

URBAN-RURAL DIFFERENCES IN SUICIDE RATES AND LEADING MEANS IN KANSAS

Introduction

Suicide was the ninth leading cause of death in Kansas in 2019 and the 10th leading cause of death in the U.S., and the suicide rates have been increasing. In both Kansas and the U.S., discharge of firearms has been the leading means of suicide. The suicide rate in Kansas, 18.2 per 100,000 population (age-adjusted to the U.S. 2000 standard population), was the 16th highest in the country in 2019. Nationally, suicide rates ranged from 8.0 per 100,000 in New Jersey to 29.3 per 100,000 in Wyoming. While rising suicide rates across the nation have drawn attention, urban-rural differences also have been noticed. Rural areas have experienced a higher suicide rate than urban areas, regardless of age, sex, race or ethnicity.

The majority (89 of 105) of counties in Kansas are considered rural by population density, including Frontier, Rural and Densely-Settled Rural counties, according to the [peer county group classification](#) used by the Kansas Department of Health and Environment. This issue brief highlights how suicide rates and the means of suicide have changed over time and have varied across Kansas, with a close look at differences by rurality. A better understanding of urban-



rural differences in rates and means of suicide could help devise unique policies and programs to meet the needs of local communities.

Rising Suicide Rates in Kansas

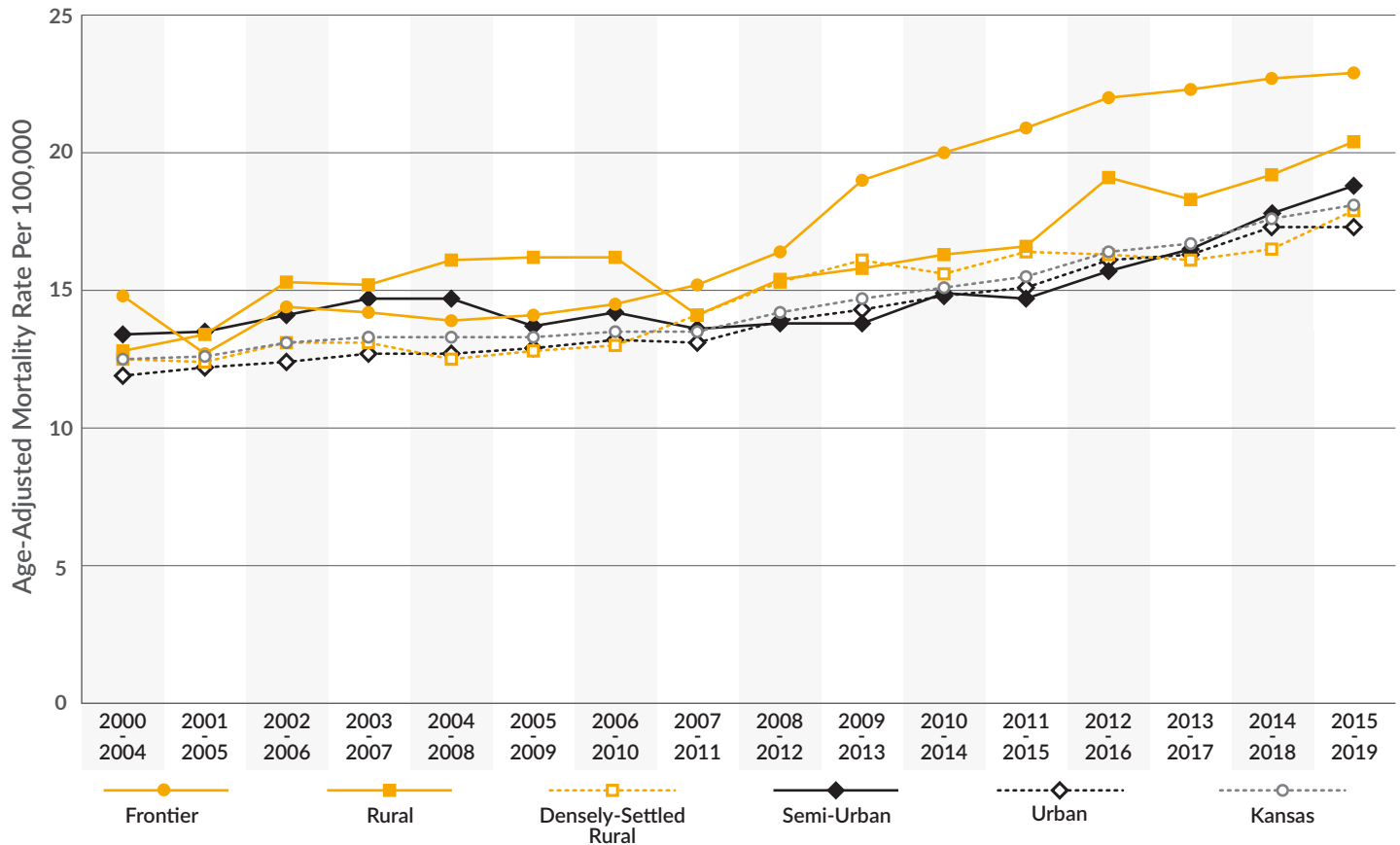
Increase in Rural Counties Outpaces Non-Rural

