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Mortality in State and Federal Prisons, 2001-2018 – Statistical Tables

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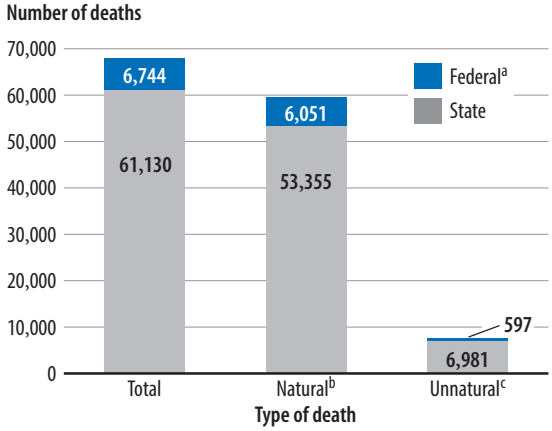
In 2018, a total of 4,135 state prisoners died in publicly or privately operated prisons, and an additional 378 federal prisoners died in facilities operated by the Federal Bureau of Prisons (BOP).[1] In state prisons, the number of deaths rose 5% from 2017 (3,943) to 2018 (4,135), the highest level since the Bureau of Justice Statistics (BJS) began collecting information on mortality in state prisons in 2001 **(figure 1)**. Between 2001 and 2018, the total number of state prisoners in custody increased 1%, while the number of deaths in state prisons rose 44%. Deaths of federal prisoners decreased almost 1% from 2017 to 2018 (from 381 to 378).

[1]BJS began receiving federal prison mortality data from privately operated facilities that were under a BOP contract in 2015. To preserve the time series back to 2001, the federal mortality data in this report does not include deaths in privately operated federal facilities. Nine federal prisoners died in private facilities in 2015, seven in 2016 and 2017, and five in 2018.

FIGURE 1
Number of state and federal prisoner deaths, 2001–2018



[a]Excludes deaths in private federal facilities.
[b]Includes deaths due to illnesses, such as heart disease, cancer, liver disease, and AIDS-related deaths.
[c]Includes deaths due to external factors and causes, such as suicide, homicide, and accidental deaths.
Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001–2018; and Federal Bureau of Prisons, 2001–2018.

Highlights

- In 2018, the number of deaths (4,135 prisoners) and the mortality rate (344 deaths per 100,000 prisoners) in state prisons were the highest since the Bureau of Justice Statistics (BJS) began collecting mortality data from state prisons in 2001.
- The number of state prisoners who committed suicide increased 20% from 2017 (259) to 2018 (311), marking the highest number of suicides that BJS has recorded in 18 years of collecting mortality data.
- State prisoners had a lower overall mortality rate (319 per 100,000) than did adult U.S. residents (419 per 100,000) in 2018 when the data were adjusted for differences in age, sex, and race or ethnicity between the two populations.
- State prisoners in 2018 were slightly more likely to die of cancer, liver disease, and suicide and more than twice as likely to die from homicide than the adjusted population of adult U.S. residents.
- Ten in 100,000 state prisoners died from homicide in 2018, the highest homicide rate in state prisons since 2001.
- White prisoners accounted for more than half of all deaths in state prisons in 2018 (53%), while they made up less than one-third (32%) of the state prison population.
- In 2018, the rate at which federal prisoners died of illness (190 deaths per 100,000 federal prisoners) was the lowest since 2012 (182 per 100,000).

Mortality rate

The mortality rate for state prisoners was 344 per 100,000 state prisoners in 2018, up from 323 per 100,000 in 2017 **(figure 2)**. This was the highest rate recorded since 2001. While the absolute number of federal prisoners who died in BOP-operated facilities declined from 2017 to 2018, the mortality rate for federal prisoners increased by almost 2% between 2017 (246 deaths per 100,000 federal prisoners) and 2018 (250 per 100,000). The increase in the rate was due to the decrease in total number of federal prisoners during this period.

Cause of death

From 2001 to 2018, 87% of state prison deaths and 90% of federal prison deaths were due to illness. Suicide accounted for 6% of state prison deaths and almost 5% of federal prison deaths over the same period. The 311 suicides of state prisoners in 2018 represented a 20% increase from 2017 (259 suicides) and an 85% increase from 2001 (168 suicides).

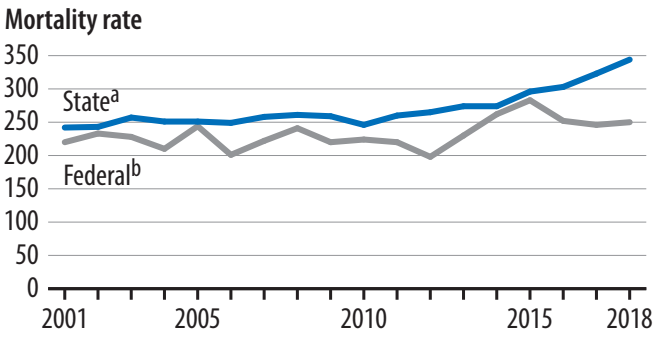
Homicide was the cause of 2% of state and nearly 3% of federal prison deaths. There were 120 homicides of state prisoners during 2018, including homicides committed by other prisoners, incidental to the use of force by staff, and resulting from injuries sustained prior to incarceration **(figure 3)**. This marked a 6% increase from the 113 homicides in 2017.

Prisoners deaths compared to U.S. population

State prisoners were less likely to die in 2018 (319 per 100,000 state prisoners) than were adult U.S. residents (those age 18 or older) (419 per 100,000 adult U.S. residents) when the resident population was adjusted to the age, sex, and race or ethnicity distribution of state prisoners.[2] State prisoners had slightly higher mortality rates than the adjusted adult U.S. resident population in 2018 for cancer, liver disease, and suicide. The rate of death by homicide among state prisoners (10 per 100,000 state prisoners) was more than twice the rate among adult U.S. residents (4 per 100,000 adult U.S. residents) **(figure 4)**.

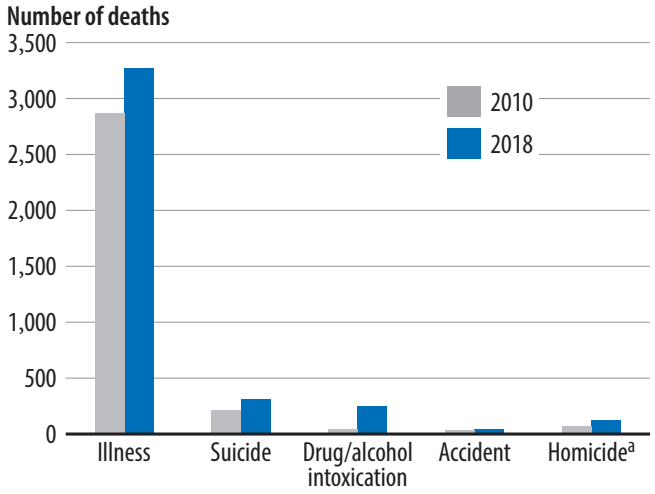
[2]The state prison population differed significantly from the U.S. resident population in terms of sex, age, and race or ethnicity. To make direct comparisons between the two populations, BJS adjusted the U.S. resident population to resemble the age, sex, and race or ethnicity distribution of state prisoners before calculating overall and cause-specific mortality rates. See *Methodology*.

FIGURE 2
Mortality rate per 100,000 state and federal prisoners, 2001–2018



Note: Mortality rates are based on the annual number of deaths and a 1-day custody population on December 31. See tables 4 and 6 for rates.
[a]Includes deaths in private state facilities.
[b]Excludes deaths in private federal facilities.
Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001–2018, and National Prisoner Statistics, 2001–2018; and Federal Bureau of Prisons, 2001–2018.

FIGURE 3
Number of state prisoner deaths, by cause of death, 2010 and 2018



Note: Data may have been revised from previously published statistics. See table 1 for data.
[a]Includes homicides committed by other prisoners, incidental to the use of force by staff, or resulting from injuries sustained prior to incarceration.
Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2010 and 2018.

Data sources

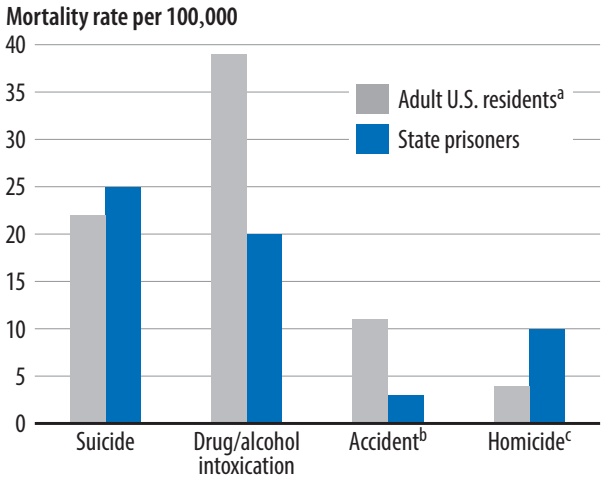
Findings in this report are from the Mortality in Correctional Institutions (MCI) data collection (formerly the Deaths in Custody Reporting Program), developed by BJS. The MCI is the only national statistical collection that obtains comprehensive information about deaths among prisoners and jail inmates in the custody of adult correctional facilities. This report reviews deaths in state and federal prisons from 2001 to 2018. Until 2015, BJS received aggregated mortality data from the BOP. In 2015, BJS began receiving individual-level data on deaths from the BOP. Data on mortality in local jails can be found in *Mortality in Local Jails, 2000-2018 – Statistical Tables* (NCJ 256002, BJS, April 2021).

Other key findings

- In 2018, a total of 22 state prisoners died from AIDS-related illnesses, a 92% decrease from 2001 (275 deaths) **(table 1) (figure 5)**.
- From 2001 to 2018, a total of 1,258 state prisoners, or 2% of all deaths in state prisons, were due to homicide **(table 2)**.
- Federal prisoners had a lower rate of suicide from 2001 to 2018 (11 suicides per 100,000 federal prisoners) than did state prisoners (17 per 100,000 state prisoners).
- Cancer and heart disease accounted for 53% of all state prison deaths from 2001 to 2018.
- Unnatural causes, including suicide, homicide, drug or alcohol intoxication, and accidents, accounted for 17% of deaths in state prisons in 2018 **(table 3)**.
- The mortality rate for state prisoners due to cancer in 2018 (95 deaths per 100,000 state prisoners) was the highest since 2001 **(table 4)**.
- State prisoners died from homicide in 2018 at a rate (10 per 100,000) 2.5 times that of the adult U.S. resident population (4 per 100,000) adjusted for sex, age, and race or ethnicity **(table 5)**.
- In 2018, federal prisoners had a suicide rate of 19 per 100,000 federal prisoners, up from 16 per 100,000 in 2017 **(table 6)**.
- In state prisons, the number of deaths and mortality rate of females increased by more than 37% between 2017 and 2018 **(tables 7 and 9)**.
- Prisoners age 55 or older made up 34% of all state prison deaths in 2001 but nearly double that (61%) in 2018 **(table 8)**.

FIGURE 4

Adjusted mortality rate per 100,000 U.S. residents, by cause of death, 2018



Note: Excludes persons younger than age 18 and federal prisoners. See table 5 for crude and adjusted rates.

[a]To allow for direct comparisons of mortality rates, BJS adjusted the U.S. resident population to resemble the sex, race or ethnicity, and age distribution of the state prison population.

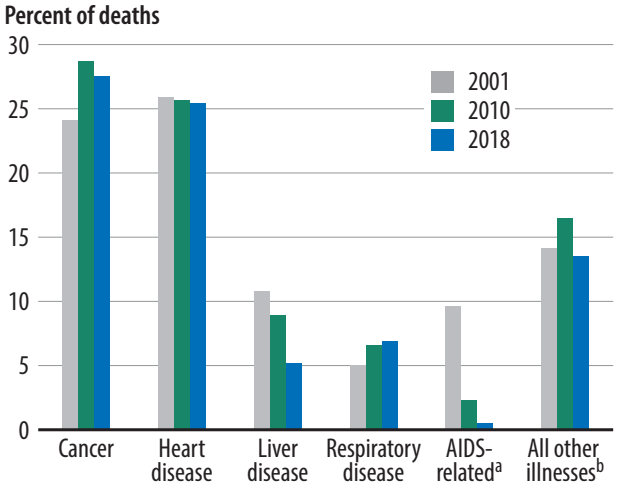
[b]Excludes causes of death that are unlikely to occur in prisons.

[c]Includes homicides committed by other prisoners, incidental to the use of force by staff, or resulting from injuries sustained prior to incarceration.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2018, National Prisoner Statistics, 2018, Survey of Inmates in State Correctional Facilities, 2004, and Survey of Prison Inmates, 2016; and Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER online database, Underlying Cause of Death 2018 (released in 2020).

