 17 states below the median prison-state death ratio and the 15 states above the median ratio. Columns (4) and (5) present averages for the 17 states that have implemented a mass (or universal) testing strategy and the 15 states that did not. COVID-19 tests, cases, and deaths among people in prison by state were obtained from The Marshall Project (2021). State COVID-19 cases and tests were collected from the Coronavirus Resource Center as of February 23, 2021 (Johns Hopkins 2021). Information on mass/universal testing policies was collected from state department of correction websites and personnel as documented in the Appendix.

These comparisons cannot disentangle the effect of other policies that may have been implemented by these states to combat the spread of COVID-19, such as mask requirements and physical distancing practices. But they do identify a clear correlation between mass testing and lower COVID-19 prison death rates. In addition, the fact that average testing, case, and death rates for the general population are similar across states, regardless of whether they conduct mass testing in prisons, alleviates some concern that some other statewide factor (such as a statewide testing policy or public health restrictions) is driving differences in outcomes, and further supports the argument that mass testing is an important strategy.

Finally, among the states below the median prison-to-state death ratio that implemented a mass testing strategy, all of them did so in April and May. Five of the six states above the median ratio that implemented mass testing did so much later. In fact, the average date of implementation was over 50 days later for mass testing states that fared less well with respect to the number of deaths in prison compared to deaths statewide.

Taken together, these patterns suggest that more testing, early testing, and early mass testing in particular may have been strategies that helped states achieve lower rates of COVID-19 mortality behind bars, although causality cannot be conclusively established.

## Focusing on Mass Testing in Four States

This section gives additional context and information about four states (Colorado, Connecticut, Michigan, and Vermont) that implemented mass testing in their prison systems and fall below the median prison-to-state death ratio of 3.5. These states were chosen because of their case and death rates, publicly available information about DOC policies, and the availability of DOC officials for interviews. The four states differed little in terms of the policies they adopted in addition to mass testing, such as suspending visits and intakes, increasing sanitation measures, and providing PPE.

While each of the four states conducted similar forms of mass testing, their exact protocols and outcomes varied. The data presented above suggests that testing may be a protective factor, but higher rates of testing do not conclusively lead to lower case and death rates.

Table 2 provides an overview of state and DOC populations as well as the testing and positivity rates within the prison system, the statewide death rates, and the prison-to-state death ratio. The four states profiled have some of the highest rates of testing per 1,000 prisoners (see Appendix 1A) and they all fall below the median prison-to-state death ratio of 3.5. Nevertheless, the prison positivity rates compared to the statewide

positivity rates vary among the four states. Colorado and Vermont's prison positivity rates are similar to their statewide rates, Connecticut's prison positivity rate is slightly higher, and Michigan's prison positivity rate is slightly lower (see Appendix 1B). Most notably, Vermont has reported no deaths of prisoners due to COVID-19.

**TABLE 2:**

**Overview of population and testing, positivity, and death rates for states profiled**

State	Colorado	Connecticut	Michigan	Vermont
State population	5,758,736	3,565,287	9,986,857	623,989
DOC population	~20,000	>9,000	~40,000	~1,250
DOC tests per 1,000	10,554	6,283	14,378	10,063
DOC positivity rate	.05	.06	.05	.02
DOC deaths per 1,000	1.8	1.87	3.89	0
State deaths per 1,000	1.03	2.11	1.63	.31
Prison-to-state death ration	3.47	2.02	3.49	0

State populations were obtained from US Census data available online. DOC populations were collected from individual DOC websites (links provided in each state profile below). The rest of the data contained in this table was obtained from The Marshall Project (2021), updated as of February 16, 2021. The prison-to-state death ratio comes from Appendix Table 1. It was calculated by dividing the prison death rate by the state death rate adjusted to match the sex, age, and race/ethnicity of people in prison as described in Schnepel (2020b).

## COLORADO

Colorado has nearly six million residents and, at the start of 2020, had a prison population of just under 20,000 (U.S. Census; Colorado Department of Corrections). The Colorado Department of Corrections (CDOC) houses incarcerated individuals at 21 facilities, with 19 run by the state and two privately managed (Colorado Department of Corrections). A typical prison facility in CDOC houses the incarcerated population in cells, with a slightly greater number of individuals in single cells than double bunked. CDOC's facilities

typically consist of multiple buildings rather than a single structure (Staff of Colorado Department of Corrections).

