



National Commission  
on COVID-19 and  
Criminal Justice

# COVID-19 in U.S. State and Federal Prisons

December 2020 Update

*PREPARED FOR THE COMMISSION BY*

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# Key Findings

- + **COVID-19 infections in prisons continue to outpace those outside of prisons.** As of Nov. 13, 2020, confirmed case rates in prisons were 3.7 times national rates and COVID-19 deaths were two times the number expected given mortality among individuals of a similar age, gender, and race/ethnicity as the U.S. prison population. These disparities are similar to those found in “Covid-19 in U.S. State and Federal Prisons” (Schnepel 2020), which reported cases 4.1 times higher and deaths 2.1 times higher in prisons as of Aug. 19, 2020.
- + **Approximately 12 of every 100 individuals in state and federal prisons had recovered from or were experiencing a COVID-19 infection as of Nov. 13, 2020.** This is considerably higher than the corresponding rate of about three in 100 U.S. residents who had confirmed COVID-19 cases by this date. In three states (AR, KS, and SD), more than 40% of the prison population had a COVID-19 case confirmed.
- + **As of Nov. 13, 2020, state and federal prisons reported 1,412 COVID-19 deaths among incarcerated people.** That’s 721 deaths (51%) *in excess* of the number expected given mortality rates for individuals of a similar age, gender, and race/ethnicity outside the prison population.
- + **Twenty-four states exhibited COVID-19 deaths among incarcerated people that were more than double comparable statewide rates.** Five states (AR, DE, OH, OK, and OR) have prison COVID-19 death rates more than seven times statewide rates. On the other hand, 14 states (AK, CO, CT, HI, ME, MS, NV, NH, NY, ND, PA, UT, VT, and WA) had fewer prison deaths than expected when compared with statewide mortality for individuals similar in age, gender and race/ethnicity.
- + **Several of the states with the highest prison COVID-19 mortality rates experienced sharp increases in prison deaths relative to statewide totals during the most recent weeks evaluated, in October and early November of 2020.** Overall, the total number of deaths among those incarcerated *in excess* of national mortality rates continues to increase. These patterns suggest that the COVID-19 crisis in U.S. state and federal prisons documented in the preceding report (Schnepel 2020) is not slowing or subsiding.

# Overview

***By mid-November 2020, novel coronavirus disease 2019 (COVID-19) outbreaks had occurred at more than 850 jails and prisons across the United States, and new cases continued to rise rapidly. These trends are especially concerning given that the U.S. has the largest incarcerated population in the world, with approximately 2 million people behind bars.***

Using data from a variety of sources, this report advances our understanding of COVID-19 outbreaks within state and federal prisons in several ways:

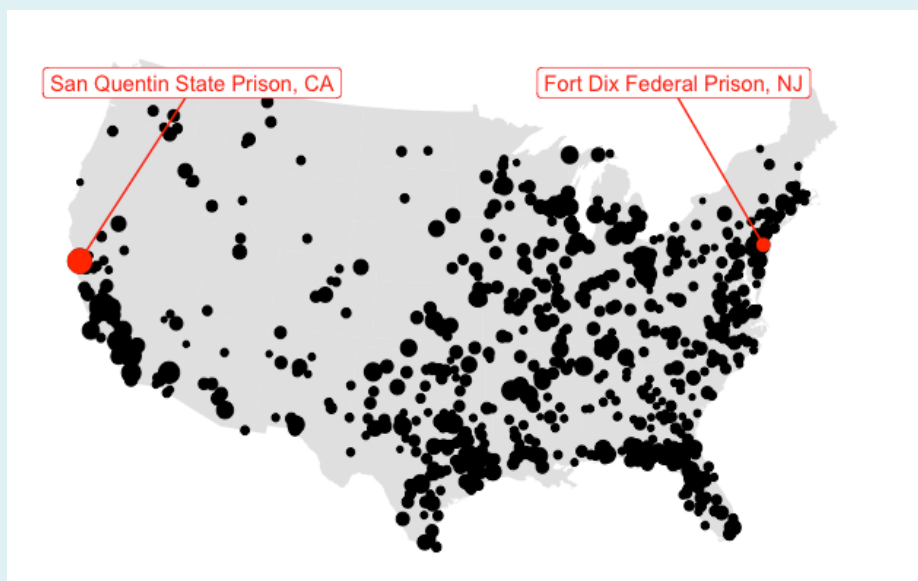
- + First, this report updates results from a recent study for the National Commission on COVID-19 and Criminal Justice, “Covid-19 in U.S. State and Federal Prisons” (Schnepel 2020), which evaluated data as of Aug. 19, 2020. The evolution of COVID-19 in prisons since then, a period of rapidly increasing infection rates across the U.S., is documented and described along with earlier trends. This report presents a detailed empirical illustration of COVID-19 across state and federal prisons using the best data available as of Nov. 13, 2020.
- + The report makes adjustments to state and national mortality rates based on the age, gender, and race/ethnicity of the incarcerated population to provide a more accurate assessment of COVID-19 mortality rates within prison populations. A detailed appendix describes these adjustments and demonstrates their impact.
- + This study illustrates the COVID-19 crisis across all federal and state prisons in the U.S. and compares case and mortality rates against statewide totals. The number and fraction of cases and deaths within prison systems that are above what would be expected (or “*in excess*”) are described and documented.

# COVID-19 Outbreaks within Correctional Facilities Across the U.S.

COVID-19 cases and deaths continue to increase at alarming rates in the U.S. As of Nov. 10, 2020, *The New York Times* was reporting the presence of COVID-19 outbreaks — defined as 50 or more confirmed cases — at 853 correctional facilities. Nearly 15% of these facilities had more than 500 cases.

Figure 1 illustrates the prevalence of these outbreaks across the country using data on cases and facility locations published on the webpage “Covid in the U.S.” by *The New York Times*. Each circle represents an outbreak, with the size of the circle indicating the total number of confirmed cases. In total, Figure 1 represents 241,213 positive cases.

**FIGURE 1: COVID OUTBREAKS IN CORRECTIONAL FACILITIES**



*Figure notes: This figure uses data provided by The New York Times webpage, “Covid in the U.S.: Latest map and case count,” which lists outbreaks of COVID-19 in correctional facilities. Locations provided in this list were then geocoded for presentation on the map. This is not a comprehensive list of all outbreaks in correctional facilities across the U.S. Its purpose here is to illustrate the prevalence of correctional facility outbreaks across the country. Two outbreaks that are discussed in this section are highlighted.*

Figure 1 also highlights two notable outbreaks in red. One involved San Quentin State Prison in California, where more than 2,500 individuals incarcerated tested positive for COVID-19 and 28 died. The outbreak led to a court order directing the state to cut the prison's population in half (Griesbach and Williams 2020). Federal Correctional Institution Fort Dix had the second highest number of active COVID-19 cases among federal prisons at the beginning of November 2020 (Atmonavage 2020). The recent outbreak at this facility in New Jersey is thought to be connected to inmate transfers from a federal prison in Elkton, OH, where eight inmates died in May from a COVID-19 outbreak (WKYC 2020). It prompted calls from members of Congress to halt federal inmate transfers to the facility (Atmonavage 2020). These two outbreaks are emblematic of current challenges faced by state and federal prison facilities across the country.

