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INFORMATION



Urban-Rural Differences in Injury and Drug Overdose Death Rates: Data from the National Vital Statistics System

Housekeeping

- Q & A to follow – Submit questions using Q&A area
- Slides are available at <https://www.ruralhealthinfo.org/webinars/unintentional-injury-death-rates>
- Technical difficulties please call 866-229-3239

Featured Speakers

- Holly Hedegaard, MD, MSPH, Injury Epidemiologist, Centers for Disease Control and Prevention, National Center for Health Statistics
- Henry Olaisen, PhD, MPH, Epidemic Intelligence Service (EIS) Fellow, Centers for Disease Control and Prevention, National Center for Health Statistics

Urban-Rural Differences in Injury and Drug Overdose Death Rates: Data from the National Vital Statistics System

R. Henry Olaisen, Ph.D., MPH
Epidemic Intelligence Service (EIS) fellow

Holly Hedegaard, M.D., MSPH
Division of Analysis and Epidemiology



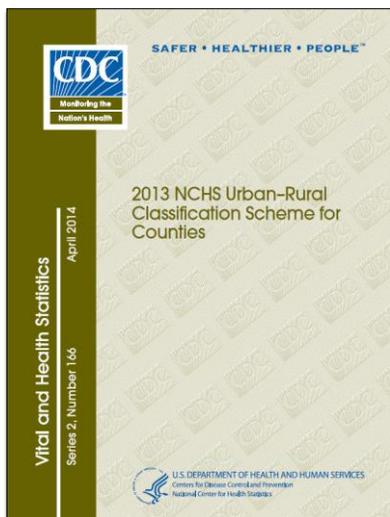
Rural Health Information Hub (RHHub) Webinar
August 29, 2019

National Center for Health Statistics

National Vital Statistics System, Mortality Data (NVSS-M)

- Compiled from information on death certificates filed in the States and Territories
- States provide data to NCHS through the Vital Statistics Cooperative Agreement
- Includes all US resident deaths
- Includes demographic characteristics, causes of death, geographic information and other variables
- Causes of death coded using the International Classification of Diseases, Tenth Revision (ICD-10)

2013 NCHS Urban-Rural Classification Scheme



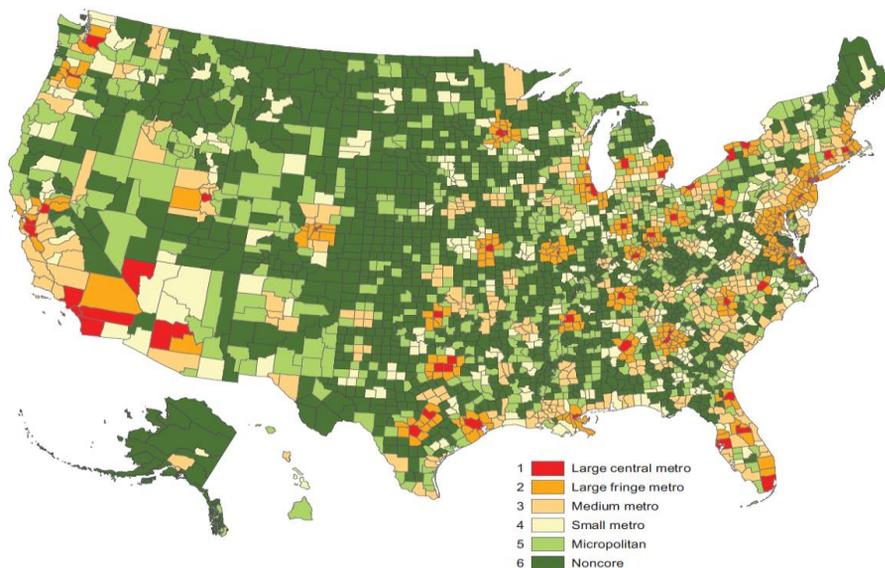
- Based on data from 2010 Census
- Counties are assigned to one of six levels based on
 - OMB designation in Feb 2013
 - Population size of the metropolitan statistical area (MSA) in which they belong
 - The location of the principal city populations within the MSA

2013 NCHS Urban-Rural Classification Scheme

Group		Description
Metro (Urban)	Large Central Metro	Counties of 1 million or more population that: 1) contain the entire population of the largest principal city, or 2) are completely contained within the largest principal city, or 3) contain at least 250,000 residents of any principal city in the area
	Large Fringe Metro	Counties of 1 million or more population that do not qualify as large central
	Medium Metro	Counties of 250,000–999,999 population
	Small Metro	Counties of 50,000–249,999 population
Non-Metro (Rural)	Micropolitan	Counties in micropolitan statistical area
	Non-Core	Counties not in micropolitan statistical area

