



Homicide in California Trends in 2020

INJURY AND VIOLENCE PREVENTION BRANCH

BACKGROUND

Violence is a significant public health problem. It has been suggested that social and economic challenges associated with the March 2020 onset of the COVID-19 pandemic may have exacerbated risks associated with violence. A recent California survey showed that the COVID-19 pandemic was associated with increases in self-reported worry about violence as well as an unprecedented surge of firearm sales in California.¹ Additionally, recent research has shown that rates of firearm homicide increased nationally 34.6% from 2019 to 2020, coinciding with the declaration of the COVID-19 pandemic.²

The purpose of this data brief is to highlight trends in homicide in California during the emergence of the pandemic. Differences in homicide counts and rates by age, sex, race/ethnicity, and use of a firearm are examined. These findings can help identify disproportionately affected populations and guide the development and implementation of data-driven strategies to prevent death and injury in California.

METHODS

Homicide data for 2019 and 2020 are compiled from death certificates in the final California Comprehensive Master Death Files (CCMDF) produced by the California Department of Public Health (CDPH) Center for Health Statistics and Informatics. Data for 2021 are compiled from Dynamic California Comprehensive Death Files (CCDF). Data for 2021 should be considered preliminary as these data are not finalized, and more deaths may have their cause and manner of death updated to homicide. While 2021 rates are presented for comparative purposes, they are not used in the percent rate change calculation which is expressed as change from 2019 to 2020. A positive percent change indicates that the rate increased over the year, and a larger percentage indicates a larger change in the rate during that year. Rates based on counts <20 are considered statistically unstable and rate change comparisons are restricted to statistically stable rates. More details on methodological issues can be found in the **Technical Notes** section of this data brief.

HOMICIDE TRENDS

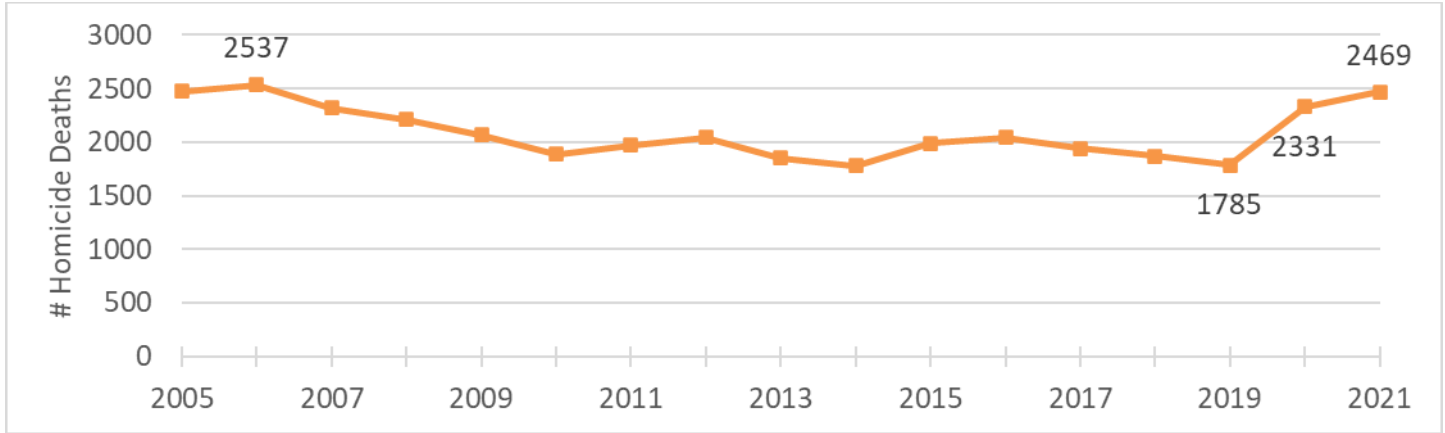
Following an overall decline in homicides in California over the last twelve years, the number of homicide deaths increased 31% in 2020. (Figure 1)

- The number of homicide deaths had been declining over the last several years with a recent low number of cases in 2019.
- In 2020, there was a 31% increase in the number of homicide deaths that occurred in California, resulting in 546 more homicides than in 2019.
- The increase continued in 2021, although to a lesser extent.
- Homicide deaths in 2020 were higher than anticipated based on projections from previous years and in 2021 were at their highest level in over a decade.

