

Suicide Rates in Kansas, 2019-2020

Technical Notes

Data Source: Mortality Database, Office of Vital Statistics, Kansas Department of Health and Environment

Statistical Methods: Age-specific or age-adjusted rates and 95% confidence intervals (95% CI) were provided. Age-adjusting was completed using direct standardization and the 2000 US Standard population. Non-overlapping 95% CIs are considered significant for rate comparisons. Changes in rates between 2019 and 2020 were analyzed by finding the absolute change (2020 rate-2019 rate) and relative change ($[(2020 \text{ rate}-2019 \text{ rate})/2019 \text{ rate}] \times 100$). Positive changes signify an increased rate in 2020 from 2019, and negative changes signify a decreased in 2020 from 2019. Rates in Kansas were compared to rates nationally, as feasible.

Summary of Findings

Overall

- 2020 had more suicide deaths than 2019 (529 vs 521), but the difference was not statistically significant
- Males have a significantly higher rate compared to females for both years
- In 2020, the age group 25-34 years had the highest rate (27.8 per 100,000 residents), but this was not statistically significant when compared to those 19-24 years, 35-44 years, or 45-54 years
- For both years, White, non-Hispanic persons (19.8 per 100,000 in 2019 and 19.7 per 100,000 residents in 2020) have a significantly higher rate than other race/ethnicities
- Firearm use is significantly higher than other mechanisms of suicide for both years.

Rate Changes

- The age groups with the greatest increase in rates from 2019 to 2020 are 19-24 years (26.4%) and 45-54 years (24.4%)
- The age groups with the greatest decrease in rates from 2019 to 2020 are 35-44 years (20.1%) and 75 years and older (19.3%)
- The rate for counties classified as Urban peer groups had a 13% rate increase from 2019 to 2020
- Rates for counties classified as Rural and Densely-Settled Rural had decreasing rates (22.3% and 23.4% respectively).



Comparison to National Rates

- For both 2019 and 2020, Kansas has significantly higher rates than the national average. The Kansas suicide rate in 2020 was 21.3 per 100,000 residents (95%CI: 19.5-23.2) while the national rate was 13.5 per 100,000 residents (95%CI: 13.4-13.6)
- Rates for all sexes across both years were significantly higher in Kansas than the U.S.
- The Kansas suicide by firearm rate is significantly higher than the national rate for firearm suicides for both years. In 2020, the US had a firearm suicide rate of 7.0 per 100,000 residents (95% CI: 6.9-7.0) while Kansas had a firearm suicide rate of 12.1 per 100,000 (95% CI: 10.7-13.5)

Data and Interpretation

Kansas Statistics

According to Vital Statistics data, there were 8 additional suicide deaths in Kansas for the year 2020 compared to 2019 (529 vs 521, respectively); and this resulted in a slightly higher rate in 2020 over 2019 (21.3 per 100,000 persons [95%CI: 19.5-23.2] vs 21.1 per 100,000 residents [95% CI: 19.3-23.0], respectively), but overlapping confidence intervals suggest this increase was not statistically significant (Table 1).

Even though statistically these rates remained comparable from 2019 to 2020, certain characteristics showed increased frequencies. The age group 19-24 years had 15 more suicide deaths in 2020 compared to 2019 (71 vs 56) and the age group 45-54 had 16 more suicide deaths in 2020 compared to 2019 (82 vs 66). Urban counties had 32 more suicide deaths in 2020 compared to 2019 (301 vs 269). And there were 23 more suicide deaths by firearm in 2020 compared to 2019 (313 vs 290).

Table 1. Frequency and Rates of Suicide Deaths by Characteristic, Kansas, 2019-2020