When the DOC experienced its first significant outbreak toward the end of April, leadership decided to begin conducting PCR testing. CDOC tested about 500 incarcerated individuals on April 22 and found that 50% tested positive for COVID-19, indicating that many asymptomatic individuals were in the population. On July 13, CDOC officials said they had implemented targeted prevalence testing (testing all individuals regardless of symptoms) at several facilities (Colorado Department of Corrections). If an incarcerated individual or member of staff tested positive, CDOC tested the entire facility. In addition to the prevalence testing, CDOC also tested all incarcerated people prior to any movement (Sanchez).

CDOC isolated incarcerated individuals who tested positive or had been potentially exposed, medically monitored those who tested positive and if necessary, transferred them immediately to an external medical facility for treatment. CDOC also conducted contact tracing and additional testing of others in close proximity, then moved individuals into cohorts based on the results of their tests, potential exposure, and other risk factors (Staff of Colorado Department of Corrections).

## CONNECTICUT

About 3.5 million people live in Connecticut, and the state incarcerates over 9,000 individuals (U.S. Census; Connecticut Department of Corrections). Connecticut is one of six states that has a unified correctional system. All of the correctional facilities in the state, including youth detention centers, jails and prisons, fall under the Connecticut Department of Corrections (CTDOC). CTDOC currently operates 14 facilities throughout the state with a range of housing structures and capacities (Martucci).

In March and April 2020, CTDOC monitored the incarcerated population for symptoms such as cough, fever, and shortness of breath. As the CDC expanded the list of symptoms associated with the coronavirus and test kits became available, CTDOC increased its testing (Martucci). The first round of PCR (Polymerase Chain Reaction) testing involved all incarcerated individuals and correctional staff in all facilities and occurred between early May and late June. The percentage of incarcerated individuals who opted into testing was above 90% and CTDOC found an overall positivity rate of 9% (832 out of 9,504). Significantly, 99% of those who tested positive had been asymptomatic. A month later, CTDOC initiated a second round of mass testing of the same population (Connecticut Department of Corrections). As of late March 2021, CTDOC was testing all incarcerated people and staff every two weeks, and continued to have a compliance rate of at least 90% (Martucci).

Unlike some states, Connecticut has centralized its medical isolation unit. If an incarcerated individual tests positive and is asymptomatic, he is isolated in his current facility and medical staff check in on the individual twice a day. However, if someone tests positive and shows symptoms, they are moved to one central facility to be isolated (Martucci).

## MICHIGAN

Michigan is a state of nearly ten million residents and a prison population of about 40,000 (U.S. Census; Prison Policy Initiative). The Michigan Department of Corrections (MDOC) operates 28 prison facilities (Michigan Department of Corrections). The average facility houses 1,300 incarcerated individuals, with smaller facilities housing 700 to 800 people and a small number of larger prisons housing about 2,500. All state correctional facilities have separate buildings for housing and programming, rather than one larger building for both purposes (Kaminski).

MDOC began conducting tests among individuals showing symptoms in March 2020. As the pandemic progressed, officials became concerned that this strategy may not be identifying individuals who were asymptomatic carriers of the virus, and by April 21 they were testing entire facilities. The initial results from testing a few facilities showed that a majority of the positive cases were among individuals who did not display symptoms, indicating a need to expand testing. With the help of the Michigan National Guard, MDOC was able to conduct department-wide testing for all facilities by May 22 using a combination of PCR and antibody tests.

MDOC then began mass surveillance testing – testing all individuals in a given facility on a weekly basis if there had been a positive case in that facility within the past two weeks. Officials continued to test when incarcerated individuals were scheduled to parole, discharge, or otherwise move to new facilities or housing, as well as when they displayed symptoms or when positive cases emerged. Recently, MDOC discovered the B117 variant in a staff member, so officials began conducting daily testing at that employee's assigned facility using rapid tests. If someone tests positive with the variant, the test is sent to the state lab for a PCR test to confirm (Michigan Department of Corrections; Kaminski).

MDOC has 340 beds for those testing positive, available throughout their facilities. When individuals test positive, MDOC moves them and anyone who has had close contact with them to these beds for monitoring by medical staff. If more than a small group of incarcerated individuals test positive at one time, MDOC designates part of their facility as a COVID section and keeps those individuals isolated from others (Kaminski).