¹ Kravitz-Wirtz N, Aubel A, Schleimer J, Pallin R, Wintemute G. [Public Concern About Violence, Firearms, and the COVID-19 Pandemic in California](#). *JAMA Netw Open*. 2021;4(1):e2033484. doi:10.1001/jamanetworkopen.2020.33484

² Kegler SR, Simon TR, Zwald ML, et al. [Vital Signs: Changes in Firearm Homicide and Suicide Rates — United States, 2019–2020](#) | *MMWR (cdc.gov)*. ePub: 10 May 2022. DOI: <http://dx.doi.org/10.15585/mmwr.mm7119e1>

Figure 1: Annual Number of Homicide Deaths that Occurred in California, 2005-2021*

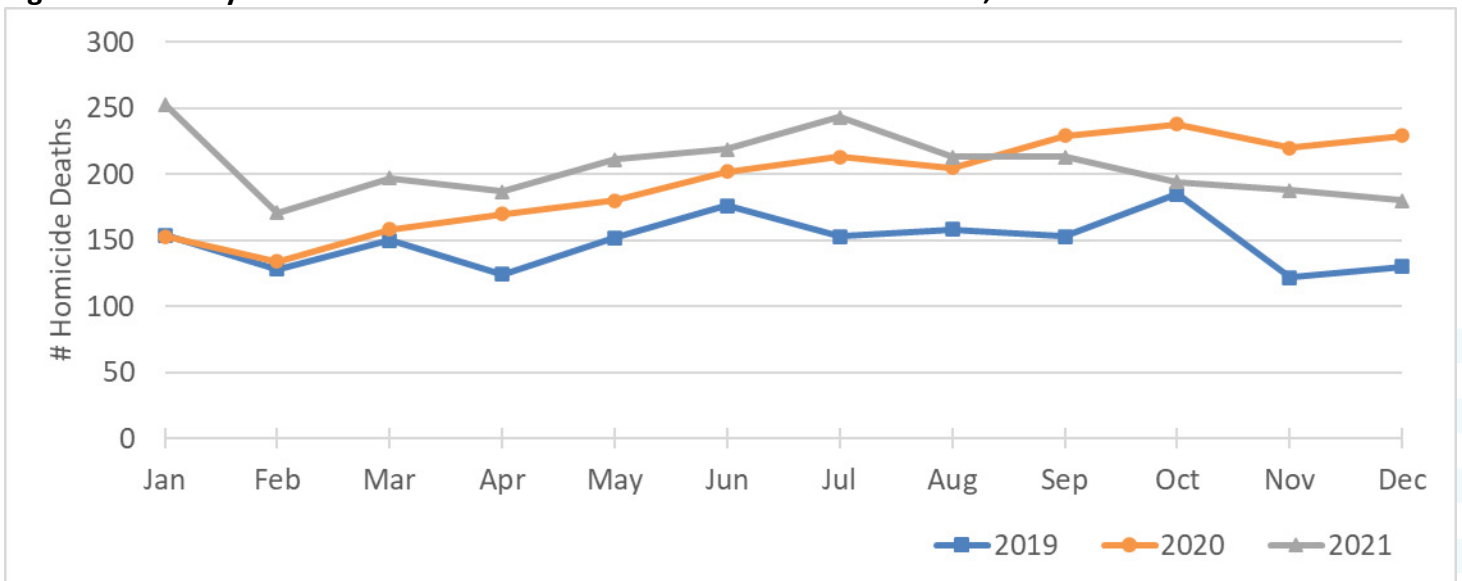


*Data for 2021 should be considered preliminary; more deaths may be updated and coded as homicide.

Monthly numbers of homicides began increasing in early 2020 and continued to rise throughout the year. (Figure 2)

- The number of homicide deaths in 2020 started at the same level as 2019 early in the year.
- Deaths began to increase in March 2020 and continued to increase throughout 2020.
- The number of deaths per month in 2021 remained higher than the same month in both of the earlier years through August 2021. The 2021 counts remained higher than 2019 throughout the year.