FIGURE 5

Percent of state prisoner deaths due to illness, by type of illness, 2001, 2010, and 2018



Note: Data may have been revised from previously published statistics. Includes deaths in private state facilities. See table 3 for data.

[a]Includes persons who died of illness and were identified as HIV-positive or having AIDS at the time of death.

[b]Includes other specified illnesses (such as cerebrovascular disease, influenza, and other nonleading natural causes of death) and unspecified illnesses.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001, 2010, and 2018.

- American Indians and Alaska Natives accounted for 646 (1%) of all deaths in state prisons from 2001 to 2018 **(table 10)**.
- In state prisons from 2001 to 2018, white prisoners had the highest average annual mortality rate for all causes of death other than AIDS **(table 11)**.
- In 2018, more than one-third of deaths in state prisons (33.7%) occurred in the states with the largest prison systems: Texas (505 deaths), California (449), and Florida (440) **(table 12)**.
- Ten states had fewer than 10 prisoner deaths in 2018, including North Dakota, which had none.
- The average annual mortality rate due to suicide was lowest in Alabama and Kentucky (9 deaths per 100,000 state residents), followed by Florida and North Carolina (10 per 100,000) **(table 15)**.
- State prisons had a preliminary count of 3,293 deaths in 2019, based on data from 49 of the 50 state departments of corrections **(table 16)**.

List of tables

TABLE 1. Number of state and federal prisoner deaths, by cause of death, 2001 and 2008–2018

TABLE 2. State and federal prisoner deaths, by cause of death, 2001–2018

TABLE 3. Percent of state prisoner deaths, by cause of death, 2001 and 2008–2018

TABLE 4. Mortality rate per 100,000 state prisoners, by cause of death, 2001 and 2008–2018

TABLE 5. Crude and adjusted mortality rate per 100,000 U.S. residents, by cause of death, 2018

TABLE 6. Mortality rate per 100,000 federal prisoners, by cause of death, 2001 and 2008–2018

TABLE 7. Number of state prisoner deaths, by decedent characteristics, 2001 and 2008–2018

TABLE 8. Percent of state prisoner deaths, by decedent characteristics, 2001 and 2008–2018

TABLE 9. Mortality rate per 100,000 state prisoners, by decedent characteristics, 2001 and 2008–2018

TABLE 10. Number of deaths in state prisons, by cause of death and decedent characteristics, 2001–2018

TABLE 11. Average annual mortality rate per 100,000 state prisoners within each demographic group, by cause of death and decedent characteristics, 2001–2018

TABLE 12. Number of prisoner deaths in state and federal facilities, by jurisdiction, 2001 and 2008–2018

TABLE 13. Mortality rate per 100,000 state and federal prisoners, by jurisdiction, 2001 and 2008–2018

TABLE 14. Number of prisoner deaths in state and federal facilities, by cause of death and jurisdiction, 2001–2018

TABLE 15. Average annual mortality rate per 100,000 state and federal prisoners, by cause of death and jurisdiction, 2001–2018

TABLE 16. Preliminary number and percent of deaths in state prisons, by selected causes of death, 2019

Continued on next page

List of figures

FIGURE 1. Number of state and federal prisoner deaths, 2001–2018

FIGURE 2. Mortality rate per 100,000 state and federal prisoners, 2001–2018

FIGURE 3. Number of state prisoner deaths, by cause of death, 2010 and 2018

FIGURE 4. Adjusted mortality rate per 100,000 U.S. residents, by cause of death, 2018

FIGURE 5. Percent of state prisoner deaths due to illness, by type of illness, 2001, 2010, and 2018

List of appendix tables

APPENDIX TABLE 1. Estimated number of state and federal prisoners in custody, by prisoner characteristics, 2001 and 2008–2018

APPENDIX TABLE 2. Deaths of federal prisoners in federally and privately operated prison facilities, by cause of death, 2015–2018

APPENDIX TABLE 3. Illness mortality rate per 100,000 state prisoners within each demographic group, by decedent characteristics, 2006–2018 (3-year rolling averages)

APPENDIX TABLE 4. Cancer mortality rate per 100,000 state prisoners within each demographic group, by decedent characteristics, 2006–2018 (3-year rolling averages)

APPENDIX TABLE 5. Heart disease mortality rate per 100,000 state prisoners within each demographic group, by decedent characteristics, 2006–2018 (3-year rolling averages)

APPENDIX TABLE 6. Liver disease mortality rate per 100,000 state prisoners within each demographic group, by decedent characteristics, 2006–2018 (3-year rolling averages)

APPENDIX TABLE 7. Respiratory disease mortality rate per 100,000 state prisoners within each demographic group, by decedent characteristics, 2006–2018 (3-year rolling averages)

APPENDIX TABLE 8. Mortality rate due to all other illnesses per 100,000 state prisoners within each demographic group, by decedent characteristics, 2006–2018 (3-year rolling averages)

APPENDIX TABLE 9. Rate of unnatural deaths per 100,000 state prisoners within each demographic group, by decedent characteristics, 2006–2018 (3-year rolling averages)

TABLE 1
Number of state and federal prisoner deaths, by cause of death, 2001 and 2008–2018

Cause of death	2001	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	3,170	3,851	3,793	3,620	3,738	3,707	3,878	3,928	4,137	4,117	4,324	4,513
Federal[a]	301	399	376	387	387	350	400	444	455	388	381	378
State[b]	2,869	3,452	3,417	3,233	3,351	3,357	3,478	3,484	3,682	3,729	3,943	4,135
Illness	2,567	3,036	3,027	2,865	2,979	2,959	3,081	3,032	3,226	3,197	3,258	3,272
Heart disease	743	845	850	830	854	804	897	896	986	1,028	1,095	1,052
Cancer	691	907	978	927	1,028	1,024	1,065	1,050	1,122	1,130	1,110	1,137
Liver disease	310	319	337	288	340	307	357	318	302	263	246	215
AIDS-related[c]	275	99	98	73	57	74	52	64	45	31	37	22
Respiratory disease	144	250	195	212	204	220	196	233	241	220	252	287
All other illnesses[d]	404	616	569	535	496	530	514	471	530	525	518	559
Suicide	168	197	202	215	185	205	192	249	219	255	259	311
Drug/alcohol intoxication	35	58	51	41	58	33	56	50	81	104	203	249
Accident	22	26	32	32	38	50	34	39	39	41	45	43
Homicide[e]	39	40	54	70	70	85	90	83	84	96	113	120
Other causes	0	95	17	7	12	14	18	10	20	23	27	37
Missing/unknown	38	0	34	3	9	11	7	21	13	13	38	103

Note: Data may have been revised from previously published statistics. Excludes executions. For execution data, see *Capital Punishment, 2017: Selected Findings* (NCJ 253060, BJS, July 2019). See *Methodology*.

[a]Excludes deaths in private federal facilities. Until 2015, federal deaths were submitted as an aggregate count by the Federal Bureau of Prisons (BOP), with limited details regarding cause of death, and excluded deaths in private federal facilities. See appendix table 2 for deaths from 2015 to 2018 in federal prison facilities operated by the BOP or operated privately under a BOP contract.

[b]Includes deaths in private state facilities.

[c]Includes persons who died of illness and were identified as HIV-positive or having AIDS at the time of death.

[d]Includes other specified illnesses (such as cerebrovascular disease, influenza, and other nonleading natural causes of death) and unspecified illnesses.

[e]Includes homicides committed by other prisoners, incidental to the use of force by staff, or resulting from injuries sustained prior to incarceration.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001 and 2008–2018; and Federal Bureau of Prisons, 2001 and 2008–2018.

TABLE 2
State and federal prisoner deaths, by cause of death, 2001–2018

	State prisoners[a]			Federal prisoners[b]		
Cause of death	Number of deaths	Percent of deaths	Mortality rate per 100,000	Number of deaths	Percent of deaths	Mortality rate per 100,000
All causes	61,130	100%	269	6,744	100%	232
Illness	53,355	87.3%	235	6,051	89.7%	208
Heart disease	15,855	25.9	70	...	...	...
Cancer	16,777	27.4	74	...	...	...
Liver disease	5,432	8.9	24	...	...	...
AIDS-related[c]	1,932	3.2	9	167	2.5	6
Respiratory disease	3,824	6.3	17	...	...	...
All other illnesses[d]	9,535	15.6	42	...	...	...
Suicide	3,870	6.3%	17	313	4.6%	11
Drug/alcohol intoxication	1,235	2.0%	5	...	...	...
Accident[e]	618	1.0%	3	102	1.5%	4
Homicide[f]	1,258	2.1%	6	182	2.7%	6
Other causes	415	0.7%	2	0	0.0%	0
Missing/unknown	379	0.6%	2	96	1.4%	3

Note: Data may have been revised from previously published statistics. Details may not sum to totals due to rounding. Excludes executions. For execution data, see *Capital Punishment, 2017: Selected Findings* (NCJ 253060, BJS, July 2019). See *Methodology*. Mortality rates are based on the annual number of deaths and a 1-day custody population on December 31.

...Not available.

[a]Includes deaths in private state facilities.

[b]Data on cause of death for federal prisoners were not available for all causes. Excludes deaths in private federal facilities.

[c]Includes persons who died of illness and were identified as HIV-positive or having AIDS at the time of death.

[d]Includes other specified illnesses (such as cerebrovascular disease, influenza, and other nonleading natural causes of death) and unspecified illnesses.

[e]Includes death by intoxication among federal prisoners.

[f]Includes homicides committed by other prisoners, incidental to the use of force by staff, or resulting from injuries sustained prior to incarceration.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001–2018; and Federal Bureau of Prisons, 2001–2018.

TABLE 3
Percent of state prisoner deaths, by cause of death, 2001 and 2008–2018

Cause of death	2001	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
All causes	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Illness	89.5%	87.9%	88.6%	88.6%	88.9%	88.1%	88.6%	87.0%	87.6%	85.7%	82.6%	79.1%
Heart disease	25.9	24.5	24.9	25.7	25.5	23.9	25.8	25.7	26.8	27.6	27.8	25.4
Cancer	24.1	26.3	28.6	28.7	30.7	30.5	30.6	30.1	30.5	30.3	28.2	27.5
Liver disease	10.8	9.2	9.9	8.9	10.1	9.1	10.3	9.1	8.2	7.1	6.2	5.2
AIDS-related[a]	9.6	2.9	2.9	2.3	1.7	2.2	1.5	1.8	1.2	0.8	0.9	0.5
Respiratory disease	5.0	7.2	5.7	6.6	6.1	6.6	5.6	6.7	6.5	5.9	6.4	6.9
All other illnesses[b]	14.1	17.8	16.7	16.5	14.8	15.8	14.8	13.5	14.4	14.1	13.1	13.5
Suicide	5.9%	5.7%	5.9%	6.7%	5.5%	6.1%	5.5%	7.1%	5.9%	6.8%	6.6%	7.5%
Drug/alcohol intoxication	1.2%	1.7%	1.5%	1.3%	1.7%	1.0%	1.6%	1.4%	2.2%	2.8%	5.1%	6.0%
Accident	0.8%	0.8%	0.9%	1.0%	1.1%	1.5%	1.0%	1.1%	1.1%	1.1%	1.1%	1.0%
Homicide[c]	1.4%	1.2%	1.6%	2.2%	2.1%	2.5%	2.6%	2.4%	2.3%	2.6%	2.9%	2.9%
Other causes	0.0%	2.8%	0.5%	0.2%	0.4%	0.4%	0.5%	0.3%	0.5%	0.6%	0.7%	0.9%
Missing/unknown	1.3%	0.0%	1.0%	0.1%	0.3%	0.3%	0.2%	0.6%	0.4%	0.3%	1.0%	2.5%

Note: Data may have been revised from previously published statistics. Details may not sum to totals due to rounding. Excludes executions. For execution data, see *Capital Punishment, 2017: Selected Findings* (NCJ 253060, BJS, July 2019). See *Methodology*. Includes deaths in private state facilities.

[a]Includes persons who died of illness and were identified as HIV-positive or having AIDS at the time of death.

[b]Includes other specified illnesses (such as cerebrovascular disease, influenza, and other nonleading natural causes of death) and unspecified illnesses.

[c]Includes homicides committed by other prisoners, incidental to the use of force by staff, or resulting from injuries sustained prior to incarceration.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001 and 2008–2018.

