Overview

The University of Vermont Center on Rural Addiction (UVM CORA)'s mission is to expand addiction treatment capacity in rural areas in northern New England and throughout the United States (US) by providing consultation, resources, training, and evidence-based technical assistance to healthcare providers and community partners. Previously, the National Center for Health Statistics identified differences in all drug overdose deaths by state and by sex in rural and non-rural areas.[1] For this project, we quantified and compared rural opioid overdose mortality in the US and in UVM CORA's primary service area (**Figure 1**) by state, sex, and substances involved, using publicly available data from the Centers for Disease Control and Prevention (CDC) Wide-ranging Online Data for Epidemiologic Research (WONDER) tool.

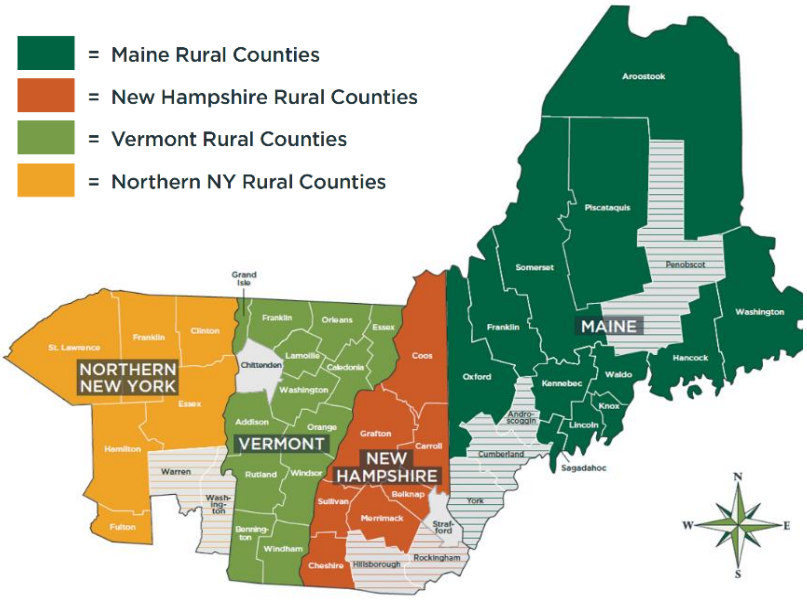

Figure 1. The University of Vermont Center on Rural Addiction (UVM CORA) primary service area. Colored shading indicates rural counties, stripes indicate partially rural counties, and light grey indicates non-rural counties.

Methods

We identified 2020 drug overdose deaths using International Classification of Diseases (10th revision) underlying cause-of-death codes and opioid over-dose deaths using multiple cause-of-death codes.[2] For our region-specific analysis, we used the counties designated as eligible for rural health grants by the Federal Office of Rural Health Policy. For our national analysis, we used the counties classified as micropolitan or non-core in the 2013 National Center for Health Statistics Urban-Rural Scheme for Counties (available in CDC WONDER). We calculated age-adjusted rates using the direct method and the 2000 U.S. standard population. We examined these rates in UVM CORA's primary service area and in the US, stratifying the UVM CORA service area rates by state, sex, and substance type to further inform future work in our service area.

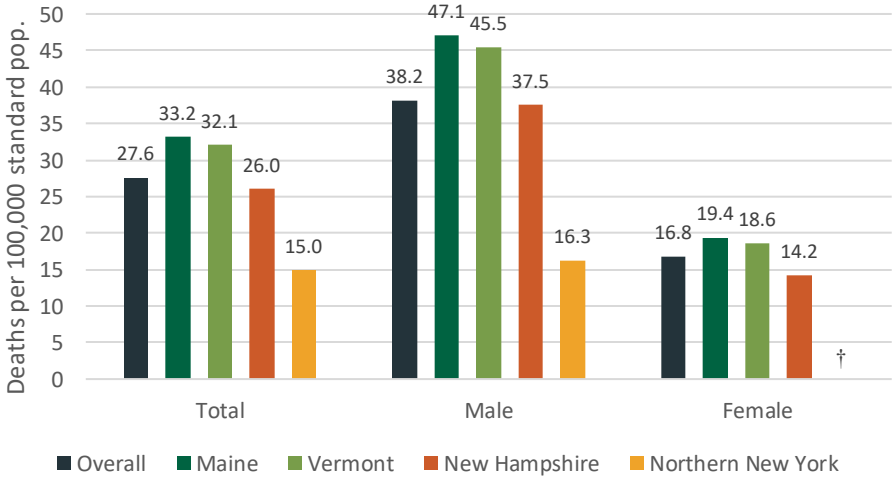

Figure 2. Age-adjusted rural opioid overdose death rates in 2020 in Vermont, New Hampshire, Maine, northern New York, and the overall region, total and by sex.

†*Northern New York not reported due to unreliable data.*

Center on Rural Addiction
UNIVERSITY OF VERMONT

2020 Rural Opioid Overdose Mortality

uvmcora.org

DATA BRIEF January 2023

UVM CORA Service Area Opioid Overdose Mortality

In 2020, the age-adjusted opioid overdose death rate in UVM CORA's rural service area was 27.6 per 100,000 persons (454 deaths) (**Figure 2**). This rate was significantly higher than the national rural opioid overdose death rate of 18.1 per 100,000 and varied by sex, with a significantly higher rate for males (38.2 per 100,000) than for females (16.8 per 100,000).