Figure 2: Monthly Number of Homicide Deaths that Occurred in California, 2019-2021*



*Data for 2021 should be considered preliminary; more deaths may be updated and coded as homicide.

DEMOGRAPHICS OF HOMICIDE VICTIMS

Highest rates of homicide were seen in males, adults aged 25-44, and people who are Black. These groups also saw the largest increases in 2020. (Table 1)

- The increase in homicide rate was seen in nearly all demographic groups but was more severe in some.
- Males consistently accounted for most of the annual homicide deaths and the male rate was five to six times higher than the female rate.
- Males experienced a much larger increase in homicide rates than females (32% and 17% respectively).
- Children younger than 10 were the only group that did not have an increase in homicide rates between 2019 and 2020.
- Rates of homicide peaked in the 25-44 year age group. This age group had the largest percentage rate change from 2019-2020 (a 37% increase) followed by a 28% increase in rate in those aged 10-24 and 45-64.
- People who are Black had the highest rates of homicide at nearly five times the overall rate. This group also saw the largest increase in rates, a 40% increase from 21.0 to 29.8 per 100,000 population.
- People who are Hispanic also had a large 30% increase from 2019 to 2020.
- People who are American Indian/Alaska Native (AI/AN) made up only 1% of homicide deaths, yet they had high rates relative to other groups. This means that although there is a small number of people who are AI/AN who die by homicide, this group is at elevated risk.

Table 1: Counts, Rates, and Percent Change by Demographic Characteristics of Homicide Deaths that Occurred in California, 2019-2021*

	Count (Crude Rate)			% Rate Change
	2019	2020	2021*	2019-2020
Total Homicide	1785 (4.4)	2331 (5.7)	2469 (6.0)	29%^
Sex	No data	No data	No data	No data
Female	318 (1.6)	374 (1.8)	372 (1.8)	17%
Male	1467 (7.3)	1957 (9.7)	2097 (10.3)	32%^
Age				
<10	43 (0.9)	37 (0.7)	34 (0.7)	-14%
10-24	440 (5.2)	566 (6.7)	565 (6.6)	28%^
25-44	833 (7.9)	1145 (10.8)	1281 (12.0)	37%^
45-64	361 (3.6)	463 (4.6)	456 (4.5)	28%^
65+	108 (1.8)	120 (1.9)	133 (2.0)	7%
Race/Ethnicity				
AI/AN	11 (6.4)**	23 (13.3)	17 (9.7)**	**
Asian/PI	104 (1.8)	114 (2.0)	104 (1.8)	8%
Black	479 (21.0)	675 (29.4)	687 (29.8)	40%^
Hispanic	825 (5.1)	1083 (6.6)	1214 (7.3)	30%^
White	354 (2.4)	429 (2.9)	436 (2.9)	21%

*Data for 2021 should be considered preliminary; more deaths may be updated and coded as homicide.

^Rate change from 2019 to 2020 is statistically significant at $p < 0.05$.