TABLE 4
Mortality rate per 100,000 state prisoners, by cause of death, 2001 and 2008–2018

Cause of death	2001	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
All causes	242	261	259	246	260	265	274	274	296	303	323	344
Illness	217	229	229	218	231	234	243	239	259	260	267	273
Heart disease	63	64	64	63	66	63	71	71	79	84	90	88
Cancer	58	68	74	71	80	81	84	83	90	92	91	95
Liver disease	26	24	26	22	26	24	28	25	24	21	20	18
AIDS-related[a]	23	7	7	6	4	6	4	5	4	3	3	2
Respiratory disease	12	19	15	16	16	17	15	18	19	18	21	24
All other illnesses[b]	34	47	43	41	38	42	40	37	43	43	42	47
Suicide	14	15	15	16	14	16	15	20	18	21	21	26
Drug/alcohol intoxication	3	4	4	3	4	3	4	4	7	8	17	21
Accident	2	2	2	2	3	4	3	3	3	3	4	4
Homicide[c]	3	3	4	5	5	7	7	7	7	8	9	10
Other causes	0	7	1	1!	1	1	1	1	2	2	2	3
Missing/unknown	3	0	3	0!	1!	1	1!	2	1	1	3	9

Note: Data may have been revised from previously published statistics. Excludes executions. For execution data, see *Capital Punishment, 2017: Selected Findings* (NCJ 253060, BJS, July 2019). See *Methodology*. Includes deaths in private state facilities. Mortality rates are based on the annual number of deaths and a 1-day custody population on December 31.

! Interpret with caution. Estimate is based on 10 or fewer cases, or coefficient of variation is greater than 50%. See *Methodology – Interpreting rates among small populations*, p. 24.

[a]Includes persons who died of illness and were identified as HIV-positive or having AIDS at the time of death.

[b]Includes other specified illnesses (such as cerebrovascular disease, influenza, and other nonleading natural causes of death) and unspecified illnesses.

[c]Includes homicides committed by other prisoners, incidental to the use of force by staff, or resulting from injuries sustained prior to incarceration.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001 and 2008–2018; and National Prisoner Statistics, 2001 and 2008–2018.

TABLE 5
Crude and adjusted mortality rate per 100,000 U.S. residents, by cause of death, 2018

Cause of death	Crude rate per 100,000 adult U.S. residents	Adjusted rate per 100,000 adult U.S. residents[a]	Prison annual mortality rate per 100,000 state prisoners[b]
All causes	1,110	419	319
Illness	1,040	344	261
Heart disease	265	96	84
Cancer	242	81	91
Liver disease	23	15	17
AIDS-related[c]	2	5	2
Respiratory disease	114	27	23
All other illnesses[d]	395	121	45
Suicide	19	22	25
Drug/alcohol intoxication	27	39	20
Accident[e]	22	11	3
Homicide[f]	2	4	10

Note: Includes deaths in private state facilities. Excludes persons younger than age 18 and federal prisoners.

[a]Population adjusted to resemble the sex, race or ethnicity, and age distribution of the state prison population.

[b]Mortality rates may differ from those presented elsewhere in this report due to the removal of state prisoners younger than age 18 from both the numerator (deaths) and denominator (state prison population) and the exclusion of deaths for which cause of death was unknown or missing. These changes were made solely to table 5 to make the mortality rates comparable to those in the U.S. resident population.

[c]Includes persons who died of illness and were identified as HIV-positive or having AIDS at the time of death.

[d]Includes other specified illnesses (such as cerebrovascular disease, influenza, and other nonleading natural causes of death) and unspecified illnesses.

[e]Excludes causes of death that are unlikely to occur in prisons, such as motor vehicle accidents, neglect and abandonment, and injury by firearms or explosives unrelated to law enforcement incidents.

[f]Includes homicides committed by other prisoners, incidental to the use of force by staff, or resulting from injuries sustained prior to incarceration.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2018, National Prisoner Statistics, 2018, Survey of Inmates in State Correctional Facilities, 2004, and Survey of Prison Inmates, 2016; and Centers for Disease Control and Prevention, National Center for Health Statistics, CDC WONDER online database, Underlying Cause of Death 2018 (released in 2020).

TABLE 6
Mortality rate per 100,000 federal prisoners, by cause of death, 2001 and 2008–2018

Cause of death	2001	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
All causes	220	241	220	224	220	198	230	262	283	252	246	250
Illness	196	217	198	203	204	182	213	238	249	220	208	190
AIDS-related[a]	16	8	4 !	4 !	2 !	3 !	2 !	0	1 !	1 !	4 !	0
Suicide	13	13	12	6	10	11	8	14	12	12	16	19
Accident[b]	4 !	4 !	3 !	1 !	1 !	2 !	2 !	1 !	10	9	5 !	9
Homicide[c]	6 !	8	4 !	10	5 !	3 !	7	8	10	9	6	8
Other/unknown	0	1 !	4 !	3 !	1 !	1 !	1 !	0	2 !	2 !	11	24

Note: Excludes deaths in private federal facilities. Until 2015, federal deaths were submitted as an aggregate count by the Federal Bureau of Prisons (BOP), with limited details regarding cause of death, and excluded deaths in private federal facilities. See appendix table 2 for deaths from 2015 to 2018 in federal prison facilities operated by the BOP or operated privately under a BOP contract. Excludes executions. For execution data, see *Capital Punishment, 2017: Selected Findings* (NCJ 253060, BJS, July 2019). See *Methodology*. Mortality rates are based on the annual number of deaths and a 1-day custody population on December 31.

! Interpret with caution. Estimate is based on 10 or fewer cases, or coefficient of variation is greater than 50%. See *Methodology – Interpreting rates among small populations*, p. 24.

[a]Includes persons who died of illness and were identified as HIV-positive or having AIDS at the time of death.

[b]Includes deaths due to drug or alcohol intoxication.

[c]Includes homicides committed by other prisoners, incidental to the use of force by staff, or resulting from injuries sustained prior to incarceration.

Source: Bureau of Justice Statistics, National Prisoner Statistics, 2001 and 2008–2018; and Federal Bureau of Prisons, 2001 and 2008–2018.

TABLE 7
Number of state prisoner deaths, by decedent characteristics, 2001 and 2008–2018

Characteristic	2001	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	2,869	3,452	3,417	3,233	3,351	3,357	3,478	3,484	3,682	3,729	3,943	4,135
Sex												
Male	2,769	3,289	3,267	3,116	3,208	3,244	3,337	3,330	3,533	3,586	3,811	3,954
Female	100	163	150	117	143	113	141	154	149	143	131	180
Race/ethnicity												
White[a]	1,340	1,822	1,774	1,680	1,912	1,789	1,901	1,921	2,040	2,063	2,156	2,198
Black[a]	1,161	1,157	1,199	1,121	1,037	1,113	1,104	1,108	1,189	1,201	1,268	1,352
Hispanic	322	400	372	359	329	379	402	368	367	382	437	503
American Indian/ Alaska Native[a]	25	36	31	36	36	40	37	43	52	51	47	48
Asian/Native Hawaiian/ Other Pacific Islander/ two or more races[a]	16	37	27	25	25	30	33	44	33	29	27	30
Age												
17 or younger	2	3	0	3	2	0	0	2	0	1	1	0
18–24	86	67	69	69	50	69	69	56	68	72	60	66
25–34	256	222	210	217	200	190	221	221	226	246	308	328
35–44	656	468	467	382	397	360	334	335	342	379	405	421
45–54	893	1,063	1,039	956	930	876	861	821	795	721	697	776
55 or older	972	1,629	1,631	1,606	1,771	1,862	1,993	2,049	2,250	2,298	2,472	2,543

Note: Data may have been revised from previously published statistics. Details may not sum to totals due to missing data. Excludes executions. For execution data, see *Capital Punishment, 2017: Selected Findings* (NCJ 253060, BJS, July 2019). See *Methodology*. Includes deaths in private state facilities.

[a]Excludes persons of Hispanic origin (e.g., "white" refers to non-Hispanic whites and "black" refers to non-Hispanic blacks).

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001 and 2008–2018.

TABLE 8
Percent of state prisoner deaths, by decedent characteristics, 2001 and 2008–2018

Characteristic	2001	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Sex												
Male	96.5%	95.3%	95.6%	96.4%	95.7%	96.6%	96.0%	95.6%	96.0%	96.2%	96.7%	95.6%
Female	3.5	4.7	4.4	3.6	4.3	3.4	4.1	4.4	4.1	3.8	3.3	4.4
Race/ethnicity												
White[a]	46.7%	52.8%	51.9%	52.0%	57.1%	53.3%	54.7%	55.1%	55.4%	55.3%	54.7%	53.2%
Black[a]	40.5	33.5	35.1	34.7	31.0	33.2	31.7	31.8	32.3	32.2	32.2	32.7
Hispanic	11.2	11.6	10.9	11.1	9.8	11.3	11.6	10.6	10.0	10.2	11.1	12.2
American Indian/ Alaska Native[a]	0.9	1.0	0.9	1.1	1.1	1.2	1.1	1.2	1.4	1.4	1.2	1.2
Asian/Native Hawaiian/ Other Pacific Islander/ two or more races[a]	0.6	1.1	0.8	0.8	0.8	0.9	1.0	1.3	0.9	0.8	0.7	0.7
Age												
17 or younger	<0.1%	<0.1%	0.0%	<0.1%	<0.1%	0.0%	0.0%	<0.1%	0.0%	<0.1%	<0.1%	0.0%
18–24	3.0	1.9	2.0	2.1	1.5	2.1	2.0	1.6	1.9	1.9	1.5	1.6
25–34	8.9	6.4	6.2	6.7	6.0	5.7	6.4	6.3	6.1	6.6	7.8	7.9
35–44	22.9	13.6	13.7	11.8	11.9	10.7	9.6	9.6	9.3	10.2	10.3	10.2
45–54	31.1	30.8	30.4	29.6	27.8	26.1	24.8	23.6	21.6	19.3	17.7	18.8
55 or older	33.9	47.2	47.7	49.7	52.9	55.5	57.3	58.8	61.1	61.6	62.7	61.5

Note: Data may have been revised from previously published statistics. Details may not sum to totals due to rounding and missing data. Excludes executions. For execution data, see *Capital Punishment, 2017: Selected Findings* (NCJ 253060, BJS, July 2019). See *Methodology*. Includes deaths in private state facilities.

[a]Excludes persons of Hispanic origin (e.g., "white" refers to non-Hispanic whites and "black" refers to non-Hispanic blacks).

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001 and 2008–2018.

TABLE 9

Mortality rate per 100,000 state prisoners, by decedent characteristics, 2001 and 2008–2018

Characteristic	2001	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	242	261	259	246	260	265	274	274	296	303	323	344
Sex												
Male	250	267	266	255	267	275	282	282	306	315	337	356
Female	131	173	163	128	160	131	159	171	167	161	148	203
Race/ethnicity												
White[a]	345	413	412	396	461	439	468	473	515	535	561	580
Black[a]	234	230	243	233	222	245	246	254	282	293	316	344
Hispanic	139	147	134	129	121	145	153	141	142	144	164	191
Other[a,b]	59	67	49	47	45	49	45	53	50	48	44	47
Age												
17 or younger	68 !	115 !	0	140 !	111 !	0	0	206 !	0	120 !	126 !	0
18–24	39	34	35	35	26	38	40	35	47	53	48	58
25–34	64	51	48	50	47	46	53	53	55	61	78	85
35–44	181	131	136	114	123	113	104	104	106	117	124	128
45–54	584	442	427	389	384	368	364	349	347	321	317	363
55 or older	2,032	1,859	1,737	1,580	1,632	1,615	1,619	1,563	1,618	1,579	1,624	1,606

Note: Data may have been revised from previously published statistics. Excludes executions. For execution data, see *Capital Punishment, 2017: Selected Findings* (NCJ 253060, BJS, July 2019). Includes deaths in private state facilities. Mortality rates are based on the annual number of deaths and a 1-day custody population on December 31.

! Interpret with caution. Estimate is based on 10 or fewer cases, or coefficient of variation is greater than 50%. See *Methodology – Interpreting rates among small populations*, p. 24.

[a]Excludes persons of Hispanic origin (e.g., "white" refers to non-Hispanic whites and "black" refers to non-Hispanic blacks).

[b]Includes Asians, Native Hawaiians or Other Pacific Islanders, American Indians or Alaska Natives, and persons of two or more races. Due to the small number of deaths and prison populations of American Indians and Alaska Natives, Asians, and Native Hawaiians and Other Pacific Islanders, mortality rates for these populations are unstable and not shown. See *Methodology*.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001 and 2008–2018; National Prisoner Statistics, 2001 and 2008–2018; Survey of Inmates in State Correctional Facilities, 2004; and Survey of Prison Inmates, 2016.

