National Institute of Justice

Literature Review and Data Analysis on Deaths in Custody

Report to Congress

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Purpose of This Report

The U.S. Department of Justice provides this report on deaths in custody as an initial step to respond to the study requirement articulated under the Death in Custody Reporting Act (DCRA) of 2013. DCRA requires states and federal law enforcement agencies to report to the Attorney General "information regarding the death of any person who is detained, under arrest, or is in the process of being arrested, is en route to be incarcerated, or is incarcerated at a municipal or county jail, State prison, State-run boot camp prison, boot camp prison that is contracted out by the State, any State or local contract facility, or other local or State correctional facility (including any juvenile facility)." See 34 U.S.C. § 60105(a). In addition, DCRA requires the Attorney General to conduct a study and submit a report to Congress using the information reported by the states and federal law enforcement agencies to "(A) determine means by which such information can be used to reduce the number of such deaths, and (B) examine the relationship, if any, between the number of such deaths and the actions of management of such jails, prisons, and other specified facilities relating to such deaths." See 34 U.S.C. § 60105 (f)(1)(A) & (B).

The Office of Justice Programs, National Institute of Justice (NIJ), is conducting research to respond to the DCRA study requirement. NIJ, in coordination with the Bureau of Justice Assistance (BJA) and the Bureau of Justice Statistics (BJS), has commissioned two studies that collectively will serve as the Department's response. The two-study approach was undertaken for reasons tied to available data. The study requirement calls for the Department to study data collected under DCRA as of 2013, however, the collection of those data by BJA did not begin until fiscal year 2020 and efforts to improve their coverage and completeness are ongoing (U.S. Department of Justice, 2022). The study is also required to use DCRA data to examine the

relationship, if any, of deaths to the "actions of management," but no data elements related to management actions, policies, or practices are specified or required for collection by DCRA. Therefore, this first study summarizes what is currently known from the research literature and available data on deaths in custody and provides the foundation for the additional information collection and analyses that will be undertaken as part of the broader second study and report.

NIJ contracted with Grant Duwe in 2021 to conduct the first study and produce the following report. Duwe is a criminologist and the research director for the Minnesota Department of Corrections. The report from the first study, which follows this introduction, reviews existing research and data focused on the prevalence, patterns, and contexts of deaths in custody, discusses their limitations, and presents findings from a new exploratory analysis of data on mortality in correctional institutions. The analysis links decedent data reported by correctional institutions to data from jail and prison censuses that include information about facility characteristics and practices. The analysis serves as an initial step in exploring factors associated with deaths in correctional institutions, however, additional information collection and analysis approaches are necessary to fully address the DCRA study requirements. As a result, the report does not issue formal recommendations for reducing deaths in custody, but rather discusses implications of the findings and opportunities for improving the future collection and analysis of data on deaths in custody.

Recognizing the need for additional research and recommendations, NIJ contracted with RTI International in late 2021 to conduct a broader three-year study involving a national-level review and analysis of policies, practices (including management practices), and available data addressing deaths in custody, along with in-depth case studies of multiple sites and agency types. Among other activities, this second study will include the collection of new information and

linkage to other data sources to respond to the DCRA study requirements, and to provide insights into the causes of deaths in custody and associated policies, practices, and standards in jails, prisons, and other specified facilities and agencies. The report resulting from the second study will develop recommendations for reducing deaths in custody and guidance for future practice and implementation. A draft of this second report is anticipated to be delivered prior to the end of the contract performance period in September 2024. Once approved by the department, the second report will also be submitted to Congress.

Executive Summary

Initially enacted in 2000, the Death in Custody Reporting Act (DCRA) placed a requirement on states to report to the U.S. Attorney General, on a quarterly basis, any deaths that occurred while people were in custody (Pub. L. No. 106-297). After DCRA was allowed to expire in 2006, Congress reenacted the law in 2014 on the heels of highly publicized fatal shootings of civilians by police (Pub. L. No. 113-242). The current statute, sometimes called DCRA 2013 to distinguish it from the original DCRA 2000, requires the Attorney General to submit a report to Congress that examines how the data collected under DCRA can be used to reduce the number of deaths in custody and the relationship, if any, between the number of deaths and the management of jails, prisons, and other specified facilities. The following provides a summary of findings from a report prepared as an initial response to this legislative requirement. This report reviews existing research literature and data focused on the prevalence, patterns, and contexts of deaths in custody, discusses their limitations, and presents findings from a new exploratory analysis of data on mortality in correctional institutions. A subsequent report will provide recommendations for reducing deaths, informed by a national review and analysis of policies, practices (including management practices), and available data addressing deaths in custody, along with in-depth case studies of multiple sites and agency types.

DCRA Reporting Requirements

DCRA requires states to provide, at a minimum, the following information on deaths that occur during the process of arrest or while individuals are confined in jails or prisons, and other specified custodial facilities: the date, time, and location of the death; the custodial agency; the circumstances associated with the death; and the name, age, gender, race, and ethnicity of the decedent.

DCRA covers a wide variety of fatalities in custody, ranging from police shootings to deaths in state and federal prisons. Deaths in custody can be grouped into three broad categories: (1) arrest-related deaths, (2) deaths in local county jails, and (3) deaths in prison facilities. Arrest-related deaths can occur while people are detained by police, about to be arrested, under arrest, or en route to being incarcerated. Jail-related deaths can take place not only when people are detained while awaiting trial or sentencing but also after conviction for people who are serving a sentence — typically of 365 days or less — in a city or county correctional facility. Meanwhile, prison-related deaths can occur for people who are confined in a state or federal correctional facility, usually following sentencing for a felony offense conviction.

DCRA Data Collection Challenges

The Bureau of Justice Statistics (BJS) has collected and analyzed data on deaths in custody dating back to the initial enactment of DCRA in 2000. BJS has, for the most part, been able to achieve complete coverage of deaths at state correctional facilities and local jails through its Mortality in Correctional Institutions (MCI) data collection program. Data on arrest-related deaths, on the other hand, have been incomplete, with research showing that roughly half of all arrest-related deaths were not captured through BJS's efforts in response to DCRA 2000. The vast majority of arrests take place at the city or county level, and those entities are, with few exceptions, not obligated to report arrest-related deaths to the state or to federal agencies. Due to the concerns over missing data, BJS suspended collecting data on arrest-related deaths in 2014. More recently, the Bureau of Justice Assistance (BJA) assumed responsibility for DCRA-related data collection efforts and began receiving submissions from states in late 2019. The current report does not assess the BJA data, as efforts are ongoing to improve the quality and completeness of DCRA reporting by states under the current statutory requirements.

To penalize states that do not meet reporting requirements, DCRA 2013 stipulates that up to 10% of Byrne Justice Assistance Grant (JAG) funding may be withheld from states that do not comply. Compliance, however, is not defined within the statute — and, perhaps more important, many law enforcement agencies responsible for reporting arrest-related deaths do not receive JAG funding. Moreover, despite noting that the relationship between deaths and the actions of correctional facility administrators (i.e., "management") may be an important consideration, the DCRA statute does not identify any types of management data that the states are required to report.

The Prevalence and Patterns of Deaths in Custody

The length of time people are in custody varies significantly, when comparing arrest-related deaths to those deaths that occur in jails or prisons. When arrest-related deaths occur, the decedents are often in custody for minutes or hours. People who die while incarcerated in jails are usually in custody for hours, weeks, or months. In fact, about 40% of jail-related deaths involve people who have been incarcerated for less than a week. Those who die in prison are typically in custody for the longest period of time, with most prison-related deaths involving people who have been imprisoned for more than a year. The difference in custody durations for deaths related to arrest, jails, and prisons has a substantial influence on the patterns observed in each category.

The best, most recent evidence available suggests there are likely between 6,500 and 7,000 deaths in custody each year in the United States. Although the MCI data provide accurate annual counts of deaths in jails and prisons only, a recent study by Banks et al. (2019) makes it possible to develop an estimate of the total annual number of deaths in custody. Extrapolating three months of data on arrest-related deaths in 2015 collected by Banks and colleagues (2019) over a

full year, the data shown in the table below indicate an estimated total of 6,470 deaths in custody for 2015.

Among the estimated 6,470 deaths in custody for 2015, the data show that 57% occurred in prisons, 26% during arrest, and 17% in jails. The leading cause of death is different for those related to arrest (homicide) in comparison to jails and prisons (illness). Given the relatively short durations in custody for arrest-related deaths, the majority (81%) are either homicides or suicides. Although arrest-related homicides accounted for 90% of all homicides in custody, these incidents made up 18% of the total estimated deaths.

Due in part to longer custody durations for people in prison, the percentage of deaths resulting from homicide and suicide — less than 10% — is almost the inverse of what has been found for arrest-related deaths. As with prisons, the mortality rate due to homicide for jails is relatively low. The local jail mortality rate from suicides, on the other hand, is about twice as high as in state and federal prisons, and 40% of these deaths have been found to take place within the first week of jail incarceration. As shown in the table below, suicides accounted for 14% of the total estimated number of deaths in custody for 2015. Of these, 42% took place in jails, 34% during arrest, and 25% in prisons.

Causes of Death by Type of Death in Custody, 2015

Cause of Death	Arrest-Related Deaths	Deaths in Jails	Deaths in Prisons	Total
Total	1,696	1,092	3,682	6,470
Percentage of All Deaths	26.2%	16.9%	56.9%	
Illness/Natural Causes	24	519	3,225	3,768

Percentage Within Cause	0.6%	13.8%	85.6%	
Percentage of Total				58.2%
Percentage Within Custody Type	1.4%	47.5%	87.6%	
Homicide	1,072	30	84	1,186
Percentage Within Cause	90.4%	2.5%	7.1%	
Percentage of Total				18.3%
Percentage Within Custody Type	63.2%	2.7%	2.3%	
Suicide	300	368	219	887
Percentage Within Cause	33.8%	41.5%	24.7%	
Percentage of Total				13.7%
Percentage Within Custody Type	17.7%	33.7%	5.9%	
Drug/Alcohol Intoxication	0	92	81	173
Percentage Within Cause	0%	53.2%	46.8%	2.7%
Percentage of Total				2.7%
Percentage Within Custody Type	0%	8.4%	2.2%	
Accident	200	26	39	265
Percentage Within Cause	75.5%	9.8%	14.7%	
Percentage of Total				4.1%
Percentage Within Custody Type	11.8%	2.4%	1.1%	
Unknown/Undetermined	100	57	34	191
Percentage Within Cause	52.4%	29.8%	17.8%	
Percentage of Total				3.0%

Percentage Within Custody Type	5.9%	5.2%	0.9%

The differences in manners of death across the three custody types are also revealed in the age disparities for each one. Given that homicide victims are generally younger than those who die of illnesses and natural causes, people who die during the arrest process are, on the whole, younger than those who die in jails or prisons. Conversely, with roughly 9 in 10 prison deaths attributable to illness, more than half of all prison decedents are age 55 or older at the time of their death. This age group — 55 and older — has accounted for a steadily growing percentage of deaths in both jails and prisons since the 2000s.

Relative to their share of the U.S. residential population, males and Black individuals are overrepresented for all three types of custody deaths. Notably, the gender and racial/ethnic distribution is similar across deaths related to arrest, jails, and prisons. For these three types of custody deaths, the percentages of males range between 87% and 96%; the percentages of Black people range between 26% and 33%.[1] This overrepresentation reflects, to a large extent, the fact that males and Black individuals are disproportionately likely to be arrested, jailed, and imprisoned. Similarly, the arrest, jail, and prison mortality rates have been found to be highest for people who are either suspected or convicted of a violent offense in comparison to other types of offenses.

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[1] Males make up a little less than half (49.5%) of the U.S. population according to the most recent Census estimates (https://www.census.gov/quickfacts/fact/table/US/LFE046220), and people identifying as Black or African American account for 14% of the population.

Arrest-Related Deaths

The number of studies on arrest-related deaths has grown sharply over the last five years; much of this research has focused on police homicides and, more narrowly, officer-involved fatal shootings. Due to a lack of consensus, existing research has often used multiple benchmarks to evaluate disparities, including demographic characteristics and measures of crime such as arrests.