**Homicide rates based on counts less than 20 are considered unstable.

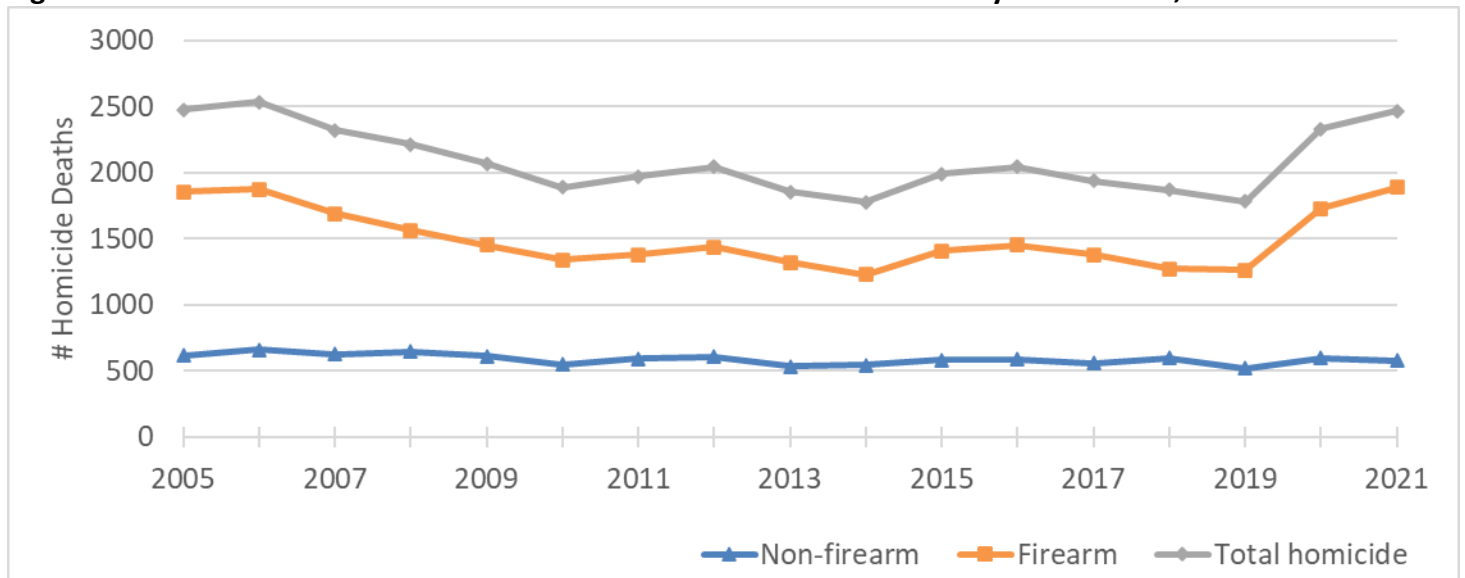
AI/AN=American Indian and Alaska Native; Asian/PI=Asian and Pacific Islander.

FIREARM HOMICIDE

Yearly changes in the number of total homicides are primarily due to changes in the number of homicides using firearms. (Figure 3)

- In general, the number of firearm homicide deaths mirrors the number of total homicides; prior to 2020 both had been declining over the last several years.
- There has been minimal change in the number of homicides due to non-firearm methods since 2005.

Figure 3: Annual Number of Homicide Deaths that Occurred in California by Firearm Use, 2005-2021*



*Data for 2021 should be considered preliminary; more deaths may be updated and coded as homicide.

The rate of homicides using firearms increased by 36% in California in 2020, and the proportion of homicides using firearms increased to 76% in 2021. (Table 2)

- Firearms accounted for 71% of homicides in 2019, 74% of homicides in 2020, and 76% of homicides in 2021.
- In 2020, There was a 36% increase in the rate of homicides using firearms in California.
- The number of homicides due to other (non-firearm) mechanisms remained relatively steady in 2020.

Table 2: Counts, Rates, and Percent Change by Firearm Use in Homicide Deaths that Occurred in California, 2019-2021*

	Count (Crude Rate)			% Rate Change 2019-2020
	2019	2020	2021*	
Total Homicide	1785 (4.4)	2331 (5.7)	2469 (6.0)	29% [^]
Firearm	1266 (3.1)	1731 (4.3)	1888 (4.6)	36% [^]
Non-firearm	519 (1.3)	600 (1.5)	581 (1.4)	15%

