# Opioid-related overdose deaths in the South Region of the U.S. From 2013 to 2020

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## Introduction

- The United States is currently suffering an epidemic of rising opioid-related deaths. This alarming trend is especially worrisome for states in the census-defined South Region of the United States.
- Prescription opioids contributed to approximately 55% of 400,000 opioid-related overdose deaths between 1999 and 2017.[1]
- The Drug Enforcement Agency (DEA) Diversion Control Division implemented the interim final rule for Electronic Prescribing of Controlled Substances (EPCS) on March 31, 2010.[2]

## Objective

- To assess the average annual change and total change in opioid-related overdose deaths from 2013 to 2020 in the South Region of the United States (consisting of the South Atlantic, East South-Central, and West South-Central divisions).

## Methods

- Age-adjusted opioid-related death rates per 100,000 population were captured for each of the 17 states in the South Region from January 2013 to December 2020.
- Rates were collected for each year.
- Centers Disease Control (CDC) WONDER Online Database was utilized.
- Analysis was used to determine differences in opioid-related deaths over time and among divisions. Statistical comparisons were performed using paired T-tests, ANOVA, and post hoc tests.

## Results

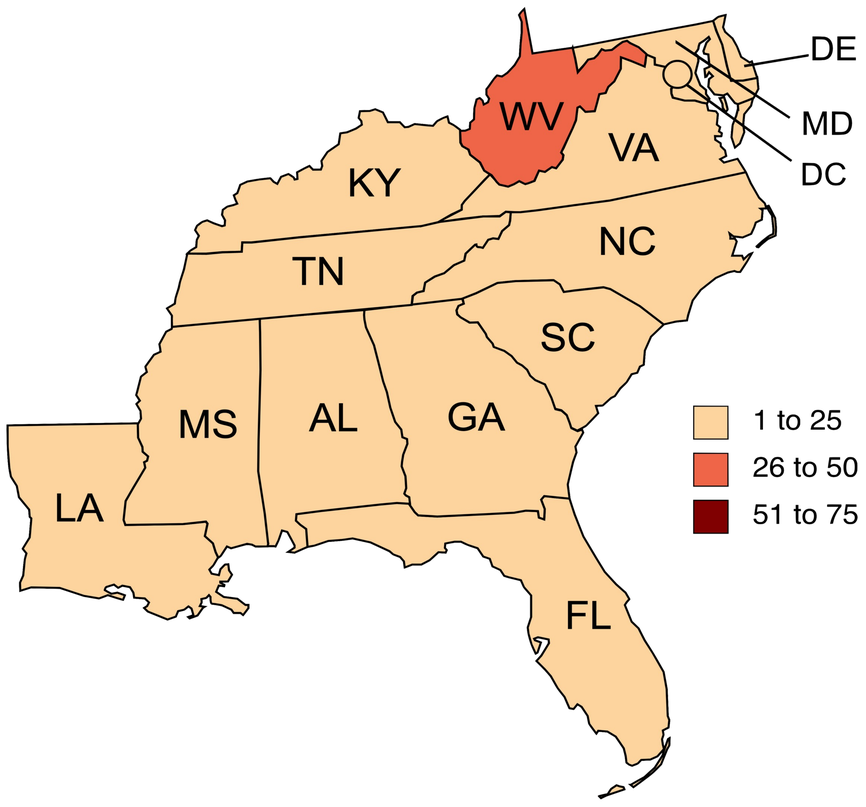


**Figure 1. 2013 Age Adjusted Death Rates per 100,000 Population.**

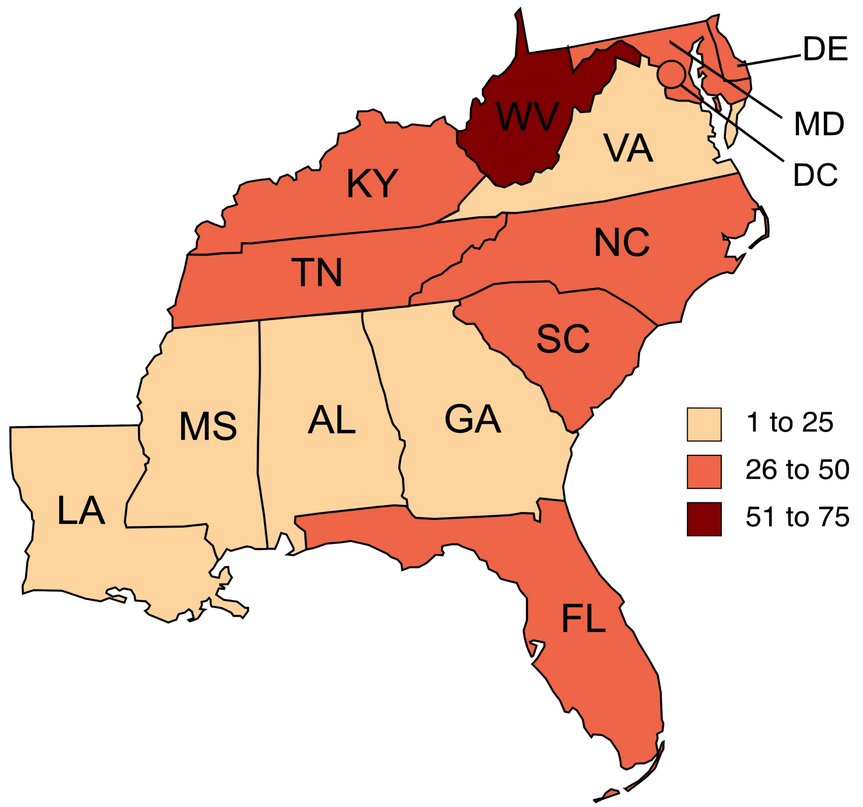


**Figure 2. 2020 Age Adjusted Death Rates per 100,000 Population.**

- From 2013 to 2020, there was a significant increase in average age-adjusted opioid-related overdose deaths per 100,000 population within the South Region of the United States (mean difference 18.2; 95% CI, 24.7 to 11.8; $p<0.001$).
- Although there was no statistical difference in average total opioid-related death rates among the three divisions, the average yearly percent change was statistically significantly different ($p=0.029$). Specifically, the South Atlantic division showed increased yearly rates of opioid-related deaths compared to the West South-Central division (mean difference 12.7; 95% CI, 1.36 to 24; $p=0.028$).

## Discussion

- Opioid death rates increased in the South Region of the United States from 2013 to 2020.
- Questions posed in this research are whether the implication of EPCS has benefited the opioid crisis or contributed to more illicit opioid use across the country.
- Further studies need to be conducted to compare differences among regions and determine what factors are causing an increase in opioid-related deaths. This includes assessing the impact of state prescription authority regulations among the South Region of the United States.

## References

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