

# UCLA

## UCLA Previously Published Works

### Title

Racial And Ethnic Inequalities In COVID-19 Mortality Within Carceral Settings: An Analysis Of Texas Prisons

### Permalink

<https://escholarship.org/uc/item/3nn6d86c>

### Journal

Health Affairs, 41(11)

### ISSN

0278-2715

### Authors

Marquez, Neal  
Moreno, Destiny  
Klonsky, Amanda  
et al.

### Publication Date

2022-11-01

### DOI

10.1377/hlthaff.2022.00390

Peer reviewed

By Neal Marquez, Destiny Moreno, Amanda Klonsky, and Sharon Dolovich

DOI: 10.1377/  
hthaff.2022.00390  
HEALTH AFFAIRS 41,  
NO. 11 (2022): 1626–1634  
©2022 Project HOPE—  
The People-to-People Health  
Foundation, Inc.

# Racial And Ethnic Inequalities In COVID-19 Mortality Within Carceral Settings: An Analysis Of Texas Prisons

**Neal Marquez** (nmarquez@uw.edu), University of Washington, Seattle, Washington.

**Destiny Moreno**, University of Texas at Austin, Austin, Texas.

**Amanda Klonsky**, University of California Los Angeles, Los Angeles, California.

**Sharon Dolovich**, University of California Los Angeles.

**ABSTRACT** The COVID-19 pandemic has taken a heightened toll on people incarcerated in prisons in the United States, with those incarcerated experiencing a higher rate of infection and mortality than the US population more generally. What is less well known is the degree to which COVID-19 outcomes differ among incarcerated populations, especially by race and ethnicity, where significant differences have been found among the US population as a whole. This knowledge gap is, in part, due to a lack of reporting of COVID-19 outcomes by race and ethnicity by most state prison systems. To shed light on this topic, we analyzed mortality patterns of the population incarcerated in Texas state prison facilities during both the year before (beginning April 1, 2019) and the first year of (beginning April 1, 2020) the COVID-19 pandemic. We used a unique data set of roster information from the Texas Department of Criminal Justice and medical examiner records. COVID-19 mortality was 1.61 and 2.12 times higher for Black and Hispanic populations, respectively, when compared with the White population in Texas prisons. Strategies for COVID-19 mitigation in carceral settings, such as vaccination and decarceration, should include an equity component to minimize disparities.

**T**he increased burden of COVID-19 infection and mortality for people incarcerated in the United States has been well documented. A recent study found that during the first fifty-two weeks of the COVID-19 pandemic, people in US prisons were 3.3 times more likely than the overall US population to have a reported case of COVID-19 and 2.5 times more likely to die of COVID-19.<sup>1</sup> What is less clear is the degree to which variation, especially by race and ethnicity, in COVID-19-related outcomes exists within prison settings. Although several studies have highlighted racial and ethnic disparities related to COVID-19 outcomes for the US population more generally,<sup>2</sup> no similar empirical analysis exists for carceral settings.<sup>3</sup> This is in part a result

of the relative lack of public reporting concerning COVID-19 outcomes by race and ethnicity among state prison systems. Although almost all state prison systems report some information on COVID-19 cases and deaths, only a few do so by race and ethnicity.<sup>3</sup>

In this study we combined two unique data sources related to prison populations and incidents of mortality for the Texas Department of Criminal Justice (TDCJ). The TDCJ prison system is the largest state prison system in the US, with a non-White population comparable to the US prison system national average (66.5 percent Texas prisons, 69.6 percent US prisons).<sup>4</sup> During the first fifteen months of the pandemic, Texas prisons had COVID-19 rates that were not extraordinarily high or low compared with

# Our findings show that the impact of COVID-19 on mortality in the TDCJ was significantly greater for Black and Hispanic populations.

other prison systems, ranking thirty-fifth for case rates and twenty-eighth for COVID-19 mortality rates among the fifty US state prison systems.<sup>5</sup> In our analysis we compared standardized rates of COVID-19-related mortality among racial and ethnic groups for those incarcerated in the TDCJ prison system during the first twelve months of the pandemic, April 1, 2020–March 31, 2021 (pandemic period). In addition, we analyzed changes in population composition and all-cause mortality between the twelve-month period preceding the pandemic, April 1, 2019–March 31, 2020 (prepandemic period) and the pandemic period itself.

Previous studies have highlighted the role that social processes related to medical access and employment contribute to racial and ethnic disparities in COVID-19 outcomes in communities outside of prisons.<sup>6</sup> Our analysis raises the possibility that such disparities also exist inside prison systems. By combining two unique data sets concerning TDCJ population demographics and mortality outcomes, we demonstrate that COVID-19-related deaths in TDCJ custody are disproportionately experienced by Black and Hispanic people compared with White people.

## Study Data And Methods

**DATA** Monthly demographic information pertaining to the Texas Department of Criminal Justice prison population for the months spanning April 2019–March 2021 were taken from TDCJ monthly high-value data-set releases.<sup>7</sup> These reports are snapshot accounts of all people incarcerated in each TDCJ facility on the first day of each month. Facilities include both Texas state prisons and state jails administered by the TDCJ. In most states, prisons and jails are run by separate agencies, with jails administered exclusively by counties. In Texas, in addition to county jails,

there are also state jails that are run by the TDCJ and that function more like prisons. Unlike county jails, which house people awaiting trial or serving short sentences for misdemeanors, TDCJ jails hold people convicted of felonies, serving sentences with lengths more similar to those of people in prisons than people in county jails. As these facilities bear a greater resemblance to what would be considered prisons in other states, we included them in this analysis and refer to them henceforth as prisons. “Race and ethnicity” is recorded as a single variable by the TDCJ (hereafter referred to as “race”), and people are categorized as White, Black, Hispanic, American Indian, Asian, or other. Monthly counts of people were tallied by sex, age, and race for the categories of Black, Hispanic, and White, with all other people falling in the category of “other.”