## VERMONT

With fewer than 630,000 residents, Vermont is much smaller than the previously discussed states (U.S. Census). Like Connecticut, Vermont's correctional system is unified. Its Department of Corrections (VTDOC) operates six facilities throughout the state (Vermont Department of Corrections). Two facilities have 120 beds and the largest facility has 450 beds. The majority of incarcerated individuals in Vermont are housed in double cells, though single cells and dormitory style housing exist as well (Cormier). According to publicly available information, VTDOC's total population was 1,650 in March 2020, decreasing to under 1,250 in March 2021.

Like many other states, VTDOC responded in early March 2020 with new policies and protocols to mitigate the spread of the coronavirus. In May 2020, it began testing incarcerated individuals and correctional staff based on the appearance of symptoms. This began in response to an outbreak of 45 cases in a single facility. Officials increased testing over time and as tests became more available throughout the state. By June 11, VTDOC had completed PCR testing for incarcerated individuals and correctional staff at all facilities and repeated testing every six weeks (Vermont Department of Corrections). The department also tested individuals entering the system three times in their first 14 days in a facility, while keeping such individuals quarantined. At the time of this report, due to increased spread of COVID-19 in the community, VTDOC is testing staff every two weeks and continues to test incarcerated individuals every six weeks. If an outbreak occurs in a facility, officials test all staff and incarcerated individuals every three days (Cormier).

Following a positive test result, VTDOC conducts contact tracing for the incarcerated individual through outreach to potential contacts and an assessment of facility video records. Each of the six correctional facilities in the state has a medical isolation unit where individuals who are already in medical quarantine are housed if they test positive. When individuals in the general population test positive, the unit they live in becomes a quarantine unit with enhanced cleaning protocols and restricted movement (Cormier). While in Colorado, Connecticut, and Michigan case and death rates largely followed the same patterns as the statewide population, in Vermont, the smallest state profiled, they did not (See Appendix Exhibit 3).

A common theme among the four states profiled was the high rate of individuals who were asymptomatic but tested positive for COVID-19. During early testing, Connecticut, Colorado, and Michigan detected a high rate of people who tested positive but did not display any symptoms. This was a significant factor leading these states to implement mass testing, rather than continuing symptomatic testing only, throughout their prison system. This finding, although anecdotal, suggests that states that are not currently testing asymptomatic incarcerated individuals should strongly consider doing so.

# Conclusion

As of mid-February 2021, testing, positivity, and death rates among incarcerated individuals are many times higher than rates for statewide populations. However, there is substantial variation across state prison systems in testing and positivity rates. Some prison systems have implemented a form of mass testing, through which every individual in their system is, at some point, tested. For certain states, this was a one-time endeavor, and for others, it has been an ongoing effort.

While state prison systems that adopted a mass testing strategy still experienced COVID-related deaths three and a half times higher than deaths among statewide populations similar in age, race/ethnicity and gender to those incarcerated, these states fared much better than those that did less testing. States that did not adopt a mass testing strategy had nearly eight times the number of COVID-19 deaths among incarcerated individuals compared to the statewide population.

These patterns do not necessarily represent causal relationships. Measuring the causal relationship between increased testing (either in general or through a mass testing policy) and deaths is difficult given data limitations.<sup>3</sup>

Colorado, Connecticut, Michigan, and Vermont are examples of states that implemented varied versions of mass testing, and while they all experienced relatively good COVID-19 outcomes compared to other state prison systems, their results and challenges varied. More testing, testing earlier, and early mass testing in particular, likely helped these and other states achieve lower rates of COVID-19 mortality behind bars.

---

<sup>3</sup> These data limitations include a lack of consistent reporting of testing information throughout the pandemic for the 32 states evaluated, along with difficulty in obtaining information about both the timing and the intensity of testing policies implemented by each state DOC.