TABLE 10
Number of deaths in state prisons, by cause of death and decedent characteristics, 2001–2018

Characteristic	All causes[a]	Illness						Suicide	Drug/alcohol intoxication	Accident	Homicide[d]
		Heart disease	Cancer	Liver disease	AIDS-related[b]	Respiratory disease	All other illnesses[c]				
Total	61,130	15,855	16,777	5,432	1,932	3,824	9,535	3,870	1,235	618	1,258
Sex											
Male	58,651	15,324	16,143	5,242	1,834	3,631	9,016	3,663	1,191	599	1,251
Female	2,476	531	634	190	98	193	518	207	44	19	7
Race/ethnicity											
White[e]	32,102	8,473	9,262	3,025	437	2,203	4,489	2,268	639	351	561
Black[e]	21,076	5,887	5,784	1,219	1,272	1,211	3,641	809	306	170	447
Hispanic	6,703	1,242	1,447	1,044	203	356	1,215	615	237	79	213
American Indian/ Alaska Native[e]	646	142	141	99	11	27	93	67	35	11	13
Asian/Native Hawaiian/ Other Pacific Islander/ two or more races[e]	504	94	118	35	8	21	80	96	17	5	22
Age											
17 or younger	22	2	4	1	0	1	1	11	0	1	1
18–24	1,207	143	72	15	19	62	138	486	67	41	140
25–34	4,344	716	376	87	247	203	553	1,243	323	106	371
35–44	8,566	1,970	1,384	636	743	400	1,313	1,098	394	151	322
45–54	16,380	3,875	4,508	2,345	656	768	2,662	705	305	131	238
55 or older	30,584	9,145	10,429	2,345	267	2,389	4,864	325	146	187	185

Note: Data may have been revised from previously published statistics. Details may not sum to totals due to missing data. Excludes executions. For execution data, see *Capital Punishment, 2017: Selected Findings* (NCJ 253060, BJS, July 2019). See *Methodology*. Includes deaths in private state facilities. There were 99 prisoners whose race or ethnicity was unknown, 27 whose age was unknown, and 3 whose sex was unknown.

[a]Includes other causes not specified and missing and unknown causes.

[b]Includes persons who died of illness and were identified as HIV-positive or having AIDS at the time of death.

[c]Includes other specified illnesses (such as cerebrovascular disease, influenza, and other nonleading natural causes of death) and unspecified illnesses.

[d]Includes homicides committed by other prisoners, incidental to the use of force by staff, or resulting from injuries sustained prior to incarceration.

[e]Excludes persons of Hispanic origin (e.g., "white" refers to non-Hispanic whites and "black" refers to non-Hispanic blacks).

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001–2018.

TABLE 11

Average annual mortality rate per 100,000 state prisoners within each demographic group, by cause of death and decedent characteristics, 2001–2018

Characteristic	All causes[a]	Illness						Suicide	Drug/alcohol intoxication	Accident	Homicide[d]
		Heart disease	Cancer	Liver disease	AIDS-related[b]	Respiratory disease	All other illnesses[c]				
Total	269	70	74	24	9	17	42	17	5	3	6
Sex											
Male	278	73	76	25	9	17	43	17	6	3	6
Female	156	33	40	12	6	12	33	13	3	1	0
Race/ethnicity											
White[e]	432	114	125	41	6	30	60	31	9	5	8
Black[e]	252	70	69	15	15	14	43	10	4	2	5
Hispanic	142	26	31	22	4	8	26	13	5	2	5
Other[e,f]	53	11	12	6	1	2	8	8	2	1	2
Age											
17 or younger	67 !	6 !	12 !	3 !	0 !	3 !	3 !	33 !	0	3 !	3 !
18–24	37	4	2	0	1	2	4	15	2	1	4
25–34	58	10	5	1	3	3	7	17	4	1	5
35–44	138	32	22	10	12	6	21	18	6	2	5
45–54	419	99	115	60	17	20	68	18	8	3	6
55 or older	1,704	509	581	131	15	133	271	18	8	10	10

Note: Data may have been revised from previously published statistics. Excludes executions. For execution data, see *Capital Punishment, 2017: Selected Findings* (NCJ 253060, BJS, July 2019). Includes deaths in private state facilities. Mortality rates are based on the annual number of deaths and a 1-day custody population on December 31.

! Interpret with caution. Estimate is based on 10 or fewer cases, or coefficient of variation is greater than 50%. See *Methodology – Interpreting rates among small populations*, p. 24.

[a]Includes other causes not specified and missing and unknown causes.

[b]Includes persons who died of illness and were identified as HIV-positive or having AIDS at the time of death.

[c]Includes other specified illnesses (such as cerebrovascular disease, influenza, and other nonleading natural causes of death) and unspecified illnesses.

[d]Includes homicides committed by other prisoners, incidental to the use of force by staff, or resulting from injuries sustained prior to incarceration.

[e]Excludes persons of Hispanic origin (e.g., "white" refers to non-Hispanic whites and "black" refers to non-Hispanic blacks).

[f]Includes Asians, Native Hawaiians or Other Pacific Islanders, American Indians or Alaska Natives, and persons of two or more races. Due to the small number of deaths and prison populations of American Indians and Alaska Natives, Asians, and Native Hawaiians and Other Pacific Islanders, mortality rates for these populations are unstable and not shown. See *Methodology*.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001–2018; National Inmate Survey, 2007–2009, 2011, and 2012; National Prisoner Statistics, 2001–2016; Survey of Inmates in State Correctional Facilities, 2004; and Survey of Prison Inmates, 2016.

TABLE 12

Number of prisoner deaths in state and federal facilities, by jurisdiction, 2001 and 2008–2018

Jurisdiction	2001	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Federal[a]	301	399	376	387	387	350	400	444	455	388	381	378
State[b]	2,869	3,452	3,417	3,233	3,351	3,357	3,478	3,484	3,682	3,729	3,943	4,135
Alabama	87	75	80	66	104	86	107	102	112	118	116	125
Alaska[c]	8	14	7	13	12	11	8	12	15	10	9	11
Arizona	64	77	85	85	86	87	95	99	105	126	133	131
Arkansas	42	41	50	54	50	43	56	57	54	71	81	76
California	287	371	395	414	388	368	365	317	353	334	384	449
Colorado	42	38	49	48	37	48	40	35	51	57	41	55
Connecticut[d]	30	32	29	21	19	24	20	24	23	17	14	28
Delaware[d]	16	15	12	23	15	10	14	18	17	14	10	16
Florida	182	291	278	275	297	324	305	346	354	356	428	440
Georgia	93	128	125	112	121	103	122	121	131	133	173	163
Hawaii[d]	7	14	11	12	6	12	14	8	4	9	4	6
Idaho	17	18	13	13	13	9	10	23	18	16	15	22
Illinois	86	71	75	94	97	85	78	88	120	90	104	83
Indiana	46	70	91	69	74	59	66	70	85	70	68	67

Continued on next page

TABLE 12 (continued)
Number of prisoner deaths in state and federal facilities, by jurisdiction, 2001 and 2008–2018

Jurisdiction	2001	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Iowa	9	21	14	13	12	20	16	15	19	29	16	19
Kansas	21	24	20	22	25	17	28	21	25	35	26	33
Kentucky	36	68	57	42	60	55	40	44	60	42	70	50
Louisiana	71	117	108	100	108	116	118	118	113	123	115	114
Maine	6	2	4	3	5	2	3	7	5	5	4	8
Maryland	70	69	56	40	41	46	58	43	62	49	57	57
Massachusetts	29	29	29	39	33	42	39	45	34	34	37	42
Michigan	114	99	148	93	119	124	124	121	118	106	106	135
Minnesota	13	17	12	16	19	14	20	14	11	18	6	6
Mississippi	36	54	52	52	47	41	68	50	45	65	77	76
Missouri	57	87	81	88	74	71	92	97	106	99	94	106
Montana	6	9	3	2	6	11	7	19	13	16	13	5
Nebraska	7	6	11	12	17	11	16	13	17	9	16	10
Nevada	27	35	35	41	34	37	35	44	47	42	47	29
New Hampshire	2	5	9	4	10	5	8	5	8	9	5	8
New Jersey	69	66	58	56	66	48	46	50	52	49	39	33
New Mexico	11	29	21	16	16	14	17	24	19	16	18	22
New York	175	133	142	124	117	115	142	123	115	147	143	138
North Carolina	66	117	86	87	71	79	81	94	90	127	104	118
North Dakota	3	0	0	1	1	3	1	0	0	4	2	0
Ohio	115	101	120	116	111	126	124	111	138	133	149	151
Oklahoma	51	88	79	60	85	79	87	107	107	93	86	113
Oregon	24	31	34	39	40	26	30	31	37	47	25	34
Pennsylvania	122	145	165	141	157	157	157	145	166	171	181	166
Rhode Island[d]	3	6	7	7	10	6	4	7	5	2	8	5
South Carolina	69	83	49	70	55	58	66	66	76	79	105	100
South Dakota	4	6	4	8	11	9	6	7	7	5	12	6
Tennessee	51	74	69	74	59	84	82	83	94	102	96	121
Texas	408	469	426	375	417	462	438	409	418	403	469	505
Utah	5	11	17	13	12	15	23	23	16	21	20	17
Vermont[d]	3	3	3	5	0	2	8	6	4	7	4	2
Virginia	71	86	87	93	99	86	82	90	90	90	93	106
Washington	29	35	44	35	21	33	39	38	42	28	40	36
West Virginia	17	19	18	20	23	24	26	24	28	26	29	34
Wisconsin	48	44	42	25	48	46	43	58	46	66	43	52
Wyoming	5	9	7	2	3	4	4	12	7	11	8	6

Note: Data may have been revised from previously published statistics. Details may not sum to totals due to missing data. Excludes executions. For execution data, see *Capital Punishment, 2017: Selected Findings* (NCJ 253060, BJS, July 2019). See *Methodology*.

[a]Excludes deaths in private federal facilities. Until 2015, federal deaths were submitted as an aggregate count by the Federal Bureau of Prisons (BOP), with limited details regarding cause of death, and excluded deaths in private federal facilities. See appendix table 2 for deaths from 2015 to 2018 in federal prison facilities operated by the BOP or operated privately under a BOP contract.

[b]Includes deaths in private state facilities. Includes nine prisoner deaths reported by the District of Columbia in 2001. As of December 30, 2001, sentenced felons from the District of Columbia were the responsibility of the BOP.

[c]Prisons and jails form one integrated system. Counts include deaths only in state-operated prisons and jails and exclude deaths in 15 locally operated jails.

[d]Prisons and jails form one integrated system. Data include the total jail and prison population.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001 and 2008–2018; and Federal Bureau of Prisons, 2001 and 2008–2018.

TABLE 13

Mortality rate per 100,000 state and federal prisoners, by jurisdiction, 2001 and 2008–2018

Jurisdiction	2001	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Federal[a]	220	241	220	224	220	198	230	262	283	252	246	250
State[b]	242	261	259	246	260	265	274	274	296	303	323	344
Alabama	352	296	294	241	388	321	399	390	444	497	531	588
Alaska[c]	175 !	280	128 !	242	193	174	157 !	190	286	228	206 !	260
Arizona	231	195	210	212	215	217	232	235	249	298	317	312
Arkansas	366	312	375	380	355	306	392	374	342	448	510	488
California	183	217	234	254	263	277	272	236	276	258	295	352
Colorado	243	164	216	211	169	236	198	171	256	293	209	275
Connecticut[d]	171	161	153	113	106	140	115	143	144	113	103	212
Delaware[d]	234	216	182	361	229	149	206	267	264	221	163	287
Florida	251	291	274	269	294	325	302	343	356	363	443	460
Georgia	202	243	233	212	229	187	227	230	252	249	323	306
Hawaii[d]	137 !	257	227	227	110 !	227	271	148 !	74 !	174 !	78 !	120 !
Idaho	323	256	181	180	174	117 !	139	307	249	222	196	273
Illinois	194	156	166	194	200	172	160	182	260	206	253	208
Indiana	234	265	340	253	270	210	232	215	320	278	264	252
Iowa	113 !	241	157	137	132	229	184	170	214	320	177	201
Kansas	245	281	231	243	268	179	291	220	262	363	268	332
Kentucky	336	446	380	290	429	423	329	363	502	354	583	381
Louisiana[e]	361	561	543	526	573	624	628	631	613	817	759	766
Maine	358 !	98 !	193 !	154 !	253 !	101 !	145 !	318 !	228 !	212 !	170 !	336 !
Maryland	295	298	254	175	178	211	267	202	296	242	286	297
Massachusetts	284	260	260	349	288	377	367	431	358	376	418	497
Michigan	233	203	325	211	277	284	284	279	277	258	267	348
Minnesota	203	188	126	170	204	149	213	146	115	189	63 !	64 !
Mississippi	238	302	302	316	305	260	436	383	322	474	568	572
Missouri	199	289	265	288	239	228	292	304	328	305	289	349
Montana	215 !	309 !	97 !	64 !	192 !	355	224 !	609	409	500	409	130 !
Nebraska	179 !	134 !	245	260	365	233	319	249	331	174 !	308	187
Nevada	274	272	278	336	280	294	274	347	355	301	349	217
New Hampshire	83 !	175 !	309 !	153 !	413	195 !	305 !	184 !	301 !	346 !	197 !	312 !
New Jersey	265	266	241	229	279	208	207	234	256	252	203	173
New Mexico	194	459	319	240	239	211	251	345	267	229	250	332
New York	259	221	243	220	212	213	266	235	223	290	289	295
North Carolina	205	293	214	215	179	211	218	252	244	353	284	336
North Dakota	276 !	0	0	71 !	72 !	212 !	63 !	0	0	244 !	126 !	0
Ohio	256	198	236	224	218	248	240	215	264	255	289	299
Oklahoma	235	372	328	248	358	324	343	404	392	353	315	415
Oregon	219	229	248	281	291	184	205	214	252	322	171	231
Pennsylvania	324	298	327	293	316	313	314	295	340	354	383	358
Rhode Island[d]	89 !	160 !	205 !	222 !	330	197 !	126 !	223 !	168 !	69 !	298 !	194 !
South Carolina	318	350	207	304	246	265	306	315	372	388	541	539
South Dakota	143 !	179 !	118 !	236 !	309	250 !	166 !	200 !	198 !	133 !	308	156 !
Tennessee	292	382	346	369	298	424	395	399	475	474	436	619
Texas	275	295	269	234	261	298	282	265	274	266	311	337
Utah	121 !	214	324	239	227	283	427	433	331	466	403	327
Vermont[d]	214 !	142 !	135 !	241 !	0	98 !	385 !	303 !	229 !	403 !	300 !	117 !
Virginia	226	264	281	291	324	289	273	300	296	301	312	358
Washington	190	204	255	206	123	195	220	221	244	163	226	207
West Virginia	500	388	356	394	447	450	456	409	473	441	490	583

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TABLE 13 (continued)
Mortality rate per 100,000 state and federal prisoners, by jurisdiction, 2001 and 2008–2018

Jurisdiction	2001	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Wisconsin	231	197	189	113	214	205	192	257	201	285	183	221
Wyoming	336 !	528 !	402 !	96 !	139 !	183 !	175 !	507	292 !	468	331 !	245 !