Studies using population-based benchmarks have generally found that people of color are disproportionately likely to be the victims of fatal police shootings. When measures of crime have been used as benchmarks, however, studies have not found disparities in fatal shootings by law enforcement. The findings from several studies suggest that racial/ethnic disparities in fatal police shootings are also influenced by community-level factors, including racial residential segregation, higher levels of concentrated disadvantage, interpersonal firearm violence, and rates of violent crime.

Although a few studies have examined the characteristics of officers involved in shootings, existing research has yet to identify individual-level factors that are strong, robust, and consistent predictors of civilian shootings.

Deaths in Jails

The mortality rate in local jails declined substantially from 1983 to 2019. This drop was due almost entirely to a reduction in suicides. In 1983, suicides accounted for more than half (56%) of all jail deaths in the United States, and the suicide rate was 129 per 100,000 individuals. Ten years later, however, the suicide rate had dropped to 54 per 100,000 individuals, which is close to what has been observed recently (a rate of 49 in 2019).

The suicide rate observed in local jails across the country is about two to three times higher than the rate found in U.S. prisons. A number of factors have been associated with suicides among the jail population. For example, higher jail suicide rates have been observed for males, non-Hispanic white individuals, and people incarcerated for violent offenses. Mental illness has long been recognized as a risk factor for suicide, and serious psychological distress has been found to be much higher among people in jail compared to the general population.

During the 2000-2019 period, suicide was the cause of death in nearly one-third of all U.S. jail deaths, while illnesses of all types were responsible for 50% of deaths. Heart disease was the most common single cause of illness-related death, making up nearly half of the illness-related deaths and nearly one-quarter of all jail deaths. Compared to the general population, people in jail were also more likely to report ever having a chronic medical condition, especially high blood pressure, stroke, diabetes, heart-related problems, asthma, or cirrhosis.

Deaths in Prison

Since the early 1980s, the prison mortality rate has been relatively stable. Over the last 40 years, the rate (per 100,000 individuals) has ranged from a low of 228 in 1990 to a high of 347 in 2018. The prison mortality rate has recently been rising and has been above 300 since 2016. As a result of the longer stays in confinement typically found among people in prison, the vast majority (87%) of deaths in state and federal prisons are related to illness and disease. Recent data show that cancer and heart, liver, and respiratory diseases combined were responsible for roughly two-thirds of all prison deaths from 2001 to 2019. Cancer and heart disease, in particular, together accounted for more than half of the deaths.

Combined, suicide and homicide were responsible for less than 10% of all prison deaths from 2001 to 2019, although deaths by both causes have seen increases in recent years. People in prison who die from homicides are more likely to be males who were imprisoned for violent offenses. Higher suicide rates in prison have been found for those who are males, non-Hispanic white individuals, imprisoned for violent offenses, married, housed in a single cell, serving a life sentence, have recently had suicidal thoughts, or have a history of attempted suicide.

Research has shown that individuals in prison actually have a mortality "advantage" relative to the U.S. resident population, at least in terms of death by most illnesses. Despite having a lower overall mortality outcome than their counterparts in the adjusted resident population, people in prison tend to die at a higher rate from liver disease, septicemia, and AIDS-related causes, which may reflect risky lifestyles and social and economic disadvantages prior to imprisonment. Serving time in prison increases the odds of dying in the community following release from prison, which suggests any protective effects of prison are fleeting. People in prison also have elevated mortality rates for suicide and homicide relative to the U.S. residential population.

The Relationship Between Prison Admissions and Deaths in Prison

The relationship between prison admissions and deaths in prison was evaluated with data from MCI and the National Corrections Reporting Program. The analyses of these data showed that increased mortality in prisons was associated with admissions involving older individuals in prison, individuals serving longer sentences, and those admitted for violent offenses. The results also indicated that an increased number of Black and Hispanic individuals admitted to prison was associated with more deaths overall, which may reflect social and economic disadvantages prior to imprisonment. Whereas a greater number of suicides in prison was associated with admissions of males and individuals age 55 and older, fewer suicides were associated with more admissions

of Black people, individuals ages 25-34 and 45-54, and those with sentences of between one and two years. Growth in homicide deaths was associated with increased admissions of Hispanic individuals, people ages 35-44, new court commitments, individuals in prison for violent or property offenses, and those with longer sentences. An increase in deaths resulting from alcohol/drug intoxication was significantly related to more admissions of individuals between the ages of 35 and 54, new court commitments, people in prison for violent or public order offenses, and persons serving sentences of between two and 10 years.

Factors Associated With Unnatural Deaths in Jails and Prisons

With the vast majority of deaths in correctional institutions due to illness and natural causes, many are difficult to prevent given the prevalence of preexisting conditions among those who enter jails and prisons. Still, there are some types of deaths in correctional facilities that may be more preventable and can be more readily analyzed given available data — namely, homicides, suicides, and accidental intoxication deaths. After linking facility-level data collected from the 2019 census of jails and adult correctional facilities (both state and federal) with 2019 MCI data, this report evaluated whether the incidence of homicides, suicides, and accidental intoxication deaths may be influenced by factors such as staffing levels, overcrowding, and the availability of programming.

Results from the analysis of deaths in jails showed that facilities with larger ratios of incarcerated individuals to staff had a significantly higher likelihood of homicides and suicides. Jails located in urban areas were significantly more likely to have homicides, suicides, and accidental intoxication deaths. Facilities that offered opioid behavioral treatment had significantly fewer suicides, although those providing opioid screening and reversal medications had significantly fewer accidental intoxication deaths.

For deaths in state and federal prisons, the analysis found that as the number of individuals in maximum custody beds in a prison increased, so did the likelihood of homicides, suicides, and accidental intoxication deaths. Facilities with restrictive housing beds had a significantly higher likelihood of having a homicide or accidental intoxication death. The effects for the availability of programming were inconsistent across the three types of unnatural deaths, although the results suggest that prisons offering some types of programming had a lower likelihood of homicides and accidental intoxication deaths.

Implications for Future Research and Data Collection

By collecting and analyzing data, the overarching goal of DCRA is to reduce the number of deaths in custody, which may be possible to achieve by implementing empirically based preventive strategies. Although findings from the exploratory analysis of the MCI data presented in this report shed some light on ways in which jails and prisons might be able to reduce mortality, it is worth emphasizing that they are based on analyses of only one year of facility census data. The second study to be conducted by NIJ and RTI International will focus on particular factors identified here that may lead to better mortality outcomes in prisons and jails: levels of staffing, inmate overcrowding, medical resources, external oversight, programming availability, and the use of any type of segregated housing. Additional research is needed to identify evidence-based strategies that jails and prisons could undertake to reduce mortality, and that law enforcement agencies could undertake to reduce arrest-related deaths. To help identify promising mortality-reduction strategies that are rooted in the best available evidence, the data collection process for DCRA must improve.

Review of the available data point to several opportunities for advancing the collection and analysis of data on deaths in custody. First, because the greatest limitation with DCRA involves

the collection of data for arrest-related deaths, providing law enforcement agencies with incentives and technical assistance for reporting these deaths would likely improve compliance. Second, the coverage, quality, and completeness of data collected under DCRA would benefit from implementation by an organization or individuals with specific expertise in the collection, compilation, processing, and analysis of information for statistical purposes. BJS has demonstrated proficiency in collecting mortality data from correctional facilities in the past. Third, collecting more detailed data at the agency, facility, and jurisdictional levels on management policies and practices and facility/agency characteristics would help further describe, explain, and ultimately prevent deaths from occurring. Finally, there is a need for additional research that focuses specifically on arrest-related deaths, deaths in jails, and deaths in prisons due to notable differences across each of the three types of custody deaths.

Introduction

In the wake of highly publicized shootings of civilians by law enforcement, especially the fatal

shooting of Michael Brown in Ferguson, Missouri, in August 2014, Congress reinstituted the

Deaths in Custody Reporting Act (DCRA) in December 2014. Initially enacted in 2000, DCRA

placed a requirement on states to report, on a quarterly basis, any deaths that occur while people

are in custody. Although the original version of DCRA expired in 2006, the current iteration,

sometimes called DCRA 2013 to distinguish it from the original DCRA 2000, does not have a

sunset provision.

DCRA 2013 covers a wide variety of fatalities in custody — from law enforcement shootings to

deaths in state and federal prisons. In general, however, deaths in custody can be grouped into

three broad categories: (1) arrest-related deaths, (2) deaths in local county jails,[1] and (3) deaths in

prison facilities. Arrest-related deaths can occur while people are detained by law enforcement,

under arrest, about to be arrested, or en route to being incarcerated. Jail-related deaths can take

place not only when people are detained while awaiting trial or sentencing but also after

conviction for people who are serving a sentence — typically of 365 days or less — in a city or

county correctional facility.[2] Meanwhile, prison-related deaths can occur for people who are

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[1] According to the Bureau of Justice Statistics, jails include facilities that have the capacity to hold someone for more than three days, whereas any incarceration for a period of less than 72 hours is considered a law enforcement lockup. In order for a death to be classified as one that took place in jail, the decedent had to have been booked into the jail (Bureau of Justice Statistics Glossary, 2021).

[2] Jails are confinement facilities that generally operate under the authority of a sheriff, police chief, or county or city administrator. A small number of jails are privately operated. Regional jails include two or more jail jurisdictions with a formal agreement to operate a jail facility. Facilities include jails, detention centers, county or city correctional centers, special jail facilities (such as medical or treatment centers and prerelease centers), and temporary holding or lockup facilities that are part of a facility's combined function. Jails are intended for adults but can hold juveniles before or after their cases are adjudicated (Bureau of Justice Statistics Glossary, 2021).

confined in a state or federal correctional facility, usually following sentencing for a felony

offense conviction.[3]

The length of time people are in custody varies significantly from arrest-related deaths to those

that occur in jails or prisons. When arrest-related deaths occur, the decedents are often in custody

for minutes or hours. People who die while incarcerated in jails are usually in custody for days,

weeks, or months. In fact, about 40% of jail-related deaths involve people who have been

incarcerated for less than a week (Carson and Cowhig, 2020a).[4] Those who die in prison are

typically in custody for the longest period of time. Indeed, most prison-related deaths involve

people who have been imprisoned for more than a year (Carson and Cowhig, 2020b). As shown

later, the difference in custody durations for deaths related to arrest, jails, and prisons has a

substantial influence on the patterns observed for each one.

DCRA 2013 requires states to provide, at a minimum, information on the date, time, and location

when a death in custody occurs (see Appendix A for the full statute). Moreover, it requires states

to identify the agency, describe the circumstances of the death, and report the name, age, gender,

race, and ethnicity of the decedent. The goal behind collecting these data from the states is,

ultimately, to reduce the number of deaths that take place while people are in custody. To this

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[3] Prisons are long-term confinement facilities that are run by a state or the federal government and typically hold persons convicted of a felony or those with sentences of more than one year imposed by state or federal courts. People in prison who are under the jurisdiction of state or federal correctional officials can be held in publicly or privately operated secure or nonsecure facilities, including state or federal prisons, boot camps, halfway houses, treatment facilities, hospitals, or another state's facilities (Bureau of Justice Statistics Glossary, 2021). Although state and federal prisoners can also be held in local jails either ahead of transfer to prison after conviction, or through a contract to purchase bedspace in the jail, the nature of the DCRA data collection requires that the death of a prisoner held in the custody of a local jail be counted among that jail's deaths.
[4] Recent changes in state sentencing laws have resulted in persons convicted for felonies and sentenced to multiple years of incarceration to be served in local jails.

end, the statute suggests the relationship between deaths and the actions of law enforcement and correctional facility administrators (i.e., "management") may be an important consideration.