Death data for the TDCJ population during the study period, including data related to COVID-19 deaths, were obtained from the Texas Justice Initiative, a nonprofit organization that collects, analyzes, and publishes criminal justice data for Texas correctional facilities. The initiative collected medical examiner records through monthly open records requests submitted to the Texas Office of the Attorney General.<sup>8</sup> By state law, all deaths that occur among people incarcerated in TDCJ facilities must be reported to the Texas Office of the Attorney General and are a matter of public record. Medical examiner records include information on a person’s age, sex, and race, with the racial designation limited to one of four categories: Black, Hispanic, White, or other. We linked medical examiner records to roster information from the TDCJ by matching people by name, age, sex, race, and the time at which a person was last recorded in TDCJ custody. For nineteen people, the race recorded by the medical examiner differed from the race recorded by the TDCJ. In these instances, we used the race recorded by the TDCJ so that deaths and population counts had the same source for recorded race. To demonstrate the robustness of our findings, we also included a secondary sensitivity analysis using the race and ethnicity categorizations reported by the medical examiner.

**ANALYSIS** We calculated age-specific sex-standardized and age- and sex-standardized COVID-19 mortality rates for the TDCJ’s Hispanic, Black, and White populations, as well as for the total TDCJ population, during the pandemic period. Separate mortality rates were not calculated for those populations who were not Black, Hispanic, or White, as these groups collectively represented less than 0.5 percent of the total population and collectively recorded only a single COVID-19 death. In addition, all-cause mortality

rates were calculated for the pre-pandemic and pandemic periods. All race-specific mortality rates are reported as deaths per 100,000 person-years. Denominators for mortality rates were calculated from monthly population counts to capture the changing demographic structure of the TDCJ population over the duration of the pandemic period. All rates were standardized to the age and sex structure of the TDCJ’s pre-pandemic White population. When comparing mortality rates with one another, we calculated confidence intervals for ratios, using standard epidemiological methods with a 0.05 significance level.<sup>9</sup>

All analyses were conducted using R, version 4.1.0. This project was deemed Institutional Review Board exempt by the University of California Los Angeles Institutional Review Board.

**LIMITATIONS** There were several limitations to this study. First, we observed data only from the TDCJ prison system and, as a consequence, were

unable to assess empirically the degree to which these results are generalizable to other prison systems. It is well known that systemic racism affects the penal system in myriad ways, including health outcomes.<sup>10</sup> However, further studies are necessary to assess the degree to which racial and ethnic disparities in COVID-19-related outcomes exist in prisons beyond Texas. Second, although this study highlighted the magnitude of racial and ethnic inequalities, we did not explicitly test the mechanisms by which this inequality manifests. In our discussion we consider how factors such as preexisting conditions, health-seeking behaviors, and facility placement are likely affecting the TDCJ prison population’s COVID-19 outcomes. Third, data from this analysis come from several reporting agencies and may have been subject to mis- or underreporting. Furthermore, race information was not always consistent between TDCJ records and medical examiner reports. Though differences in how race and ethnicity were reported are important to highlight, our sensitivity analysis found that our major findings still held true even when using alternative assignments of race and ethnicity.

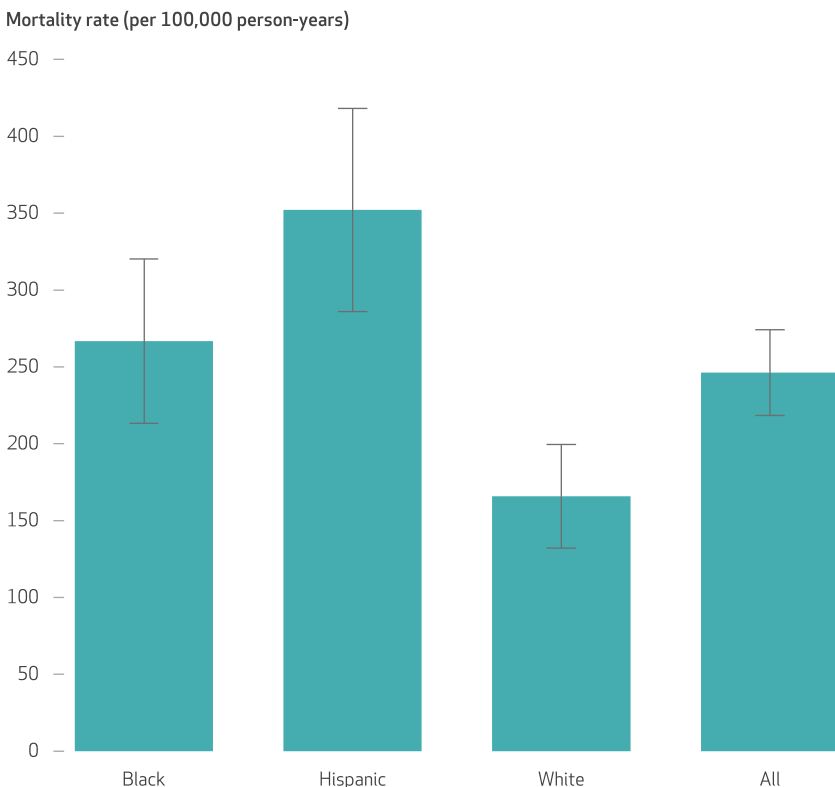
Fourth, we were unable to obtain COVID-19 case data by race and ethnicity, so we could not evaluate exposure risk directly. If COVID-19 infection rates differed by race within the TDCJ, the results observed in this study would be expected. However, we were unable to assess that relationship in this analysis. Finally, this analysis did not cover the period after which vaccinations had become widely available for people in TDCJ custody. Although staff at TDCJ facilities received vaccines as early as December 2020, those incarcerated did not start receiving vaccinations until March 2021. As a consequence, the impact that vaccinations had on COVID-19 mortality could not be readily assessed in this study period. Given that vaccine hesitancy has been reported among the Black incarcerated population in the United States,<sup>11</sup> it may be that different rates of vaccination uptake among racial groups in the prison population have since exacerbated the observed dynamics of COVID-19 mortality found in this study.