Note: Data may have been revised from previously published statistics. Excludes executions. For execution data, see *Capital Punishment, 2017: Selected Findings* (NCJ 253060, BJS, July 2019). Mortality rates are based on the annual number of deaths and a 1-day custody population on December 31. Mortality rates are not adjusted for demographic differences among states. See *Methodology*.

! Interpret with caution. Estimate is based on 10 or fewer cases, or coefficient of variation is greater than 50%. See *Methodology – Interpreting rates among small populations*, p. 24.

[a]Excludes deaths in private federal facilities. Until 2015, federal deaths were submitted as an aggregate count by the Federal Bureau of Prisons (BOP), with limited details regarding cause of death, and excluded deaths in private federal facilities. See appendix table 2 for deaths from 2015 to 2018 in federal prison facilities operated by the BOP or operated privately under a BOP contract.

[b]Includes deaths in private state facilities. Includes nine prisoner deaths reported by the District of Columbia in 2001. As of December 30, 2001, sentenced felons from the District of Columbia were the responsibility of the BOP.

[c]Prisons and jails form one integrated system. Counts include deaths only in state-operated prisons and jails and exclude deaths in 15 locally operated jails.

[d]Prisons and jails form one integrated system. Data include the total jail and prison population.

[e]Annually, Louisiana holds roughly half of its prison population in local jails. Since the calculation of mortality rates is based on the custody populations, which exclude prisoners held in local jails, the mortality rates for Louisiana prisoners will be high because the prisoners held in jails are generally healthier according to the Louisiana Department of Corrections.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001 and 2008–2018, and National Prisoner Statistics, 2001 and 2008–2018; and Federal Bureau of Prisons, 2001 and 2008–2018.

TABLE 14

Number of prisoner deaths in state and federal facilities, by cause of death and jurisdiction, 2001–2018

Jurisdiction	All causes[a]	Illness						Suicide	Drug/alcohol intoxication	Accident[d]	Homicide[e]
		Heart disease	Cancer	Liver disease	AIDS-related[b]	Respiratory disease	All other illnesses[c]				
Federal[f]	6,744	...	...	...	167	...	5,884	313	...	102	182
State[g]	61,130	15,855	16,777	5,432	1,932	3,824	9,535	3,870	1,235	618	1,258
Alabama	1,601	369	403	136	37	107	287	40	13	17	46
Alaska[h]	176	42	28	17	1	4	24	34	10	9	4
Arizona	1,607	380	422	206	34	89	202	116	75	15	54
Arkansas	900	302	241	64	25	45	92	52	42	14	15
California	6,628	1,131	1,635	647	116	472	1,356	558	336	49	282
Colorado	805	155	165	129	1	58	144	73	35	15	29
Connecticut[i]	472	115	65	66	11	27	96	75	3	6	7
Delaware[i]	274	69	63	25	20	14	33	32	6	1	2
Florida	5,260	1,129	1,552	407	303	350	931	170	160	63	135
Georgia	2,212	735	559	122	82	181	284	122	8	18	75
Hawaii[i]	162	30	42	17	4	7	23	28	4	1	5
Idaho	265	69	66	23	4	13	38	35	5	5	4
Illinois	1,590	457	503	80	64	88	211	132	14	15	17
Indiana	1,165	312	314	102	22	76	170	78	40	17	28
Iowa	290	64	100	17	5	29	35	31	3	1	2
Kansas	436	120	125	50	2	29	65	27	6	8	3
Kentucky	887	298	280	64	30	46	130	22	3	4	6
Louisiana	1,806	558	547	140	109	85	231	40	3	20	9
Maine	74	23	18	6	1	6	8	4	2	0	5
Maryland	1,039	260	218	82	109	43	117	79	62	9	46
Massachusetts	622	170	170	62	10	28	90	58	10	9	4
Michigan	2,180	654	744	169	39	123	220	131	35	25	22
Minnesota	235	47	70	32	1	10	43	26	4	1	1
Mississippi	1,001	366	251	47	24	49	136	47	4	14	28
Missouri	1,471	406	449	158	26	83	216	70	21	8	24
Montana	161	31	44	25	2	10	25	18	3	1	2
Nebraska	195	44	44	25	4	9	22	18	5	3	6
Nevada	623	151	141	42	9	27	129	39	6	4	11
New Hampshire	119	26	46	11	3	4	12	12	5	0	0
New Jersey	986	314	234	61	83	58	129	52	21	10	12
New Mexico	318	71	82	57	4	17	38	29	7	1	11
New York	2,599	690	754	200	221	115	233	229	56	34	29
North Carolina	1,605	437	524	130	74	104	210	64	8	24	16
North Dakota	20	4	5	2	1	0	3	4	1	0	0
Ohio	2,175	618	746	119	34	161	303	126	20	8	31
Oklahoma	1,475	385	371	167	30	85	196	87	39	32	60
Oregon	603	128	184	87	7	29	81	36	13	7	10
Pennsylvania	2,730	776	790	240	38	170	500	150	21	14	18
Rhode Island[i]	112	27	21	3	5	5	9	26	5	3	1
South Carolina	1,246	472	267	81	36	52	195	69	11	7	53
South Dakota	128	30	28	18	1	13	13	17	1	4	3
Tennessee	1,451	441	397	148	43	71	194	67	30	13	33
Texas	7,602	1,896	1,899	804	172	595	1,542	492	27	76	72
Utah	245	59	52	20	0	10	43	39	5	3	8
Vermont[i]	69	17	13	11	3	1	11	10	3	0	0
Virginia	1,586	423	543	153	54	82	207	60	19	10	14
Washington	637	150	182	70	9	54	98	43	9	11	8

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TABLE 14 (continued)
Number of prisoner deaths in state and federal facilities, by cause of death and jurisdiction, 2001–2018

Jurisdiction	All causes[a]	Illness						Suicide	Drug/alcohol intoxication	Accident[d]	Homicide[e]
		Heart disease	Cancer	Liver disease	AIDS-related[b]	Respiratory disease	All other illnesses[c]				
West Virginia	366	138	98	25	6	17	58	10	3	2	6
Wisconsin	808	226	265	50	11	64	85	85	9	6	1
Wyoming	104	38	17	14	1	8	15	8	2	1	0

Note: Data may have been revised from previously published statistics. Details may not sum to totals due to missing data. Excludes executions. For execution data, see *Capital Punishment, 2017: Selected Findings* (NCJ 253060, BJS, July 2019). See *Methodology*.

...Not available.

[a]Includes other causes not specified and missing and unknown causes.

[b]Includes persons who died of illness and were identified as HIV-positive or having AIDS at the time of death.

[c]Includes other specified illnesses (such as cerebrovascular disease, influenza, and other nonleading natural causes of death) and unspecified illnesses. Includes natural and illness-related deaths of federal prisoners for which the Federal Bureau of Prisons (BOP) could not provide details.

[d]Includes death by intoxication among federal prisoners.

[e]Includes homicides committed by other prisoners, incidental to the use of force by staff, or resulting from injuries sustained prior to incarceration.

[f]Excludes deaths in private federal facilities.

[g]Includes deaths in private state facilities. Includes nine prisoner deaths reported by the District of Columbia in 2001. As of December 30, 2001, sentenced felons from the District of Columbia were the responsibility of the BOP.

[h]Prisons and jails form one integrated system. Counts include deaths only in state-operated prisons and jails and exclude deaths in 15 locally operated jails.

[i]Prisons and jails form one integrated system. Data include the total jail and prison population.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001–2018; and Federal Bureau of Prisons, 2001–2018.

TABLE 15

Average annual mortality rate per 100,000 state and federal prisoners, by cause of death and jurisdiction, 2001–2018

Jurisdiction	All causes[a]	Illness						Suicide	Drug/alcohol intoxication	Accident[d]	Homicide[e]
		Heart disease	Cancer	Liver disease	AIDS-related[b]	Respiratory	All other illnesses[c]				
Federal[f]	232	...	...	...	6	...	202	11	...	4	6
State[g]	269	70	74	24	9	17	42	17	5	3	6
Alabama	352	81	89	30	8	24	63	9	3	4	10
Alaska[h]	194	46	31	19	1 !	4 !	26	37	11	10 !	4 !
Arizona	237	56	62	30	5	13	30	17	11	2	8
Arkansas	363	122	97	26	10	18	37	21	17	6	6
California	244	42	60	24	4	17	50	21	12	2	10
Colorado	217	42	44	35	0 !	16	39	20	9	4	8
Connecticut[i]	151	37	21	21	4	9	31	24	1 !	2 !	2 !
Delaware[i]	230	58	53	21	17	12	28	27	5 !	1 !	2 !
Florida	313	67	92	24	18	21	55	10	10	4	8
Georgia	237	79	60	13	9	19	30	13	1 !	2	8
Hawaii[i]	169	31	44	18	4 !	7 !	24	29	4 !	1 !	5 !
Idaho	215	56	53	19	3 !	11	31	28	4 !	4 !	3 !
Illinois	195	56	62	10	8	11	26	16	2	2	2
Indiana	255	68	69	22	5	17	37	17	9	4	6
Iowa	183	40	63	11	3 !	18	22	20	2 !	1 !	1 !
Kansas	264	73	76	30	1 !	18	39	16	4 !	5 !	2 !
Kentucky	373	125	118	27	13	19	55	9	1 !	2 !	3 !
Louisiana[j]	535	165	162	41	32	25	68	12	1 !	6	3 !
Maine	198	62	48	16 !	3 !	16 !	21 !	11 !	5 !	0	13 !
Maryland	260	65	55	21	27	11	29	20	16	2 !	12
Massachusetts	336	92	92	34	5	15	49	31	5	5 !	2 !
Michigan	265	79	90	21	5	15	27	16	4	3	3
Minnesota	148	30	44	20	1 !	6	27	16	3 !	1 !	1 !
Mississippi	359	131	90	17	9	18	49	17	1 !	5	10
Missouri	266	73	81	29	5	15	39	13	4	1 !	4
Montana	292	56	80	45	4 !	18	45	33	5 !	2 !	4 !
Nebraska	234	53	53	30	5 !	11 !	26	22	6	4 !	7 !
Nevada	282	68	64	19	4 !	12	58	18	3 !	2 !	5
New Hampshire	255	56	99	24	6 !	9 !	26	26	11 !	0	0
New Jersey	234	74	55	14	20	14	31	12	5	2	3
New Mexico	268	60	69	48	3 !	14	32	24	6 !	1 !	9
New York	250	66	72	19	21	11	22	22	5	3	3
North Carolina	242	66	79	20	11	16	32	10	1 !	4	2
North Dakota	79	16 !	20 !	8 !	4 !	0	12 !	16 !	4 !	0	0
Ohio	245	70	84	13	4	18	34	14	2	1 !	3
Oklahoma	336	88	85	38	7	19	45	20	9	7	14
Oregon	248	53	76	36	3 !	12	33	15	5	3 !	4
Pennsylvania	330	94	95	29	5	21	60	18	3	2	2
Rhode Island[i]	192	46	36	5 !	9 !	9 !	15 !	45	9 !	5 !	2 !
South Carolina	315	119	68	21	9	13	49	17	3	2 !	13
South Dakota	209	49	46	29	2 !	21	21	28	2 !	7 !	5 !
Tennessee	408	124	112	42	12	20	55	19	8	4	9
Texas	272	68	68	29	6	21	55	18	1	3	3
Utah	273	66	58	22	0	11	48	44	6 !	3 !	9 !
Vermont[i]	205	50	39	33	9 !	3 !	33	30	9 !	0	0
Virginia	286	76	98	28	10	15	37	11	3	2	3
Washington	209	49	60	23	3 !	18	32	14	3 !	4	3 !
West Virginia	412	156	110	28	7 !	19	65	11	3 !	2 !	7 !