Characteristic	2019		2020	
	N (%)	Rate* per 100,000 Residents (95%CI)	N (%)	Rate* per 100,000 Residents (95%CI)
Overall	521	21.1 (19.3, 23.0)	529	21.3 (19.5, 23.2)
Sex				
Male	414 (79.5)	28.8 (26.0, 31.7)	417 (78.8)	28.6 (25.8, 31.4)
Female	107 (20.5)	7.7 (6.2, 9.1)	112 (21.2)	8.1 (6.6, 9.6)
Age Group*				
10-18yrs	33 (6.3)	9.2 (6.1, 12.4)	31 (5.9)	8.7 (5.6, 11.7)
19-24yrs	56 (10.8)	22.0 (16.2, 27.7)	71 (13.4)	27.8 (21.4, 34.3)
25-34yrs	104 (20.0)	27.2 (21.9, 32.4)	114 (21.6)	29.8 (24.3, 35.2)
35-44yrs	106 (20.4)	29.4 (23.8, 34.9)	85 (16.1)	23.5 (18.5, 28.5)
45-54yrs	66 (12.7)	20.1 (15.3, 25.0)	82 (15.5)	25.0 (19.6, 30.4)
55-64yrs	66 (12.7)	17.8 (13.5, 22.0)	70 (13.2)	18.8 (14.4, 23.3)
65-74yrs	48 (9.2)	17.6 (12.6, 22.3)	42 (7.9)	15.4 (10.8, 20.1)
75yrs and older	42 (8.1)	20.7 (14.4, 26.9)	34 (6.4)	16.7 (11.1, 22.3)
Race/Ethnicity				
White, Non-Hispanic (NH)	444 (85.4)	19.8 (17.9, 21.7)	441 (83.8)	19.7 (17.8, 21.6)
Black, NH American Indian/ Alaska Native, NH	23 (4.4)	12.5 (7.2, 17.8)	21 (4.0)	10.6 (5.9, 15.4)
Hispanic	-	-	8 (4.5)	-
Other, NH†	47 (9.0)	12.5 (8.8, 16.1)	51 (9.7)	13.3 (9.5, 17.0)
Other, NH†	5 (1.0%)	-	5 (1.0%)	-
Population Density §				
Frontier	18 (3.6)	-	21 (4.0)	20.8 (11.2, 30.0)
Rural	51 (9.9)	24.2 (17.2, 31.2)	39 (7.4)	18.8 (12.6, 24.9)
Densely-Settled Rural	95 (18.2)	20.5 (16.6, 24.8)	75 (14.2)	15.7 (12.0, 19.4)
Semi-Urban	88 (16.9)	20.5 (16.1, 25.0)	93 (17.6)	20.4 (16.1, 24.8)
Urban	269 (51.6)	16.1 (14.2, 18.1)	301 (56.9)	18.2 (16.1, 20.3)
Mechanism of Injury				
Firearm	290 (55.7)	11.4 (10.0, 12.8)	313 (59.2)	12.1 (10.7, 13.5)
Suffocation	143 (27.4)	6.1 (5.1, 7.1)	128 (24.2)	5.6 (4.6, 6.6)
Poisoning or Overdose	60 (11.5)	2.5 (1.8, 3.1)	59 (11.2)	2.4 (1.8, 3.1)
Other †	28 (5.4)	1.1 (0.7, 1.5)	29 (5.5)	1.2 (0.8, 1.6)

Counts under 5 are suppressed and rates are suppressed for counts less than 20.

*Age Adjusting: Rates and 95% confidence intervals (95% CI) for all characteristics with the exception of Age Group were age-adjusted using direct standardization and the 2000 US Standard population. Non-overlapping 95% CIs are considered significant for rate comparisons.

†Other race includes: Asian/Pacific Islander, Multiracial or other

§ Population Density by Kansas Peer County Groups: Frontier less than 6 persons per square mile (ppsm); Rural 6.0-19.9 ppsm; Densely-settled rural 20.0-39.9 ppsm; Semi-Urban 40.0-149.9 ppsm; and Urban 150.0 or more ppsm

¶ Other mechanisms of injury include cut/pierce, drowning, fall, traffic, or other

Despite the relatively steady overall rate for 2019-2020, rates for certain characteristics had changed. Table 2, below, compares the rates for each characteristic through absolute change calculation (2020 rate minus 2019 rate) and relative change calculation (2020 rate minus 2019 rate, divided by 2019 rate and then multiplied by 100 to show percent change). The rate of female deaths increased 5%. The rates for age groups 19-24 and 45-54 both increased about 25%. The rate for urban counties increased 13%. The Hispanic rate increased 6%. And the use of a firearm increased 6% from 2019 to 2020. Other characteristics had rates decrease from 2019 to 2020. The age groups 35-44 and 75 years and older both decreased around 20%. The rate for non-Hispanic Blacks decreased 15%. The rates for rural and densely-settled rural decreased 22% and 23%, respectively.

Table 2. Absolute and Relative Change of Suicide Rates by Selected Characteristics, Kansas, 2019-2020

Characteristic	Relative Change†(%)	Direction
Overall	0.9%	↑
Sex		
Male	0.7%	↓
Female	5.2%	↑
Age Group		
10-18yrs	5.4%	↓
19-24yrs	26.4%	↑
25-34yrs	9.6%	↑
35-44yrs	20.1%	↓
45-54yrs	24.4 %	↑
55-64yrs	5.6%	↑
65-74yrs	12.5%	↓
75yrs and older	19.3%	↓
Race/Ethnicity		
White, NH	0.5%	↓
Black, NH	15.2%	↓
American Indian/ Alaska Native, NH	-	
Hispanic	6.4%	↑
Other, NH†	-	
Population Density		
Frontier		
Rural	22.3%	↓
Densely-Settled Rural	23.4%	↓
Semi-Urban	0.5%	↓
Urban	13.0%	↑
Mechanism of Injury		
Firearm	6.1%	↑
Suffocation	8.2%	↓
Poisoning or Overdose	4.0%	↓
Other ¶	9.1%	↑

*Absolute change was the rate in 2020 minus the rate in 2019.