**Study Results**

Exhibit 1 highlights our main finding, that rates of standardized COVID-19 mortality among Black and Hispanic people greatly exceeded the rate among White people during the pandemic period. The standardized rates of COVID-19 mortality during the pandemic period were 266.7 per 100,000 person-years for the Black population (96 deaths), 352.1 for the Hispanic population (109 deaths), and 165.9 for the

**EXHIBIT 1**

**COVID-19 standardized mortality rate in Texas Department of Criminal Justice (TDCJ) facilities, by race, April 1, 2020–March 31, 2021**



**SOURCE** Authors’ analysis of TDCJ medical records and demographic data. **NOTES** COVID-19 mortality rates were age- and sex-standardized such that all three populations shown match the age and sex structure of the TDCJ White population averaged across the 12 months before the pandemic. The denominators for mortality rate are 100,000 person-years. The determination of race designations is described in the text. “All” refers to the entire TDCJ population.

# Steps to alleviate COVID-19 in prison systems nationwide should be considered as long as the pandemic persists.

White population (93 deaths). The standardized COVID-19 mortality rate for the Texas Department of Criminal Justice population as a whole was 246.3 (299 deaths). The Black and Hispanic populations were found to have mortality rates that were 1.61 (95% confidence interval: 1.21, 2.14;  $p < 0.01$ ) and 2.12 (95% CI: 1.61, 2.80,  $p < 0.01$ ) times higher, respectively, than those of the White population.

Online appendix exhibit A1 shows the population decline across TDCJ facilities observed across the study period.<sup>12</sup> To appropriately assess the mortality rate across the study period, it was necessary to take this decline into account, as we have done in our monthly population accounting. From April 2020 to March 2021, the total population incarcerated in TDCJ prisons dropped from 135,833 to 117,486, for a 13.5 percent decline. The decline was nearly identical for the Black, Hispanic, and White populations (13.1 percent, 13.9 percent, and 13.5 percent, respectively). During this same period, population decline by age was similarly consistent, with the population younger than age sixty-five declining by 13.5 percent and the population ages sixty-five and older declining by 14.8 percent. Slight differences were observed by race for declines in the population ages sixty-five and older, with the Black, Hispanic, and White populations declining by 18.6 percent, 15.3 percent, and 12.7 percent, respectively (data not shown).

Population decline was largely driven by a reduction in admissions to TDCJ facilities rather than an increase in releases. According to TDCJ reports, admissions decreased from 62,621 in the prepandemic period to 37,286 in the pandemic period.<sup>13,14</sup> Releases from TDCJ facilities also decreased from 64,445 to 57,669.<sup>13,14</sup>

Appendix exhibit A2 highlights the differences in age and sex demographic structure between groups.<sup>12</sup> Across the study period, the Hispanic population had the youngest demographics among the study population, with 2.3 percent

of its population ages sixty-five and older. In contrast, 2.5 percent of the total Black population and 4.6 percent of the White population was ages sixty-five and older. The percentage of the White population that was male was 87.6 percent, which was a lower proportion than either the Black (94.4 percent) or the Hispanic (94.6 percent) population. Because the White population was substantially older than either the Black or the Hispanic population, it was essential that we standardize mortality comparisons. Without such standardization, we risked misrepresenting the mortality burden of Black and Hispanic populations simply because they were younger. Indeed, an earlier report that did not standardize COVID-19 mortality rates found there were no substantial differences between mortality rates for different racial and ethnic groups in TDCJ custody.<sup>15</sup>

In appendix exhibit A3,<sup>12</sup> we show a comparison between the percentage of the incarcerated population that was White and the population density of facilities, as measured by taking the population count of a facility and dividing it by the rated capacity of the facility as declared by the TDCJ. Population values were averaged over the twelve months of the pandemic period. Although White people made up 33.5 percent of the total TDCJ population during the pandemic period, facilities greatly differed with respect to how much of their population was White. Across facilities, the percentage of the population that was White ranged from 16 percent up to 62 percent. In the graph, a clear pattern is seen between population density and percentage White. Facilities that had a low percentage White population, and thus a high percentage Black and Hispanic population, tended to have a higher population density than those of facilities with a high percentage White population. Given that population density is a known risk factor for COVID-19 infection, we would anticipate that racial and ethnic differences in COVID-19 mortality are likely partially explained by differences in facility percentage capacity.