Notwithstanding the laudable goal of reducing deaths in custody, states have yet to consistently produce the data delineated within the statute. Although DCRA implies that gaining a better understanding of the "actions of management" may be helpful in reducing fatalities, it does not require any type of management data to be provided by the states. More importantly, data on arrest-related deaths have been decidedly incomplete. DCRA places the reporting requirement at the state level. The vast majority of arrests, however, take place at the city level, and, with few exceptions, cities are not obligated to report arrest-related deaths to the state. Similarly, local jails are operated by the city or county and are only required to report deaths to a central state reporter in a few states. When the Bureau of Justice Statistics (BJS) began to collect mortality data in 2000, it found that going directly to local jail administrators and state departments of corrections resulted in much better response rates and data quality. Since this method was not consistent with the state-level reporting requirement written in DCRA 2013, BJS ended collection of its Mortality in Correctional Institutions (MCI) program.

To encourage states to meet reporting requirements, DCRA 2013 stipulates that up to 10% of Byrne Justice Assistance Grant (JAG) funding may be withheld from states that do not comply, although compliance is never defined in the law. Given that not all agencies required by DCRA 2013 to report death data to a central state reporter actually receive JAG funding from the state, the DCRA's withholding provision does not provide much of an incentive to report. Nevertheless, in 2016 the U.S. Department of Justice (DOJ) shifted the data collection responsibility for DCRA 2013 from BJS to the Bureau of Justice Assistance (BJA), the grant-making office that administers JAG funds. Although BJS is a federal statistical agency that may

not collect data for law enforcement or regulatory purposes, BJA is not bound by similar requirements to collect data for statistical purposes only.

The DCRA statute requires the Attorney General to submit a report to Congress that examines how the data collected could be used to reduce the number of deaths in custody. This requirement assumes that the DCRA information collected from the states includes managerial practices and facility/agency characteristics that could contextualize the death data. This report represents the initial effort to satisfy this legislative requirement. However, data collection challenges have impeded the ability to conclusively determine whether the actions of management have influenced the rate at which deaths in custody occur.

Despite these challenges, BJS has collected and analyzed data on deaths in custody dating back to the initial enactment of DCRA 2000. As interest in arrest-related deaths and, more narrowly, law enforcement homicides has grown over the past five years, so has the number of scholarly studies on the topic. This report reviews the emerging academic literature on deaths in custody and, in particular, arrest-related deaths. It also discusses the reports produced by federal agencies such as BJS, including recent studies that focus on deaths in custody at the federal level (Brooks and Scott, 2021; Brooks, Scott, and Whyde, 2020).

BJS launched its MCI program (formerly called the Deaths in Custody Reporting Program) in the early 2000s; it has generally achieved comprehensive and accurate counts of deaths in correctional institutions since the beginning of this century. BJS also maintains the National Corrections Reporting Program (NCRP), which has collected individual-level administrative data annually on prison admissions and releases since 1983. Moreover, since the early 1970s, BJS has periodically collected facility, inmate, and staff data through its censuses of local jails and state

and federal prisons. To further advance what is known about deaths in correctional institutions, this report analyzes the relationship between prison admissions and deaths in U.S. state prisons. More specifically, this report connects the NCRP data with the MCI data to assess the extent to which broad, system-level trends may influence not only the total number of deaths in prisons but also the manner of those deaths. It also links the MCI data with the jail and prison census data for 2019 — the most recent year these censuses were conducted — to assess whether there are correctional staff and facility characteristics associated with deaths in correctional institutions.

The report concludes by summarizing the evidence from the existing literature and the results from the analyses of the MCI, NCRP, and correctional facility census data. It then considers implications for practices and identifies several opportunities to improve the collection and analyses of data for DCRA in the future.

Arrest-Related Deaths

A variety of data sources have been used to measure arrest-related deaths, and each one has been found to have significant limitations. Research has shown, for example, that data from the Federal Bureau of Investigation's Supplementary Homicide Reports (SHR) — a voluntary program involving law enforcement agencies nationwide — significantly undercount police homicides in the United States (Finch et al., 2021). The Centers for Disease Control and Prevention maintains the National Vital Statistics System (NVSS) and the National Violent Death Reporting System (NVDRS), both of which have been used to measure arrest-related deaths. NVSS has been found to contain significant measurement error. NVDRS has generally fared better than either SHR or NVSS (Barber et al., 2016) because it combines both police agency reporting and death certificate data to identify homicides by police (Paulozzi et al., 2004). Unfortunately, the NVDRS data are currently limited in scope and availability. Although NVDRS now includes all 50 states, more than one-third of the states were added within the past five years. With many states in the early stages of data collection, NVDRS does not currently provide comprehensive coverage of arrest-related deaths.

More recently, efforts have been undertaken to collect data on use of force by law enforcement. However, not all instances of law enforcement use of force result in death. Law enforcement homicides account for, at most, two-thirds of all arrest-related deaths (Banks et al., 2019). Other causes of deaths that occur during the process of arrest include suicide,[5] traffic accidents, and natural causes such as a heart attack. Thus, even if use-of-force data captured all law

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[5] Suicides include self-inflicted deaths that result from suffocation (e.g., hanging, strangulation, asphyxia, anoxia, and other methods of reducing oxygen intake), exsanguination (e.g., all types of sharp force trauma or other injuries that cause acute loss of blood), poisoning (e.g., drug overdoses), use of firearms, and other methods, including self-inflicted blunt force trauma, dehydration, and unknown or unreported causes.

enforcement homicides, they would still miss the one-third of all arrest-related deaths that cannot directly be linked to law enforcement use of force.

The most widely used source of data has been the Arrest-Related Deaths Program (ARDP) developed by BJS in 2003. ARDP was designed to be a census of all arrest-related deaths, including law enforcement homicides (justifiable and nonjustifiable), suicides, deaths due to natural causes, deaths resulting from accidents, and those with undetermined or unknown manners of death (Banks et al., 2019). By relying solely on voluntary reporting by law enforcement agencies, ARDP operated similarly to SHR from 2003 until it was suspended in 2014. ARDP was discontinued because of research that demonstrated these data were substantially incomplete. For example, Borrego (2011) compared arrest-related deaths in ARDP to open-source, web-based media reports of arrest-related deaths in a stratified, random sample of 12 states during 2005. The study found that all types of arrest-related deaths, including law enforcement homicides, were not accurately and reliably reported.

In a more recent study, Banks and colleagues (2015) found that from 2003 to 2009 and in 2011, ARDP captured, at most, only 49% of all law enforcement homicides in the United States. In comparison, SHR was estimated to capture approximately 46% of law enforcement homicides. Although there was some overlap between ARDP and SHR, an estimated 28% of the law enforcement homicides in the United States were not captured by either system. Banks and colleagues (2015) also found that increased use of open-source data helped improve the potential identification of arrest-related deaths. Accordingly, they recommended that ARDP coverage could be improved by providing a more centralized method for identifying arrest-related deaths and providing incentives for law enforcement agencies to confirm or identify deaths that occur in

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the course of an arrest and provide information on the circumstances (Banks, Couzens, and Planty, 2015).

Similar to the research by Banks and colleagues (2015), Williams and colleagues (2019) found that use of multiple data sources helped improve the identification of officer-involved shooting fatalities — the type of arrest-related death that often captures the most attention. Comparing data from government databases with a content analysis of open-source records on incidents that occurred in the United States between 2006 and 2015, Williams and colleagues (2019) identified a total of 7,869 officer-involved shooting fatalities. They also found that fatalities increased from 594 in 2006 to 1,007 in 2015. Depending on the reporting year, government data sources reported a low of 46% of incidents to a high of 75%. According to Williams and colleagues (2019), open-source research can help identify 30% to 45% more cases than official federal or state databases and can also provide more detailed data about fatal shootings that occur.

The Prevalence and Patterns of Arrest-Related Deaths

Despite the data limitations noted above, existing research, particularly over the past five years, has shed light on the prevalence and patterns of arrest-related deaths. Studies have not only examined the extent of homicides among arrest-related deaths, but also who is more likely to die during an arrest. In addition, research has examined the characteristics of the officers involved and whether there are community-level factors that may be associated with arrest-related deaths.

Although the aforementioned limitations with government databases have hindered efforts to accurately document the true prevalence of arrest-related deaths, the study by Banks et al. (2019) provides an estimate. After using a combination of data sources, including open-source information and surveys of law enforcement agencies and medical examiners' and coroners'

offices, Banks and colleagues (2019) identified 424 arrest-related deaths that took place in the United States between June 1 and August 31, 2015. When the number of arrest-related deaths during this three-month period is extrapolated over a full year, the annual incidence of arrest-related deaths approaches 1,700.[6]

Existing research has consistently shown that homicide is the leading cause of arrest-related deaths. In one of the initial studies using ARDP data, Mumola (2007) reported that homicides by law enforcement officers made up 55% of all deaths during arrests by state and local agencies. Moreover, no other cause of arrest-related death was reported half as often as homicide. Indeed, Mumola (2007) reported that drug and alcohol intoxication accounted for 13% of all deaths, followed by suicides (12%), accidental injuries (7%), and illness or natural causes (6%). Among the homicides by law enforcement, three-quarters involved arrests for a violent crime (Mumola, 2007).

In a later study, Burch (2011) noted that a total of 4,813 deaths were reported to ARDP from 2003 to 2009. Of these, about 6 in 10 deaths (2,931) were classified as homicides by law enforcement personnel, and 4 in 10 (1,882) were attributed to other manners of death. Suicide and death by intoxication each accounted for 11% of reported arrest-related deaths, accidental injury for 6%, and natural causes for 5%. Similarly, of the 424 arrest-related deaths identified in the Banks et al. (2019) study, 63% were homicides, 18% were suicides, and 12% were classified as accidents.

Although homicides account for roughly 6 of every 10 arrest-related deaths, existing research does not provide support for the notion that this type of arrest-related death has increased since

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[6] The extrapolated data presented do not adjust for any seasonal patterns that might exist in arrest-related deaths.

the death of Michael Brown in August 2014. For example, Campbell and colleagues (2018) reported that although there are short-term fluctuations in the number of people killed by law enforcement, they should not be adduced as a substantively meaningful trend. Rather, Campbell and colleagues found no evidence that the number of fatal law enforcement shootings either increased or decreased after August 2014 (Campbell, Nix, and Maguire, 2018).

Existing research has consistently shown that there are distinct demographic patterns for arrest-related decedents. Males are disproportionately likely to die during the process of arrest. Indeed, Burch (2011) reported that although men make up roughly three-fourths of reported arrests, they account for 95% of arrest-related deaths. Moreover, arrest-related decedents tend to be older than the total arrest population. Whereas people younger than age 25 account for 45% of reported arrests, they make up less than a quarter (22%) of arrest-related deaths (Burch, 2011).

Although the racial distribution for arrest-related decedents is similar to that observed for arrests in general, the evidence shows that Black individuals are more likely to die during the process of arrest relative to their share of both the U.S. resident population and those arrested. Burch (2011) reported that Black people accounted for 32% of arrest-related deaths and 28% of all arrests between 2003 and 2009. These rates are more than double the percentage of Black individuals in the United States, which was 13% in 2010 (U.S. Census Bureau, 2011).

Over the past five years, a number of studies have taken a closer look at the racial and ethnic disparities observed in law enforcement homicides and, more narrowly, fatal shootings by officers. Due to a lack of consensus, existing research has often used multiple benchmarks to evaluate disparities. A study by Edwards and colleagues (2019) found that Black men and women, American Indian/Alaska Native men and women, and Latino men have a higher lifetime

risk of being killed by law enforcement than their white peers. In contrast, compared to white individuals, Latina women and Asian/Pacific Islander men and women had a lower risk of being killed by law enforcement. The average lifetime odds of being killed by law enforcement were estimated to be 1 in 2,000 for men of all race/ethnicities and about 1 in 33,000 for women of all race/ethnicities. Although Edwards and colleagues (2019) reported that risk peaks between the ages of 20 and 35 for all racial/ethnic groups, risk was found to be highest for Black men, who face about a 1 in 1,000 chance of being killed by law enforcement over the life course (Edwards, Lee, and Esposito, 2019).