# References

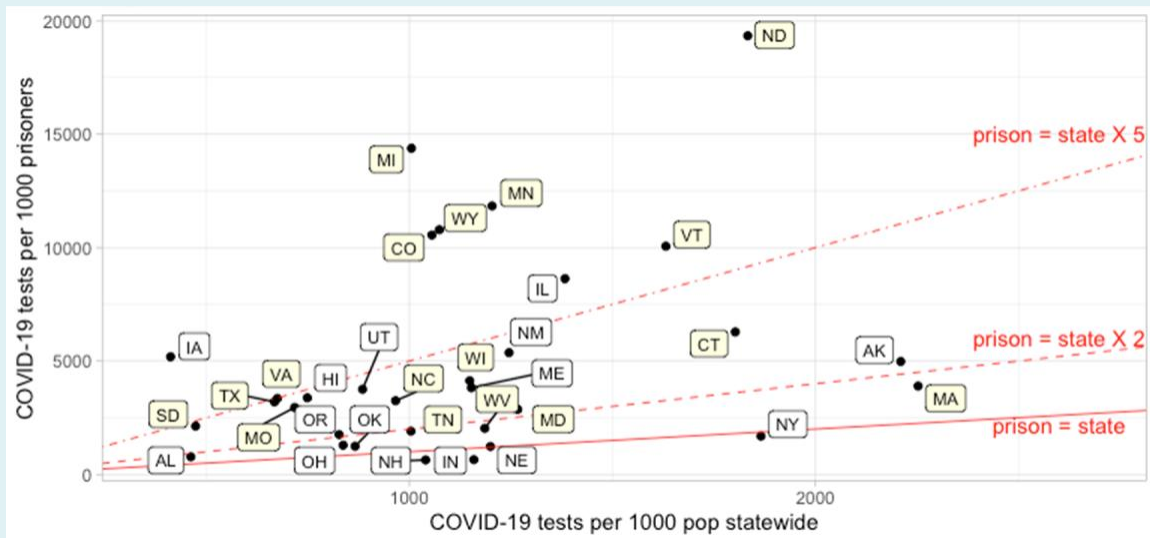
- Centers for Disease Control and Prevention (CDC): 2020, COVID-19 Case Surveillance Public Use Data. Accessed Nov. 10, 2020, <https://data.cdc.gov/Case-Surveillance/COVID-19-Case-Surveillance-Public-Use-Data/vbim-akqf>.
- Colorado Department of Corrections. [Online]. <https://www.cdcc.colorado.gov>.
- Connecticut Department of Corrections. [Online]. <https://portal.ct.gov/DOC>.
- Cormier, Al. Interview. Conducted by the Crime and Justice Institute, 18 March, 2021.
- Johns Hopkins Coronavirus Resource Center: 2021, Cases, Deaths, and Testing in all 50 States. [Online]. Accessed Feb. 23, 2021, <https://coronavirus.jhu.edu/testing/states-comparison>.
- Kaminski, Kyle. Interview. Conducted by the Crime and Justice Institute, 11 February, 2021.
- Martucci, Karen. Interview. Conducted by the Crime and Justice Institute, 19 February, 2021.
- Michigan Department of Corrections. [Online]. <https://www.michigan.gov/corrections>.
- National Academies of Sciences, Engineering, and Medicine. 2020. Decarcerating Correctional Facilities during COVID-19: Advancing Health, Equity, and Safety. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25945>.
- Prison Policy Initiative. State Profiles: Michigan profile. [Online]. <https://www.prisonpolicy.org/profiles/MI.html>.
- Sanchez, Adrienne. Written communication. 21 December, 2020.
- Schnepel, Kevin T.: 2020a, COVID-19 in U.S. State and Federal Prisons. Washington, D.C.: Council on Criminal Justice, September 2020.
- Schnepel, Kevin T.: 2020b, COVID-19 in U.S. State and Federal Prisons. Washington, D.C.: Council on Criminal Justice, December 2020 Update.
- Staff, Colorado Department of Corrections. Written communication. 22 February, 2021.
- The Marshall Project: 2021, A State-by-State Look at Coronavirus in Prisons. [Online]. Accessed Feb. 23, 2021, <https://www.themarshallproject.org/2020/05/01/a-state-by-state-look-at-coronavirus-in-prisons>, raw data available from <https://data.world/associatedpress/marshall-project-covid-cases-in-prisons>.
- U.S. Census Bureau (2019). QuickFacts. [Online]. <https://www.census.gov/quickfacts>.
- Vermont Department of Corrections. [Online]. <https://doc.vermont.gov>.