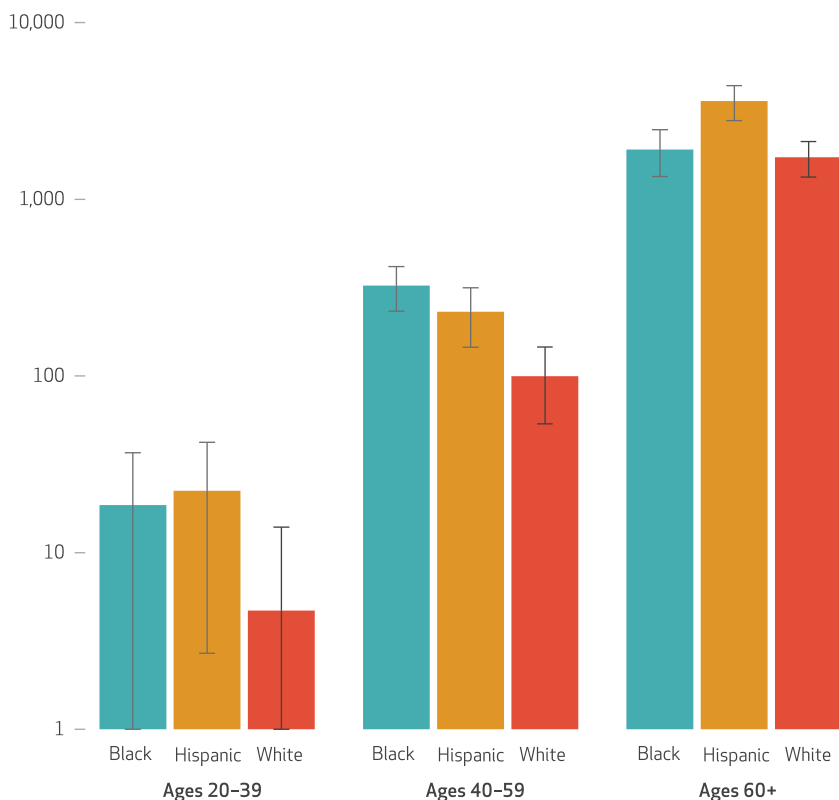
In exhibit 2, we show age-specific sex-standardized rates of COVID-19-related mortality for the Black, Hispanic, and White populations. Only ten total COVID-19-related deaths occurred among people younger than age forty, and differences between racial groups were not found to be significant within this age group. Compared with rates in the White population, Hispanic COVID-19 mortality was 2.31 (95% CI: 1.28, 4.17;  $p < 0.01$ ) times higher for those ages 40–59 and 2.08 (95% CI: 1.52, 2.85;  $p < 0.01$ ) times higher for those ages sixty and older. In the Black population, COVID-19 mortality was 3.25 (95% CI: 1.89, 5.58;  $p < 0.01$ ) times higher than in the



EXHIBIT 2

COVID-19 standardized mortality rate in Texas Department of Criminal Justice (TDCJ) facilities, by age and race, April 1, 2020–March 31, 2021

Mortality rate (per 100,000 person-years)



**SOURCE** Authors' analysis of TDCJ medical records and demographic data. **NOTES** Values are presented in log scale. Age-specific COVID-19 mortality rates were sex-standardized such that all three populations shown match the sex structure of the TDCJ White population averaged across the 12 months before the pandemic. Lower values of 95% confidence intervals for Black and White race for ages 20-39 (indicated by whiskers) are truncated at 1 to accommodate the log scale. The determination of race designations is described in the text.

White population for those ages 40-59. For people ages sixty and older, Black COVID-19 mortality was slightly greater than for White mortality; however, this difference was not statistically significant (1.11; 95% CI: 0.76, 1.60;  $p > 0.05$ ).

Exhibit 3 shows the monthly standardized mortality rates for the whole of the TDCJ for both COVID-19 and non-COVID-19 deaths. The age- and sex-standardized all-cause mortality rates for the prepandemic and pandemic periods were 325.5 and 611.3 per 100,000 person-years (data not shown), respectively, with the pandemic period having a mortality rate 1.88 (95% CI: 1.67, 2.11) times greater than that of the prepandemic period. Further, we found that COVID-19 mortality in the TDCJ was 2.97 (95% CI: 2.28, 3.88;  $p < 0.05$ ) times higher in the first six months of the pandemic period when compared with the second six months, with rates of 362.2 and 121.9 per 100,000 person-years, respectively. During

the first six months of the pandemic, the average monthly population was 5.6 percent higher, at 126,654 people, than the second six months of the pandemic, at 119,961 people (data not shown).

Exhibit 4 shows the change in all-cause mortality in the TDCJ population in the prepandemic and pandemic periods. During the prepandemic period, there were a total of 457 deaths (standardized rate 325.5 deaths per 100,000), 125 among the Black population (298.7 per 100,000), 115 among the Hispanic population (297.7 per 100,000), and 213 among the White population (358.4 per 100,000). During the prepandemic period, there were a total of 744 deaths (611.3 per 100,000), 239 among the Black population (662.8 per 100,000), 215 among the Hispanic population (659.4 per 100,000), and 284 among the White population (541.7 per 100,000). Before the start of the pandemic, all-cause standardized mortality for Black and Hispanic people in TDCJ prisons was lower than that for White people, although these differences were not statistically significant. However, in the first twelve months of the pandemic, significant differences in mortality outcomes arose such that the Black and Hispanic populations had all-cause standardized mortality rates greater than that of the White population. For the Black population, it was 1.22 (95% CI: 1.03, 1.45;  $p < 0.05$ ) times higher than that of the White population, and for the Hispanic population, it was also 1.22 (95% CI: 1.02, 1.45;  $p < 0.05$ ) times higher than that of the White population.