Over the past 20 years, the rate of suicide across Kansas has steadily risen, from 12.5 per 100,000 population in 2000-2004 to 18.1 in 2015-2019 (*Figure 1, page 2*). This translates

KEY POINTS

- ✓ The suicide rate in Kansas was nearly 1.5 times higher in 2015-2019 than in 2000-2004 (18.1 compared to 12.5 per 100,000), and in 2019 was the 16th highest in the country.
- ✓ The suicide rate increased gradually starting in 2000, then picked up pace between 2007-2011.
- ✓ While Kansas counties of all population densities saw an increase in suicide rates over the past 20 years, the increase in Frontier and Rural counties outpaced that in Densely-Settled Rural, Semi-Urban and Urban counties (54.7 and 59.4 percent increases compared to 43.2, 40.3 and 45.4 percent increases, respectively).
- ✓ Since 2011-2015, the rate of suicide by discharge of firearms in Frontier counties has been significantly higher than other county groups.
- ✓ In 2015-2019, two-thirds (66.8 percent) of suicides in Frontier counties occurred by discharge of firearms (15.3 out of 22.9 per 100,000).

Figure 1. Suicide Rate by Peer County Group, Kansas, 2000-2019



Note: Data were aggregated to five years due to small sample size. All rates are age-adjusted to the U.S. 2000 standard population. Source: KHI analysis of Kansas Information for Communities data, 2000-2019.

to an increase of 44.8 percent, or nearly 1.5 times higher. Though the suicide rate increased gradually, it began to rise more quickly after 2007-2011. This pattern was observed across Kansas counties of all population densities, and the suicide

Urban counties to 22.9 per 100,000 among Frontier counties (Figure 1), and there was a significant difference between Frontier and Urban counties.

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rate in 2014-2018 and 2015-2019 was significantly higher than 2000-2004 for each group of counties.