NCHS Urban–Rural Classification Scheme for Counties. Available from: https://www.cdc.gov/nchs/data/series/sr_02/sr02_166.pdf

2013 NCHS Urban-Rural Classification Scheme



National Center for Health Statistics



Unintentional Injury Death Rates in Rural and Urban Areas: United States, 1999-2017

R. Henry Olaisen, Ph.D., MPH

Epidemic Intelligence Service (EIS) fellow

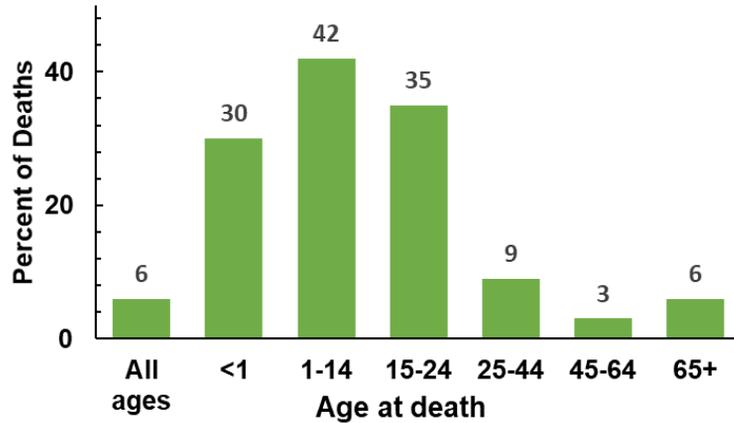
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Context

Unintentional Injury Death Rates in Rural and Urban Areas: United States, 2014-2017

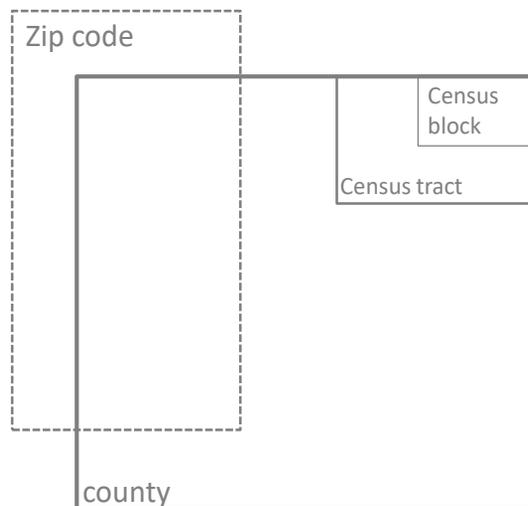
Percentage of deaths from unintentional injuries, by age group: United States, 2017



Source: NCHS, National Vital Statistics System, Mortality

Geography

- County as unit of measure
 - 3,149 counties
 - Continuum
 - Stability over time

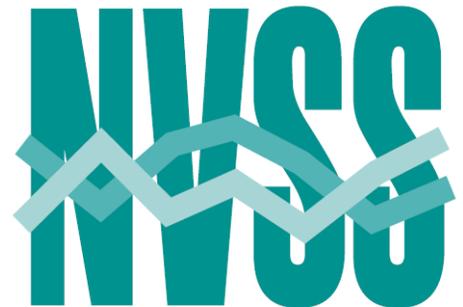


STUDY OBJECTIVES

- Describe trends in the death rates for unintentional injuries and three leading causes of death due to unintentional injuries.
- Assess differences by urbanization level for leading causes of unintentional injury deaths for 2014 and 2017.

METHODS

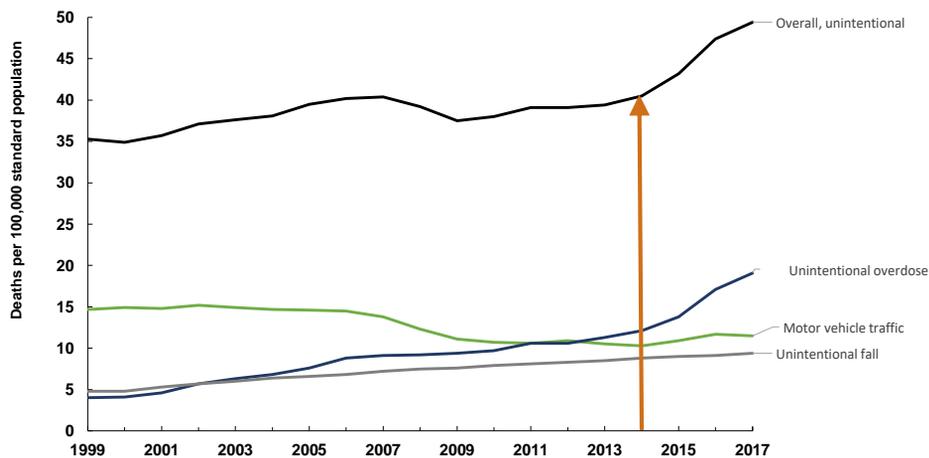
- National Vital Statistics System
 - CDC Wonder interface
- Measurement
 - ICD-10 disease codes
 - NCHS Classification scheme (granularity of place of living)
 - Death rates (Age-adjustment using 2000 standard population)
- Analyses
 - Trajectories of trends using piecewise linear regression
 - Comparisons (levels of urbanization) with Jonckheere-Terpstra
 - Comparisons (2014 vs. 2017) with z-tests