When we reevaluated our mortality analysis using definitions of race provided by medical examiner records rather than TDCJ roster records, we obtained similar results. Using the medical examiner race categorizations, age- and sex-standardized COVID-19 mortality rates during the first year of the pandemic were 1.56 (95% CI: 1.17, 2.07;  $p < 0.01$ ) times higher for the Black population and 2.07 (95% CI: 1.57, 2.72;  $p < 0.01$ ) times higher for the Hispanic population when compared with those of the White population. When we reanalyzed age- and sex-standardized all-cause mortality for the first year of the pandemic, we also found elevated rates for non-White populations. All-cause mortality rates were 1.20 (95% CI: 1.01, 1.42;  $p < 0.05$ ) times higher for the Black population and 1.20 (95% CI: 1.01, 1.43;  $p < 0.05$ ) times higher for the Hispanic population when compared with those of the White population (data not shown).

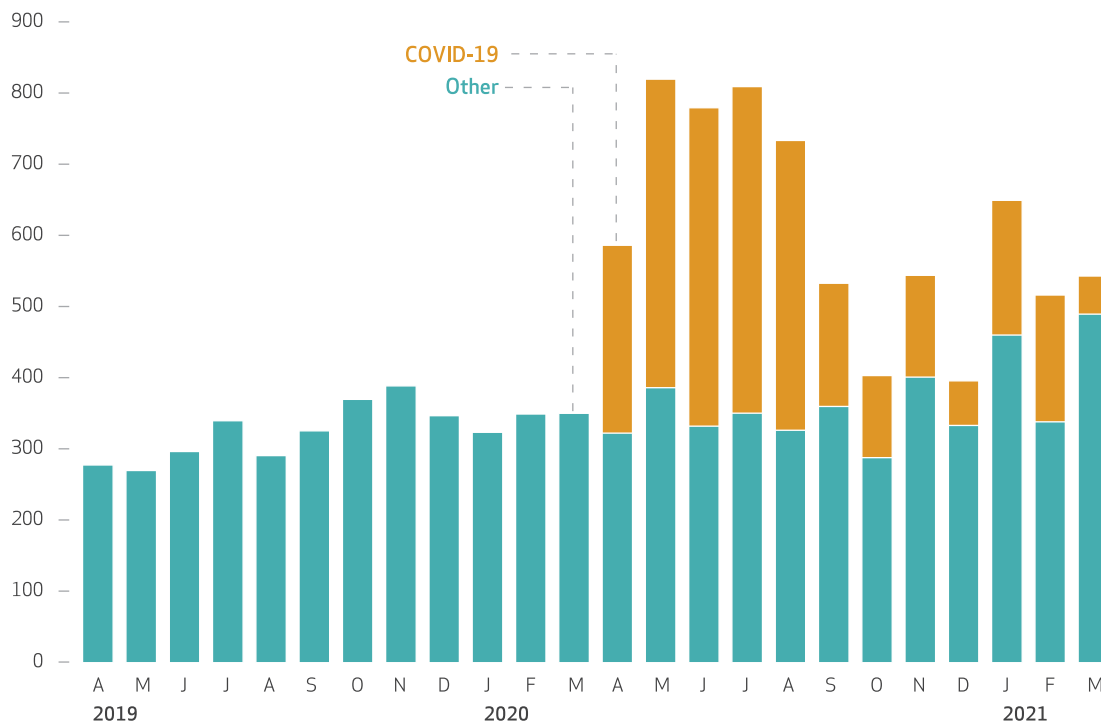
Discussion

Our analysis found that during the first twelve months of the pandemic in the US, Black and

**EXHIBIT 3**

**Monthly age- and sex-standardized mortality rates from COVID-19 and other causes in Texas Department of Criminal Justice (TDCJ) facilities, April 1, 2019–March 31, 2021**

Mortality rate (per 100,000 person-years)



**SOURCE** Authors' analysis of TDCJ medical records and demographic data.

Hispanic populations in Texas Department of Criminal Justice custody experienced higher rates of standardized COVID-19 mortality when compared with their White counterparts. During this period, the risk for COVID-19 mortality in TDCJ facilities was 2.12 times higher for the Hispanic population than for the White population and 1.61 times higher for Black population than for the White population. Moreover, during the pandemic period, 50.7 percent (109 of 215 deaths) of all deaths among the Hispanic population in TDCJ custody were COVID-19 related, compared with 40.2 percent for the Black population (96 of 239 deaths) and 32.7 percent for the White population (93 of 284 deaths). These disparate outcomes suggest that the experience of people in TDCJ custody is stratified by race and ethnicity, with members of different racial and ethnic groups facing inequitable levels of COVID-19 risk, COVID-19 exposure, or barriers to health care use that could prevent COVID-19-related mortality.