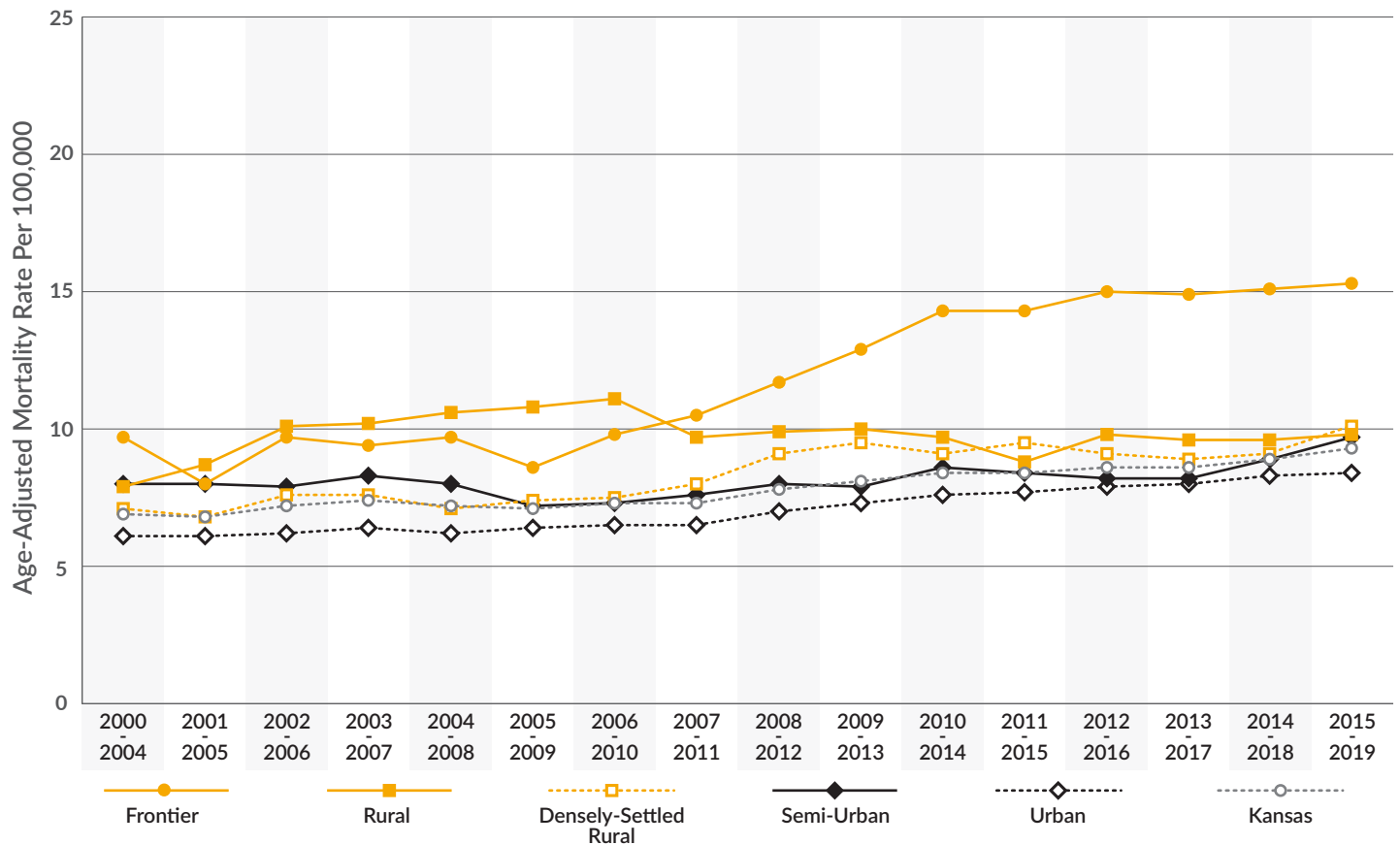
Higher Rate of Suicide by Discharge of Firearms in Frontier Kansas

While suicide by discharge of firearms has been the leading means of suicide across counties of all population densities, suicide by discharge of firearms in Frontier counties has been higher than in Urban counties throughout the past 20 years. However, beginning approximately in the 2011-2015 period, the rate of suicide by discharge of firearms has become significantly higher in Frontier counties than in all other groups of counties (Figure 2, page 3, and Figure 3, page 4). In contrast, suicide by other/unspecified means, such as poisoning and suffocation, has remained similar among all groups of counties.