Key Findings

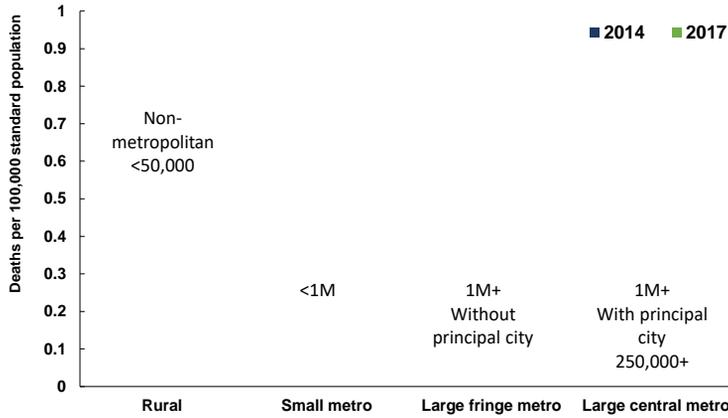
Unintentional Injury Death Rates in Rural and Urban Areas: United States
2014-2017

Unintentional injury death rates by three leading causes: 1999-2017.



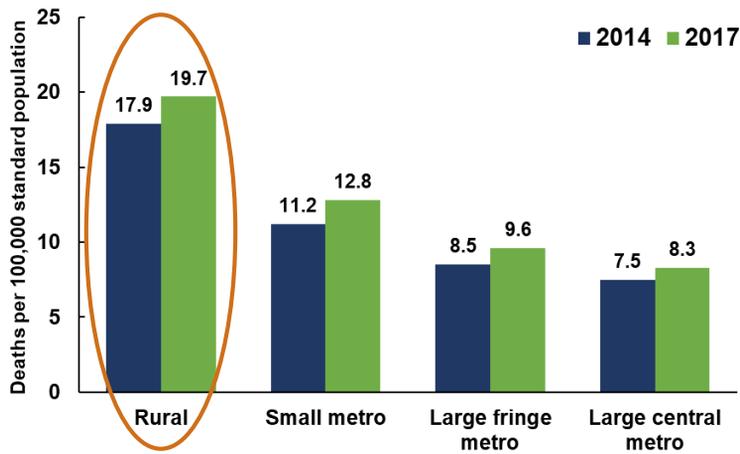
Source: NCHS, National Vital Statistics System, Mortality

Differences in motor vehicle death rates across geography.



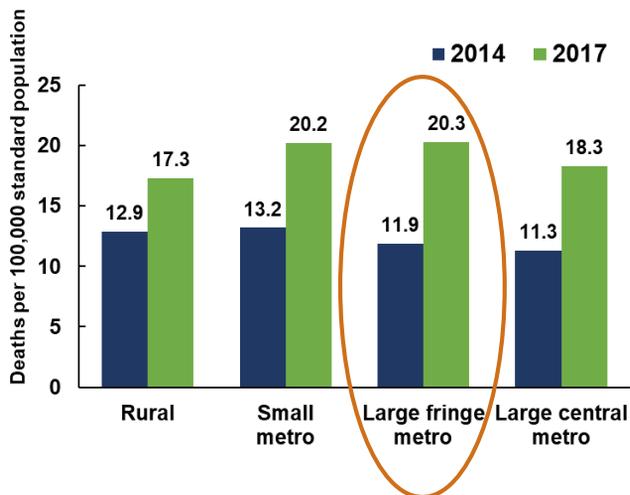
Note: NCHS, Urban-Rural Classification Scheme, 2013

Highest rates for motor vehicle traffic in rural counties for both 2014 and 2017.