To be sure, differences in COVID-19 mortality may in part be explained by a higher prevalence of comorbidities among the Black and Hispanic populations, as has been found in the US popu-

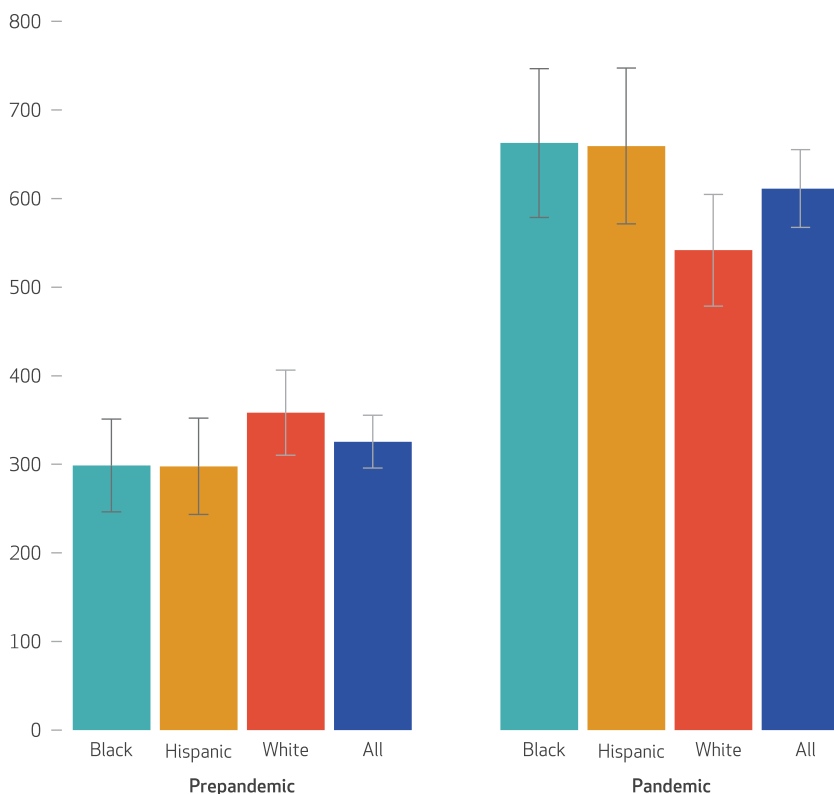
lation more generally.<sup>2</sup> Preexisting conditions such as diabetes, ischemic heart disease, and hypertension are known to increase the risk for death among people who become infected with COVID-19.<sup>16</sup> Previous studies have found that among the TDCJ population, age-standardized diabetes prevalence was higher among the Black and Hispanic populations compared with the White population and likely contributed to the differences in mortality observed in this study.<sup>17</sup> At the same time, the age-standardized prevalence of ischemic heart disease, which is another risk factor for COVID-19 mortality, was greater among the White population than either the Black or the Hispanic population, making it unlikely that preexisting conditions alone explained the observed differences in mortality.

Another factor likely contributing to unequal COVID-19 mortality outcomes was exposure risk. Other studies of COVID-19 in prison settings have found that the risk for infection can differ widely across facilities. This finding suggests that if Black, Hispanic, and White incarcerated people were to be unevenly distributed among a system's different facilities, members of these groups would face differing degrees of COVID-

EXHIBIT 4

All-cause standardized mortality rate in the Texas Department of Criminal Justice (TDCJ) population by age and race, prepandemic and pandemic periods

Mortality rate (per 100,000 person-years)



**SOURCE** Authors' analysis of TDCJ medical records and demographic data. **NOTES** All-cause mortality rates were age- and sex-standardized such that all three populations shown match the age and sex structure of the TDCJ White population averaged across the 12 months before the pandemic. The prepandemic period includes deaths from April 1, 2019, to March 31, 2020, and the pandemic period includes deaths from April 1, 2020, to March 31, 2021. The determination of race designations is described in the text. "All" refers to the entire TDCJ population.

19 infection and mortality risk.<sup>18</sup> Although there is an equal representation of Black, Hispanic, and White people across the whole of the TDCJ, their breakdown differs substantially across facilities.

In this analysis we highlighted population density as one possible exposure risk that differs across facilities and may be contributing to the unequal COVID-19 mortality risk found in our study. Population density is a known risk factor for COVID-19 spread in carceral settings.<sup>19</sup> As we have shown, in the TDCJ, facilities with high population density tend to have a higher percentage of non-White populations. There are, however, a number of other environmental hazards that differ across facilities, such as living arrangements, presence of medical facilities, and participation in carceral labor settings. These factors should also be analyzed in relation to COVID-19 risk and inequitable health outcomes

in prisons by race.

Finally, the way in which people interact with the medical system has been found to differ by race and ethnicity. Rates of medical care use in prisons have been found to be lower for non-White people than for White people.<sup>20</sup> Levels of trust toward medical care providers and systems have been found to be lower among non-White people than White people in carceral settings.<sup>21</sup> In addition, the requirement of medical copayments in prison has been found to be a greater deterrent to seeking care for non-White people compared with White people.<sup>20</sup> For the portion of the pandemic covering this study period, Texas did suspend medical copayments "for patients presenting COVID-19 and flu-like symptoms."<sup>22</sup> However, the range of symptoms for COVID-19 is large, and public agencies such as the Centers for Disease Control and Prevention acknowledge that symptom lists provided are not exhaustive.<sup>23</sup> Given this range of symptoms, vague statements such as "COVID-19 and flu-like symptoms" do not assure people with more atypical symptoms that they will be exempt from payments. The lack of certainty that medical copayments would be waived, coupled with what is known about the racial disparity in the deterrent effects of copayments on the seeking of medical care in prison, may well have contributed to the racial difference in COVID-19 mortality that we observed.