While Kansas counties of all population densities saw increases in suicide rates over the past 20 years, the increase in Frontier and Rural counties outpaced that in Densely-Settled Rural, Semi-Urban and Urban counties (54.7 and 59.4 percent increases compared to 43.2, 40.3 and 45.4 percent increases, respectively). By 2015-2019, the suicide rate varied from 17.3 per 100,000 among

The most recent data (2015-2019) show that two-thirds (66.8 percent) of suicides in Frontier counties were by discharge of firearms (Figure 3, page 4), and

Figure 2. Rate of Suicide by Discharge of Firearms by Peer County Group, Kansas, 2000-2019



Note: Data were aggregated to five years due to small sample size. All rates are age-adjusted to the U.S. 2000 standard population. Source: KHI analysis of Kansas Information for Communities data, 2000-2019.

the rate of suicide by discharge of firearms (15.3 per 100,000) was higher than any other county groups (ranging from 8.4 to 10.1 per 100,000). Additionally, the Frontier counties group was the only one for which suicide by discharge of firearms was significantly higher than by other/unspecified means (7.6 per 100,000).

Discussion and Conclusions

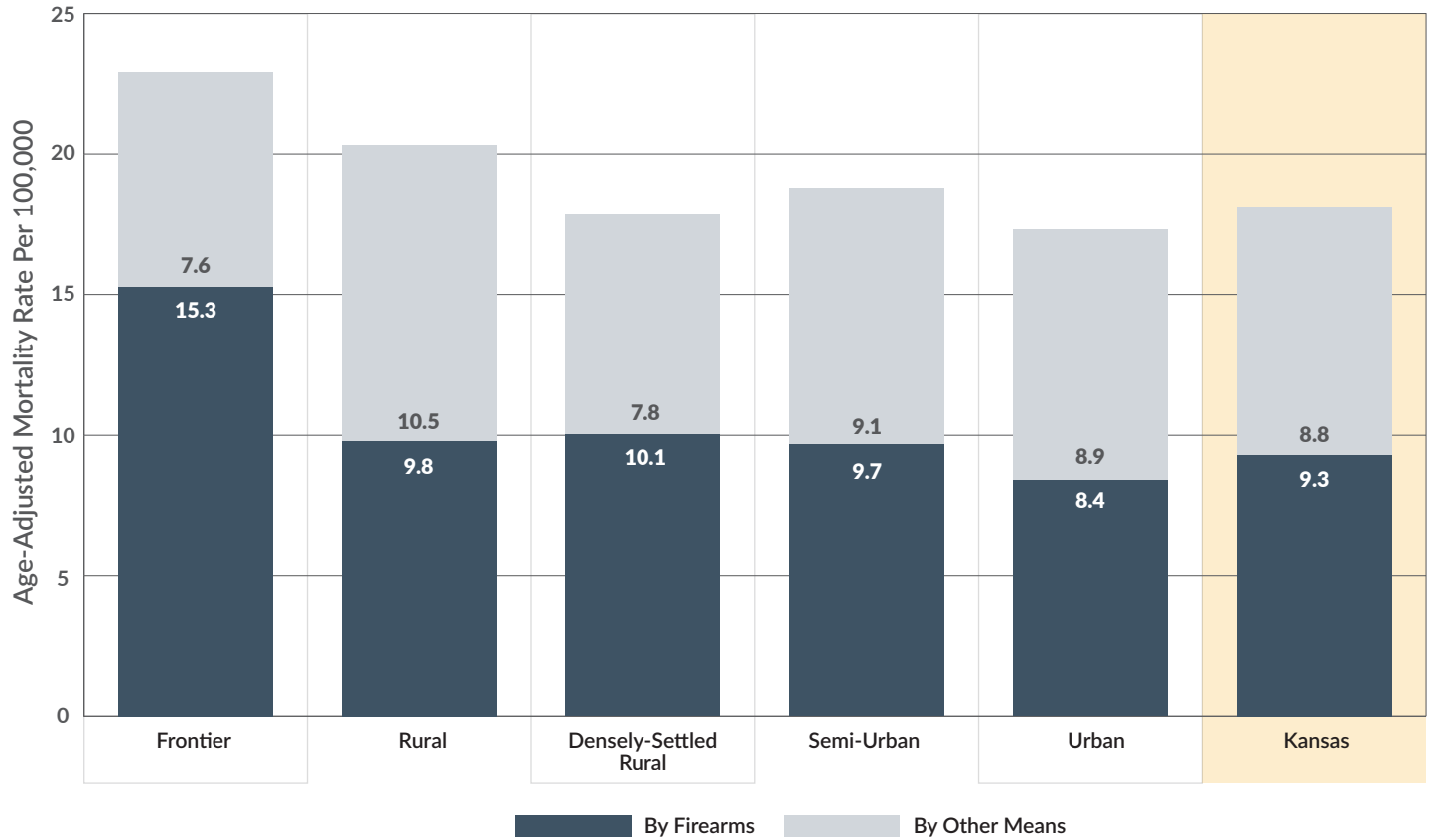
During the past two decades, suicide has become more prevalent in counties of all population densities in Kansas, and the urban-rural differences in suicide rates have not narrowed. Notably, Frontier counties, representing the most remote and least densely populated areas of the state, face a high overall suicide rate and an elevated proportion of suicide by discharge of firearms. In response, specific interventions related to safe firearm storage and access to firearms in times of crisis could be considered.