In another study, Fagan and Campbell (2020) found that Black suspects were more than twice as likely to be killed by law enforcement than persons of other racial or ethnic groups, even when there were no obvious circumstances during the encounter that would make the use of deadly force reasonable. Examining nearly 3,000 fatal law enforcement shootings from 2015 to 2017, Hemenway et al. (2019) reported that Black victimization rates were more than twice those for white individuals, with Hispanic victimization rates in between. Although there was little overall difference in rates between urban and rural areas, Hemenway and colleagues (2020) found higher rates of fatal law enforcement shootings in rural areas for white individuals and higher rates in urban areas for Black individuals. And in a study that analyzed 990 fatal law enforcement shootings identified by *The Washington Post* in 2015, Nix and colleagues (2017) reported that Black civilians were more than twice as likely as white civilians to have been unarmed during the confrontation that led to their deaths.

Overall, the evidence shows that people of color are disproportionately likely to be the victims of fatal law enforcement shootings, although the findings from existing research have offered several different explanations for this. A study by Scott et al. (2017), for example, found that

officers are more likely to shoot Black suspects, even when race-based differences in crime are held constant. Similarly, when using population, police-citizen interactions, or total arrests as a benchmark, Tregle and colleagues (2019) observed that Black individuals appear more likely than white individuals to be fatally shot by officers. However, when Tregle and colleagues (2019) used violent crime arrests or weapons offense arrests as benchmarks, they found that Black individuals appear less likely to be fatally shot by officers.

In their study, Worral and colleagues (2018) found that Black suspects were approximately one-third as likely to be shot as other suspects and were not disproportionately the target of law enforcement shootings. Likewise, when adjusting for crime, Cesario and colleagues (2019) found no systematic evidence of anti-Black disparities in fatal shootings, fatal shootings of unarmed citizens, or fatal shootings involving misidentification of harmless objects. Among 144 possible statistical tests, their analyses showed only one significant anti-Black disparity. Cesario and colleagues (2019) reasoned that given crime rate differences, exposure to law enforcement likely accounts for the higher per capita rate of fatal law enforcement shootings for Black individuals, at least when analyzing all shootings. This conclusion was echoed by Streeter (2019), who suggested that racial disparity in the rates of lethal force is most likely driven by higher rates of law enforcement contact among Black individuals rather than racial differences in the circumstances of the interactions or officer bias in the applications of lethal force.

A recent study by Davis and colleagues (2018) revealed that although law enforcement was equally likely to initiate contact with Black and white people (11% each), Black people (9.8%) were more likely than white (8.6%) and Hispanic people (7.6%) to be the driver in a traffic stop. A higher percentage of Black individuals (1.5%) experienced street stops than white (0.9%) and Hispanic individuals (0.9%) (Davis, Whyde, and Langton, 2018). Regardless of whether the

racial and ethnic disparities in arrest-related deaths are the result of differences in the rates of law enforcement contact, the recent study by Lett et al. (2021) showed that the rate of fatal law enforcement shootings for people of color had not increased since 2015. Rather, the rate was constant from 2015 to 2020.

Community Characteristics

A small but growing number of studies over the past several years has examined whether there are any community-level characteristics that may have an influence on the incidence of fatal law enforcement shootings. Analyzing data at the city level, Siegel et al. (2019) reported that the level of racial residential segregation was significantly associated with the racial disparity in fatal law enforcement shooting rates. Moreover, Siegel and colleagues (2019) argued that racial residential segregation helps explain the magnitude of the Black-white disparity in fatal shootings.

In a follow-up study using data at the census tract level, Siegel et al. (2021) found that higher levels of concentrated disadvantage[7] and interpersonal firearm violence were significant predictors of the likelihood of any fatal law enforcement shooting occurring in that tract. Siegel et al. (2021) also reported that a significant predictor of whether the victim was Black was knowing that the victim was unarmed. Three other significant predictors of a law enforcement shooting victim being Black were a higher proportion of Black residents in the census tract, a greater number of police officers in the city, and a higher level of Black-white residential segregation in the state (Siegel et al., 2021).

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[7] Concentrated disadvantage measures the percentage of households within a census tract that are headed by females, have individuals on public assistance, are under the poverty level, have individuals under the age of 18, and have individuals who are unemployed.

Along the same lines, Gaston et al. (2020) found that violent crime and, to a lesser extent, social disorganization[8] were significant predictors of law enforcement killings of males, regardless of their race or ethnicity, and of Hispanic women. Neither factor, however, had a significant effect on Black or white women. Gaston and colleagues (2020) found some evidence that racial conflict[9] had an influence on law enforcement homicides across all gender and racial/ethnic categories.

Officer Characteristics

Existing data on fatal law enforcement shootings tend to lack details about the officers involved, which makes it challenging to examine whether racial disparities vary by officer characteristics. Using data from the New York City Police Department and the Major Cities Chiefs Association, Ridgeway (2020) found that older individuals who became police officers later in their lives had a lower shooting risk. In fact, for each additional year of their recruitment age, the odds of being shooters declined by 10%. Both officer race and prior problem behavior (e.g., losing a firearm, crashing a department vehicle) predicted up to three times greater odds of being involved in a shooting, although officers who made numerous misdemeanor arrests were four times less likely to shoot (Ridgeway, 2020). However, in a larger follow-up study, Ridgeway and colleagues (2021) applied similar methods with data from 55 law enforcement agencies in the Major Cities Chiefs Association and identified no officer characteristics that were strongly predictive of the number of rounds fired or the decision to stop shooting.

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[8] The social disorganization construct typically measures the extent to which a community is socioeconomically disadvantaged. Thus, in the Gaston et al. (2020) study, measures of social disorganization included the percentage of unemployed residents, individuals living below the federal poverty line, single-mother households, residents younger than age 18, and vacant housing units.

[9] In the Gaston et al. (2020) study, the racial conflict concept incorporated multiple measures, including the racial composition of a community, the percentage of foreign-born residents, and racial income competition. As economic disparities between races dissipate, it is theorized that racial income competition increases.

Deaths in Correctional Institutions

In contrast to the available data for arrest-related deaths, which have not been comprehensive, there are reliable and accurate data on deaths in correctional facilities since 2000 — the year that BJS began its MCI data collection program for deaths that take place in jails and prisons. Indeed, prior research has shown that MCI has obtained 100% coverage for prisons and 98% coverage for jails (Carson and Cowhig, 2020a, 2020b).

As noted earlier, the U.S. Department of Justice determined in 2016 that BJA should manage the collection of data for DCRA 2013. Yet because BJA needed time to develop and implement the DCRA protocol and web-based data entry system, BJS agreed to collect MCI data through the end of calendar year 2019. Given that BJA began collecting data in fiscal year 2020 (starting October 1, 2019), there were three months (October to December 2019) in which both agencies collected data on deaths in jails and prisons. An evaluation of this three-month period showed that, compared to the MCI data collected by BJS, the state information reported to BJA missed 61% of the jail deaths and 34% of the state prison deaths (Carson, 2021a). Given ongoing efforts to improve the coverage and completeness of the DCRA data collected by BJA, examination of deaths in correctional institutions in this report focuses on the 20 years of complete data that have been published and verified by BJS.

Among all correctional institutions, there are notable differences between jails and prisons in the prevalence and patterns of deaths. These differences are due, in large part, to the much longer stays in confinement for people in prison versus those incarcerated in jail. Accordingly, the available evidence and literature on deaths in jails and prisons are reviewed separately in the next sections.

Deaths in Jails

The mortality rate in local jails has declined substantially since the early 1980s. As Mumola (2005) reports, the mortality rate for jails was 232 deaths for every 100,000 people in jail in 1983. Within a decade, however, the rate had dropped to 149 per 100,000, which is closer to the mortality rate observed for 2019 (167 deaths per 100,000) (Carson, 2021d), the most recent year for which data are available. This drop was due almost entirely to a reduction in suicides. In 1983, suicides accounted for more than half of all jail deaths in the United States, and the suicide rate was 129 per 100,000 people in jail. Ten years later, the suicide rate had dropped to 54 per 100,000, which is close to what has been observed recently (a rate of 49 per 100,000 in 2019) (Carson, 2021d).

Recent data show there have been more than 1,000 deaths per year in local jails across the United States. As noted in the next section, there have been, on average, nearly 3,500 prison deaths per year. Thus, jail deaths have been found to constitute roughly one-fourth of all deaths in adult correctional facilities nationwide (Noonan and Carson, 2011). Nevertheless, deaths are relatively uncommon in local jails. Indeed, since BJS began collecting jail mortality data on a regular basis, most jails have not reported any deaths (Trotter and Noonan, 2016), and in any given year, 80% of jails do not have a death.

Although suicide was the leading cause of death in U.S. jails during the 1980s, it has been the second-highest cause since the 1990s (Carson, 2021b; Carson and Cowhig, 2020b; Mumola, 2005). Recent data show that suicide accounts for nearly one-third of all jail deaths. Moreover, the suicide rate observed in local jails across the country has been shown to be about two to three times higher than the rate found in prisons within the United States (Carson, 2021b, 2021c; Mumola, 2005). The available evidence suggests that jail suicide rates are higher for males, non-

Hispanic white people, those younger than age 18, and people incarcerated for violent offenses (Mumola, 2005). Compared to females in jail, the suicide rate was more than 50% higher for males. Individuals in jail who were younger than age 18 had a suicide rate twice as high as the overall jail suicide rate. Non-Hispanic white people had a suicide rate three times higher than Hispanic people and six times higher than non-Hispanic Black people. Meanwhile, the suicide rate for individuals confined in jail for a violent offense was three times higher than the rate observed for those in jail for nonviolent offenses (Mumola, 2005). Research further suggests that many suicides occur in close proximity to a court hearing and that most jail inmates who died by suicide were not under the influence of drugs or alcohol at the time of death (Hayes, 2012).

Mental illness has long been recognized as a risk factor for suicide, and serious psychological distress (SPD) has been found to be much higher among persons confined in jail compared to the general population. Approximately 5% of the adult general population had SPD compared to 26% of individuals incarcerated in jail (Bronson and Berzofsky, 2017). Among people in jail, approximately two-thirds (63%) met the criteria for substance dependency or substance use disorder compared to only 5% of the general adult population (Bronson et al., 2017).

The largest category of deaths in U.S. jails since the 1990s has been illness and natural causes. During the period from 2000 to 2019, illness was responsible for roughly half of all jail deaths. Heart disease was, by far, the most common cause of illness-related death. In fact, heart disease made up nearly half of the illness-related deaths and 25% of all jail deaths (Carson, 2021d). Research has shown that, compared to the standardized general population, people incarcerated in jail are more likely to report ever having a chronic medical condition, especially high blood pressure, stroke, diabetes, heart-related problems, asthma, or cirrhosis. Forty-five percent of

people in jail reported ever having a chronic medical condition, compared to 27% of the general population (Maruschak, Berzofsky, and Unangst, 2015).

After illness and suicide, which collectively accounted for 81% of jail deaths from 2000 to 2019, intoxication from drugs or alcohol was the third-leading cause of deaths in jail, making up 9% of the total (Carson, 2021d). With a mortality rate four times higher in 2019 (26 per 100,000 people in jail) than in 2000 (6 per 100,000), this type of death has become increasingly common for people incarcerated in jail. Research has found a disproportionately high percentage of deaths due to drug overdose and withdrawal among females in jail. For example, the study of jail mortality by Kim et al. (2007) found that females are more likely than males to have a history of using drugs as well as to be recent users. Moreover, Kim and colleagues (2007) found that over half of all female jail deaths involved individuals incarcerated for drug charges, compared to 28% of male jail deaths (Kim et al., 2007).

Among the remaining 10% of jail deaths from 2000 to 2019, 6% were attributed to missing or unknown causes, 2% were accidents, and 2% were homicides. Since the early 2000s, jails and prisons have had a similar homicide rate, with roughly 3 homicides per 100,000 people confined per year. The jail homicide rate has been found to be higher for males in comparison to females, and higher for people incarcerated for violent offenses versus those incarcerated for nonviolent crimes (Carson, 2021d; Mumola, 2005; Noonan, 2016).

Overall, nearly 40% of all jail deaths occur within the first week of incarceration (Carson, 2021d; Noonan, 2016). People incarcerated for violent offenses account for approximately 40% of jail deaths. Nearly three-fourths of jail decedents, however, were not convicted and were awaiting court action on their current charge (Carson and Cowhig, 2020b).

