Kentucky Drug Overdose Patterns and Social Vulnerability

2025 County-Level Analysis

DATA KY Death Certificate Registry + CDC/ATSDR SVI* **PERIOD** 2025 **DESIGN** County-level bivariate choropleth **GEOGRAPHY** Kentucky Counties

Kentucky Counties at a Glance - 2025

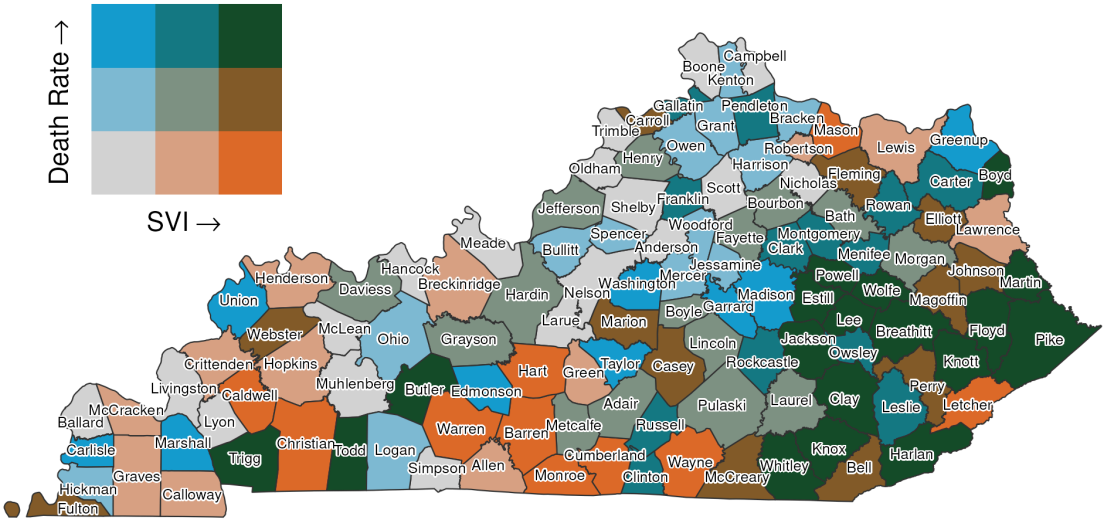
1,130
Count of resident drug overdose deaths, 2025

24.5
Statewide crude death rate, per 100,000 residents

25%
of overdose deaths were in the 40 counties with the highest Social Vulnerability Index (SVI), home to 20% of the state's residents

SOCIAL VULNERABILITY INDEX AND OVERDOSE DEATH RATES, BY COUNTY

Overdose Death Rate vs. SVI, 2025



HOW TO READ THIS MAP

Each county is shaded by two ranks at once: Social Vulnerability Index (SVI, left → right) and overdose death rate (bottom → top), each split into thirds across all 120 counties.

Dark green – top third on *both*. **Orange** – high SVI, lower death rate. **Blue** – high death rate, lower SVI. **Light gray** – low on both.

The color coding indicates where the two measures co-occur geographically – not that one causes the other.

Social Vulnerability Index (SVI). Overall, high SVI and overdose death rates are concentrated in eastern Kentucky, primarily in Appalachian counties; only three counties outside the eastern third of the state fall in the highest tier for both measures.

UNDERSTANDING THIS ANALYSIS

Elevated drug overdose fatality rates do not occur in isolation; they are concentrated in communities where social and economic conditions create compounded risk. The SVI, developed by the Centers for Disease Control and Prevention (CDC), draws on census data to quantify four dimensions of community vulnerability: socioeconomic status, household characteristics, racial and ethnic minority status, and housing type and transportation. Higher SVI scores indicate communities with greater vulnerability.

The maps in this series use a bivariate choropleth design to display two variables at once: drug overdose death rate and social vulnerability. Dark green indicates counties high on both measures; orange or blue indicates counties high on one measure but low on the other; gray indicates counties low on both. This approach reveals not just where overdose burden is concentrated, but whether and how that concentration aligns with social vulnerability.