## COVID-19 CASE AND MORTALITY TRENDS IN PRISONS COMPARED WITH NATIONAL TOTALS

Figure 2 charts cumulative COVID-19 deaths and cases per 100,000 individuals in a state or federal prison alongside national rates.<sup>1</sup>

As of Nov. 13, 2020, there had been 1,412 COVID-19-related deaths in state and federal prisons, a rate of 98 deaths per 100,000 incarcerated individuals. That rate is double (104%) the number of deaths expected given the age, gender, and race/ethnicity of the prison population in the U.S. Appendix A details the adjustments made to COVID-19 mortality rates to approximate the number of deaths for a non-incarcerated population that is similar in basic demographic characteristics to the population inside prisons. These adjustments are important because incarcerated individuals are much younger, more likely to be male, and disproportionately Black and Hispanic compared with the general public.

A larger disparity exists between confirmed COVID-19 cases in prisons compared to national rates. Panel B of Figure 2 documents the growth in COVID-19 infections culminating in 12,724 confirmed cases per 100,000 people in prisons as of Nov. 13, 2020— a rate 3.7 times the 3,424 cases per 100,000 people nationally. Here, the rate of cases nationally is *not* adjusted to reflect the demographic characteristics of individuals incarcerated because reliable data by age, gender, and race/ethnicity is currently only available for deaths.<sup>2</sup> This greater (3.7 times) disparity for cases compared with mortality (2.04 times) is likely affected by high rates of COVID-19 testing within prisons. Several states have implemented mass COVID-19 testing for incarcerated populations, which could be leading to comparably higher rates of confirmed cases in prisons.<sup>3</sup> Documenting the testing rates and policies for every prison system was beyond the scope of this report.

Overall, COVID-19 deaths and cases within prisons have continued to outpace national rates since mid-May, as depicted in Figure 2.<sup>4</sup>

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<sup>1</sup> Death and case counts are based on publicly reported data and have not been independently confirmed.

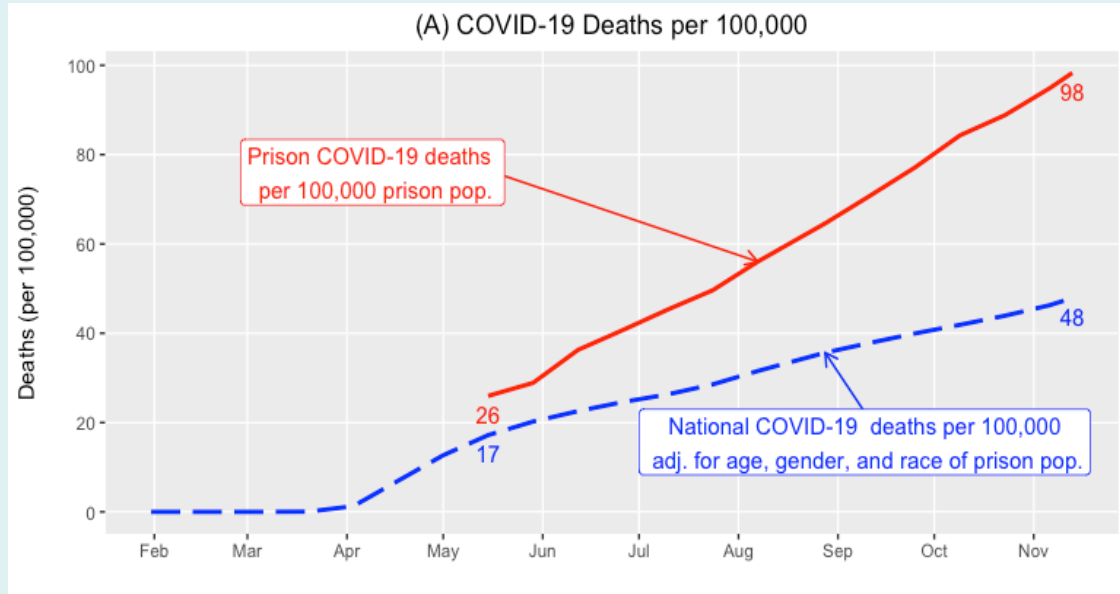
<sup>2</sup> As discussed in Appendix A, it is unclear whether demographic adjustments, if possible, would follow a similar pattern as those for mortality where the adjusted rates are nearly 40% lower than unadjusted rates. Differences in testing rates and preventative behavior across demographic categories could imply a smaller adjustment or even one in the opposite direction. For example, rates of confirmed cases per 100,000 elderly individuals may be low due to higher levels of isolation and more preventative action taken among these groups compared with young adults.

<sup>3</sup> For example, North Carolina began mass testing its prison population in June 2020 and finished in August 2020 (Wiseman 2020).

<sup>4</sup> In the preceding report by Schnepel (2020), mortality rates in prisons were 2.1 times adjusted national rates and prison case rates were 4.3 times higher as of Aug. 19, 2020.

## FIGURE 2

**Cumulative COVID-19 mortality rate per 100,000 people in U.S. state and federal prisons compared with national totals, Feb. 1–Nov. 13, 2020**



**Cumulative COVID-19 mortality rate per 100,000 people in U.S. state and federal prisons compared with national totals, Feb. 1–Nov. 13, 2020**