# Appendix

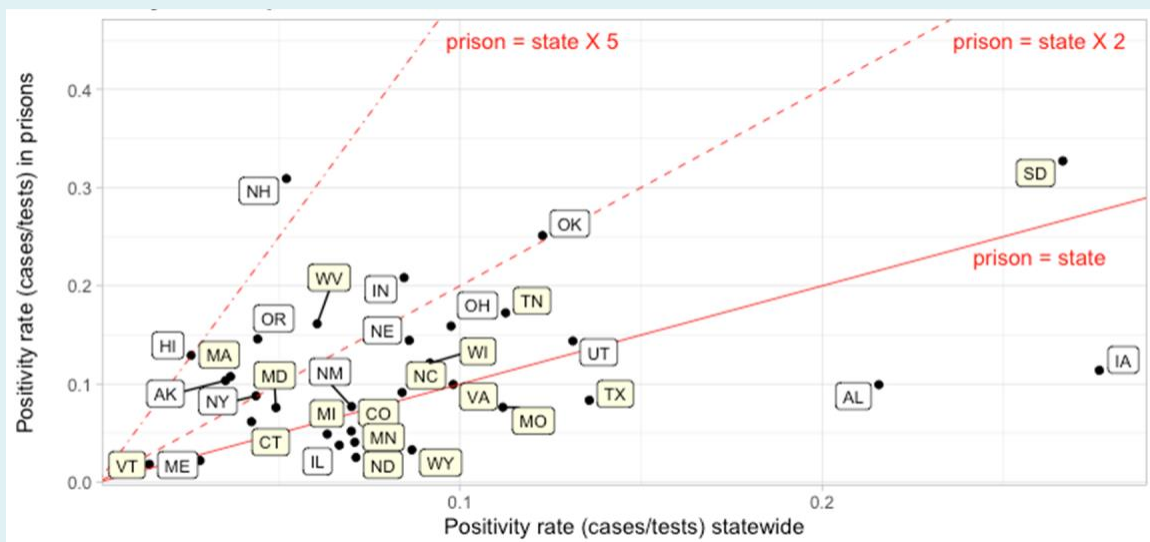
FIGURE A1:

COVID-19 testing and positivity rates in 32 state prison systems as of February 16, 2021, compared with statewide testing and positivity rates.

## A. Testing in prisons vs. statewide



## B. Positivity rate in prisons vs. statewide

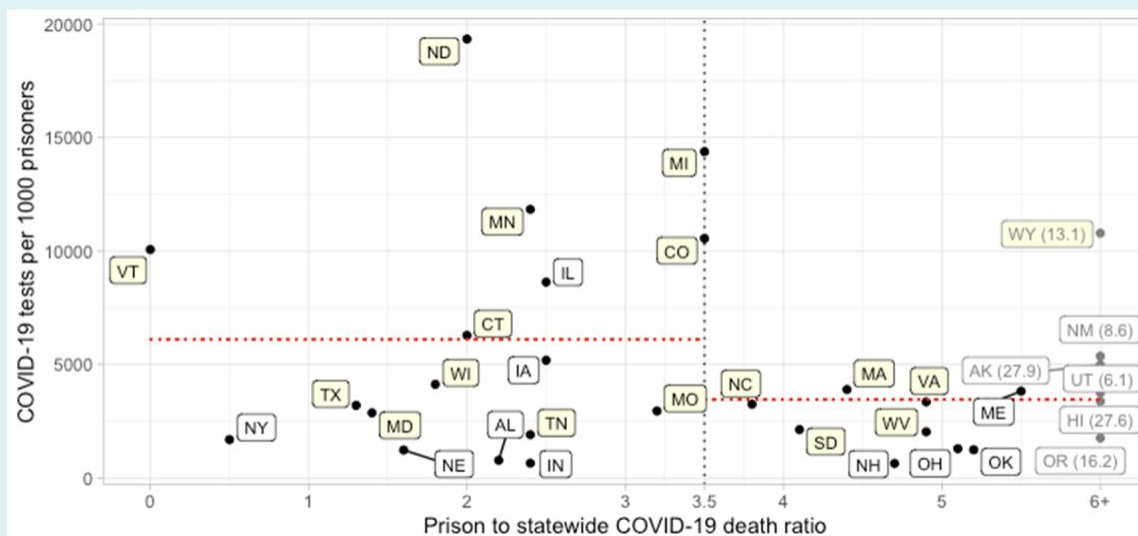


This figure plots COVID-19 test rates (per 1,000 population) and positivity rates (number of confirmed cases to tests) among incarcerated individuals and the statewide population for 32 states as of February 16, 2021. States that implemented a mass/universal testing policy are highlighted in yellow. COVID-19 tests and cases among people in prison by state were obtained from The Marshall Project (2020). State COVID-19 cases and tests were collected from the Coronavirus Resource Center as of February 23, 2021 (Johns Hopkins 2021).