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TABLE 15 (continued)

Average annual mortality rate per 100,000 state and federal prisoners, by cause of death and jurisdiction, 2001–2018

Jurisdiction	All causes[a]	Illness						Suicide	Drug/alcohol intoxication	Accident[d]	Homicide[e]
		Heart disease	Cancer	Liver disease	AIDS-related[b]	Respiratory disease	All other illnesses[c]				
Wisconsin	200	56	66	12	3	16	21	21	2 !	1 !	0 !
Wyoming	283	103	46	38	3 !	22 !	41	22 !	5 !	3 !	0

Note: Data may have been revised from previously published statistics. Details may not sum to totals due to missing data. Excludes executions. For execution data, see *Capital Punishment, 2017: Selected Findings* (NCJ 253060, BJS, July 2019). Includes deaths in private state facilities. Mortality rates are based on the annual number of deaths and a 1-day custody population on December 31. Mortality rates are not adjusted for demographic differences among states. See *Methodology*.

...Not available.

! Interpret with caution. Estimate is based on 10 or fewer cases, or coefficient of variation is greater than 50%. See *Methodology – Interpreting rates among small populations*, p. 24.

[a]Includes other causes not specified and missing and unknown causes.

[b]Includes persons who died of illness and were identified as HIV-positive or having AIDS at the time of death.

[c]Includes other specified illnesses (such as cerebrovascular disease, influenza, and other nonleading natural causes of death) and unspecified illnesses. Includes natural and illness-related deaths of federal prisoners for which the Federal Bureau of Prisons (BOP) could not provide details.

[d]Includes death by intoxication among federal prisoners.

[e]Includes homicides committed by other prisoners, incidental to the use of force by staff, or resulting from injuries sustained prior to incarceration.

[f]Excludes deaths in private federal facilities.

[g]Includes deaths in private state facilities. Includes nine prisoner deaths reported by the District of Columbia in 2001. As of December 30, 2001, sentenced felons from the District of Columbia were the responsibility of the BOP.

[h]Prisons and jails form one integrated system. Counts include deaths only in state-operated prisons and jails and exclude deaths in 15 locally operated jails.

[i]Prisons and jails form one integrated system. Data include the total jail and prison population.

[j]Annually, Louisiana holds roughly half of its prison population in local jails. Since the calculation of mortality rates is based on the custody populations, which exclude prisoners held in local jails, the mortality rates for Louisiana prisoners will be high because the prisoners held in jails are generally healthier according to the Louisiana Department of Corrections.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2001–2018, and National Prisoner Statistics, 2001–2018; and Federal Bureau of Prisons, 2001–2018.

TABLE 16

Preliminary number and percent of deaths in state prisons, by selected causes of death, 2019

Cause of death	Number	Percent[a]
All causes	3,293	100%
Illness[b]	2,429	73.8
AIDS-related[c]	13	0.4
Suicide	271	8.2
Drug/alcohol intoxication	204	6.2
Accident	24	0.7
Homicide[d]	106	3.2
Other causes	46	1.4
Missing/unknown	200	6.1

Note: Represents a 98% response rate. As of July 13, 2020, a total of 49 of the 50 state departments of corrections had reported at least one death to the Mortality in Correctional Institutions. Excludes executions. For execution data, see *Capital Punishment, 2019: Selected Findings* (BJS, Forthcoming).

[a]Based on the total number of records reported.

[b]Excludes AIDS-related deaths.

[c]Includes persons who died of illness and were identified as HIV-positive or having AIDS at the time of death.

[d]Includes homicides committed by other prisoners, incidental to the use of force by staff, or resulting from injuries sustained prior to incarceration.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2019.

Methodology

Data collection coverage

The Mortality in Correctional Institutions (MCI), formerly the Deaths in Custody Reporting Program (DCRP), is an annual Bureau of Justice Statistics (BJS) data collection. The MCI obtains national-, state-, and incident-level data on persons who died while in the physical custody of the 50 state departments of corrections (DOCs) or of the approximately 2,800 local jail jurisdictions with adult populations nationwide. This methodology pertains to the prison portion of the MCI collection only. See *Mortality in Local Jails, 2000-2018 – Statistical Tables* (NCJ 256002, BJS, April 2021) for the methodology for deaths in local jails.

The DCRP began in 2000 in response to the Death in Custody Reporting Act of 2000 (DICRA; P.L. 106-297) and was the only national statistical collection providing comprehensive information about deaths in adult correctional facilities. Starting in 2001, BJS has annually collected data directly from state prison systems, maintaining a 100% response rate. BJS uses these data to track national trends in the number, cause, and manner of deaths occurring in state prisons. Until 2015, the Federal Bureau of Prisons (BOP) submitted aggregate counts of the number of male and female deaths to BJS, by cause of death. The BOP started reporting decedent-level data to BJS in 2015, including individual demographic and criminal justice characteristics. In 2017, BJS changed the name of the DCRP to MCI to more accurately describe the data collection.

BJS will cease collection of mortality data in state and local correctional facilities after the 2019 reference year. The U.S. Department of Justice (DOJ) determined that it would be more appropriate for the Bureau of Justice Assistance (BJA) to administer the program and collect mortality data for DOJ starting with quarter 1 of fiscal year (FY) 2019 (October to December 2019). State DOCs and local jails will be asked to report their death information on a quarterly basis to centralized state agencies, which will compile and submit the information to BJA to comply with all applicable requirements in P.L. 113-242.

Mortality data collected by the MCI include the location and type of facility where the prisoner died, decedent characteristics (sex, race or ethnicity, and age), admission date, conviction status, and admission offense. The MCI also collects data on the circumstances surrounding the death (the cause, time, and location of death), whether an autopsy was conducted, and the availability of autopsy results to the respondent. Data on executions are excluded from this report but are accessible on the BJS website.[3] Statistics for 2001 to 2018 presented in this report are current as of September 14, 2020.

For more information on mortality in correctional settings, see—

- *Assessing Inmate Cause of Death: Deaths in Custody Reporting Program and National Death Index* (NCJ 249568, BJS, April 2016)
- *Federal Deaths in Custody and During Arrest, 2016-2017 – Statistical Tables* (NCJ 252838, BJS, December 2020)
- *Mortality in Local Jails, 2000-2018 – Statistical Tables* (NCJ 256002, BJS April 2021)
- *Mortality in Local Jails, 2000-2016 – Statistical Tables* (NCJ 251921, BJS, February 2020)
- *Mortality in State and Federal Prisons, 2001-2016 – Statistical Tables* (NCJ 251920, BJS, February 2020)
- *Suicide and Homicide in State Prisons and Local Jails* (NCJ 210036, BJS, August 2005).

The MCI instruments for collecting data from state prisons are administered annually to state DOCs. Respondents provide an aggregate count of the number of deaths (NPS-4) that occurred during the referenced calendar year and provide forms (NPS-4A) describing individual deaths. The prison data collection instruments are available on the BJS website. Respondents can submit individual records on decedents at any time during a collection cycle through a BJS web-based collection system. The BOP submits federal prison data directly to BJS.

Determining eligibility for reporting to the Mortality in Correctional Institutions

In the MCI, custody refers to the physical holding of a person in a facility or to the period during which a correctional authority maintains a chain of custody over a prisoner. For instance, if a prison transports an ill prisoner to a hospital for medical services and that prisoner dies while in the chain of custody of the prison, then that death is counted as a death

[3]See *Capital Punishment, 2018 – Statistical Tables* (NCJ 254786, BJS, September 2020).

in custody. A death that occurs when a prisoner is not in the custody of a correctional authority is considered beyond the scope of the MCI. Deaths were considered out of scope for prisoners who died while on escape status or under the supervision of community corrections, such as on probation, parole, or home electronic monitoring. For state prisons responding to the survey, prisoners in physical custody include those held in any private prison facility under contract to the responding states' DOCs or in any of their state-operated facilities, such as halfway houses, prison camps or farms, training or treatment centers, and prison hospitals. BOP data submitted to the MCI exclude deaths of federal prisoners that occurred in privately operated facilities.

State and federal prison officials were asked to exclude deaths of prisoners serving sentences in the custody of local jails while under the jurisdiction of the state or federal DOCs. The MCI obtains information about such deaths through the jail data collections.

Identifying and excluding duplicate records

Duplicate and out-of-scope records are excluded from analysis in this report. Duplicate death records may occur in the MCI due to overlapping correctional populations or overlapping duties within correctional facilities. For example, a state prison system may report the death of a prisoner who was transferred to a local jail while serving a prison sentence. This death would be counted by the local jail that had custody of the prisoner at the time of death. The duplicate record from the prison would be deleted.

To identify duplicate records, BJS reconciles the aggregate summary counts of deaths that occurred during a calendar year with the number of individual records of death that were obtained from a reporting prison system. When discrepancies are identified, reporting prison systems are contacted for clarification.

Information on cause of death

MCI respondents are instructed to report on the cause of death as determined by autopsy or another official medical investigation. For this collection, deaths due to intoxication, accidents, suicides, and homicides are considered discrete causes of death. Although the manner and cause of death are distinct from one another, no such distinction is made in the MCI. When reporting a death due to illness, accident, suicide, intoxication, or homicide, BJS requests that respondents describe the events surrounding these deaths. Clinical data specialists convert text entries that describe illness-related deaths into standard medical codes from the World Health Organization's International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10).

Homicides include all types of intentional homicide and involuntary manslaughter as determined by a medical examiner or pathologist at autopsy. Homicide counts include legal intervention homicides committed while the prisoner was trying to escape. Homicides also encompass cases that are ruled a homicide at autopsy when events that led to the death occurred prior to incarceration, such as a prisoner who was shot outside of custody and who later died from complications of the gunshot wound while in custody.

Other BJS sources of correctional mortality data

BJS maintains other data collections on prisoner mortality. These other collections include—

- Capital Punishment, which provides data on legal executions. Additional details on executions are available on the BJS website.
- The National Prisoner Statistics (NPS) program, which collects counts of deaths by cause of death, including deaths due to execution; illness; AIDS and AIDS-related causes, such as HIV; suicide; accident; or homicide. Detailed counts by cause of death were discontinued in 2007. The NPS currently collects a total count of deaths as a type of release from prison. After 2006, the BOP submitted counts of deaths by cause of death to the MCI but discontinued submitting counts to the NPS. Additional details on the NPS are available on the BJS website.

Reported statistics

Mortality data in this report include the number of deaths and mortality rates by year in state and federal prisons, the cause of death, selected decedent characteristics, and the state where the death occurred.

Mortality rates are calculated per 100,000 prisoners, with the denominators providing estimates of the number of person-years of exposure in custody in institutional corrections (*person-years* combines time in jail with the number of inmates to measure actual exposure to a jail setting). The mortality rate for state or federal prisoners is calculated as the number of deaths per year divided by the December 31 population of state or federal prisoners in custody, with the resulting quotient multiplied by 100,000. The population of state prisoners used in rate calculations

includes prisoners held in privately operated facilities, while the population in federal prisons does not. To improve comparability between years, this report includes mortality rates of state prisons that were reestimated for prior years using updated year-end custody populations, including privately operated facilities.

Data on the source of the denominator allow annual mortality rates to be calculated separately by group or characteristic. The National Center for Health Statistics (NCHS) calculates crude mortality rates as the number of events for a period (such as 1 year), divided by the population estimate at the midpoint of the period. For statistics on mortality in the general population, the NCHS uses the midyear population as an approximation of the average population that is exposed to risk of death during any given year.[4]

The crude mortality rates that are reported in the MCI annual statistical tables use a year-end, rather than midyear, population for the denominator. The composition of the general population (sex, race or ethnicity, and age) differs from the population in state and federal prisons, which in turn differs from the population in local jails. For 2018, BJS adjusted the general population in table 5 of this report to reflect the age, sex, and race or ethnicity distribution of state prisons to permit direct comparisons. For details on this adjustment, see *Comparison of state prison mortality rates to the U.S. resident population* in this *Methodology*.