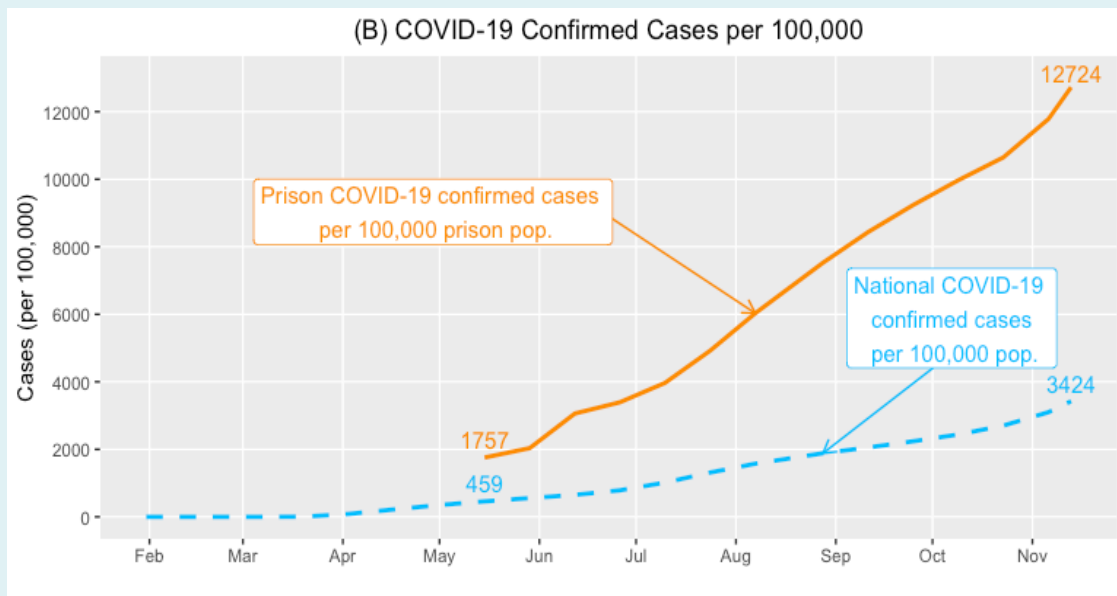


Figure notes: This figure plots cumulative COVID-19 case and mortality rates for all U.S. state and federal prisons from May 15, 2020 through Nov. 13, 2020 alongside national totals from Feb. 1, 2020 through Nov. 13, 2020. Prison case and death counts were obtained from The Marshall Project (2020), which first posted data on May 15, 2020. These prison cases and deaths are adjusted for prison population totals as of Dec. 31, 2019 as collected and reported by Kang-Brown et. al (2020). National case and death rates were obtained from the Centers for Disease Control and Prevention (2020a) and adjusted for total population estimates as of Dec. 31, 2019 provided by the U.S. Census (2020). National death rates in panel (A) were further adjusted for the age, gender, and race/ethnicity of the prison population using data from the American Public Media Research Lab (2020), the Bureau of Justice Statistics (2020), and the CDC (2020b) as detailed in Appendix A.



## STATE LEVEL COVID-19 PRISON CASES AND DEATHS COMPARED WITH STATEWIDE RATES

Figure 3 compares the fraction of the population with confirmed COVID-19 cases in prisons compared to statewide rates as of Nov. 13, 2020.<sup>5</sup> States (including the U.S. total and the federal prison system) are sorted in descending order of COVID-19 case rates.

A few striking patterns emerge in Figure 3. There is not a symmetric pattern, which would reflect equal case rates in prisons compared with state rates. Rates of cases in prisons are considerably larger than statewide case rates. Three states—South Dakota (53%), Arkansas (47%), and Kansas (43%)—reported that more than 40% of their prison population had been infected with COVID-19. Nationally, 12.7% of individuals incarcerated have confirmed COVID-19 cases compared with 3.4% of the general population. In the federal prison system, the number of confirmed COVID-19 cases represents 11.7% of individuals incarcerated. Appendix Table B2 provides the COVID-19 case data for each state that formed the basis for these calculations.

Several states that report very high numbers of COVID-19 confirmed cases do not have similarly high mortality rates. For example, South Dakota reported the highest rate of confirmed cases (53%) but ranks below 29 other states in COVID-19 mortality.

Figure 4 compares prison mortality rates with statewide rates adjusted for the age, gender, and race/ethnicity of prison populations (as described in Appendix A). First, panel (A) displays the ratio of deaths per 100,000 individuals incarcerated to statewide deaths per 100,000 total population. The mortality rate in prisons exceeds the expected rate, given the age, gender, and race/ethnicity of incarcerated individuals, for 34 states as well as the federal prison system. While the overall rate is approximately twice as high in prisons, this comparison masks considerable heterogeneity across states: Five states — Oregon (14.7X), Ohio (11.4X), Arkansas (8.8X), Oklahoma (7.7X), and Delaware (7.6X) — exhibit mortality rates more than seven times those of comparable statewide populations. By contrast, six states (Connecticut, Colorado, Pennsylvania, Washington, New York, and Mississippi) have fewer deaths than expected given statewide rates and eight states (Alaska, Hawaii, Maine, Nevada, New Hampshire, North Dakota, Utah, and Vermont) report zero COVID-19 deaths among their prison populations.

Another way to compare prison mortality rates to statewide rates is to calculate the number (or fraction) of deaths *in excess* of what would be expected if COVID-19 was equally as deadly inside prisons as it has been outside of prisons for a population of similar

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<sup>5</sup> Data for each state is provided in Appendix Table B1. Information about the source of information is described in the table notes. The fraction of the population with a confirmed case is calculated by dividing the rates per 100,000 presented by 100,000.

age, gender, and race/ethnicity. Appendix Table B2 provides data for each state necessary to make this calculation. First, the number of deaths per 100,000 people in prison *in excess* of state rates is calculated by subtracting the state death rate per 100,000 population from the prison death rate per 100,000 people incarcerated. The resultant number of deaths *in excess* per 100,000 incarcerated individuals is then divided by the number of deaths in prison per 100,000 to obtain the fraction of deaths considered *in excess*, a finding presented in panel (B) of Figure 4 for each state. Along with this fraction, the total number of deaths that were *in excess* (or above-and-beyond) the number expected given each state's mortality rate is provided in square brackets for each state in panel (B) of Figure 4. States with deaths lower than expected given statewide rates are assigned a zero for the fraction and number of deaths *in excess*.

A few patterns are worth noting in Figure 4(B). First, the fraction of cases and deaths that can be considered *in excess* of statewide rates is astoundingly high in many states. There is a mechanical relationship between the ratios presented in Figure 4(A) and the fractions in Figure 4(B). Thus, the states with the highest ratios previously discussed are also those with the highest fraction of deaths *in excess* of statewide totals. The prison mortality rates that were more than seven times comparable state rates imply that approximately 90% of the COVID-19 deaths in prison were *in excess* of statewide rates.

Figure 4(B) also reports the number of deaths *in excess* for each state in square brackets by multiplying the fraction of deaths *in excess* by the total number of prison deaths for each state. This calculation yields alarming numbers for many states. For example, 101 deaths in the Ohio state prison system were above-and-beyond what would be expected given the COVID-19 mortality rate in Ohio for a population of similar age, gender, and race/ethnicity as the prison population; in Florida, 139 deaths were *in excess*. Nationally, 51% of the deaths in state and federal prisons were *in excess*, which implies 721 of the 1,412 deaths would have been avoided had the COVID-19 mortality rate in prisons mirrored the mortality rate for non-incarcerated individuals similar in age, gender, and race/ethnicity.

Finally, to further assess how the COVID-19 situation has evolved in prisons through the course of the pandemic, Figure 5 plots the rates of deaths *in excess* per 100,000 people incarcerated for the five states with the highest disparity between prison deaths compared to statewide deaths (AR, DE, OH, OK, and OR) along with rates for all prisons (US) and federal prisons (FE) from May 15, 2020 through Nov. 13, 2020. While the rate of deaths *in excess* has leveled off or started to decrease in Delaware and the federal prison system since mid-September, all other states exhibit increasing rates of deaths *in excess*. These rates are above-and-beyond the expanding statewide COVID-19 mortality rates across many of these states and imply that the situation in many prison systems is worsening. Two of these states, Oklahoma and Oregon, experienced sharp increases in

prison COVID-19 mortality rates in October and early November relative to statewide rates. Overall, the number of deaths *in excess* per 100,000 people in prison has continued to increase at a steady rate since September, due to the fact that the prison mortality rate has maintained a level around two times the national mortality rate.