The demographic characteristics of jail decedents tend to be similar to those of the jail population in general. For example, males have been found to make up the majority of all jail deaths. During the most recent 10-year period (2010 to 2019), males constituted 86% of all jail deaths. Of the 10,419 jail deaths from 2010 to 2019, 58% were non-Hispanic white people, 26% were non-Hispanic Black people, and 12% were Hispanic people. During this 10-year span, however, the percentage of decedents increased for white individuals, decreased for Black individuals, and remained stable for Hispanic individuals. Nearly half of all jail deaths from 2010 to 2019 involved individuals ages 35 to 54, although the percentage of decedents age 55 and older grew from 19% in 2010 to 26% in 2019 (Carson, 2021d).

Deaths in Prisons

Since the early 1980s, the prison mortality rate has been relatively stable. Over the past 40 years, the rate has ranged from a low of 228 per 100,000 people in 1990 to a high of 347 per 100,000 in 2018 (Carson, 2021e; Mumola, 2005). During the most recent 10-year period for which data are available (2010 to 2019), a total of 40,240 people died in prison, which amounts to an average mortality rate of 293 per 100,000 (Carson, 2021e). The prison mortality rate has recently been rising, and it has been above 300 since 2016.

Unlike jail deaths, nearly 40% of which involve people who had been incarcerated for less than a week, nearly four-fifths of prison deaths involve people who had been imprisoned for more than a year (Carson and Cowhig, 2020a). As a result of the longer stays in confinement typically found among people in prison, the vast majority of deaths in state and federal prisons are related to illness and disease. Indeed, research has shown that illness-related deaths account for roughly 90% of all deaths in prisons (Carson and Cowhig, 2020b). During the period from 2010 to 2019, cancer and heart, liver, and respiratory diseases were responsible for roughly two-thirds of all

prison deaths. Cancer and heart disease, in particular, together accounted for more than half of the deaths.

Although suicide accounts for about one-third of jail deaths and homicide makes up about three-fifths of arrest-related deaths, suicide and homicide combined are responsible for less than 10% of all prison deaths. More specifically, suicides made up 6% of prison deaths from 2010 to 2019, and 3% were due to homicides (Carson, 2021e). As Mumola (2005) shows, suicide and homicide rates in U.S. prisons are lower than they were during the 1980s, though both have increased in recent years (Carson, 2021e). The suicide rate in prison, which was relatively stable in the 1990s and 2000s, has recently increased (it stood at 27 per 100,000 in 2019) but remains below the levels of the early 1980s. Meanwhile, the homicide rate in prison was 12 per 100,000 in 2019, higher than at any other point in the 2000s, but less than one-fourth the rate observed during the early 1980s (Carson, 2021e; Mumola, 2005).

As with jail deaths, higher suicide rates in prison have been found for males, non-Hispanic white individuals, and those imprisoned for violent offenses (Mumola, 2005). In addition to these risk factors, Fazel and colleagues (2008) identified several other factors that have been found to place people in prison at a greater risk for suicide. In particular, they found an elevated risk for individuals who are married, housed in a single cell, serving a life sentence, have recently had suicidal thoughts, have a history of attempted suicide, have a current psychiatric diagnosis, are receiving psychotropic medication, or have a history of alcohol use problems.

Compared to jails, the lower suicide rate for prisons may reflect, at least in part, a reduced prevalence of SPD. As noted above, Bronson and Berzofsky (2017) found that 26% of people in jail had SPD, which is nearly double the rate reported for those in prison (14%) (Maruschak,

Bronson, and Alper, 2021). Thus, although individuals in prison still have an SPD rate that is higher than in the general population, it is also decidedly lower than what has been found for those in jail.

The demographic characteristics of prison decedents are also largely similar to those observed for jail decedents. For example, males account for most prison deaths. During the period from 2010 to 2019, males constituted 96% of all prison deaths, an even larger majority than in jails. As in jails, people in prison who die from homicide are more likely to be males imprisoned for violent offenses (Mumola, 2005). With respect to race and ethnicity, 55% of the prison deaths were non-Hispanic white people, 32% were non-Hispanic Black people, and 11% were Hispanic people. Although this distribution is similar to the state and federal prison population overall (Carson, 2021e), Black people are nevertheless overrepresented in prison deaths, much like in arrest-related and jail deaths, relative to their share of the overall population.

The age of decedents is a notable difference between jails and prisons. Whereas individuals age 55 and older accounted for 22% of jail deaths between 2010 and 2019, they made up 59% of prison deaths during the same 10-year period. Moreover, the percentage of prison decedents who were age 55 and older grew from 50% in 2010 to 63% in 2019 (Carson, 2021e).

Due in large part to the crimes that have been committed by people who are imprisoned, many of which are violent, prisons are often considered to be dangerous environments in which homicides and suicides are commonplace (Noonan and Ginder, 2015). Research has shown, however, that individuals in prison actually have a mortality "advantage" relative to the U.S. resident population (Wildeman et al., 2016). The mortality rate for people in prison is, on the whole, lower than the rate for those who are not in prison.

Compared to females, a larger mortality advantage has been found for males in prison over their male counterparts in the general population. When both gender and race/ethnicity are considered, the mortality advantage for people in prison is greatest for Black males, followed by Black females, Hispanic males, white females, and white males (Wildeman et al., 2016). Still, despite having a better overall mortality outcome than their peers in the adjusted resident population, people in prison die at higher rates from liver disease, septicemia, and AIDS-related causes, which may reflect risky lifestyles and social and economic disadvantages prior to imprisonment (Noonan and Ginder, 2015). Moreover, any "protective" effects of prison appear to be fleeting, as longitudinal research shows that time spent in prison increases the odds of dying once released (Massoglia et al., 2014; Patterson, 2013).

Federal Deaths in Custody

The preceding discussion has focused on deaths in custody at the local and state levels. Several recent studies on federal deaths in custody provide a comparison of arrest-related deaths and mortality in correctional institutions (Brooks and Goodison, 2022; Brooks and Scott, 2021; Brooks, Scott, and Whyde, 2020). Relying on federal arrest-related death data and federal correctional institution death data, these studies found that most federal deaths occur in correctional facilities. Indeed, of the 2,686 federal custody deaths that occurred during fiscal years 2016 to 2020, 278 (10%) were related to arrest. The remaining 2,408 deaths occurred in federal correctional facilities operated by the Federal Bureau of Prisons, U.S. Immigration and Customs Enforcement, and the U.S. Marshals Service.

Among the 278 arrest-related deaths, 131 (47%) were homicides and 77 (28%) were suicides. More than half (58%) of the arrest-related deaths occurred while law enforcement was serving an active warrant, and roughly one-third who died had attempted to escape or flee from custody. Nearly three-fourths of the decedents were alleged to have committed an offense in the events leading up to their death, of which the most serious alleged offense was a violent crime in roughly half of the cases. The vast majority of the 278 decedents either had or appeared to have a weapon, and more than half attempted to injure officers or others. Officers used a weapon, mostly a firearm, in 57% of the 278 cases.

Among the 2,408 deaths in federal correctional facilities between fiscal years 2016 and 2020, 204 (8%) were due to suicide and 67 (3%) resulted from homicide. The vast majority (85%) of these deaths were due to illness. As a result, nearly 90% of the deaths occurred in a medical center outside the facility or in a medical unit within the facility. Moreover, about three-fourths

of those who died in federal correctional facilities had been incarcerated for more than a year at the time of their death.

The gender and racial distributions of decedents were relatively similar for persons whose deaths were related to an arrest and those who died while under federal correctional supervision. For example, males accounted for 94% of arrest-related deaths and 96% of deaths in federal correctional custody. White individuals made up 67% of arrest-related deaths versus 63% for deaths in correctional institutions. Black individuals, meanwhile, accounted for 20% of arrest-related deaths and 28% of those in correctional facilities.

Aside from gender and race, however, there are notable differences between the persons involved in arrest-related deaths and those who died in federal correctional facilities. For example, Hispanic people made up 31% of the arrest-related deaths, which is nearly double the percentage observed for those who died in correctional facilities (17%). Moreover, almost half of the arrest-related deaths involved people younger than age 35. In contrast, only 8% of the deaths in federal facilities involved people younger than age 35. Whereas a violent offense was, as noted above, the most common crime associated with arrest-related deaths, the most common offense for those who died in federal correctional facilities was a drug violation (33%). This is a reflection of the fact that people imprisoned for drug offenses make up nearly half of the federal prison population (Motivans, 2021).

The Relationship Between Prison Admissions and Deaths in Prison

As noted earlier, BJS began collecting data through NCRP in 1983 and through MCI from state prisons in 2001. NCRP contains individual-level administrative data on prison admissions and releases, including information on demographic characteristics (gender, race/ethnicity, and age), type of admission and release from prison, offense type, and length of sentence and time served. MCI for prisons also contains individual-level administrative data on people who have died in prison, including their demographic characteristics, type of admission, offense type, length of stay, and cause of death for decedents.

Whereas the MCI prison data are relatively complete, not all state prison systems have consistently provided BJS with all of the requested NCRP data on an annual basis. As such, missing data are one of the drawbacks with NCRP, although the comprehensiveness of these data has recently improved. Still, the available data within NCRP can be leveraged to gain a better understanding of broad, system-level trends that may influence prison mortality. In particular, this report focuses on the NCRP prison admission data.[10]

Exhibit 1. Total Number of State Prison Deaths by State, 2007-2017

States Included in Analysis	Number of Deaths, 2007-2017	States Excluded From Analysis	Number of Deaths, 2007-2017
Arizona	1,039	Alabama	1,020
Arkansas	603	Alaska	121
California	4,084	Connecticut	250

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[10] Rather than focusing on a one-day snapshot of the stock population, the analyses of the NCRP data examine prison admissions for several reasons. First, there is greater variation from year to year in the admissions data, which is more conducive to identifying trends that may have an impact on prison mortality. Second, the composition of the stock population is heavily influenced by the type and volume of prison admissions. Finally, the analyses assume that the independent variables precede the dependent variable — deaths in prison — and focusing on prison admissions helps ensure this temporal order.

Colorado	486	Delaware	163
Florida	3,503	Idaho	162
Georgia	1,412	Kansas	263
Hawaii	107	Louisiana	1,261
Illinois	1,006	Maine	41
Indiana	776	Maryland	578
Iowa	192	Massachusetts	400
Kentucky	584	Michigan	1,275
Minnesota	160	Montana	104
Mississippi	627	New Hampshire	74
Missouri	967	New Mexico	212
Nebraska	140	North Dakota	12
Nevada	436	South Dakota	83
New Jersey	590	Vermont	43
New York	1,449	Wyoming	75
North Carolina	1,035		
Ohio	1,352		
Oklahoma	969		
Pennsylvania	1,735		
Rhode Island	71		
South Carolina	779		
Tennessee	890		
Texas	4,721		
Utah	178		
Virginia	909		

Washington	394		
West Virginia	256		
Wisconsin	504		
Total	38,557		6,137

Inspection of the NCRP prison admission data since 2001 — the first year MCI data are available — revealed that a little more than one-third of the states were missing data for either entire years or key variables such as race/ethnicity. There were 32 states, however, that had nearly complete prison admission data from 2007 to 2017. As shown in exhibit 1, there were 44,694 deaths in state prisons during that period. The 18 states excluded from the analyses due to missing NCRP data had a total of 6,137 prison deaths during those 11 years, whereas the 32 states that were included had a total of 38,557 deaths. Thus, although the inability to include nearly one-third of the states due to missing data is a notable caveat, it is nonetheless important to emphasize that the analyses presented below are based on 86% of the state prison deaths recorded between 2007 and 2017.

For each of the 11 years during this period, the NCRP prison admissions data were linked (by year and state) with the MCI data for these 32 states. The combined dataset included the cause of death, year of death, and state where the death occurred from the MCI data. Meanwhile, the NCRP data included the admission year, state, demographic characteristics, prison admission type, offense type, and length of sentence. Importantly, the NCRP data did not include individual facility names, so the two datasets were linked at the state level, not by individual facility.