Estimating population characteristics of prisoners to calculate mortality rates by demographic subgroups

Age and sex distributions of the state prison population are estimated using the NPS and National Corrections Reporting Program (NCRP) data collections. Rates for race or ethnicity are also derived from these collections. They have been updated from previous years and will not match previously reported rates. Race or ethnicity reported in the NPS and NCRP come from administrative records of prisoners and may not reflect self-reporting by prisoners. In this report, distributions of race or ethnicity were adjusted based on self-reported data collected from interviews with prisoners through BJS's national prisoner surveys. Previously, distributions of race or ethnicity were derived from BJS's 2004 Survey of Inmates in State and Federal Correctional Facilities. In 2017, BJS updated estimates of prisoners' race or ethnicity using new data from the 2016 Survey of Prison Inmates (formerly the Survey of Inmates in State and Federal Correctional Facilities). Annual distributions of race or ethnicity were weighted by the number of years from the most recent prisoner survey (2004 or 2016). For complete details on the methodology used to estimate distributions of race or ethnicity, see *Prisoners in 2016* (NCJ 251149, BJS, January 2018).

Comparison of state prison mortality rates to the U.S. resident population

The state prison population differs substantially from the U.S. resident population in terms of age, race or ethnicity, and sex distributions. These differences preclude direct comparisons of mortality rates between state prisoners and the U.S. resident population. To control for these differences and allow for direct comparisons, BJS standardized the U.S. resident population's mortality rates to the age-sex-race/ethnicity (ASR) distribution of state prisoners in 2018.

Data for the U.S. resident population were obtained from the WONDER (Wide-ranging Online Data for Epidemiological Research) Underlying Cause of Death database (https://wonder.cdc.gov/ucd-icd10.html), created by the Centers for Disease Control and Prevention. Since the state prison population holds fewer than 800 persons age 17 or younger, BJS limited the WONDER death data to those residents who had a known age at death and were age 18 or older in 2018. In addition, BJS excluded causes of death that are unlikely to occur in prisons, such as motor vehicle accidents, neglect and abandonment, and injury by firearms or explosives unrelated to law enforcement incidents.

For each cause of death, BJS parsed the WONDER death data to match ASR categories from the MCI and calculated the crude mortality rates for the adult U.S. resident population for each ASR category. Next, the total state prison population was divided into the same ASR categories based on data from the NPS and NCRP, then weighted to the race or ethnicity distribution from BJS's self-reported prisoner surveys as described above. The crude mortality rates for the adult U.S. resident population were then multiplied by the total state prison population by weighted ASR category. This approach allowed BJS to generate a cause-specific expected count of deaths that, when summed, gave the total number of expected deaths in the U.S. resident population due to that cause for 2018, if the demographic distribution of the U.S. population

[4]See Siegel, J. S., & Swanson, D. A. (Eds.). (2004). *The methods and materials of demography* (2nd ed., p. 269). Elsevier Academic Press.

resembled that of the state prison population. To obtain the adjusted mortality rate per 100,000 shown in table 5, BJS divided these cause-specific mortality rates by the total state prison population and multiplied by 100,000.

Rolling averages

Rolling averages were computed to examine trends for certain causes of death in prisons while smoothing short-term fluctuations. Data were divided into 10 overlapping 3-year periods spanning 12 years. The rolling averages in this report describe some changes in cause-specific mortality rates over time, such as whether the overall rise in the mortality rate for cancer was steady or the increase in unnatural deaths was recent. Rolling averages were not computed for all causes of death in custody due to small cell sizes.

Interpreting rates among small populations

MCI data on deaths in state prisons are not subject to sampling error because the data represent a full enumeration of deaths. However, according to Brillinger and NCHS, mortality data from a complete enumeration may be subject to random error because "the number of deaths that actually occurred may be considered as one of a large series of possible results that could have arisen under the same set of circumstances."[5,6] The random variation can be large when the number of deaths is small. Therefore, caution is warranted when interpreting statistics that are based on small numbers of deaths.

Continuing to use the NCHS and Brillinger methods, BJS quantified random variation by assuming that the appropriate underlying probability distribution for the number of deaths was a Poisson distribution. This provided a simple and reasonable approach for estimating variances in mortality statistics when the probability of dying is low. Variances were calculated based on the assumption of a Poisson process. From these variances, estimates of relative random error were calculated. These estimates are comparable to the relative standard error because the relative random error is the ratio of random error derived from the Poisson variance to the number of deaths. Following NCHS practice, when the relative random error exceeded 30%, estimated mortality rates were flagged with an "!" symbol to show the instability of the rate. (Interpret with caution. Estimate is based on 10 or fewer cases, or coefficient of variation is greater than 50%.)

[5]See Brillinger, D. R. (1986). The natural variability of vital rates and associated statistics. *Biometrics, 42*(4), 693-734.

[6]See Xu, J., Kochanek, K. D., Murphy, S. L., & Tejada-Vera, B. (2010). *Deaths: Final data for 2007* (National Vital Statistics Reports, Vol. 58, No. 19). National Center for Health Statistics. https://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf

APPENDIX TABLE 1

Estimated number of state and federal prisoners in custody, by prisoner characteristics, 2001–2018

Characteristic	Custody population, 2001–2018	2001	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	25,595,000	1,322,600	1,489,800	1,490,600	1,487,500	1,466,400	1,443,500	1,444,100	1,439,200	1,405,800	1,382,900	1,374,000	1,351,900
Federal[a]	2,906,100	137,100	165,300	171,000	173,100	176,200	176,500	173,800	169,500	160,700	154,200	154,600	151,500
State[b]	22,688,900	1,185,500	1,324,500	1,319,600	1,314,400	1,290,200	1,267,000	1,270,300	1,269,700	1,245,100	1,228,700	1,219,400	1,200,400
Sex													
Male	21,102,600	1,109,400	1,230,600	1,227,500	1,222,900	1,201,100	1,180,600	1,181,500	1,179,400	1,156,000	1,139,900	1,130,800	1,111,900
Female	1,586,300	76,100	93,900	92,100	91,500	89,100	86,400	88,800	90,300	89,100	88,800	88,700	88,500
Race/ ethnicity													
White[c]	7,433,600	387,900	441,100	430,400	424,700	414,600	407,800	406,100	406,300	396,100	385,400	384,000	379,000
Black[c]	8,379,200	495,400	502,800	493,200	481,800	467,900	454,600	448,200	437,000	421,000	409,600	401,800	393,200
Hispanic	4,709,300	232,200	272,400	277,400	278,600	270,900	260,900	262,100	261,800	258,300	266,100	266,600	263,300
Other[c,d]	2,166,800	70,000	108,300	118,600	129,300	136,800	143,700	153,900	164,700	169,600	167,600	167,000	164,900
Age													
17 or younger	33,000	2,900	2,600	2,500	2,100	1,800	1,400	1,100	1,000	900	800	800	600
18–24	3,268,600	218,000	197,900	198,700	196,000	189,100	180,400	173,700	161,300	145,500	134,800	124,800	113,700
25–34	7,494,300	401,700	439,200	437,300	434,800	424,400	413,800	415,300	417,700	407,700	400,000	395,700	385,700
35–44	6,189,100	362,000	356,600	343,700	334,200	324,100	318,200	320,500	323,700	322,500	322,600	326,100	328,200
45–54	3,908,900	153,000	240,600	243,500	245,600	242,300	238,000	236,500	235,000	229,400	224,900	219,700	213,900
55 or older	1,795,000	47,800	87,600	93,900	101,700	108,500	115,300	123,100	131,100	139,100	145,600	152,300	158,300

Note: Data are rounded to the nearest 100. Data may have been revised from previously published statistics. Details may not sum to totals due to missing data. All populations are based on a custody count as of December 31.

[a]Excludes prisoners in private federal facilities.

[b]Includes prisoners in private state facilities.

[c]Excludes persons of Hispanic origin (e.g., "white" refers to non-Hispanic whites and "black" refers to non-Hispanic blacks).

[d]Includes Asians, Native Hawaiians or Other Pacific Islanders, American Indians or Alaska Natives, and persons of two or more races.

Source: Bureau of Justice Statistics, National Corrections Reporting Program, 2001–2018; National Prisoner Statistics, 2001–2018; Survey of Inmates in State and Federal Correctional Facilities, 2004; and Survey of Prison Inmates, 2016.

APPENDIX TABLE 2

Deaths of federal prisoners in federally and privately operated prison facilities, by cause of death, 2015–2018

	2015	2016	2017	2018
Number of deaths	464	395	388	383
Illness[a]	407	343	323	292
AIDS-related[b]	1	1	6	0
Suicide	21	19	24	29
Accident[c]	16	14	8	14
Homicide[d]	16	15	10	12
Other/unknown	3	3	17	36
Mortality rate per 100,000 federal prisoners	237	210	213	214
Illness[a]	209	183	181	163
AIDS-related[b]	1 !	1 !	3 !	0
Suicide	11	10	13	16
Accident[c]	8	7	4 !	8
Homicide[d]	8	8	5	7
Other/unknown	2 !	2 !	9	20

Note: Includes deaths in federal prison facilities operated by the Federal Bureau of Prisons (BOP) or operated privately under a BOP contract. Until 2015, federal deaths were submitted as an aggregate count by the BOP, with limited details regarding cause of death, and excluded deaths in private federal facilities. Excludes executions. For execution data, see *Capital Punishment, 2017: Selected Findings* (NCJ 253060, BJS, July 2019). See *Methodology*. Mortality rates are based on the annual number of deaths and a 1-day BOP custody population on December 31.

! Interpret with caution. Estimate is based on 10 or fewer cases, or coefficient of variation is greater than 50%. See *Methodology – Interpreting rates among small populations*, p. 24.

[a]Excludes AIDS-related deaths.

[b]Includes persons who died of illness and were identified as HIV-positive or having AIDS at the time of death.

[c]Includes deaths due to drug or alcohol intoxication.

[d]Includes homicides committed by other prisoners, incidental to the use of force by staff, or resulting from injuries sustained prior to incarceration.

Source: Bureau of Justice Statistics, National Prisoner Statistics, 2015–2018; and Federal Bureau of Prisons, 2015–2018.

APPENDIX TABLE 3

Illness mortality rate per 100,000 state prisoners within each demographic group, by decedent characteristics, 2006–2018 (3-year rolling averages)

Characteristic	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	225	228	226	226	227	236	238	247	253	262	267
Sex											
Male	231	235	232	233	235	243	246	255	261	272	276
Female	136	144	137	132	122	132	133	143	142	138	145
Race/ethnicity											
White[a]	337	353	356	372	381	403	404	425	439	460	466
Black[a]	213	218	216	215	213	217	225	236	248	259	266
Hispanic	122	119	115	107	110	116	120	120	115	119	126
Other[a,b]	49	46	42	35	36	36	39	39	38	35	32
Age											
17 or younger	27 !	13 !	41 !	47 !	56 !	23 !	29 !	33 !	73 !	79 !	89 !
18–24	14	15	15	14	14	15	15	16	14	13	10
25–34	29	26	25	25	24	24	23	24	24	27	27
35–44	110	106	98	94	85	81	75	71	70	69	68
45–54	416	397	382	364	346	338	324	315	298	281	271
55 or older	1,777	1,765	1,658	1,598	1,558	1,567	1,538	1,544	1,530	1,540	1,517

Note: Based on 3-year rolling averages. Labels show the most recent year only (for example, 2006–2008 is shown as 2008). Includes deaths in private state facilities. Mortality rates are per 100,000 inmates held in the custody of state prisons. Mortality rates are based on the annual number of deaths and a 1-day custody population on December 31.

! Interpret with caution. Estimate is based on 10 or fewer cases, or coefficient of variation is greater than 50%. See *Methodology – Interpreting rates among small populations*, p. 24.

[a]Excludes persons of Hispanic origin (e.g., "white" refers to non-Hispanic whites and "black" refers to non-Hispanic blacks).

[b]Includes Asians, Native Hawaiians or Other Pacific Islanders, American Indians or Alaska Natives, and persons of two or more races. Due to the small number of deaths and prison populations of American Indians and Alaska Natives, Asians, and Native Hawaiians and Other Pacific Islanders, mortality rates for these populations are unstable and not shown. See *Methodology*.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2006–2018; National Prisoner Statistics, 2006–2018; Survey of Inmates in State Correctional Facilities, 2004; and Survey of Prison Inmates, 2016.

APPENDIX TABLE 4

Cancer mortality rate per 100,000 state prisoners within each demographic group, by decedent characteristics, 2006–2018 (3-year rolling averages)

Characteristic	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	63	67	71	75	77	81	82	86	88	91	93
Sex											
Male	65	70	73	77	79	84	85	88	91	94	96
Female	33	35	40	48	44	45	43	51	53	49	49
Race/ethnicity											
White[a]	103	114	119	130	134	145	144	149	154	162	166
Black[a]	58	62	66	68	71	75	79	84	89	89	91
Hispanic	24	23	28	30	31	32	34	36	38	40	41
Other[a,b]	15	13	15	11	12	11	11	11	11	10	9
Age											
17 or younger	14 !	13 !	14 !	16 !	19 !	23 !	0	0	37 !	79 !	89 !
18–24	1 !	2	3	4	4	3	2	2	2 !	2 !	2 !
25–34	4	4	4	5	5	6	5	6	6	6	5
35–44	22	20	22	21	21	22	22	21	19	17	16
45–54	113	115	117	118	113	116	114	113	104	99	95
55 or older	577	592	584	584	573	572	553	550	558	558	554

Note: Based on 3-year rolling averages. Labels show the most recent year only (for example, 2006–2008 is shown as 2008). Includes deaths in private state facilities. Mortality rates are per 100,000 inmates held in the custody of state prisons. Mortality rates are based on the annual number of deaths and a 1-day custody population on December 31.