**FIGURE 3**

*Fraction of Population with Confirmed COVID-19 Cases in Prisons vs. Statewide as of Nov. 13, 2020*

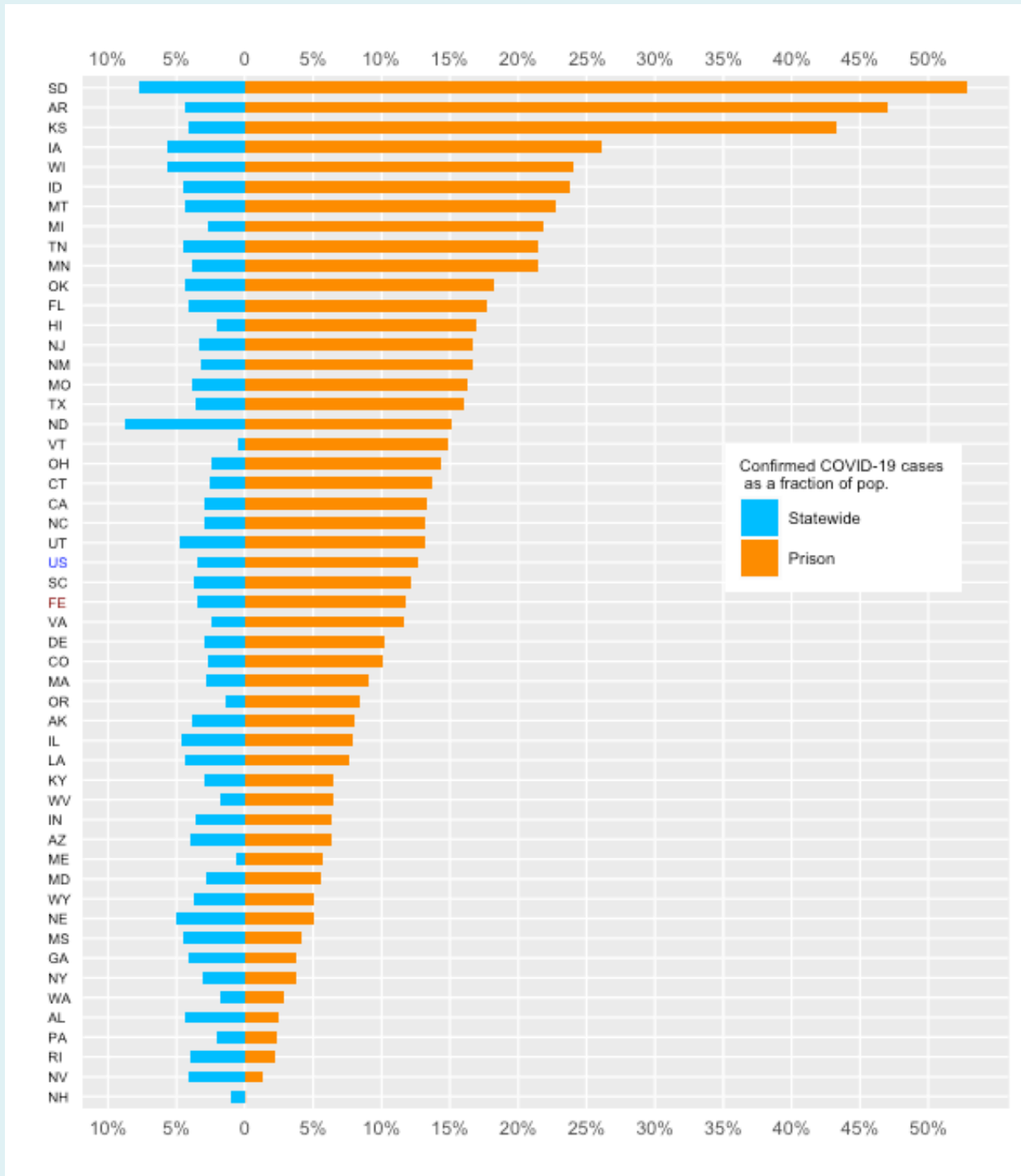


Figure notes: This figure presents the ratio of COVID-confirmed cases statewide and in prisons divided by the respective populations. Rates for states are in blue and increasing toward the left, while rates for prisons within each state are in orange and increasing toward the right. Total rates for all state and federal prisons are presented in the category "US" and highlighted in blue text. Rates for federal prisons are presented in the category "FE" and highlighted in red text.