Each of the individual maps, on this page and on the reverse, examines a different vulnerability indicator – the composite SVI and four individual component measures – to show how the geographic relationship between overdose burden and social disadvantage shifts across measures.

WHAT SVI MEASURES

The SVI composite score combines county rankings across four CDC-defined themes, each based on multiple Census variables.

SOCIOECONOMIC STATUS	Below 150% poverty; Unemployed; Housing cost burden; No high school diploma; No health insurance
HOUSEHOLD CHARACTERISTICS	Aged 65+; Aged 17 and younger; Civilian with a disability; Single-parent households; Limited English proficiency
RACIAL AND ETHNIC MINORITY STATUS	Hispanic or Latino; Black; Asian; American Indian/Alaska Native; Native Hawaiian/Pacific Islander; Two or more races; Other races
HOUSING TYPE AND TRANSPORTATION	Multi-unit structures; Mobile homes; Crowding; No vehicle access; Group quarters

*SVI is the Centers for Disease Control and Prevention and Agency for Toxic Substances and Disease Registry's (CDC/ATSDR's) composite Social Vulnerability Index (sum of all four theme rankings), CDC/ATSDR SVI 2022 Database, 2018-2022 American Community Survey estimates. Overdose deaths are Kentucky resident deaths with an underlying cause of death consistent with the standard CDC/National Center for Health Statistics drug-poisoning definition (ICD-10 codes X40– 44, X60– 64, X85, Y10– 14), 2025, crude rate per 100,000 residents (not age-adjusted).

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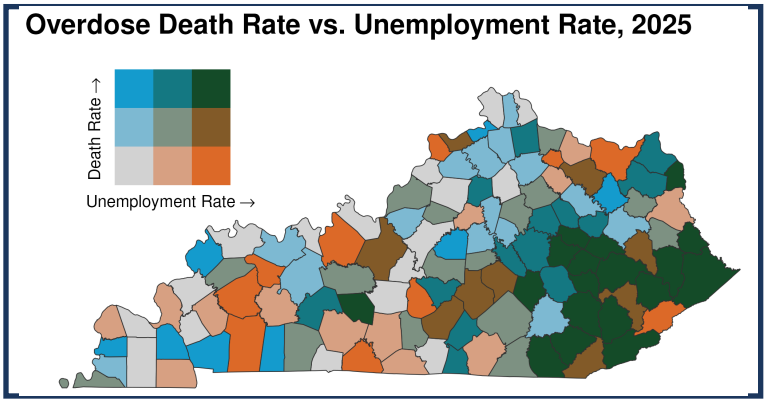
COMPONENT FACTORS BEHIND THE SVI SCORE

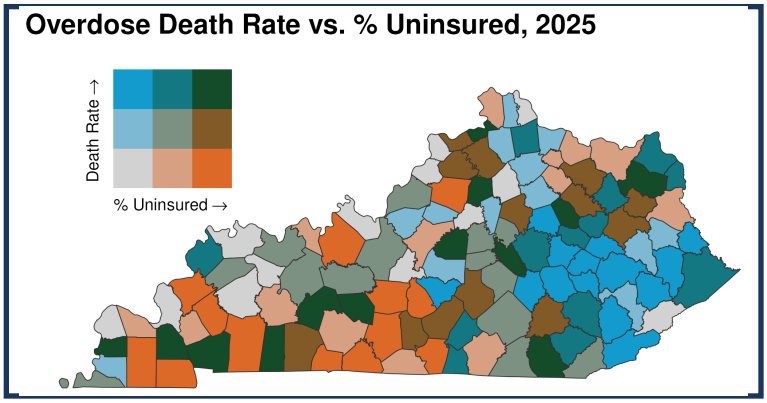
The composite SVI score above is built from many measures. The four maps below isolate individual components most directly tied to health-care access and economic strain, each paired with the same overdose death rate as the map above, to help visualize which specific factors are driving a county's overall vulnerability.