Given that the combined dataset was composed of cross-sectional, longitudinal panel data, a multilevel, random effects regression model was used to analyze the data.[11] Using state as the group variable and year as the time variable, the analyses examined the relationship between a series of mortality outcomes and the prison admission variables. The following reference categories were used for the prison admission variables: gender (females), race/ethnicity (non-Hispanic other races), age (18 to 24 years old), admission type (parole violations), offense type (other), and sentence length (less than one year). In addition to examining the factors that are associated with the total number of deaths, this report further disaggregated the analyses into four discrete morality outcomes: (1) all illnesses, (2) suicide, (3) homicide, and (4) alcohol/drug intoxication. (For a more detailed description of the methodology, see Appendix B.)

As shown in exhibit 2, the results suggest that a number of prison admission variables were significantly associated with an increase in overall prison mortality. With respect to race/ethnicity, an increased number of Black and Hispanic individuals admitted to prison was associated with more deaths overall, which may reflect social and economic disadvantages prior to imprisonment. An increased number of admissions involving individuals ages 35 to 44 and age 55 and older was associated with increased mortality. New court commitments, violent offense admissions, and longer sentences (i.e., 10 years or more) were positively associated with mortality overall. Conversely, prison admissions for males, individuals ages 25 to 34, and individuals ages 45 to 54 were negatively associated with mortality. Given that illnesses make up

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[11] More specifically, because the dependent variable — annual number of deaths in a state — consisted of count data, a negative binomial model was used. The state was the panel ID, or group, variable, and year was the time variable. The model provides estimates of the impact that prison admissions have on the annual number of deaths.

approximately 90% of all prison deaths, the results for the analyses that focused specifically on illness-related deaths were largely similar to those that included all deaths.

Consistent with the evidence presented earlier, an increased number of male admissions to prison was significantly associated with a greater number of suicides. Similarly, more individuals age 55 and older admitted to prison was linked with an increase in suicides. In contrast, a lower number of suicides was associated with more admissions of Black people, individuals ages 25 to 34, individuals ages 45 to 54, and those with sentences of one to two years.

Exhibit 2. Association Between Prison Admissions and Deaths in U.S. State Prisons

	All Deaths		All Illness		Suicide		Homicide		Alcohol/Drugs	
Admissions	B	SE	B	SE	B	SE	B	SE	B	SE
Gender										
Males	-0.01262**	0.004	-0.00457	0.004	0.00166*	0.001	-0.00069	0.000	-0.00461**	0.001
Race/Ethnicity										
Non-Hispanic White	-0.00019	0.001	0.00117	0.001	0.00026	0.000	-0.00024*	0.000	-0.00084**	0.000
Non-Hispanic Black	0.00486**	0.002	0.00270*	0.001	-0.00031*	0.000	-0.00007	0.000	-0.00004	0.000
Hispanic	0.00182**	0.002	0.00072	0.002	0.00006	0.000	0.00030**	0.000	-0.00073**	0.000
Age										
25 to 34	-0.00147**	0.007	0.00297	0.006	-0.00210*	0.001	0.00004	0.001	0.00065	0.001
35 to 44	0.01639**	0.003	0.00569*	0.003	0.00058	0.000	0.00126**	0.000	0.00586**	0.001
45 to 54	-0.00702**	0.009	-0.01564*	0.008	-0.00503**	0.001	-0.00275**	0.001	0.00806**	0.002
55 and older	0.04734*	0.014	0.03075*	0.013	0.00877**	0.002	0.00145	0.001	0.00117	0.002
Admission Type										
New Court Commit	0.00254*	0.001	0.00171	0.001	-0.00008	0.000	0.00039**	0.000	0.00056**	0.000
Offense Type										
Violent	0.00923**	0.003	0.00840**	0.003	0.00030	0.000	0.00080**	0.000	0.00156**	0.001

	B	SE	B	SE	B	SE	B	SE	B	SE
Property	-0.00152	0.003	-0.00124	0.002	-0.00061	0.000	0.00087**	0.000	-0.00105*	0.000
Drugs	-0.00189	0.003	-0.00030	0.002	-0.00007	0.000	-0.00084**	0.000	-0.00057	0.001
Public Order	0.00436	0.004	-0.00232	0.003	-0.00010	0.000	-0.00007	0.000	0.00375**	0.001
Sentence Length										
1 to 1.9 Years	0.00502*	0.003	0.00405	0.002	-0.00053*	0.000	0.00022	0.000	0.00048	0.000
2 to 4.9 Years	0.00286	0.002	-0.00020	0.002	0.00016	0.000	0.00035**	0.000	0.00112**	0.000
5 to 9.9 Years	0.00644	0.004	0.00383	0.003	-0.00004	0.000	0.00068**	0.000	0.00126*	0.001
10 to 24.9 Years	0.01542*	0.006	0.00466	0.005	0.00040	0.000	0.00008	0.000	0.00088	0.001
25 Years or More	0.09031**	0.017	0.08368**	0.015	0.00138	0.002	0.00266**	0.001	0.00074	0.002
Life	0.06006**	0.020	0.06610**	0.017	0.00180	0.002	-0.00246	0.001	0.00050	0.003
Constant	-16.55676*	7.802	-15.41480**	5.277	-1.36598*	0.319	-0.42718*	0.190	-0.36262	0.515

** $p < 0.01$

* $p < 0.05$

B = coefficient; SE = standard error

The results suggest an increased number of homicides was significantly associated with more admissions of Hispanic individuals, which is consistent with the findings from Mumola (2005). Likewise, a growth in homicides was associated with increased admissions of individuals ages 35 to 44, new court commitments, individuals convicted for violent offenses, individuals convicted for property offenses, and those with sentences between two and 10 years as well as 25 years or more. Conversely, admissions of individuals convicted for drug offenses, white individuals, and those ages 45 to 54 were associated with fewer homicides.

An increase in deaths resulting from alcohol/drug intoxication was significantly related to more admissions of individuals ages 35 to 54, new court commitments, individuals convicted of violent offenses and public order offenses, and persons serving sentences between two and 10 years. Fewer alcohol/drug intoxication deaths were associated with admissions involving males, which may be consistent with the finding presented earlier that females have a disproportionately high percentage of deaths due to drug overdose and withdrawal (Kim et al., 2007). The results also revealed a negative association between the number of alcohol/drug intoxication deaths and the number of prison admissions for white individuals, Hispanic individuals, and individuals convicted of property offenses.

Factors Associated With Unnatural Deaths in Jails and Prisons

Although the results from the analyses of MCI and NCRP data demonstrate the extent to which the characteristics of individuals entering prison can influence mortality rates, jail and prison systems seldom have much control over who gets admitted to their correctional facilities. As previously demonstrated, illness accounts for almost 90% of deaths in prisons and 50% of deaths in jails, and many people enter correctional facilities with preexisting health conditions that may limit a facility's ability to prevent their deaths. To produce recommendations for how correctional facilities should decrease or prevent in custody deaths due to illness would require additional decedent-level information on preexisting conditions and pre-incarceration health care as well as the availability and quality of correctional facility medical care. Still, there are some types of deaths in correctional facilities that may be more easily prevented if factors associated with facilities that have higher mortality rates for these causes can be identified — namely, homicides, suicides, and accidental intoxication deaths. In its 2019 censuses of jails and adult correctional facilities (both state and federal), BJS collected data on correctional populations, staff, and facility characteristics. By linking these data with 2019 MCI data, it is possible to determine whether the incidence of homicides, suicides, and accidental intoxication deaths may be influenced by factors such as staffing levels, overcrowding, and the availability of programming.[13]

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[13] With both the jail and prison data, it was not possible to separate the accidental intoxication deaths from all accidental deaths among federal agencies. Thus, although federal agencies account for relatively few of the deaths overall, the analyses focusing on accidental intoxication deaths likely include some other accidental deaths as well.

Jails

The 2019 jail census data reveal that, across 2,850 jurisdictions, there were 25 homicides, 354 suicides, and 184 accidental intoxication deaths.[14] The vast majority of jurisdictions did not report any deaths relating to these three causes in 2019. Indeed, 90% did not have a suicide, 95% did not have an accidental intoxication death, and 99% did not have a homicide. Because the data for these three types of death are count data, combined with the fact that relatively few jurisdictions had a homicide, suicide, or accidental intoxication death, negative binomial regression was used to analyze the data. As shown in exhibit 3, the statistical models controlled for any effects that gender or race/ethnicity might have on the three types of deaths.

The results of this analysis show there were only three factors that influenced whether homicides occurred in local county jails. Jurisdictions located in urban areas were significantly more likely to have a homicide. As the percentage of unconvicted individuals increased, so did the likelihood of a homicide. And jurisdictions that had a larger ratio of confined individuals to correctional staff were significantly more likely to have a homicide; in other words, jurisdictions with fewer staff per persons incarcerated relative to other jurisdictions were significantly more likely to have a homicide.

Jail jurisdictions with larger ratios of incarcerated individuals to staff also had a significantly higher likelihood of suicide, as did urban jurisdictions. Whereas a greater percentage of unconvicted people in jail was more strongly associated with homicides, it was negatively associated with suicides. Suicides were also negatively associated with the number of confined

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[14] Counts of jail facilities, jail jurisdictions, and deaths may differ from previously published BJS statistics due to differences in analysis methodology and facility nonresponse. For example, MCI had a 2019 response rate of 97%, but the number of decedents was not weighted for nonresponse given the unpredictable nature of deaths in custody. The 2019 Census of Jails had a response rate of 94%, but data for key measures were imputed based on known characteristics.

individuals held on behalf of the state's prison system and those who were non-U.S. citizens. Jurisdictions that offered opioid behavioral treatment had a lower incidence of suicides, although those in which opioid medication-assisted treatment was available had a higher incidence.

Exhibit 3. Effects of Population, Staff, and Facility Characteristics on Jail Deaths

Predictors	Homicide		Suicide		Accidental Intoxication	
	B	SE	B	SE	B	SE
Females Avg. Daily Population	0.002	0.002	-0.002	0.002	-0.003	0.001
Males Avg. Daily Population	-0.001	0.001	0.000	0.001	0.002**	0.001
White	-0.001	0.001	0.002**	0.001	0.001**	0.000
Black	0.000	0.001	0.001	0.001	-0.001	0.000
Hispanic	0.001	0.001	0.001	0.001	0.000	0.000
American Indian	0.001	0.006	0.002	0.002	0.001	0.002
Asian	-0.001	0.011	0.003	0.005	-0.004	0.005
Inmate-Staff Ratio	0.081*	0.035	0.032*	0.015		
Urban	1.630**	0.551	0.996**	0.145	1.236**	0.206
In-State Prison			-0.002*	0.001		
Unconvicted	0.002*	0.001	-0.001*	0.000	-0.001*	0.000
Noncitizen			-0.003*	0.001	-0.004*	0.001
Opioid Behavioral Treatment			-0.292*	0.130		
Opioid MAT			0.155**	0.053		
Opioid Screen					-0.483*	0.229

					Opioid Reversal				-0.360*	0.177

	B	SE	B	SE	B	SE
Constant	-6.253	0.469	-2.526	0.235	-2.685	0.407

** p < 0.01.

* p < 0.05.

+ p < 0.10.

B = coefficient; SE = standard error; MAT = medication-assisted treatment.

The incidence of accidental intoxication deaths was significantly greater, once again, in urban jurisdictions. The incidence was significantly less, however, in facilities that provided opioid screens and opioid reversal medication. It was also significantly less in facilities that had larger numbers of non-U.S. citizens and unconvicted individuals.

Prisons

The prison census data for 2019 show there were 342 suicides, 267 accidental intoxication deaths, and 159 homicides across 1,677 state and federal adult correctional facilities.[15] Similar to jails, 87% of prisons did not have a suicide, 91% did not have an accidental intoxication death, and 93% did not have a homicide. As with the jail mortality analysis above, negative binomial regression was used to analyze these count data. Moreover, the statistical models controlled for any effects that demographic characteristics might have on the three types of deaths.