# FIGURE 4

## COVID-19 Cases and Deaths in Prisons Compared with Statewide Rates

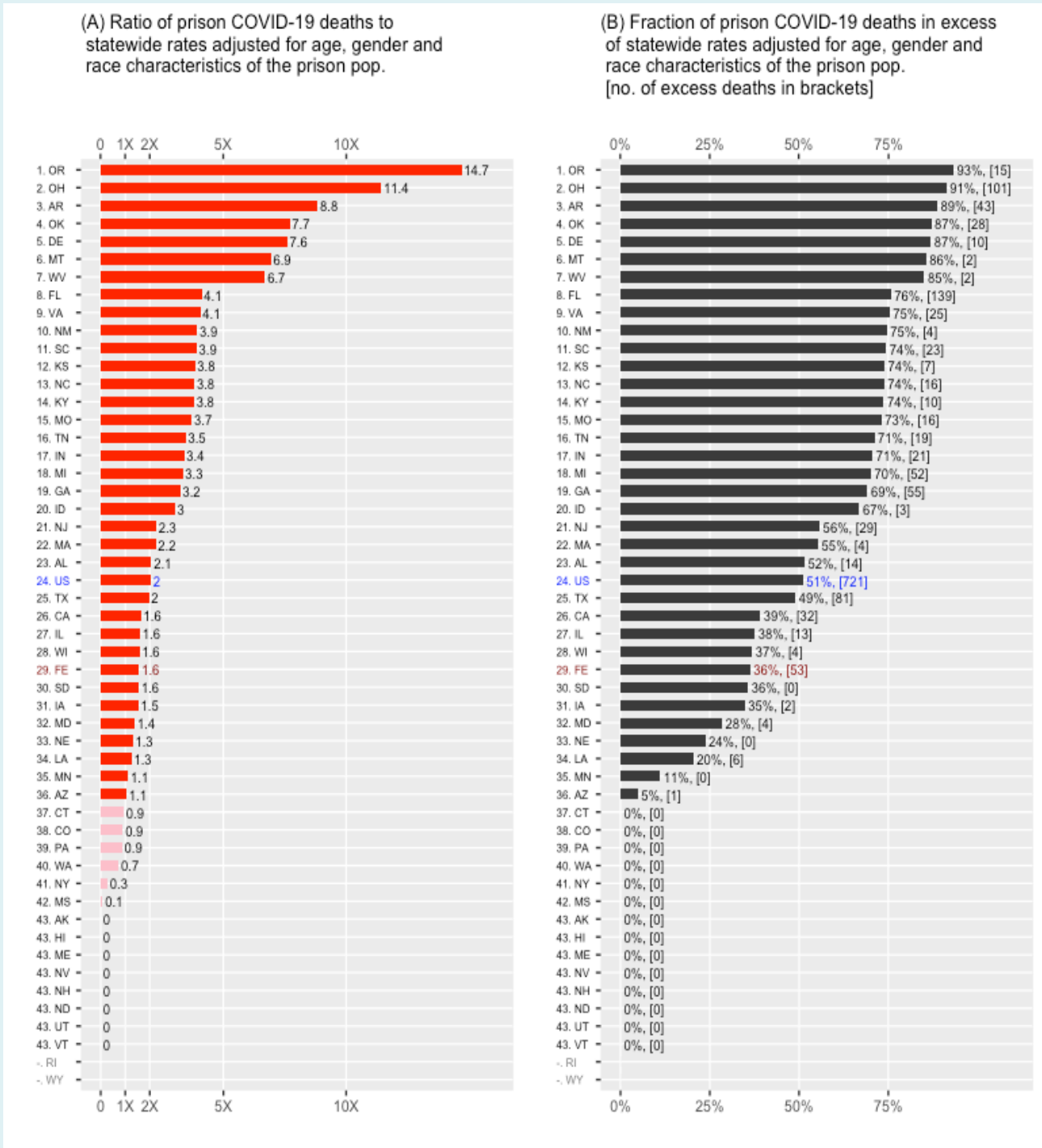


Figure notes: This figure presents the ratio of the prison COVID-19 mortality rate to the statewide rates (adjusted for the age, gender, and race of individuals incarcerated) in panel (A) and the fraction of prison COVID-19 deaths defined in excess of statewide deaths panel (B). This fraction of “deaths in excess” is calculated by dividing the difference between prison and state death rates by the prison rates. Negative “deaths in excess” are set at zero and correspond to states where the ratio of prison-to-state deaths is below one. Values of each bar are presented for each figure with the total number of “deaths in excess” for each state provided in square brackets for panel (B). The Marshall Project (2020) was not able to obtain information on COVID-19 prison deaths for two states: Wyoming (WY) and Rhode Island (RI), which are colored gray at the bottom.

## FIGURE 5

**Excess COVID-19 Cases in Prisons Relative to Statewide Rates, May 15 – Nov. 13, 2020, for five states (AR, OH, DE, OK, OR), federal prisons (FE), and all state and federal incarcerated people (U.S.)**

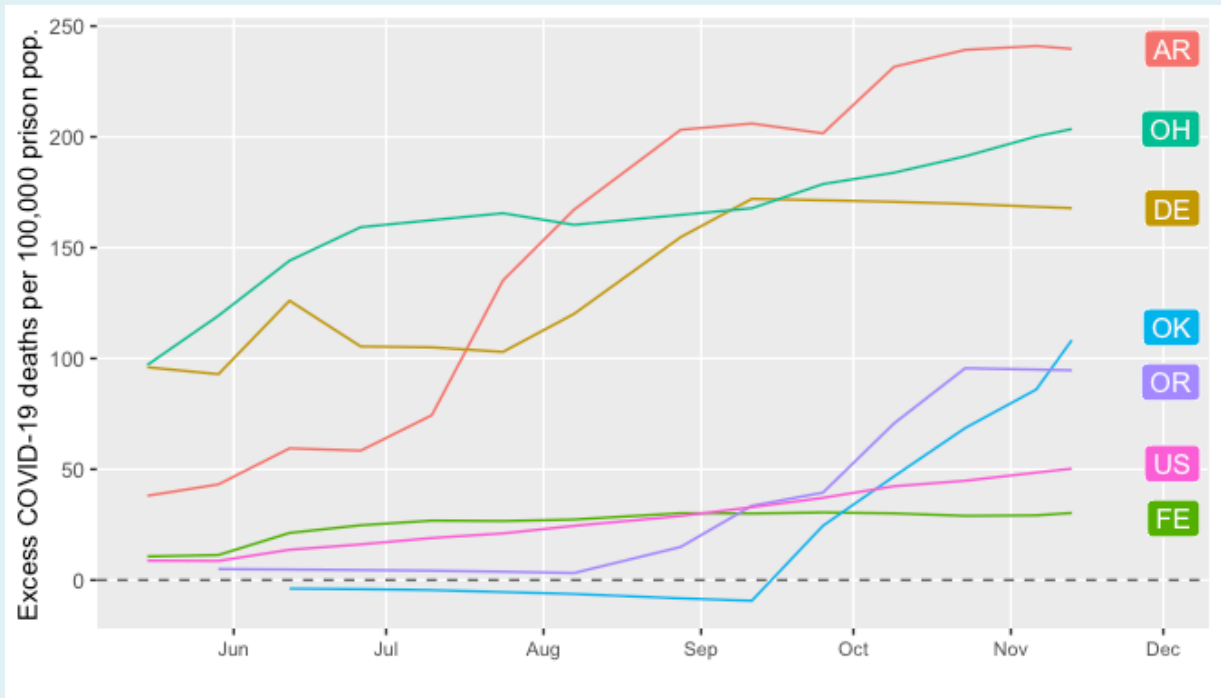


Figure notes: This figure plots cumulative excess COVID-19 deaths in prisons per 100,000 incarcerated individuals compared with statewide rates per 100,000 population adjusted for the age, gender, and race/ethnicity composition of incarcerated individuals as discussed in previous sections of this report. Data on COVID-19 cases by state was obtained from The Marshall Project (2020) approximately every two weeks since May 15, 2020 and compared against statewide rates from the CDC (2020b). States are labeled with separate colors. Rates for the five states with the highest ratio of prison-to-state COVID-19 mortality rates presented in Figure 5 are included, along with rates for the federal prison system (FE) and all state and federal prisons (US).

## POLICY IMPLICATIONS, DATA GAPS, AND FUTURE RESEARCH

State and federal prison facilities across the U.S. are COVID-19 hotspots. This report provides a detailed description of the magnitude of the COVID-19 crisis within prisons using the best data available. It updates results from the first National Commission on COVID-19 and Criminal Justice report covering COVID-19 in state and federal prisons (Schnepel 2020). The figures and tables illustrate substantial variation in the intensity of

the crisis across states. They also indicate alarming trends in October and November as the rates of COVID-19 deaths continue to outpace national and statewide rates.

Similar to college dormitories, nursing homes, and other congregate facilities, carceral institutions pose a significant challenge for containing highly infectious diseases. This report finds that 51% of deaths in U.S. prisons (or 721 deaths) are beyond expectations given national mortality rates among a population similar in age, gender, and race to those incarcerated. While the majority of states exhibit case and death rates in prison that far exceed statewide rates, there are several states with zero COVID-19 deaths and/or low rates of confirmed cases. Further work is needed to understand which policies, such as mass testing of prison populations, have been most effective in protecting vulnerable incarcerated populations.