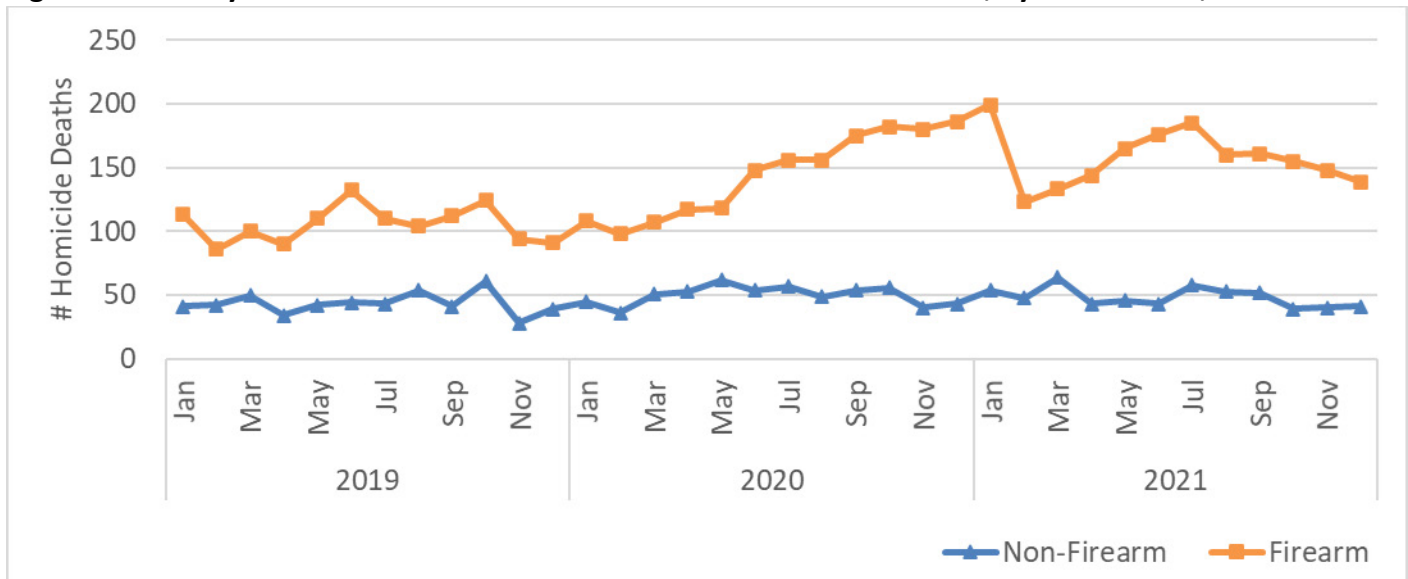
*Data for 2021 should be considered preliminary; more deaths may be updated and coded as homicide.

[^]Rate change from 2019 to 2020 is statistically significant at $p < 0.05$.

The dramatic increase in homicide death in 2020 in California was primarily due to homicides using firearms. (Figure 4)

- The monthly number of firearm homicides began increasing consistently in early 2020. They continued to rise throughout 2020 and remained higher than previously throughout 2021.
- The increase in deaths by homicide was primarily driven by the increase homicides using firearms. Non-firearm homicides remained relatively stable over 2019-2021.

Figure 4: Monthly Number of Homicide Deaths that Occurred in California, by Firearm Use, 2019-2021*



*Data for 2021 should be considered preliminary; more deaths may be updated and coded as homicide.

CONCLUSION

Coinciding with the COVID-19 pandemic, homicide rates in California reached their highest level of the previous decade. Homicide rates in general, as well as firearm-related homicide rates specifically, are lower in California than in many other states and in the country as a whole.³ Additionally, homicide rates in California have been lower in the past twelve years than they were in the previous three decades. However, the large single-year increase in homicide death in 2020 disrupted previous progress and rates in California are now higher than those recently seen in the state.

In addition to an overall increase, substantial increases among several population subgroups were identified. Higher rates indicate an elevated risk of dying in this violent manner and were seen among males; youth and young adults (ages 10-24 and 25-44); and people who are Black, AI/AN, or Hispanic. While these groups had higher rates to begin with, they were also the groups with the most drastic increases from 2019 to 2020. Increases in homicide among populations that were already at high risk, have widened already existing disparities.

³ WISQARS: Web-based Injury Statistics Query and Reporting System, Centers for Disease Control and Prevention (CDC), National Center for Injury Prevention and Control (NCIPC).

The increase in homicides was primarily accounted for by the increase in homicides due to firearms which had a 36% increase from 2019 to 2020 in California. This is similar to the 34.6% rate increase seen nationwide.² Counts of firearm homicide continued to remain higher throughout 2021 in California, and the proportion of homicides due to firearms increased to 76% of homicide deaths in 2021.