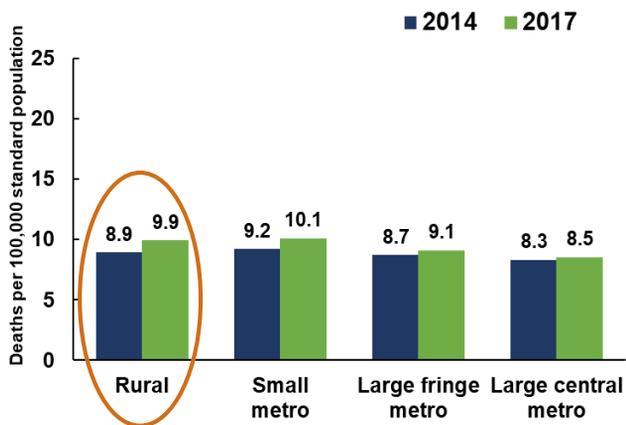
Source: NCHS, National Vital Statistics System, Mortality

Largest increase in unintentional drug overdose deaths in suburban counties (large fringe metro) from 2014 to 2017.



Source: NCHS, National Vital Statistics System, Mortality

Largest increase in unintentional falls in rural counties from 2014 to 2017.



Source: NCHS, National Vital Statistics System, Mortality

SUMMARY

Deaths from Unintentional Injuries

- Unintentional injury death rates increased from 1999 through 2017, but trends varied by leading causes of injury deaths.
- Death rates for motor vehicle traffic injuries were highest in rural counties in both 2014 and 2017.
- Suburban counties (large fringe metro) had largest increase in death rates for unintentional drug overdose from 2014 to 2017.
- Rural counties experienced the largest increase in unintentional falls between 2014 and 2017.

For more information:

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



Urban-Rural Differences in Drug Overdose Death Rates, by Sex, Age, and Type of Drugs Involved, 2017

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National Center for Health Statistics
Division of Analysis and Epidemiology

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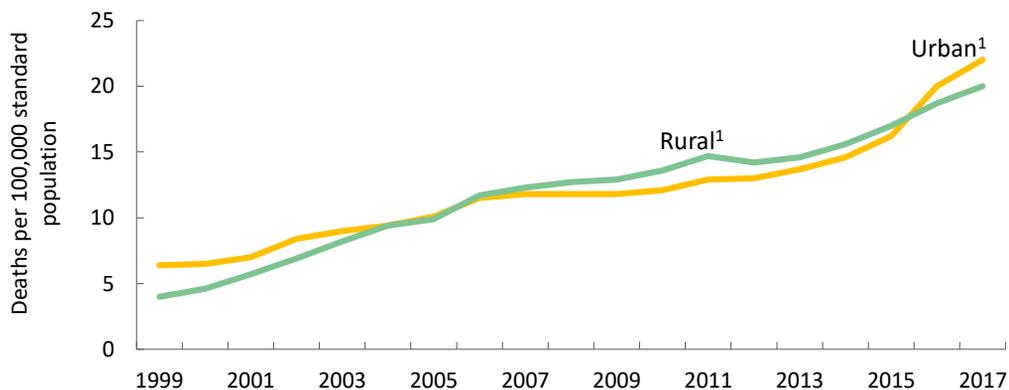
Methods

- Data from the National Vital Statistics System Mortality data (NVSS-M)
- Drug overdose deaths identified using ICD-10 codes X40-X44, X60-X64, X85 or Y10-Y14
- Includes deaths involving all types of drugs (not just opioids)
- Deaths were grouped based on the decedent's county of residence

Methods

- Counties were categorized to Urban or Rural using the 2013 NCHS Urban-Rural Classification Scheme for Counties
 - **Urban counties:** Large Central Metro
Large Fringe Metro
Medium Metro
Small Metro
 - **Rural counties:** Micropolitan
Non-core

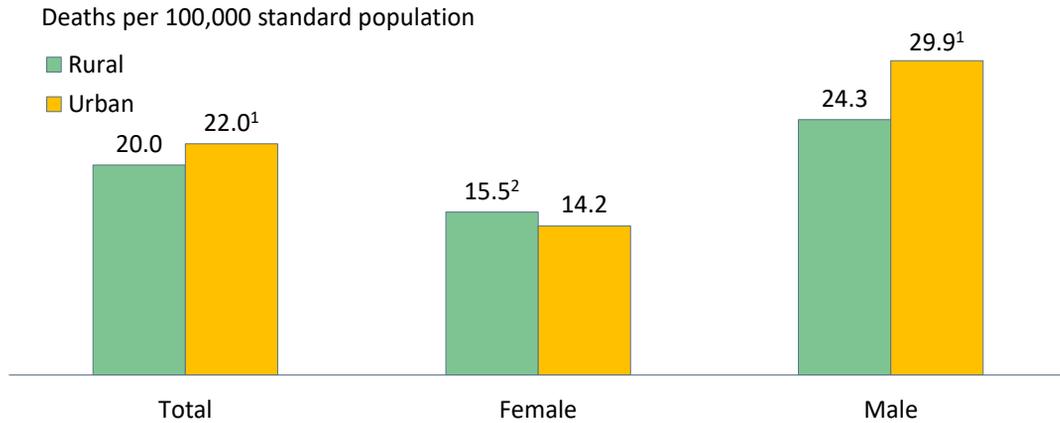
Age-adjusted rates of drug overdose deaths, by urban and rural residence: United States, 1999-2017