While detailed adjustments have been made to enable a more accurate comparison of death rates within prisons to statewide and national rates, similar adjustments were not possible for COVID-19 case rates. Moreover, the adjusted rates used here to gauge COVID-19 mortality within prisons could possibly overstate or understate the expected mortality rate among the prison population for several reasons. First, only adjustments for broad age categories are possible (e.g. “65 and older” rather than more fine categories). Within this “65 and older” category, it is likely that individuals incarcerated are much closer in age to 65, on average, than those over 65 in the general population. Thus, with finer age categories, the expected mortality among those incarcerated might be lower than reported here. On the other hand, incarcerated individuals are more likely to suffer from chronic health conditions, such as heart disease or diabetes, which can exacerbate the impact of COVID-19 on this population (Wildeman and Wang 2017). Adjustments for differences in chronic health conditions could increase the expected mortality rates among individuals incarcerated compared with individuals in the general population.

While COVID-19 continues to wreak havoc in prisons across the U.S., several states have managed to avoid COVID-19 deaths among those incarcerated. Evaluating which public health responses within prison systems have been most effective is an important area for future research. Further, little is known about the degree to which outbreaks within correctional facilities contribute to infections in surrounding communities, making that another crucial area for additional study.

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# APPENDIX A: ADJUSTING FOR DIFFERENCES IN AGE, GENDER, AND RACE BETWEEN INCARCERATED AND NON-INCARCERATED POPULATIONS

Table A1 presents descriptive statistics of these two populations at the end of 2018, the most recent period available for data documenting the characteristics of individuals incarcerated in state and federal prisons (BJS 2020). The third column of Table A1 also reports overall mortality rates for each demographic group.

The incarcerated population is 92.6% male versus 49.3% of the general population being male; the overall male mortality rate is around 20% higher than the female mortality rate. Black individuals represent 14.2% of the general population but 32.9% of the prison population. The COVID-19 mortality rate among Black individuals is 114.3 (per 100,000 population), which is nearly double the 61.7 deaths among Whites (American Public Media Research Lab 2020). Finally, the incarcerated population does not include children under 15, who exhibit very low COVID-19 mortality rates, but contains fewer individuals over 65 who exhibit substantially higher COVID-19 mortality rates compared with younger age groups.

**Table A1: Percent of populations by demographic categories and national COVID-19 mortality rates.**

	Percent of Pop. by Demographic Category		COVID-19 Mortality per 100,000
	Prison Pop. (Dec. 2018)	Total US (Dec. 2018)	Total US (Nov. 2020)
Male	92.6	49.3	72.72
Female	7.4	50.7	59.90
Black	32.9	14.2	114.30
Hispanic	23.3	18.3	78.50
White	35.0	76.6	61.70
Age: Under 15	NA	19.2	0.13
Age: 15 through 24	9.5	13.3	0.94
Age: 25 through 34	31.9	14.0	3.65
Age: 35 through 44	27.7	12.5	10.40
Age: 45 through 54	18.4	12.6	28.08
Age: 55 through 64	9.5	12.7	64.95
Age: 65 and older	3.0	15.7	317.83
Total	NA	NA	66.22

*Table notes: This table describes the distribution of demographic characteristics among individuals incarcerated in state and federal prisons in the U.S. (first column) and for the total U.S. population (second column). Incarcerated population characteristics were obtained from the 2018 National Prisoner Statistics (BJS 2020). Characteristics for the total population were obtained from U.S. Census population estimates during 2018 (Census 2020). The third column reports mortality rates by demographic groups as of Nov. 13, 2020. Mortality rates by gender and age group were obtained from tables of weekly updates provided by the CDC (2020c). Mortality rates by demographic characteristics were obtained from American Public Media Research Lab (2020).*

These differences in mortality rates and population characteristics highlight the need to adjust national COVID-19 rates to enable a more accurate assessment of the disease in prisons compared with the general public. This report estimates a COVID-19 mortality rate for the national population based on age, gender, and race/ethnicity characteristics that are similar to the incarcerated population. This exercise builds upon the adjustments made by Saloner et al. (2020) and the first National Commission on COVID-19 and Criminal Justice report by Schnepel (2020).

This adjustment is made according to the following steps:

**Step 1:** Multiply age-specific COVID-19 mortality rates<sup>6</sup> by the specific population shares for the prison population within each age category<sup>7</sup> and then sum across categories. This provides a COVID-19 mortality rate for a population that more closely mirrors the age of the incarcerated population. In other words, this provides a COVID-19 mortality rate for a population that is only 3% over the age of 65.

**Step 2:** Multiply age-by-gender specific COVID-19 mortality rates<sup>8</sup> by the specific population shares for the prison population within each age-by-gender category<sup>9</sup> and then sum across categories. This provides a COVID-19 mortality rate for a population that mirrors the age-gender characteristics of the incarcerated population. In other words, this provides a COVID-19 mortality rate for a population that is 92 percent male and only 3 percent over the age of 65.

**Step 3:** (3A) Multiply the age-by-gender adjusted mortality rates in Step 2 by the proportion of the prison population in each race/ethnicity category. This divides the total number of age-by-gender adjusted deaths proportionally across each race/ethnicity category. (3B) Calculate the ratio of the race/ethnicity-specific COVID-19 mortality rate to the overall mortality rate for each race/ethnicity category. Mortality rates that are already age-adjusted are used to obtain the ratio.<sup>10</sup> This ratio is then multiplied with the deaths in part (3A) and summed across all of the race/ethnicity categories. This results in a COVID-19 mortality rate for a population that mirrors the age, gender, and race/ethnicity characteristics of the

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<sup>6</sup> Rates are calculated as of Nov. 6, 2020 and sourced from CDC (2020b).

<sup>7</sup> The age distribution of the state and federal incarcerated populations is available at the national level from Carson (2020).

<sup>8</sup> Rates are calculated as of Nov. 6, 2020 and sourced from CDC (2020b).

<sup>9</sup> The age distribution of the prison population at the national level is applied equally to splits by gender available from the National Prisoner Statistics (BJS 2018).

<sup>10</sup> Age-adjusted mortality rates by race/ethnicity are available from American Public Media Research Lab (2020).

incarcerated population. Therefore, this provides a COVID-19 mortality rate for a population that is 92% male, 3% over age 65, and 32.9 % Black.