The results in exhibit 4 show that homicides were significantly more likely to occur in prisons with more people assigned to maximum custody. Facilities with a higher percentage of individuals placed in restrictive housing also had a significantly greater incidence of homicides.

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[15] Counts of prison facilities and deaths in prison may differ from previously published BJS statistics due to differences in analysis methodology. The current analysis included community-based prison facilities, including boot camps and halfway houses, although previous BJS analysis of the linked MCI-Census of State and Federal Prison data was limited to confinement facilities.

The same was true for facilities whose main function was to provide medical treatment, although since most states have a central prison hospital where they treat prisoners with serious conditions, this result may only reflect the fact that the person was mortally injured in another facility but ultimately died in the medical prison facility. Conversely, the incidence of homicides was significantly less for facilities that had more education programs available for individuals in prison.

The results show that as the number of people in prison assigned to maximum custody increased, so did the likelihood of suicide. The incidence of suicide was significantly greater in facilities with more assaults against imprisoned individuals, prisons that were over capacity, and facilities with specialized mental health treatment. Conversely, the incidence of suicide was significantly lower for community corrections facilities.

Exhibit 4. Effects of Population, Staff, and Facility Characteristics on Prison Deaths

Predictors	Homicide		Suicide		Accidental Intoxication	
	B	SE	B	SE	B	SE
Total Individuals Confined	-0.002	0.001	0.000	0.000	0.000	0.001
Individuals Under Age 18 Confined	-0.004	0.024	-0.011	0.020	0.005	0.020
Number of Males Confined	0.002	0.001	0.000	0.000	0.001	0.001
Black Individuals Confined	0.002**	0.001	0.000	0.000	0.001	0.001
Hispanic Individuals Confined	-0.001	0.001	0.000	0.000	=0.001	0.001
American Indian Individuals Confined	0.001	0.004	-0.001	0.002	0.002	0.003

	B	SE	B	SE	B	SE
Asian Individuals Confined	-0.019	0.014	-0.021	0.009	-0.015	0.010
Native Hawaiians Confined	-0.182	0.146	-0.015	0.030	0.067	0.091
Population Over Facility Capacity			0.424*	0.166		
Individuals Confined in Maximum Custody	0.001**	0.000	0.001**	0.000	0.001**	0.000
Restrictive Housing Percentage	2.363**	0.734			1.904*	0.813
Number of Assaults Against People Confined			0.002	0.001		
Percentage U.S. Citizens					-0.001*	0.000
Community Corrections Facility			0.893*	0.433		
Mental Health Facility			0.647**	0.159		
Medical Treatment Facility	1.050**	0.233			0.768*	0.251
Geriatric Care Facility					-1.685*	0.497
Number of Ed. Programs Available	-0.201**	0.057				
Sex Offender Counseling Available					-0.692*	0.285
Special Ed. Programs Available					-0.484*	0.217
Constant	-2.679**	0.303	-2.785**	0.179	-3.045**	0.237

** $p < 0.01$.

* $p < 0.05$.

B = coefficient; SE = standard error

Just as a higher number of individuals in maximum custody increased the likelihood of homicides and suicides in a facility, the same was true for accidental intoxication deaths. Accidental intoxication deaths were significantly more likely to be associated with prison facilities that had a higher percentage of restrictive housing beds or that functioned as medical treatment facilities. The likelihood of accidental intoxication deaths was significantly less, however, for geriatric care facilities, prisons with higher percentages of U.S. citizens, and prisons offering programming for sex offender counseling and special education.

Discussion

Before DCRA was enacted in 2000, information on arrest-related deaths was relatively scarce, and data on individuals who died in prisons and jails were limited to aggregate counts and selected causes of death (e.g., illness, AIDS related, accident, suicide, homicide). Although aggregate count data on deaths in state and federal prison systems were collected annually, data on jail deaths were collected about every five years (Noonan and Ginder, 2015). Since the turn of this century, however, the data collected by BJS on a regular, ongoing basis in response to DCRA 2000 have helped shed light on the prevalence and patterns of deaths related to arrest, jails, and prisons.

The best, most recent evidence available suggests that 6,500 to 7,000 deaths in custody take place each year in the United States. Although the MCI data only provide accurate annual counts of deaths in jails and prisons, the aforementioned study by Banks et al. (2019) makes it possible to develop an estimate of the total annual number of deaths in custody. In that study, Banks and colleagues (2019) identified 424 arrest-related deaths, along with the cause of death for each one, that occurred in the United States between the beginning of June and the end of August in 2015. Assuming this three-month period was more or less representative for all of 2015, the total number of arrest-related deaths would be 1,696 when extrapolated over the full year.[16] The extrapolated annual data for arrest-related deaths are presented alongside the 2015 MCI data for jails and prisons in exhibit 5.

The data shown in exhibit 5 indicate an estimated total of 6,470 deaths in custody for 2015. Although there were 455 deaths in federal prisons during 2015, these deaths were excluded from

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[16] The extrapolated data presented do not adjust for any seasonal patterns that might exist in arrest-related deaths.

exhibit 5 because there was incomplete information on the causes of death (Carson and Cowhig, 2020b). Among the estimated 6,470 deaths in custody for 2015, the data in exhibit 5 show that 57% occurred in prisons, 26% during arrest, and 17% in jails. At the federal level, arrest-related deaths account for a smaller percentage (10%) of the overall total, with the remainder taking place in correctional facilities (Brooks, Scott, and Whyde, 2020).

Exhibit 5. Cause of Death by Type of Death in Custody, 2015

Cause of Death	Arrest-Related Deaths	Deaths in Jails	Deaths in Prisons	Total
Total	1,696	1,092	3,682	6,470
Percentage of All Deaths	26.2%	16.9%	56.9%	
Illness/Natural Causes	24	519	3,225	3,768
Percentage Within Cause	0.6%	13.8%	85.6%	
Percentage of Total				58.2%
Percentage Within Custody Type	1.4%	47.5%	87.6%	
Homicide	1,072	30	84	1,186
Percentage Within Cause	90.4%	2.5%	7.1%	
Percentage of Total				18.3%
Percentage Within Custody Type	63.2%	2.7%	2.3%	
Suicide	300	368	219	887
Percentage Within Cause	33.8%	41.5%	24.7%	
Percentage of Total				13.7%
Percentage Within Custody Type	17.7%	33.7%	5.9%	
Drug/Alcohol Intoxication	0	92	81	173

Percentage Within Cause	0%	53.2%	46.8%	
Percentage of Total				2.7%
Percentage Within Custody Type	0%	8.4%	2.2%	
Accident	200	26	39	265
Percentage Within Cause	75.5%	9.8%	14.7%	
Percentage of Total				4.1%
Percentage Within Custody Type	11.8%	2.4%	1.1%	
Unknown/Undetermined	100	57	34	191
Percentage Within Cause	52.4%	29.8%	17.8%	
Percentage of Total				3.0%
Percentage Within Custody Type	5.9%	5.2%	0.9%	

As noted at the beginning of this report, the length of time in custody has a substantial impact on the patterns observed for each type of death in custody. For instance, the leading cause of death is different for deaths related to arrest (homicide) in comparison to those in jails and prisons (illness). Given the relatively short durations in custody for arrest-related deaths, the majority—a little more than 80% — are either homicides or suicides. Although arrest-related homicides accounted for 90% of all homicides in custody, these incidents made up 18% of the total estimated deaths.

Because prisons have the longest custody durations, the percentage of deaths resulting from homicide and suicide — less than 10% — is almost the inverse of what has been found for arrest-related deaths, especially those at the federal level. Like prisons, jails have a relatively low

mortality rate due to homicide. The mortality rate from suicides, however, is about twice as high in jails as in prisons, and 40% of these jail deaths by suicide have been found to take place within the first week of incarceration (Carson, 2021d; 2021e). As shown in exhibit 5, suicides accounted for 14% of the total estimated number of deaths in custody for 2015. Of these, 42% took place in jails, 34% during arrest, and 25% in prisons.

The differences in manners of death across the three custody types are also revealed in the age disparities for each one. Given that homicide victims are generally younger than those who die of illnesses and natural causes, people who die during the arrest process are, on the whole, younger than those who die in jails or prisons. Conversely, with roughly 9 in 10 prison deaths attributable to illness, more than half of all prison decedents are age 55 and older at the time of their death. This age group — 55 and older — has accounted for a steadily growing percentage of deaths in both jails and prisons since the 2000s.

Relative to their share of the population, males and Black people are overrepresented for all three types of custody deaths. Notably, the gender and racial/ethnic distribution is similar across deaths related to arrest, jails, and prisons. For these three types of custody deaths, the percentages of males range between 87% and 96%, and the percentages of Black individuals range between 26% and 33%. This overrepresentation reflects, to a large extent, the fact that males and Black people are disproportionately likely to be arrested, jailed, and imprisoned. Similarly, the arrest, jail, and prison mortality rates are highest for people who are either suspected or convicted of a violent offense in comparison to other types of offenses.

Conclusion

The accumulation of data mandated by DCRA, combined with the publication of government reports and academic studies (particularly over the past five years), has significantly advanced what is known about deaths in custody. Although homicides involving law enforcement tend to capture more attention and concern than other deaths in custody, the findings presented in this report show that nearly 60% of all deaths in custody are due to illness and natural causes. Moreover, most of the illness-related deaths take place in prisons, which appear to offer at least a short-term mortality advantage for many people in prison in comparison to their peers in the resident population. This is not to say that U.S. law enforcement agencies, prisons, and jails cannot improve conditions to enhance the life expectancy of those in custody. Yet because many individuals come into contact with law enforcement or enter correctional facilities with preexisting medical conditions that ultimately contribute to their deaths, the extent to which agency management can significantly lower mortality rates may have some limitations.

Still, the findings presented above suggest strategies that correctional facilities and policymakers could consider to reduce homicides, suicides, and accidental intoxication deaths. For example, homicides and suicides were significantly associated with jails that had fewer staff per individuals confined. Thus, by increasing staffing levels, jails may be able to reduce the likelihood of homicides and suicides. Even though the effects for opioid screening and treatment were inconsistent across the three types of deaths, facilities that offered screening, behavioral treatment, and reversal medications had significantly fewer suicides and accidental intoxication deaths.

For prisons, as the number of individuals housed in maximum custody beds increased, so did the likelihood of homicide, suicide, and accidental intoxication deaths, although this may reflect a

greater number of individuals housed within that facility who are at higher risk for these causes of death. At the same time, however, a greater percentage of maximum security beds may also reflect facilities that are focused primarily on the isolation, security, and control of those confined in prison. Similarly, facilities with restrictive housing beds had a significantly higher likelihood of having a homicide or accidental intoxication death. Although the effects for the availability of programming were inconsistent across the three types of unnatural deaths examined, the results nevertheless suggest that prisons offering some types of programming had a lower likelihood of homicides and accidental intoxication deaths.

Although these findings shed some light on ways in which jails and prisons might be able to reduce mortality, it is worth emphasizing that they are based on analyses of only one year of prison and jail census data. More research is needed to identify evidence-based strategies that law enforcement agencies, jails, and prisons could undertake to reduce mortality. As noted earlier, the overarching goal of DCRA is to reduce the number of deaths in custody, which may be possible to achieve by implementing preventive strategies that are revealed through the collection and evaluation of data. However, to help identify promising mortality-reduction strategies that are rooted in the best available evidence, the data collection process for DCRA must improve. For example, whereas BJS has been able to obtain relatively accurate and comprehensive counts of deaths in jails and prisons on an annual basis, the same cannot be said about arrest-related deaths.

Implications for Future Research and Data Collection

To improve the collection and analysis of data on deaths in custody in the future, this report concludes with several observations. First and foremost, the greatest limitation with DCRA 2013 involves the collection of data for arrest-related deaths. There are several options to improve the

collection of these data, all of which would require funding on an ongoing basis. First, as Williams and colleagues (2019) suggest, one approach would entail allocating funding for an independent party, such as a university or think tank, to collect data from open sources and supplement that data with public records requests and the currently collected official government data. In other words, the approach taken by Banks et al. (2019) in their pilot study would become standard operating practice for the collection of arrest-related data.