COVID-19 had a substantial impact on patterns of mortality for all people in TDCJ custody. The standardized mortality rate across the whole of the TDCJ population increased by 87.8 percent from the prepandemic period to the pandemic period (exhibit 4), with COVID-19-related deaths accounting for 40.1 percent of all deaths (299 of 744 total deaths; exhibits 1 and 4).

However, our findings show that the impact of COVID-19 on mortality in the TDCJ was significantly greater for Black and Hispanic populations. In addition to COVID-19 mortality being higher, all-cause mortality rates were also higher during the pandemic period for Black and Hispanic populations when compared with the White population—a pattern not observed in the twelve months before the start of the pandemic.

The relationship between incarceration and increased risk for COVID-19 infection and mortality is well documented,<sup>1,3,20</sup> and the disproportionate representation of Black and Hispanic people in jails and prisons implies that they are more likely to experience adverse health outcomes related to COVID-19.<sup>3,24</sup> This study adds to previous research by demonstrating that there are compounding racial disparities in health outcomes within prison settings. This finding supports the suggestion made by other scholars that the structures of systemic racism



# In this ongoing public health emergency, all prison systems must do more to reduce the spread of COVID-19 in their facilities.

that lead to racial and ethnic health disparities of COVID-19 in the US as a whole also penetrate the boundaries of carceral systems.<sup>3</sup>

Steps to alleviate COVID-19 in prison systems nationwide, such as through decarceration, should be considered as long as the COVID-19 pandemic persists. Many TDCJ facilities remain at high density, above the 85 percent capacity recommendation for prisons made by previous scholars.<sup>25</sup> Although the TDCJ population did decline during the study period, most of the decline was due to a reduction in admissions rather than an increase in releases. In fact, releases declined from the previous year.<sup>13,14</sup> One priority of population reduction efforts should be the release of vulnerable people.

In addition, policy makers should also focus on strategies to mitigate racial and ethnic inequalities in COVID-19-related outcomes. First, as medical copayments have been found to be a greater deterrent to seeking care for non-White than White incarcerated people, states should at a minimum suspend all medical copayments for prison populations during public health crises. At least eleven state prison systems have removed medical copayments entirely, with eight more doing so through the duration of the

COVID-19 pandemic.<sup>22</sup> However, a majority of state prison systems have eliminated copays only for patients presenting with COVID-19 and influenza-related symptoms, and the TDCJ and several other state prisons systems have resumed charging all medical copays.<sup>22</sup> It is imperative that prisons remove monetary barriers for obtaining care while the risk for COVID-19 persists, not only to reduce severe COVID-19-related outcomes but also to address racial and ethnic inequalities.

Because vaccinations have proved successful at reducing severe COVID-19 outcomes, vaccination strategies should anticipate and address possible differences in uptake across race and ethnicity. An early study of vaccine hesitancy found that among incarcerated populations in the US, Black people were less likely to accept a vaccine than White people.<sup>11</sup> Outreach that seeks to reduce vaccine hesitancy among communities that have historically been mistreated by medical communities is vital for reducing severe COVID-19 outcomes overall and more generally for lessening inequalities in health-related outcomes across racial and ethnic groups.

## Conclusion

We found that COVID-19 mortality was significantly higher for Black and Hispanic populations compared with the White population in Texas Department of Criminal Justice custody during the first year of the COVID-19 pandemic. This increase contributed to Black and Hispanic populations having disproportionately high overall mortality rates during the first year of the pandemic, a result not found in the year before the pandemic. In this ongoing public health emergency, all prison systems must do more to reduce the spread of COVID-19 in their facilities through vaccinations, expansion and improvement of health care, reduction of medical costs, decarceration, and other preventative measures. ■

This study was presented at the Population Association of America Conference in Atlanta, Georgia, April 9, 2022. Neal Marquez was funded by a National Institute of Child Health and Human Development P2C grant (Grant

No. P2C HD042828), as well as a National Institute of Child Health and Human Development T32 grant (Grant No. T32 HD007543). Marquez, Amanda Klonsky, and Sharon Dolovich are associated with the UCLA Law COVID

Behind Bars Data Project. Dolovich was funded in part by Vital Projects Fund, Arnold Ventures, and the Centers for Disease Control and Prevention.

## NOTES

- 1 Marquez N, Ward JA, Parish K, Saloner B, Dolovich S. COVID-19 incidence and mortality in federal and state prisons compared with the US population, April 5, 2020, to April 3, 2021. *JAMA*. 2021;326(18):1865–7.
- 2 Lopez L 3rd, Hart LH 3rd, Katz MH.