Overdose Death Rate vs. Unemployment Rate, 2025



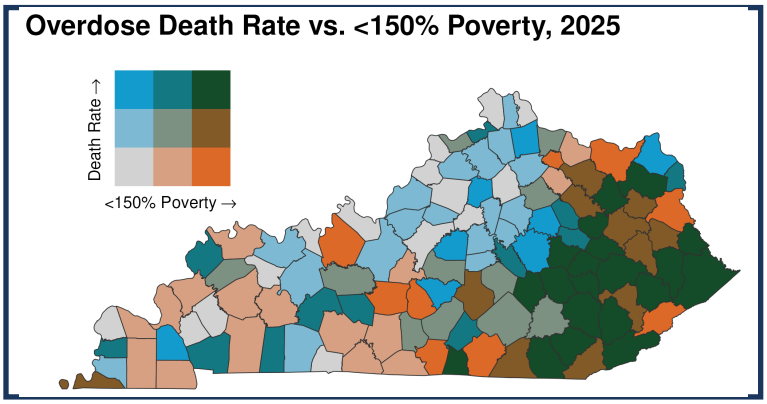
Unemployment Rate. The county-level association between overdose fatality and unemployment rates is strongest in far western Kentucky (low fatality paired with low unemployment) and in south-central/Appalachian counties (high fatality paired with high unemployment).

Overdose Death Rate vs. % Uninsured, 2025



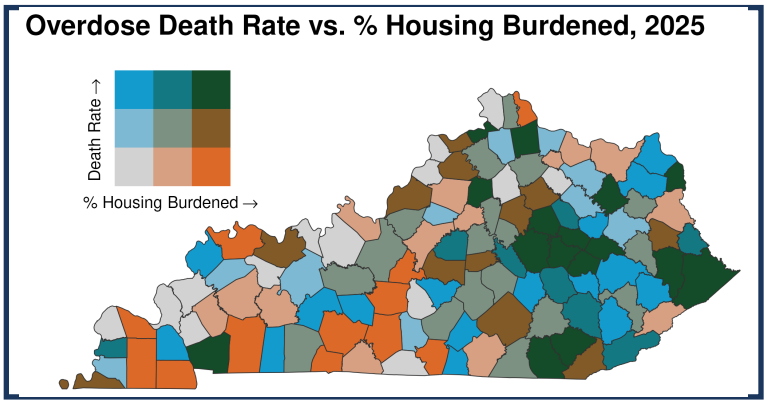
Percentage Uninsured in Total Civilian Noninstitutionalized Population (the population excluding those in institutional settings, e.g. correctional facilities or nursing homes). The association between overdose fatality and uninsured rates varies by region: western and south-central Kentucky counties combine high rates of both, while northern, northeastern, and eastern Kentucky counties tend to pair high overdose fatality with comparatively low uninsured rates.

Overdose Death Rate vs. <150% Poverty, 2025



Percentage of Persons below 150% Poverty. The association between poverty and overdose fatality rates is strongest in Appalachian counties, where high poverty and high overdose fatality consistently co-occur; the pattern is less consistent elsewhere in the state.

Overdose Death Rate vs. % Housing Burdened, 2025



Percentage of Cost-Burdened Housing Units (30%+ Income Spent on Housing). Several clusters of counties with a strong association between overdose fatality and housing cost burden are located in central and eastern Kentucky, though the regional pattern is weaker here than for the other three indicators in this analysis.

DISCLAIMER

This project is a product of the Kentucky Injury Prevention and Research Center, a partnership between the University of Kentucky College of Public Health and the Kentucky Department for Public Health. County-level crude rates are not age-adjusted and may be unstable for counties with small populations or few deaths. This report describes geographic co-occurrence, not causation. Data are subject to revision. This project is supported by the Centers for Disease Control and Prevention (CDC) of the U.S. Department of Health and Human Services (HHS) as part of cooperative agreement 1 NU17CE010186 totaling $5,769,396 with 0% financed with nongovernmental sources. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement by, CDC, HHS, or the U.S. government. For more information, please visit CDC.gov.

Data sources: Kentucky Death Certificate Database, KY Office of Vital Statistics, Cabinet for Health and Family Services (provisional); CDC/ATSDR Social Vulnerability Index 2022 Database, Geospatial Research, Analysis, and Services Program | **Period:** 2025 | **Contact:** Kentucky Injury Prevention and Research Center at kiprc@uky.edu