Another option, previously noted by Banks et al. (2019), would be to provide all law enforcement agencies with an incentive to report arrest-related deaths to the state. Currently, the only incentive for law enforcement agencies is avoiding the potential loss of JAG funding; however, because many agencies never receive this funding, this provision of the statute is arguably a poor incentive. Rather than attempting to punish law enforcement agencies for not reporting arrest-related deaths to the state, an incentive that may produce better reporting compliance would be to reward the agencies that report. More specifically, providing law enforcement agencies with a monetary award for reporting arrest-related deaths would likely improve reporting. There are other existing instances, such as the State Criminal Alien Assistance Program, in which local and state agencies receive monetary awards for performing work that is primarily beneficial to the federal government.

Second, the coverage, quality, and completeness of data collected under DCRA would benefit from implementation by BJS, the primary statistical agency of the U.S. Department of Justice. The evidence has long shown that BJS has been very effective in collecting data on deaths in jails and prisons, which was further demonstrated in a comparison with BJA's efforts to collect these data from October to December 2019 (Carson, 2021a). Although collecting data pursuant to DCRA has been challenging since its inception, the discontinuation of BJA's MCI program

marked the elimination of the one area of data collection that had been quite successful. Even though collecting data on arrest-related deaths has been more difficult for the reasons noted above, BJS has, in collaboration with RTI International, proposed the aforementioned hybrid methodology to achieve more complete coverage of these deaths (Banks et al., 2019).

Third, although there is value in accurately cataloging all of the deaths in custody that take place, efforts should also be made to identify and regularly collect data that would help further describe, explain, and ultimately prevent deaths from occurring. Indeed, more detailed data at the agency, facility, and jurisdiction levels would likely help significantly to advance our understanding of deaths in custody. For example, to what extent does staff training or the quantity of correctional programming delivered have an impact on deaths in custody? To help identify data that would be both relevant and feasible to collect, the federal government could convene law enforcement and corrections practitioners and scholars to identify and propose data collection modifications for consideration by the U.S. Department of Justice.

Finally, beyond improving and expanding the data collected for DCRA, there is a need for additional research and evaluation efforts on deaths in custody. Similar to leveraging NCRP and jail and prison census data to help analyze correctional institution deaths for this report, future funded research would not only attempt to analyze existing relevant sources of data but could also involve efforts to collect additional data. Because of the notable differences across each of the three types of custody deaths, it may also be worth supporting research projects that focus specifically on arrest-related deaths, deaths in jails, and deaths in prisons.

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Appendix A: Public Law 113–242

Public Law 113–242
113th Congress

Dec. 18, 2014
[H.R. 1447]

Death in Custody Reporting Act of 2013.
42 USC 13701 note.
42 USC 13727.

An Act
To encourage States to report to the Attorney General certain information regarding the deaths of individuals in the custody of law enforcement agencies, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.
This Act may be cited as the "Death in Custody Reporting Act of 2013."

SECTION 2. STATE INFORMATION REGARDING INDIVIDUALS WHO DIE IN THE CUSTODY OF LAW ENFORCEMENT.
(a)   IN GENERAL.—For each fiscal year after the expiration of the period specified in subsection (c)(1) in which a State receives funds for a program referred to in subsection (c)(2), the State shall report to the Attorney General, on a quarterly basis and pursuant to guidelines established by the Attorney General, information regarding the death of any person who is detained, under arrest, or is in the process of being arrested, is en route to be incarcerated, or is incarcerated at a municipal or county jail, State prison, State-run boot camp prison, boot camp prison that is contracted out by the State, any State or local contract facility, or other local or State correctional facility (including any juvenile facility).
(b)   INFORMATION REQUIRED.—The report required by this section shall contain information that, at a minimum, includes—
      (1)   the name, gender, race, ethnicity, and age of the deceased;
      (2)   the date, time, and location of death;
      (3)   the law enforcement agency that detained, arrested, or was in the process of arresting the deceased; and
      (4)   a brief description of the circumstances surrounding the death.
(c)   COMPLIANCE AND INELIGIBILITY.—
      (1)   COMPLIANCE DATE.—Each State shall have not more than 120 days from the date of enactment of this Act to comply with subsection (a), except that—
            (A)   the Attorney General may grant an additional 120 days to a State that is making good faith efforts to comply with such subsection; and
            (B)   the Attorney General shall waive the requirements of subsection (a) if compliance with such subsection by a State would be unconstitutional under the constitution of such State.

(2) INELIGIBILITY FOR FUNDS.—For any fiscal year after the expiration of the period specified in paragraph (1), a State that fails to comply with subsection (a), shall, at the discretion of the Attorney General, be subject to not more than a 10-percent reduction of the funds that would otherwise be allocated for that fiscal year to the State under subpart 1 of part E of title I of the Omnibus Crime Control and Safe Streets Act of 1968 (42 U.S.C. 3750 et seq.), whether characterized as the Edward Byrne Memorial State and Local Law Enforcement Assistance Programs, the Local Government Law Enforcement Block Grants Program, the Edward Byrne Memorial Justice Assistance Grant Program, or otherwise.

(d)   REALLOCATION.—Amounts not allocated under a program referred to in subsection (c)(2) to a State for failure to fully comply with subsection (a) shall be reallocated under that program to States that have not failed to comply with such subsection.

(e)   DEFINITIONS.—In this section the terms "boot camp prison" and "State" have the meaning given those terms, respectively, in section 901(a) of the Omnibus Crime Control and Safe Streets Act of 1968 (42 U.S.C. 3791(a)).

(f) STUDY AND REPORT OF INFORMATION RELATING TO DEATHS IN CUSTODY.—

     (1)   STUDY REQUIRED.—The Attorney General shall carry out a study of the information reported under subsection (b) and section 3(a) to—

          (A)   determine means by which such information can be used to reduce the number of such deaths; and

          (B)   examine the relationship, if any, between the number of such deaths and the actions of management of such jails, prisons, and other specified facilities relating to such deaths.

     (2)   REPORT.—Not later than 2 years after the date of the enactment of this Act, the Attorney General shall prepare and submit to Congress a report that contains the findings of the study required by paragraph (1).

SECTION 3. FEDERAL LAW ENFORCEMENT DEATH IN CUSTODY REPORTING REQUIREMENT.

(a) IN GENERAL.—For each fiscal year (beginning after the date that is 120 days after the date of the enactment of this Act), the head of each Federal law enforcement agency shall submit to the Attorney General a report (in such form and manner specified by the Attorney General) that contains information regarding the death of any person who is—

     (1)   detained, under arrest, or is in the process of being arrested by any officer of such Federal law enforcement agency (or by any State or local law enforcement officer while participating in and for purposes of a Federal law enforcement operation, task force, or any other Federal law enforcement capacity carried out by such Federal law enforcement agency); or

     (2)   en route to be incarcerated or detained, or is incarcerated or detained at—

          (A)   any facility (including any immigration or juvenile facility) pursuant to a contract with such Federal law enforcement agency;

          (B)   any State or local government facility used by such Federal law enforcement agency; or

          (C)   any Federal correctional facility or Federal pre-trial detention facility located within the United States.

(b) INFORMATION REQUIRED.—Each report required by this section shall include, at a minimum, the information required by section 2(b).

(c) STUDY AND REPORT.—Information reported under subsection (a) shall be analyzed and included in the study and report required by section 2(f).

Approved December 18, 2014.

Appendix B: Methodology

Prison Admissions and Deaths in Prison

The examination of the relationship between prison admissions and mortality began by linking the National Corrections Reporting Program (NCRP) data with the Mortality in Correctional Institutions (MCI) data based on the state and the year during which admissions and deaths occurred for the 2001 to 2018 period. Although MCI data were generally complete for this 18-year period, missing data were a problem with the NCRP data collection. More specifically, prison admission data were missing for some states for one or more years during the 2001 to 2018 period, or key variables were not available for some states during this time frame. Because of the lack of complete prison admissions data, it was not possible to examine the relationship between prison admissions and deaths for all 50 states for even a single year during the 2001 to 2018 period. Therefore, the next best alternative involved analyzing a period of time that captured most of the prison admissions and deaths that have occurred in the United States since 2001. Inspection of the NCRP data showed that 32 states had relatively complete prison admission data from 2007 to 2017. Given that 44,694 deaths occurred in state prisons during the 2007 to 2017 period, the 32 states included accounted for 86% (38,557 deaths) of all state prison deaths in that period. In contrast, the 18 states excluded from the analyses due to missing NCRP data had a total of 6,137 deaths, which made up 14% of all deaths.

The combined MCI-NCRP dataset included information on the state, prison admission year, demographic characteristics (age, race, and gender) of prison admissions, type of prison admission, offense types and sentence lengths for prison admissions, and annual number of deaths in each state by the cause of death. To analyze the effects of prison admissions on mortality, a multilevel, random effects regression model was used, because the dataset consisted

of cross-sectional, longitudinal panel data. More specifically, a negative binomial model was used because it is designed to handle count data, and the dependent variable for these analyses — the annual number of deaths in a state — is considered count data.

Within a multilevel, random effects model, there is a group (i.e., panel ID) variable and a time variable. For these analyses, the state was the group variable and the year during which prison admissions and deaths occurred was the time variable. As noted above, the dependent variable in these analyses was the annual number of deaths in a state, which was measured five different ways. In addition to including a measure for the total annual number of deaths within a state, the analyses further disaggregated mortality outcomes by the cause of death, resulting in the following four measures: (1) all illnesses, (2) suicide, (3) homicide, and (4) alcohol/drug intoxication.

The analyses contained six independent variables, derived from the NCRP data, that were a mixture of dichotomous, categorical, and ordinal measures of prison admissions. Each of the six independent variables contained a reference category. The reference categories were females for gender, non-Hispanic other for race/ethnicity, the 18- to 24-year-old age range for age, parole violation for admission type, other for offense type, and less than one year for sentence length. By estimating the effects these variables had on the different measures of prison deaths, these analyses can help clarify the relationship between prison admissions and mortality.

Factors Associated With Unnatural Deaths in Jails and Prisons
The analyses that examined whether correctional population, facility, and staffing characteristics had an impact on the types of deaths that may be more preventable (homicides, suicides, and accidental intoxication deaths) began by connecting the MCI data with jail and prison census

data. In 2019, the Bureau of Justice Statistics conducted a census of jails and adult correctional facilities (both state and federal) in which data were gathered on correctional populations, staff, and facilities. The jail and prison census data were linked with 2019 MCI data according to either the facility, jurisdiction, or state in which deaths occurred. Therefore, the combined dataset contained not only the number of homicides, suicides, and accidental intoxication deaths that took place in each facility, jurisdiction, and state during 2019, but also a rich array of data on the jails and prisons themselves, including the availability of programming and the characteristics of correctional populations and staff. The one notable caveat with the data on accidental intoxication deaths for both jails and prisons is that, among federal agencies, it was not possible to distinguish accidental intoxication deaths from among all accidental deaths. Although the analyses for this mortality outcome likely included accidental deaths that were not caused by intoxication, the reality is that federal agencies accounted for relatively few of the deaths overall.

Unlike the combined MCI-NCRP dataset, the prison and jail census datasets were not longitudinal. Instead, these datasets consisted of cross-sectional data for a single year (2019). The three types of mortality outcomes examined in the jail and prison analyses consisted of count data. Thus, as with the analyses of the MCI-NCRP dataset, negative binomial regression was the appropriate statistical technique to use. The statistical models for the jail and prison analyses controlled for any effects that the demographic characteristics of the correctional population may have had on the three types of deaths. Because of the large number of possible independent variables that measured the availability of programming and the characteristics of correctional populations and staff, it was not possible to include each one in the statistical models presented in exhibits 3 and 4. Instead, aside from the control variables, the findings presented in these tables include only the factors that were statistically significant at the $p < 0.05$ level. The

results from these analyses may thus be interpreted as the significant effects that correctional

population, staff, facility, and system-level characteristics have on homicides, suicides, and

accidental intoxication deaths.