Figure A1 demonstrates the importance of these adjustments by replicating Figure 2(A) with the raw national COVID-19 mortality rates adjusted in the above three steps. First, the unadjusted national COVID-19 mortality rates are adjusted as described in Step 1 to more closely match the age characteristics of the prison population. This adjustment yields much lower mortality rates due to fact that the prison population contains few elderly individuals. Second, rates are also adjusted for gender, which shifts the curve up since the mortality rate among males is higher than that for females and the U.S. prison population is almost 93% male (as depicted in Table A1). The final adjustment follows Step 3 above to incorporate differential mortality rates by race/ethnicity. This adjustment shifts the rates up again since Black and Hispanic individuals experience higher overall COVID-19 mortality rates and are overrepresented in prisons. The adjustments are uniform across the time periods since data used to make these adjustments are only available as of November 13, 2020.<sup>11</sup>

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<sup>11</sup> Specifically, mortality rates by race/ethnicity from American Public Media Research Lab (2020) were available as of Nov. 13, 2020.

**Figure A1: National COVID-19 mortality rates per 100,000 adjusted for age, gender, and race/ethnicity characteristics of the U.S. prison population, Feb. 1–Nov. 13, 2020**

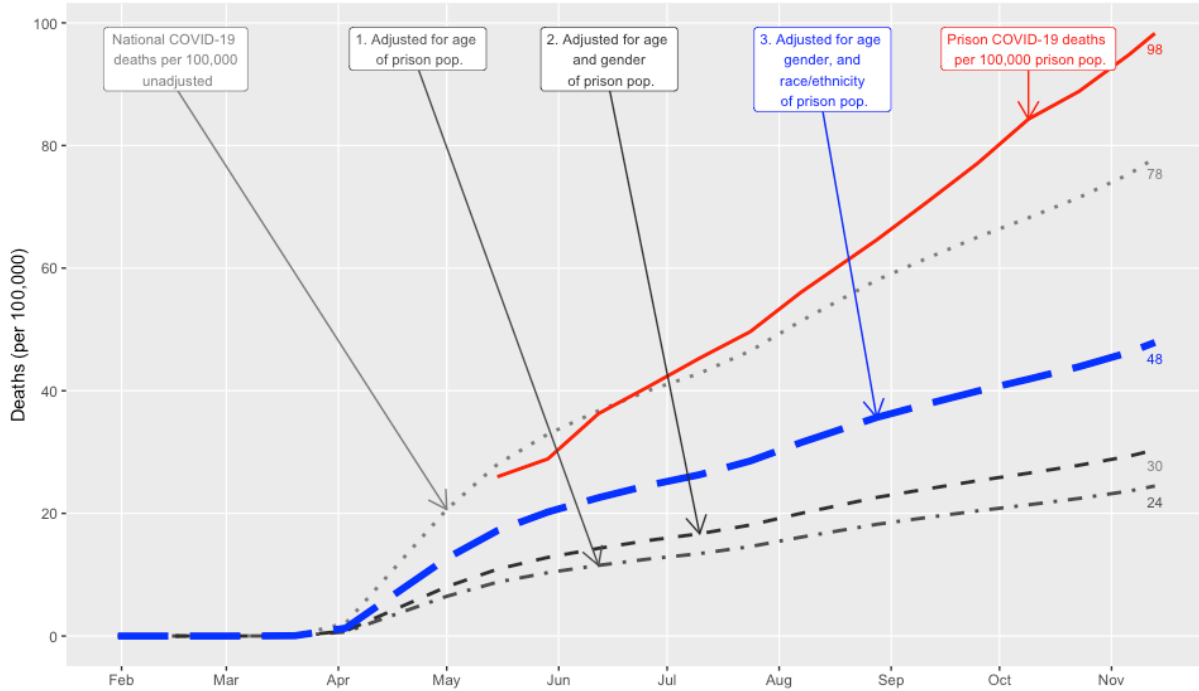


Figure notes: This figure plots cumulative COVID-19 mortality rates for all U.S. state and federal prisons from May 15, 2020 through Nov. 13, 2020 alongside national totals from Feb. 1, 2020 through Nov. 13, 2020. Prison death counts were obtained from The Marshall Project (2020), which first posted data on May 15, 2020. These prison deaths are adjusted for prison population totals as of Dec. 31, 2019 as collected and reported by Kang-Brown et. al (2020). National death counts were obtained from the Centers for Disease Control and Prevention (2020a) and total population estimates as of Dec. 31, 2019 provided by the U.S. Census (2020). National mortality rates are adjusted for the age of the incarcerated population as described by Step 1 of this section, then for gender as described by Step 2 and, finally, for race/ethnicity as described by Step 3.

Similar adjustments are not yet possible for confirmed cases of COVID-19 since reliable data by age, gender, and race/ethnicity is currently only available for deaths. It is difficult to assess whether these shifts would be similar given differences in testing rates and behavior across demographic categories. For example, rates of confirmed cases per 100,000 elderly individuals may be low due to higher levels of isolation and more preventative action taken among these groups compared with infection rates for young adults.

## APPENDIX B: DATA TABLES

**Table B1: COVID-19 cases in U.S. state and federal prisons**

State	(1)	(2)	(3)	(4)	(5)
	Prison pop.	Prison cases	Prison cases (per 100k pris.)	Statewide cases (per 100k pop.)	Prison-to-state ratio
Alabama	28266	711	2515	4412	0.57
Alaska	4475	357	7978	3876	2.06
Arizona	42441	2667	6284	3938	1.60
Arkansas	17759	8343	46979	4395	10.69
California	125507	16749	13345	2932	4.55
Colorado	19714	1996	10125	2743	3.69
Connecticut	12293	1686	13715	2577	5.32
Delaware	5692	579	10172	2956	3.44
Florida	96009	16969	17674	4074	4.34
Georgia	55556	2095	3771	4090	0.92
Hawaii	5179	878	16953	2018	8.40
Idaho	9437	2249	23832	4549	5.24
Illinois	38259	3008	7862	4576	1.72
Indiana	27268	1726	6330	3567	1.77
Iowa	9282	2426	26137	5709	4.58
Kansas	10177	4406	43294	4062	10.66
Kentucky	23436	1524	6503	2992	2.17
Louisiana	31609	2416	7643	4411	1.73
Maine	2205	125	5669	663	8.55
Maryland	18686	1039	5560	2864	1.94
Massachusetts	8205	740	9019	2888	3.12
Michigan	38053	8295	21799	2759	7.90
Minnesota	9982	2138	21419	3866	5.54
Mississippi	19469	816	4191	4521	0.93
Missouri	26044	4226	16226	3899	4.16
Montana	3811	865	22697	4417	5.14
Nebraska	5651	283	5008	5022	1.00
Nevada	12942	170	1314	4105	0.32
New Hampshire	2622	1	38	1050	0.04
New Jersey	18613	3114	16730	3331	5.02
New Mexico	6723	1120	16659	3247	5.13
New York	44284	1644	3712	3083	1.20
North Carolina	34510	4555	13199	2998	4.40
North Dakota	1794	271	15106	8784	1.72
Ohio	49762	7121	14310	2446	5.85
Oklahoma	25712	4702	18287	4405	4.15
Oregon	15755	1315	8347	1368	6.10
Pennsylvania	45875	1093	2383	2037	1.17
Rhode Island	2740	60	2190	4011	0.55
South Carolina	19608	2378	12128	3772	3.22
South Dakota	3804	2009	52813	7745	6.82
Tennessee	26539	5705	21497	4451	4.83
Texas	158820	25548	16086	3621	4.44
Utah	6731	886	13163	4713	2.79
Vermont	1608	240	14925	446	33.43
Virginia	36091	4190	11610	2490	4.66
Washington	19160	537	2803	1822	1.54
West Virginia	6800	440	6471	1765	3.67
Wisconsin	23956	5745	23981	5619	4.27
Wyoming	2479	125	5042	3774	1.34
Federal Prison	175116	20495	11704	3439	3.40
United States	1436509	182776	12724	3439	3.70