As was true elsewhere, 2020 was a difficult year for California given the COVID-19 pandemic and other catastrophic events (e.g., social unrest, political polarization, wildfires). The challenges and disruptions created by COVID-19, as well as these other issues, may have created a convergence of factors that substantially increased the risk of outbreaks of violence, most notably gun violence. This relationship does not suggest causality; this report could not determine why observed increases occurred or whether the observed increases were attributable to the pandemic or other specific causes. Although less drastic, continued increases were seen in 2021 data where numbers of death remained higher than both 2019 and 2020 and rates continued to increase in some of the most vulnerable groups. These findings can help identify disproportionately affected populations and guide the development and implementation of data-driven strategies to prevent death due to homicide in California.

OPPORTUNITIES FOR PREVENTION

A focus on firearms can prevent homicide. The fatal weapon for three out of every four victims of homicide was a firearm and firearms were the main driver in the substantial increase in homicide seen from 2019 to 2020. Strategies to facilitate a culture of firearm safety (e.g., safe and secure gun storage, training and licensing for owners, engagement with responsible gun dealers and owners in identifying solutions) or those that may limit access to firearms in certain cases (e.g., youth, individuals at risk of harming themselves or others) may help to prevent these deaths in the future.

Address risk and resilience within communities. Effective prevention efforts focus on those at increased risk or with ongoing increasing risk. In the case of homicide, these priority populations include males; youth and young adults; and people who are Black, AI/AN, and Hispanic. It may also be beneficial to address risk factors that are relevant to different types of homicides (e.g., intimate partner violence, gang-related violence) so that prevention efforts are focused on supporting communities to create policy change and help those who are most at risk of violent death. Homicide prevention efforts may also include trauma-informed strategies to address social, emotional, and mental health supports in communities. Finally, it is important to emphasize comprehensive strategies that can stop violence by addressing factors that contribute to underlying economic, physical, and social inequities that drive racial and ethnic disparities.

For ideas on evidence-based prevention strategies, please refer to the violence prevention technical packages available from the Centers for Disease Control and Prevention (CDC), including: [A Comprehensive Technical Package for the Prevention of Youth Violence](#), [Preventing Intimate Partner Violence Across the Lifespan](#), and [Preventing Adverse Childhood Experiences \(ACEs\)](#).

TECHNICAL NOTES

Data Sources

- 2021 Death data: Compiled from CDPH, California Comprehensive Death Files (CCDF) Dynamic Files with deaths registered through 4/30/2022 and data extracted 5/12/2022. Data for 2021 should be considered preliminary as it is possible that more registered deaths will be updated and coded as homicide.
- 2014-2020 Death data: CDPH, California Comprehensive Master Death Files (CCMDF), 2014-2020.
- 2005-2013 Death data: CDPH, Death Statistical Master File (DSMF), 2005-2013.
- Population denominator data for rate calculations: California Department of Finance (DOF) Table P-3: Complete State and County Projections Dataset.

Other Notes

- Homicide death data include all homicide deaths that occurred in California even if the decedent was an out-of-state resident.
- Homicide rates per 100,000 are comprised of the following:
 - Numerator=All homicide deaths that occurred in California during calendar year (also includes out-of-state residents).
 - Denominator=California resident population.
- Homicides are identified on the death certificate by the ICD-10 code for underlying cause of death. The following ICD-10 code groupings are used:
 - Total Homicide: X85-X99, Y00-Y09, or U01
 - Firearm Homicide: X93-X95 or U01.4
- Codes for Legal intervention deaths, a subset of homicide in which the death involved Law Enforcement acting in the line of duty, are **not** included in the total homicide counts.
- Deaths where the race/ethnicity of the victim was Other/Unknown are excluded from the rate calculation for race/ethnicity.
- Percent rate change is calculated as the difference between the rates divided by the original rate. Rounding of decimal places may affect the calculation.
$$\text{percent rate change} = [(2020 \text{ Rate} - 2019 \text{ Rate}) / 2019 \text{ Rate}] * 100$$
- The statistical significance of the percent rate change is determined by comparing the 95% confidence intervals for the 2019 and 2020 rates; if there is no overlap between these intervals the rates are determined to be statistically different at $p < 0.05$.

For more information about the Injury and Violence Prevention Branch (IVPB) or the California Violent Death Reporting System (CalVDRS) please contact CalVDRS@cdph.ca.gov.