- Racial and ethnic health disparities related to COVID-19. *JAMA*. 2021; 325(8):719–20.
- 3 Nowotny KM, Bailey Z, Brinkley-Rubinstein L. The contribution of prisons and jails to US racial disparities during COVID-19. *Am J Public Health*. 2021;111(2):

- 197–9.
- 4 Carson AE. Prisoners in 2020—statistical tables [Internet]. Washington (DC): Department of Justice, Bureau of Justice Statistics; 2021 Dec [cited 2022 Sep 8]. Available from: <https://bjs.ojp.gov/content/pub/pdf/p20st.pdf>

- 5 Marshall Project. A state-by-state look at 15 months of coronavirus in prisons [Internet]. New York (NY): The Project; 2021 Jul 1 [cited 2022 Sep 8]. Available from: <https://www.themarshallproject.org/2020/05/01/a-state-by-state-look-at-coronavirus-in-prisons>
- 6 Yehia BR, Winegar A, Fogel R, Fakhri M, Ottenbacher A, Jesser C, et al. Association of race with mortality among patients hospitalized with coronavirus disease 2019 (COVID-19) at 92 US hospitals. *JAMA Netw Open*. 2020;3(8):e2018039.
- 7 Texas Department of Criminal Justice. Monthly high value dataset [Internet]. Huntsville (TX): TDCJ; 2022 [cited 2022 Sep 8]. Available for download from: [https://www.tdcj.texas.gov/documents/High\\_Value\\_Data\\_Sets.xlsx](https://www.tdcj.texas.gov/documents/High_Value_Data_Sets.xlsx)
- 8 Texas Justice Initiative. Deaths in custody [Internet]. Austin (TX): TJI; c 2022 [cited 2022 Sep 8]. Available from: <https://texasjusticeinitiative.org>
- 9 Rothman KJ. *Epidemiology: an introduction*. 2nd ed. New York (NY): Oxford University Press; 2012.
- 10 Western B, Pettit B. Incarceration and social inequality. *Daedalus*. 2010;139(3):8–19.
- 11 Stern MF, Piasecki AM, Strick LB, Rajeshwar P, Tyagi E, Dolovich S, et al. Willingness to receive a COVID-19 vaccination among incarcerated or detained persons in correctional and detention facilities—four states, September–December 2020. *MMWR Morb Mortal Wkly Rep*. 2021;70(13):473–7.
- 12 To access the appendix, click on the Details tab of the article online.
- 13 Texas Department of Criminal Justice. Statistical report 2020 [Internet]. Huntsville (TX): TDCJ; [cited 2022 Sep 21]. Available from: [https://www.tdcj.texas.gov/documents/Statistical\\_Report\\_FY2020.pdf](https://www.tdcj.texas.gov/documents/Statistical_Report_FY2020.pdf)
- 14 Texas Department of Criminal Justice. 2019 statistical report [Internet]. Huntsville (TX): TDCJ; [cited 2022 Sep 21]. Available from: [https://www.tdcj.texas.gov/documents/Statistical\\_Report\\_FY2019.pdf](https://www.tdcj.texas.gov/documents/Statistical_Report_FY2019.pdf)
- 15 Deitch M, Welch A, Bucknall W, Moreno D. COVID and corrections: a profile of COVID deaths in custody in Texas [Internet]. Austin (TX): University of Texas at Austin, Lyndon B. Johnson School of Public Affairs; 2020 Nov [cited 2022 Sep 8]. Available from: <https://law.utexas.edu/faculty/publications/2020-covid-and-corrections-a-profile-of-covid-deaths-in-custody-in-texas/download>
- 16 Bae S, Kim SR, Kim MN, Shim WJ, Park SM. Impact of cardiovascular disease and risk factors on fatal outcomes in patients with COVID-19 according to age: a systematic review and meta-analysis. *Heart*. 2021;107(5):373–80.
- 17 Harzke AJ, Baillargeon JG, Pruitt SL, Pulvino JS, Paar DP, Kelley MF. Prevalence of chronic medical conditions among inmates in the Texas prison system. *J Urban Health*. 2010;87(3):486–503.
- 18 Chin ET, Ryckman T, Prince L, Leidner D, Alarid-Escudero F, Andrews JR, et al. COVID-19 in the California State Prison System: an observational study of decarceration, ongoing risks, and risk factors. *J Gen Intern Med*. 2021;36(10):3096–102.
- 19 Wang EA, Western B, Backes EP, Schuck J, editors. *Decarcerating correctional facilities during COVID-19: advancing health, equity, and safety*. Washington (DC): National Academies Press; 2020.
- 20 Wyant BR, Harner H, Lockwood B. Gender differences and the effect of copayments on the utilization of health care in prison. *J Correct Health Care*. 2021;27(1):30–5.
- 21 Washington HA. *Medical apartheid: the dark history of medical experimentation on Black Americans from colonial times to the present*. New York (NY): Harlem Moon; 2008 Jan 8.
- 22 Herring T. COVID looks like it may stay. That means prison medical copays must go [Internet]. Northampton (MA): Prison Policy Initiative; 2022 Feb 1 [cited 2022 Sep 8]. Available from: [https://www.prisonpolicy.org/blog/2022/02/01/pandemic\\_copays/](https://www.prisonpolicy.org/blog/2022/02/01/pandemic_copays/)
- 23 Centers for Disease Control and Prevention. Symptoms of COVID-19 [Internet]. Atlanta (GA): CDC; 2022 Aug 11 [cited 2022 Sep 8]. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>
- 24 Reinhart E, Chen DL. Incarceration and its disseminations: COVID-19 pandemic lessons from Chicago's Cook County Jail. *Health Aff (Millwood)*. 2020;39(8):1412–8.
- 25 Vest N, Johnson O, Nowotny K, Brinkley-Rubinstein L. Prison population reductions and COVID-19: a latent profile analysis synthesizing recent evidence from the Texas State Prison System. *J Urban Health*. 2021;98(1):53–8.