Substances Involved in Opioid Overdose Deaths in UVM CORA's Service Area

Most of the rural opioid overdose deaths in 2020 in UVM CORA's primary service area involved synthetic opioids such as fentanyl (**Figure 3**). Other non-opioid substances commonly involved in rural opioid overdose deaths in the region included cocaine, other psychostimulants, and benzodiazepines.

National Rural Opioid Overdose Mortality

In the US in 2020, the highest age-adjusted rural opioid overdose death rates were concentrated in the northeast (**Figure 4**). The states with the highest rates were West Virginia (57.8), Maryland (53.1), Connecticut (48.3), Ohio (37.3), Vermont (35.0), Maine (33.4), Kentucky (32.8), and North Carolina (32.5), compared to the national rural opioid overdose death rate of 18.1 per 100,000.

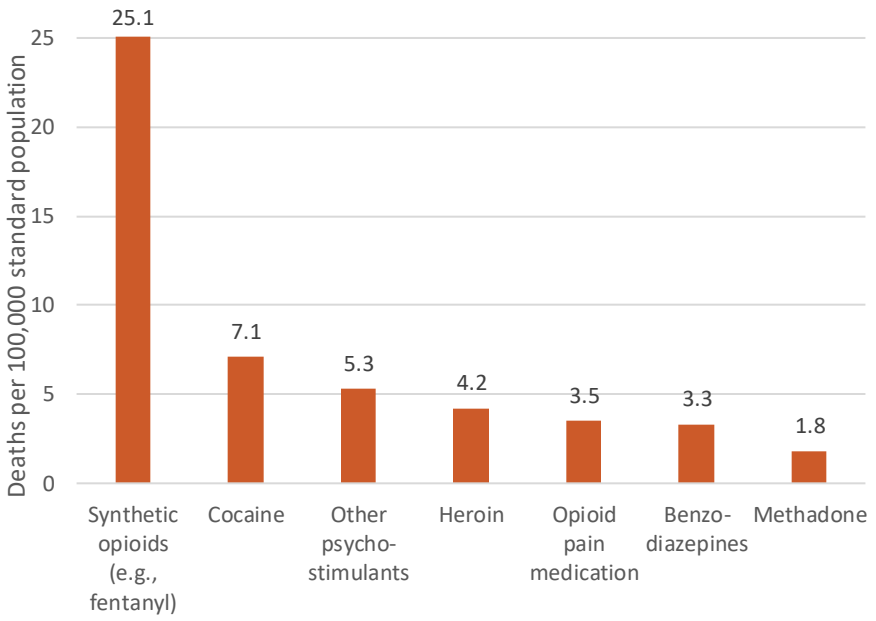

Figure 3. Rate of involvement of various substances in 2020 rural opioid overdose deaths in Vermont, New Hampshire, Maine, and northern New York.
Note: Substances are not mutually exclusive. Opium and other unspecified narcotics were excluded due to small numbers.

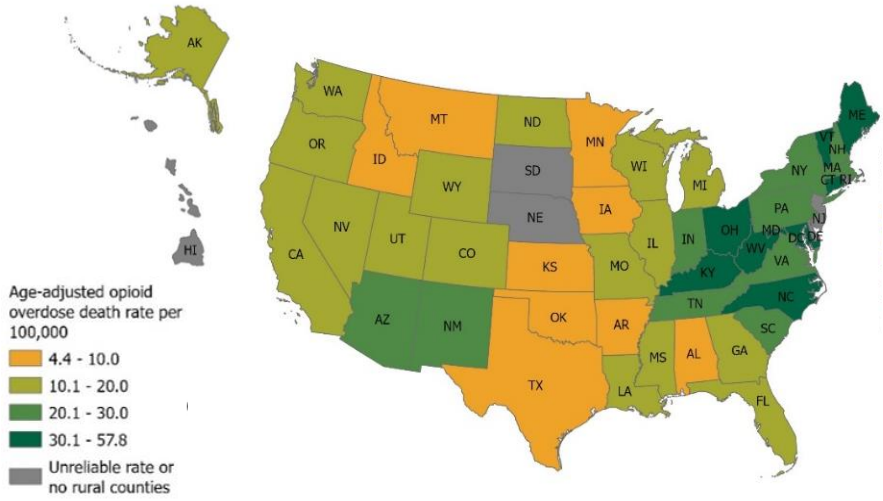

Figure 4. State 2020 age-adjusted rural opioid overdose death rates per 100,000 standard population. **Unreliable rate: HI, NE, SD; no rural counties: DC, DE, NJ, RI.*

For more information, please visit uvmcora.org.

[1] Spencer MR, Garnett MF, Miniño AM. Urban-rural differences in drug overdose death rates, 2020. NCHS Data Brief, no 440. Hyattsville, MD: National Center for Health Statistics. 2022. DOI: https://dx.doi.org/10.15620/cdc:118601.

[2] Deaths were identified using ICD-10 codes X40-X44, X60-X64, X85, and Y10-Y14. Deaths involving opioids were identified using multiple cause-of-death codes T40.0, T40.1, T40.2, T40.3, T40.4, and T40.6. Deaths involving both opioid and non-opioid substances were identified using multiple cause-of-death codes T40.5, T42.4, and T43.6 in addition to the opioid codes listed above.

This publication is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) as part of an award totaling $17,032,587 with zero percentage financed with non-governmental sources. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement by, HRSA, HHS or the U.S. Government.