In 2017, the National Advisory Committee on Rural Health and Human Services recommended that the Substance Abuse and Mental Health Services Administration (SAMHSA) “include rural-specific

research and considerations for prevention into the National Strategy for Suicide Prevention” and that the U.S. Department of Health and Human Services (HHS) be required to “conduct a national comprehensive evaluation that assesses existing state and tribal efforts to reduce rural suicide rates and that identifies successful evidence-based, rural-specific strategies.” Nevertheless, four years later, additional targeted efforts and strategies may be needed to reduce suicide in rural areas and narrow the gap with their urban counterparts.

The [statewide suicide prevention plan](#) provides overall guidance and activities to prevent and reduce suicide in Kansas and offers the possibility for approaches specifically designed for varied geographic areas. Tailored approaches may be necessary to narrow the differences and meet the unique challenges and limited resources in the most rural communities. An upcoming blog series for KHI’s [A Kansas Twist – Suicide Prevention in Rural Communities](#) – will dive into approaches, policies and programs that Kansas policymakers and other stakeholders may consider when working to reduce suicide rates in rural Kansas.

Figure 3. Rate of Suicide and Means of Suicide by Peer County Group, 2015-2019



Peer County Group	Frontier	Rural	Densely-Settled Rural	Semi-Urban	Urban	Kansas
Number of Suicides	122	229	407	419	1,432	2,609
Suicide Per 100,000	22.9*	20.4	17.9	18.8	17.3	18.1
By Other Means	7.6**	10.5	7.8	9.1	8.9	8.8
By Firearms	15.3***	9.8	10.1	9.7	8.4	9.3

Note: Data were aggregated to five years due to small sample size. All rates are age-adjusted to the U.S. 2000 standard population. Statistically significant differences (p-value < 0.05) were found between Frontier and Urban counties (*), between suicide by firearms and by other means for Frontier counties (**), and between Frontier and other county groups (***).

Source: KHI analysis of Kansas Information for Communities data, 2015-2019.

Technical Note: Vital statistics from the [Kansas Information for Communities](#), a database that is created by the Kansas Department of Health and Environment, were used to investigate the urban-rural differences in suicide rate and means of suicide from 2000 to 2019. Using year 2000 U.S. standard population, suicide rates were age-adjusted and presented as per 100,000 population. Five-year average rates were used in the analysis to mitigate fluctuation in yearly estimates due to the small number of events. Differences in the suicide rate and means for suicide among county groups over a 20-year span were examined. Counties were grouped based on their population density to form the peer county groups including, Urban, Semi-Urban, Densely Settled Rural, Rural and Frontier. Means of suicide include those by discharge of firearms and by other means (e.g., poisoning and suffocation).

ABOUT THE ISSUE BRIEF

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