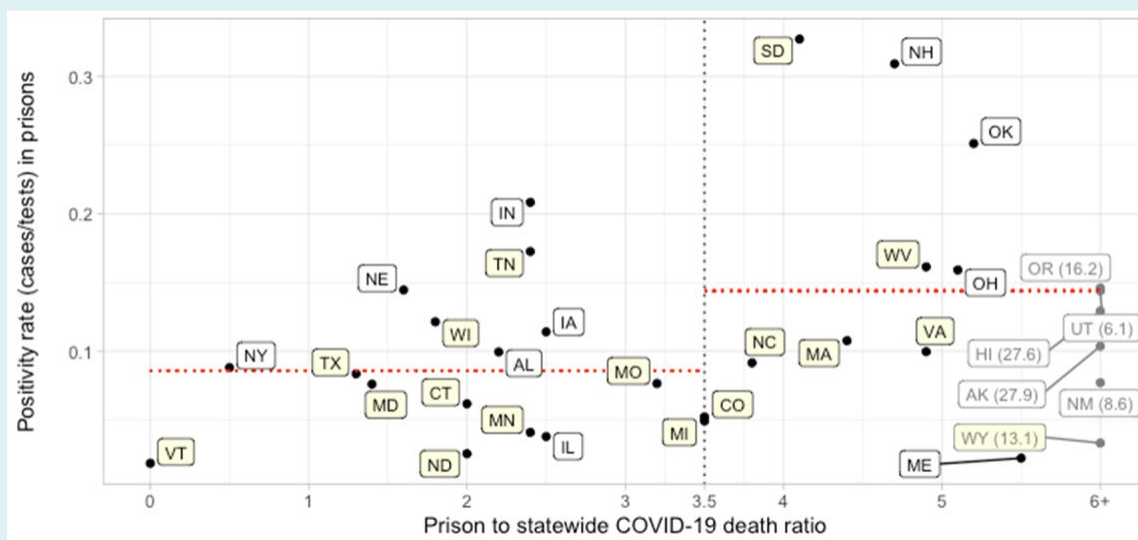
**FIGURE A2:**

**COVID-19 testing and positivity rates in 32 state prison systems as of February 16, 2021, compared with the ratio of prison-to-state COVID-19 deaths (state rates adjusted to match the gender, age, and race/ethnicity of people in prison).**

**A. Testing in prisons and prison-to-statewide COVID-19 death ratio**



**B. Positivity rate in prisons and prison-to-statewide COVID-19 death ratio**



This figure plots COVID-19 test rates (per 1,000 population) and positivity rates (number of confirmed cases to tests) among incarcerated individuals alongside the prison-to-state COVID-19 death ratio calculated for 32 states as of February 16, 2021. States that implemented a mass/universal testing policy are highlighted in yellow. The prison to statewide death ratio on the horizontal axis was calculated by dividing the prison death rate by the state death rate adjusted to match the gender, age, and race/ethnicity of people in prison as described in Schnepel (2020b). The vertical dashed grey line represents the median ratio for the 32 states evaluated. The horizontal dashed red lines represent the average testing rates for those states below and at the median ratio (left) and states above the median ratio (right). COVID-19 tests, cases and deaths among people in prison by state were obtained from The Marshall Project (2021). State COVID-19 cases and tests were collected from the Coronavirus Resource Center as of February 23, 2021 (Johns Hopkins 2021).