† Relative change was calculated using the equation: (2020 rate–2019 rate)/2019 rate x 100.

Comparison to National Rates

Table 3. below lists the national rates for selected characteristics from the article “Changes in Suicide Rates – United States, 2019-2020” published in the CDC’s Morbidity and Mortality Weekly Report on February 25, 2022 and the Kansas rates for comparison.

The rate for suicide in Kansas is higher than that of the national rate for both 2019 (U.S.: 13.9 per 100,000 residents [95%CI: 13.8, 14.1] and KS: 21.1 per 100,000 residents [95% CI: 19.3, 23.0]) and 2020 (U.S.: 13.5 per 100,000 residents [95%CI: 13.4, 13.6] and KS: 21.3 per 100,000 residents [95% CI: 19.5, 23.2]). The rates for both males and females were higher in Kansas compared to the national rates (Males: 28.6 per 100,000 residents in Kansas vs 22.0 per 100,000 residents nationally; Females: 8.1 per 100,000 residents in Kansas vs 5.5 per 100,000 residents nationally).

The rate for non-Hispanic Whites in Kansas was comparable to that of the national rate in 2019, but slightly, yet significantly, higher in 2020. The rate of non-Hispanic Blacks in Kansas was comparable to the national rate for both years, but the rate for Hispanics in Kansas was nearly double that of the national rate (12.5 per 100,000 residents in Kansas vs 7.3 per 100,000 residents nationally for 2019; and 13.3 per 100,000 residents in Kansas vs 7.0 per 100,000 residents nationally for 2020).

Rates for suicide by firearm are nearly double in Kansas compared to the national rate: 11.4 per 100,000 residents in Kansas compared to 6.8 per 100,000 residents nationally for 2019 and 12.1 per 100,000 residents in Kansas vs 7.1 per 100,000 residents nationally in 2020.

Table 3. Suicide Rates for Selected* Characteristics, United States and Kansas, 2019-2020

Characteristic	2019		2020	
	U.S. Rate per 100,000 Residents (95%CI)	Kansas Rate per 100,000 Residents (95%CI)	U.S. Rate per 100,000 Residents (95%CI)	Kansas Rate per 100,000 Residents (95%CI)
Overall	13.9 (13.8, 14.1)	21.1 (19.3, 23.0)	13.5 (13.4, 13.6)	21.3 (19.5, 23.2)
Sex				
Male	22.4 (22.1, 22.6)	28.8 (26.0, 31.7)	22.0 (21.7, 22.2)	28.6 (25.8, 31.4)
Female	6.0 (5.9, 6.1)	7.7 (6.2, 9.1)	5.5 (5.4, 5.6)	8.1 (6.6, 9.6)
Race/Ethnicity				
White, NH	17.1 (17.5, 17.9)	19.8 (17.9, 21.7)	16.9 (16.7, 17.0)	19.7 (17.8, 21.6)
Black, NH	7.5 (7.2, 7.7)	12.5 (7.2, 17.8)	7.8 (7.5, 8.1)	10.6 (5.9, 15.4)
Hispanic	7.3 (7.0, 7.5)	12.5 (8.8, 16.1)	7.5 (7.3, 7.8)	13.3 (9.5, 17)
Mechanism of Injury				
Firearm	6.8 (6.8, 6.9)	11.4 (10.0, 12.8)	7.0 (6.9, 7.0)	12.1 (10.7, 13.5)
Suffocation	4.2 (4.1, 4.3)	6.1 (5.1, 7.1)	3.9 (3.8, 3.9)	5.6 (4.6, 6.6)
Poisoning or Overdose	1.8 (1.7, 1.8)	2.5 (1.8, 3.1)	1.6 (1.5, 1.6)	2.4 (1.8, 3.1)

*Due to smaller populations in Kansas than is available nationally, some rates are not able to be reported and compared nationally or data was aggregated differently in Kansas to allow for reporting of numbers and so only rates that can be compared between the state and national data were provided in this table.

References:

1. Ehlmann, D.C., Yard, E., Stone, D. M., Jones, C. M., and Mack, K. A. (2022). Changes in Suicide Rates – United States, 2019-2020. *Morbidity and Mortality Weekly Report*: 71(8): 306-312. Retrieved from: <https://www.cdc.gov/mmwr/volumes/71/wr/mm7108a5.htm>