Table notes: This table presents COVID-19 cases in prison and in the general population for each state. The information contained here was used to create Figures 2 through 5. Prison population estimates in column (1) were obtained from Kang et al. (2020). Data on prison COVID-19 cases by state in column (2) is from The Marshall Project (2020) as of Nov. 13, 2020. Data on state cases in column (4) is calculated with case information from CDC (2020a) and population information from the Census (2020). The prison-to-state ratio in column (5) represent the prison case rate in column (3) divided by the state case rate in column (4).

**Table B2: COVID-19 deaths in U.S. state and federal prisons**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
State	Pris. pop.	Pris. deaths	Prison deaths (per 100k pris.)	State deaths (per 100k pop.)	State deaths adj. for age (per 100k pris.)	State deaths adj. for age, and gender (per 100k pris.)	State deaths adj. for age, gender and race (per 100k pris.)	Excess prison deaths (per 100k pris.)	Fraction of prison deaths in excess	Total no. of prison deaths in excess	Prison-to-state death ratio
Alabama	28266	28	99	67	30	34	48	51	0.52	14	2.06
Alaska	4475	0	0	17	2	2	2	0	0.00	0	0.00
Arizona	42441	28	66	91	34	42	63	3	0.05	1	1.05
Arkansas	17759	48	270	72	21	24	31	240	0.89	43	8.84
California	125507	82	65	53	19	26	40	26	0.39	32	1.64
Colorado	19714	4	20	45	13	16	22	0	0.00	0	0.91
Connecticut	12293	7	57	138	32	38	61	0	0.00	0	0.94
Delaware	5692	11	193	77	17	18	25	168	0.87	10	7.60
Florida	96009	184	192	83	24	30	47	145	0.76	139	4.11
Georgia	55556	79	142	87	28	32	44	98	0.69	55	3.24
Hawaii	5179	0	0	27	5	7	6	0	0.00	0	0.00
Idaho	9437	4	42	43	9	11	14	28	0.67	3	3.02
Illinois	38259	34	89	90	26	33	55	33	0.38	13	1.60
Indiana	27268	30	110	73	19	22	32	78	0.71	21	3.40
Iowa	9282	5	54	63	17	21	35	19	0.35	2	1.53
Kansas	10177	9	88	44	11	14	23	65	0.74	7	3.84
Kentucky	23436	13	55	37	11	12	15	41	0.74	10	3.81
Louisiana	31609	30	95	134	45	52	76	19	0.20	6	1.26
Maine	2205	0	0	12	2	3	2	0	0.00	0	0.00
Maryland	18686	13	70	75	27	34	50	20	0.28	4	1.40
Massachusetts	8205	8	98	158	30	34	44	54	0.55	4	2.24
Michigan	38053	74	194	85	23	28	58	136	0.70	52	3.34
Minnesota	9982	3	30	54	12	14	27	3	0.11	0	1.12
Mississippi	19469	1	5	120	45	48	64	0	0.00	0	0.08
Missouri	26044	22	84	56	14	16	23	62	0.73	16	3.71
Montana	3811	2	52	48	8	9	8	45	0.86	2	6.93
Nebraska	5651	2	35	41	11	14	27	8	0.24	0	1.31
Nevada	12942	0	0	67	23	30	42	0	0.00	0	0.00
New Hampshire	2622	0	0	38	7	9	8	0	0.00	0	0.00
New Jersey	18613	52	279	204	59	78	124	156	0.56	29	2.26
New Mexico	6723	5	74	63	21	26	19	55	0.75	4	3.93
New York	44281	18	41	187	65	88	144	0	0.00	0	0.28
North Carolina	34510	22	64	46	10	12	17	47	0.74	16	3.82
North Dakota	1794	0	0	101	18	21	20	0	0.00	0	0.00
Ohio	49762	111	223	49	12	15	20	204	0.91	101	11.43
Oklahoma	25712	32	121	43	12	14	16	108	0.87	28	7.69
Oregon	15755	16	102	19	4	5	7	95	0.93	15	14.70
Pennsylvania	45875	17	37	74	19	23	42	0	0.00	0	0.88
Rhode Island	2740	NA	NA	121	26	31	49	NA	NA	NA	NA
South Carolina	19608	31	158	81	23	27	40	118	0.74	23	3.91
South Dakota	3804	1	26	71	16	19	17	9	0.36	0	1.55
Tennessee	26539	27	102	57	17	21	29	72	0.71	19	3.46
Texas	158820	166	105	70	33	41	53	51	0.49	81	1.96
Utah	6731	0	0	23	10	13	16	0	0.00	0	0.00
Vermont	1608	0	0	10	2	2	2	0	0.00	0	0.00
Virginia	36091	33	91	47	14	16	23	69	0.75	25	4.06
Washington	19160	2	10	37	9	11	14	0	0.00	0	0.73
West Virginia	6800	2	29	32	4	4	4	25	0.85	2	6.70
Wisconsin	23956	10	42	47	10	12	26	15	0.37	4	1.58
Wyoming	2479	NA	NA	22	2	2	2	NA	NA	NA	NA
Federal Prison	175116	146	83	78	25	31	53	30	0.36	53	1.57
United States	1436509	1412	98	78	25	31	48	50	0.51	721	2.04

Table notes: This table presents COVID-19 deaths in prison and in the full population for each state. The information contained here was used to create Figures 2 through 5. Prison population estimates in column (1) were obtained from Kang et al. (2020). Data on prison COVID-19 deaths in column (2) by state is from The Marshall Project (2020) as of Nov. 13, 2020. Data on statewide deaths in column (4) is calculated from CDC (2020a) and Census (2020) data. Adjustments to statewide rates in columns (5) through (7) are made according to the process detailed in Appendix A. Excess prison deaths in column (8) represent the difference between prison deaths per 100,000 prison population in column (3) and adjusted state deaths per 100,000 population in column (7). Negative values are set to zero. Column (9) computes the fraction of prison deaths in excess of the adjusted statewide totals by dividing column (8) by column (3). Column (10) calculates the number of excess deaths for each state by multiplying the fraction in column (9) by the total number of deaths in column (2). Finally, column (11) calculates the ratio prison mortality rates to adjusted state mortality rates by dividing column (3) by column (7).