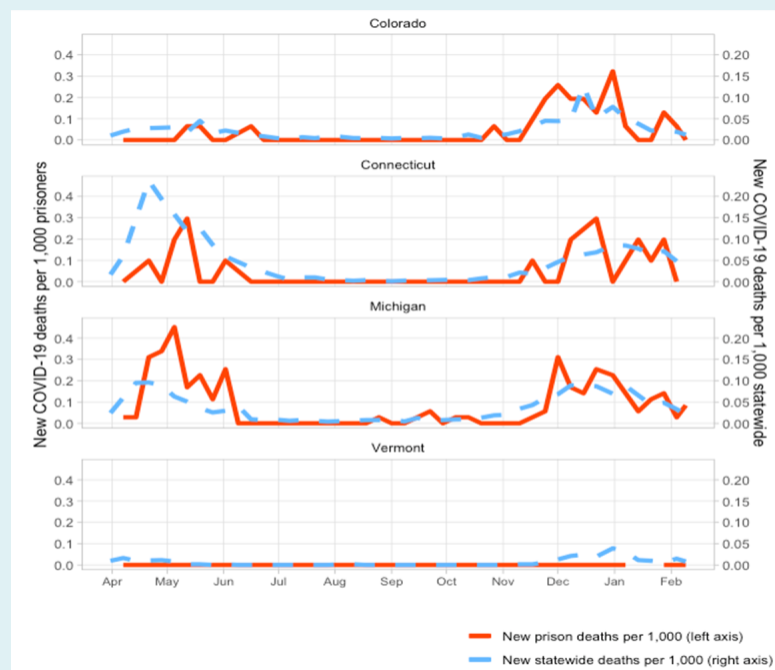
**FIGURE A3:**

**New COVID-19 cases and deaths per 1,000 incarcerated individuals in the four states**

**A. Cases**



**B. Deaths**



Data on COVID-19 cases and deaths by state was obtained from The Marshall Project (2021) approximately every two weeks since May 15, 2020 and compared against statewide rates from the CDC (2020). The scale for statewide rates per 1,000 on the right vertical axis is adjusted in each figure so that trends in cases over time can be visualized and compared. The state scale is 10 times smaller for statewide case rates and 2 times smaller for death rates.

TABLE A1:

## Data by state

State		Prison pop. (avg)	Prison tests per 1,000	Prison cases per 1,000	Prison positivity rate	Prison deaths per 1,000	Statewide tests per 1,000	Statewide cases per 1,000	Statewide positivity rate	Statewide deaths per 1,000	Statewide deaths per 1,000 (adjusted)	Prison to statewide death ratio
Alabama	AL	19329	780	78	0.10	3.10	462	100	0.22	1.96	1.41	2.20
Alaska	AK	4462	4980	516	0.10	1.12	2210	78	0.04	0.39	0.04	27.88
Arizona	AZ	40008	.	296	.	1.27	515	113	0.22	2.16	1.49	0.85
Arkansas	AR	15955	.	691	.	3.26	864	105	0.12	1.78	0.75	4.35
California	CA	103074	.	474	.	2.02	1189	89	0.08	1.25	0.93	2.17
Colorado	CO	15524	10554	551	0.05	1.80	1055	74	0.07	1.03	0.52	3.47
Connecticut	CT	10139	6283	388	0.06	1.87	1803	76	0.04	2.11	0.93	2.02
Delaware	DE	4407	.	431	.	2.72	1403	88	0.06	1.41	0.46	5.87
Florida	FL	86395	.	207	.	2.37	992	88	0.09	1.40	0.79	3.00
Georgia	GA	50762	.	68	.	1.73	669	94	0.14	1.59	0.81	2.15
Hawaii	HI	4335	3381	437	0.13	1.85	749	19	0.03	0.30	0.07	27.62
Idaho	ID	7546	.	539	.	0.80	360	96	0.27	1.04	0.34	2.35
Illinois	IL	32204	8632	327	0.04	2.70	1383	92	0.07	1.76	1.08	2.49
Indiana	IN	25146	654	136	0.21	1.99	1159	98	0.08	1.85	0.82	2.44
Iowa	IA	7705	5189	592	0.11	2.34	412	114	0.28	1.69	0.94	2.48
Kansas	KS	8899	.	677	.	1.57	425	101	0.24	1.57	0.82	1.92
Kentucky	KY	10949	.	631	.	4.02	852	89	0.10	1.00	0.39	10.28
Louisiana	LA	14490	.	214	.	2.42	1162	91	0.08	2.03	1.15	2.11
Maine	ME	1852	3825	85	0.02	0.54	1153	33	0.03	0.49	0.10	5.45
Maryland	MD	18619	2872	218	0.08	1.18	1267	62	0.05	1.28	0.85	1.39
Massachusetts	MA	7130	3898	420	0.11	2.81	2253	82	0.04	2.29	0.63	4.44
Michigan	MI	35447	14378	706	0.05	3.89	1005	64	0.06	1.63	1.11	3.49
Minnesota	MN	8017	11836	484	0.04	1.37	1204	85	0.07	1.16	0.57	2.39
Missouri	MO	24135	2954	226	0.08	1.74	718	80	0.11	1.32	0.54	3.24
Montana	MT	3981	.	284	.	1.51	990	93	0.09	1.26	0.20	7.52
Nebraska	NE	5378	1234	178	0.14	1.12	1200	103	0.09	1.06	0.70	1.60
Nevada	NV	11605	.	405	.	4.57	878	96	0.11	1.61	1.01	4.53
New Hampshire	NH	2253	642	198	0.31	0.89	1040	54	0.05	0.85	0.19	4.68
New Jersey	NJ	15915	.	273	.	3.33	1160	86	0.07	2.57	1.56	2.14
New Mexico	NM	6238	5368	414	0.08	4.49	1245	87	0.07	1.73	0.52	8.61
New York	NY	38117	1693	149	0.09	0.84	1866	81	0.04	2.39	1.85	0.45
North Carolina	NC	31791	3250	297	0.09	1.45	966	81	0.08	1.05	0.38	3.83
North Dakota	ND	1268	19337	491	0.03	0.79	1833	131	0.07	1.93	0.39	2.04