! Interpret with caution. Estimate is based on 10 or fewer cases, or coefficient of variation is greater than 50%. See *Methodology – Interpreting rates among small populations*, p. 24.

[a]Excludes persons of Hispanic origin (e.g., "white" refers to non-Hispanic whites and "black" refers to non-Hispanic blacks).

[b]Includes Asians, Native Hawaiians or Other Pacific Islanders, American Indians or Alaska Natives, and persons of two or more races. Due to the small number of deaths and prison populations of American Indians and Alaska Natives, Asians, and Native Hawaiians and Other Pacific Islanders, mortality rates for these populations are unstable and not shown. See *Methodology*.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2006–2018; National Prisoner Statistics, 2006–2018; Survey of Inmates in State Correctional Facilities, 2004; and Survey of Prison Inmates, 2016.

APPENDIX TABLE 5

Heart disease mortality rate per 100,000 state prisoners within each demographic group, by decedent characteristics, 2006–2018 (3-year rolling averages)

Characteristic	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	64	64	64	65	64	67	68	73	78	84	87
Sex											
Male	67	66	66	67	67	69	71	76	81	88	91
Female	33	37	30	30	27	31	31	35	37	39	37
Race/ethnicity											
White[a]	99	99	101	107	107	114	117	127	136	147	151
Black[a]	62	63	64	65	66	67	69	76	82	92	95
Hispanic	30	29	28	25	23	24	24	26	25	27	31
Other[a,b]	12	12	10	8	9	11	13	12	11	9	10
Age											
17 or younger	0	0	14 !	16 !	19 !	0	29 !	33 !	37 !	0	0
18–24	4	4	4	4	3	5	5	7	5	4	5
25–34	8	8	8	8	7	7	8	9	10	10	11
35–44	31	31	32	33	30	28	25	24	24	26	26
45–54	106	98	94	90	86	82	80	81	83	85	85
55 or older	550	526	488	468	448	455	450	467	472	490	484

Note: Based on 3-year rolling averages. Labels show the most recent year only (for example, 2006–2008 is shown as 2008). Includes deaths in private state facilities. Mortality rates are per 100,000 inmates held in the custody of state prisons. Mortality rates are based on the annual number of deaths and a 1-day custody population on December 31.

! Interpret with caution. Estimate is based on 10 or fewer cases, or coefficient of variation is greater than 50%. See *Methodology – Interpreting rates among small populations*, p. 24.

[a]Excludes persons of Hispanic origin (e.g., "white" refers to non-Hispanic whites and "black" refers to non-Hispanic blacks).

[b]Includes Asians, Native Hawaiians or Other Pacific Islanders, American Indians or Alaska Natives, and persons of two or more races. Due to the small number of deaths and prison populations of American Indians and Alaska Natives, Asians, and Native Hawaiians and Other Pacific Islanders, mortality rates for these populations are unstable and not shown. See *Methodology*.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2006–2018; National Prisoner Statistics, 2006–2018; Survey of Inmates in State Correctional Facilities, 2004; and Survey of Prison Inmates, 2016.

APPENDIX TABLE 6

Liver disease mortality rate per 100,000 state prisoners within each demographic group, by decedent characteristics, 2006–2018 (3-year rolling averages)

Characteristic	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	24	25	24	25	24	26	26	26	24	22	20
Sex											
Male	25	26	25	26	25	27	27	27	24	23	21
Female	10	10	10	9	9	13	14	16	13	11	11
Race/ethnicity											
White[a]	37	40	42	44	44	47	46	46	45	41	38
Black[a]	14	15	14	16	14	16	15	15	14	14	12
Hispanic	25	24	21	19	20	23	25	25	20	16	15
Other[a,b]	8	8	5	5	5	6	5	5	5	5	4
Age											
17 or younger	0	0	14 !	16 !	19 !	0	0	0	0	0	0
18–24	1 !	1 !	1 !	1 !	0 !	0 !	1 !	1 !	1 !	1 !	1 !
25–34	1	1	1	1	1	1 !	1	1	1	1 !	1 !
35–44	11	11	9	10	7	7	5	5	5	5	5
45–54	69	67	63	59	54	54	50	47	41	33	26
55 or older	136	137	130	138	140	157	152	147	127	119	107

Note: Based on 3-year rolling averages. Labels show the most recent year only (for example, 2006–2008 is shown as 2008). Includes deaths in private state facilities. Mortality rates are per 100,000 inmates held in the custody of state prisons. Mortality rates are based on the annual number of deaths and a 1-day custody population on December 31.

! Interpret with caution. Estimate is based on 10 or fewer cases, or coefficient of variation is greater than 50%. See *Methodology – Interpreting rates among small populations*, p. 24.

[a]Excludes persons of Hispanic origin (e.g., "white" refers to non-Hispanic whites and "black" refers to non-Hispanic blacks).

[b]Includes Asians, Native Hawaiians or Other Pacific Islanders, American Indians or Alaska Natives, and persons of two or more races. Due to the small number of deaths and prison populations of American Indians and Alaska Natives, Asians, and Native Hawaiians and Other Pacific Islanders, mortality rates for these populations are unstable and not shown. See *Methodology*.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2006–2018; National Prisoner Statistics, 2006–2018; Survey of Inmates in State Correctional Facilities, 2004; and Survey of Prison Inmates, 2016.

APPENDIX TABLE 7

Respiratory disease mortality rate per 100,000 state prisoners within each demographic group, by decedent characteristics, 2006–2018 (3-year rolling averages)

Characteristic	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	17	16	17	16	16	16	17	18	19	19	21
Sex											
Male	17	17	17	16	17	17	18	18	19	20	21
Female	16	14	12	10	7	10	9	10	11	12	16
Race/ethnicity											
White[a]	28	28	28	29	31	32	32	34	35	37	40
Black[a]	14	14	14	12	13	12	14	15	16	16	18
Hispanic	8	8	9	7	7	7	8	7	8	9	10
Other[a,b]	1 !	1 !	1 !	1 !	2 !	3	3	3	3	2	2 !
Age											
17 or younger	14 !	0	0	0	0	0	0	0	0	0	0
18–24	3	2	2	1 !	2 !	2	2 !	2 !	1 !	1 !	0
25–34	3	3	3	2	3	3	3	2	2	1	2
35–44	8	8	7	6	5	4	4	4	4	5	6
45–54	23	21	20	20	19	17	16	15	16	14	15
55 or older	143	139	136	121	127	119	123	124	124	127	129

Note: Based on 3-year rolling averages. Labels show the most recent year only (for example, 2006–2008 is shown as 2008). Includes deaths in private state facilities. Mortality rates are per 100,000 inmates held in the custody of state prisons. Mortality rates are based on the annual number of deaths and a 1-day custody population on December 31.

! Interpret with caution. Estimate is based on 10 or fewer cases, or coefficient of variation is greater than 50%. See *Methodology – Interpreting rates among small populations*, p. 24.

[a]Excludes persons of Hispanic origin (e.g., "white" refers to non-Hispanic whites and "black" refers to non-Hispanic blacks).

[b]Includes Asians, Native Hawaiians or Other Pacific Islanders, American Indians or Alaska Natives, and persons of two or more races. Due to the small number of deaths and prison populations of American Indians and Alaska Natives, Asians, and Native Hawaiians and Other Pacific Islanders, mortality rates for these populations are unstable and not shown. See *Methodology*.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2006–2018; National Prisoner Statistics, 2006–2018; Survey of Inmates in State Correctional Facilities, 2004; and Survey of Prison Inmates, 2016.

APPENDIX TABLE 8

Mortality rate due to all other illnesses per 100,000 state prisoners within each demographic group, by decedent characteristics, 2006–2018 (3-year rolling averages)

Characteristic	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	48	48	43	41	40	40	40	40	41	43	44
Sex											
Male	49	49	44	41	41	41	40	41	42	44	45
Female	36	39	39	32	31	30	32	29	26	25	30
Race/ethnicity											
White[a]	65	66	61	59	60	61	61	64	66	69	68
Black[a]	48	50	45	43	41	39	40	39	41	43	46
Hispanic	32	30	27	23	26	27	28	25	24	25	28
Other[a,b]	12	11	10	9	7	6	6	6	8	8	8
Age											
17 or younger	0	0	0	0	0	0	0	0	0	0	0
18–24	4	5	4	4	5	4	4	4	4	3	3
25–34	9	9	7	7	6	6	5	5	5	7	7
35–44	28	27	21	18	17	16	14	14	14	14	14
45–54	84	78	72	65	64	58	55	50	47	45	46
55 or older	350	351	302	273	255	250	244	244	238	236	233

Note: Excludes cancer; heart, liver, and respiratory diseases; and AIDS-related illnesses. Based on 3-year rolling averages. Labels show the most recent year only (for example, 2006–2008 is shown as 2008). Includes deaths in private state facilities. Mortality rates are per 100,000 inmates held in the custody of state prisons. Mortality rates are based on the annual number of deaths and a 1-day custody population on December 31.

[a]Excludes persons of Hispanic origin (e.g., "white" refers to non-Hispanic whites and "black" refers to non-Hispanic blacks).

[b]Includes Asians, Native Hawaiians or Other Pacific Islanders, American Indians or Alaska Natives, and persons of two or more races. Due to the small number of deaths and prison populations of American Indians and Alaska Natives, Asians, and Native Hawaiians and Other Pacific Islanders, mortality rates for these populations are unstable and not shown. See *Methodology*.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2006–2018; National Prisoner Statistics, 2006–2018; Survey of Inmates in State Correctional Facilities, 2004; and Survey of Prison Inmates, 2016.

APPENDIX TABLE 9

Rate of unnatural deaths per 100,000 state prisoners within each demographic group, by decedent characteristics, 2006–2018 (3-year rolling averages)

Characteristic	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	26	25	26	27	28	29	31	32	36	42	50
Sex											
Male	27	26	26	27	29	29	31	33	37	43	53
Female	15	15	16	18	18	17	20	22	23	19	22
Race/ethnicity											
White[a]	43	44	44	47	49	50	53	57	63	70	82
Black[a]	15	15	16	16	18	18	20	22	26	34	44
Hispanic	21	19	20	20	21	23	25	25	26	30	38
Other[a,b]	13	10	11	11	11	10	10	11	12	12	13
Age											
17 or younger	41 !	40 !	41 !	31 !	38 !	23 !	29 !	33 !	37 !	0	0
18–24	18	19	19	18	19	19	22	24	30	36	41
25–34	23	22	23	23	23	24	26	29	30	35	44
35–44	27	26	27	29	30	31	30	33	38	45	51
45–54	30	30	30	32	33	32	35	36	39	43	56
55 or older	40	36	38	39	46	46	51	46	48	55	65

Note: Unnatural deaths include deaths caused by suicide, accident, homicide, or drug or alcohol intoxication. Based on 3-year rolling averages. Labels show the most recent year only (for example, 2006–2008 is shown as 2008). Includes deaths in private state facilities. Mortality rates are per 100,000 inmates held in the custody of state prisons. Mortality rates are based on the annual number of deaths and a 1-day custody population on December 31.

! Interpret with caution. Estimate is based on 10 or fewer cases, or coefficient of variation is greater than 50%. See *Methodology – Interpreting rates among small populations*, p. 24.

[a]Excludes persons of Hispanic origin (e.g., "white" refers to non-Hispanic whites and "black" refers to non-Hispanic blacks).

[b]Includes Asians, Native Hawaiians or Other Pacific Islanders, American Indians or Alaska Natives, and persons of two or more races. Due to the small number of deaths and prison populations of American Indians and Alaska Natives, Asians, and Native Hawaiians and Other Pacific Islanders, mortality rates for these populations are unstable and not shown. See *Methodology*.

Source: Bureau of Justice Statistics, Mortality in Correctional Institutions, 2006–2018; National Prisoner Statistics, 2006–2018; Survey of Inmates in State Correctional Facilities, 2004; and Survey of Prison Inmates, 2016.

The Bureau of Justice Statistics of the U.S. Department of Justice is the principal federal agency responsible for measuring crime, criminal victimization, criminal offenders, victims of crime, correlates of crime, and the operation of criminal and civil justice systems at the federal, state, tribal, and local levels. BJS collects, analyzes, and disseminates reliable statistics on crime and justice systems in the United States, supports improvements to state and local criminal justice information systems, and participates with national and international organizations to develop and recommend national standards for justice statistics. Doris J. James is the acting director.

This report was written by E. Ann Carson. Stephanie Mueller and Zhen Zeng verified the report.

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