Notes: See notes at bottom of Appendix Table 1 (continued).

TABLE A1 (CONT):

## Data by state (continued)

State		Prison pop. (avg)	Prison tests per 1,000	Prison cases per 1,000	Prison positivity rate	Prison deaths per 1,000	Statewide tests per 1,000	Statewide cases per 1,000	Statewide positivity rate	Statewide deaths per 1,000	Statewide deaths per 1,000 (adjusted)	Prison to statewide death ratio
Ohio	OH	45937	1291	205	0.16	2.92	837	82	0.10	1.44	0.57	5.13
Oklahoma	OK	22695	1244	312	0.25	2.07	866	106	0.12	1.06	0.40	5.16
Oregon	OR	13699	1759	257	0.15	3.07	827	36	0.04	0.51	0.19	16.22
Pennsylvania	PA	43032	.	221	.	2.25	786	71	0.09	1.84	1.05	2.14
Rhode Island	RI	2267	.	499	.	0.88	2699	116	0.04	2.25	0.91	0.97
South Carolina	SC	16851	.	181	.	2.20	954	99	0.10	1.64	0.82	2.67
South Dakota	SD	3353	2131	697	0.33	2.09	474	126	0.27	2.11	0.51	4.13
Tennessee	TN	19961	1909	329	0.17	2.05	1004	113	0.11	1.64	0.85	2.42
Texas	TX	126654	3201	268	0.08	1.48	668	91	0.14	1.47	1.12	1.32
Utah	UT	6035	3756	540	0.14	2.49	885	116	0.13	0.59	0.41	6.13
Vermont	VT	1428	10063	186	0.02	0	1632	23	0.01	0.31	0.08	0
Virginia	VA	26850	3354	334	0.10	2.01	675	66	0.10	0.86	0.41	4.88
Washington	WA	15847	.	386	.	0.88	673	44	0.07	0.64	0.25	3.54
West Virginia	WV	4731	2034	328	0.16	0.85	1186	72	0.06	1.25	0.17	4.87
Wisconsin	WI	21606	4130	501	0.12	1.16	1149	105	0.09	1.18	0.66	1.76
Wyoming	WY	2073	10789	358	0.03	1.45	1074	93	0.09	1.15	0.11	13.12
Federal	FE	153659	.	316	.	1.54	.	.	.	.	.	.

Notes: All prison data was obtained from The Marshall Project (2021) and is as of February 16, 2021. Statewide tests, cases and deaths were collected from the Coronavirus Resource Center as of February 23, 2021 (Johns Hopkins 2021). The prison to statewide death ratio on the horizontal axis was calculated by dividing the prison death rate by the state death rate adjusted match the sex, age, and race/ethnicity of people in prison as described in Schnepel (2020b).