¹ Significant increasing trend from 1999 through 2017 with different rates of change over time, $p < 0.05$. Rates were higher in urban than in rural counties from 1999 through 2003 and in 2016 and 2017. Rates in urban and rural counties were similar from 2004 through 2006. Rates were higher in rural than in urban counties from 2007 through 2015.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Rates of drug overdose deaths, by sex and by urban and rural residence, 2017

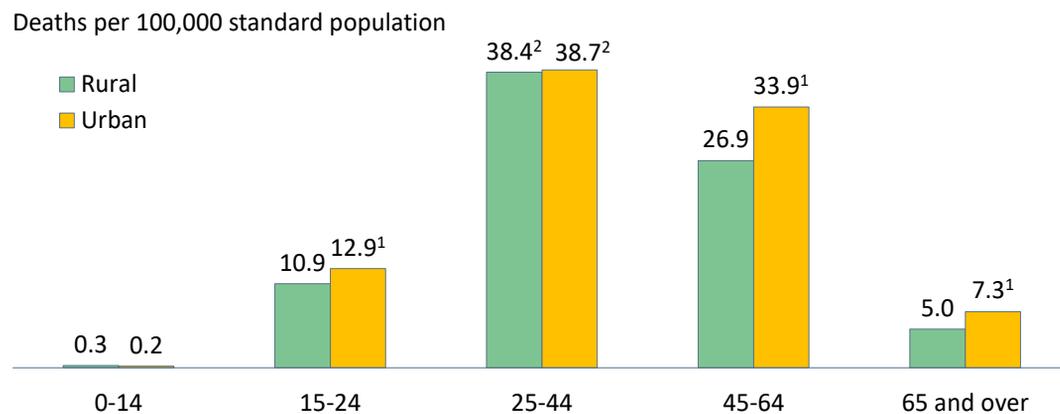


¹Significantly higher than rural rate, $p < 0.05$.

²Significantly higher than the urban rate, $p < 0.05$

SOURCE: NCHS, National Vital Statistics System, Mortality.

Rates of drug overdose deaths, by age group and by urban and rural residence, 2017

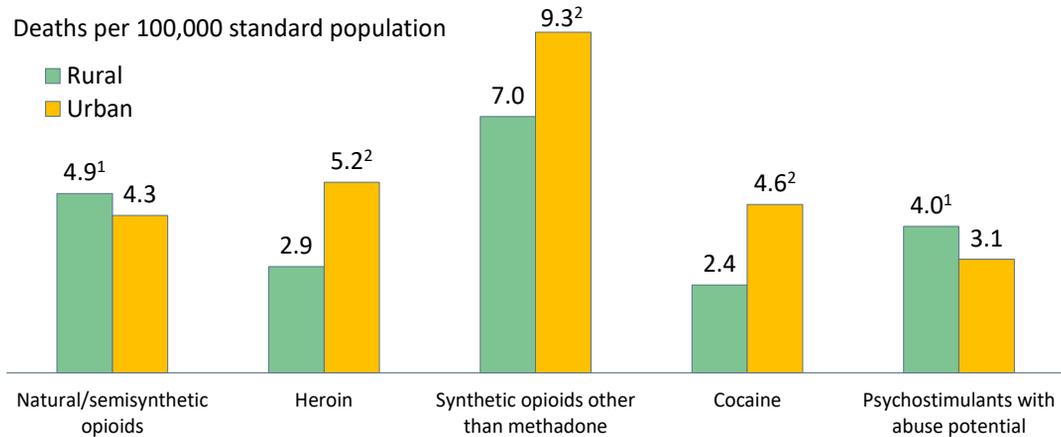


¹Significantly higher than rural rate, $p < 0.05$.

²Significantly higher than for other age groups, $p < 0.05$.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Age-adjusted rates of drug overdose deaths involving selected types of drugs, by urban and rural residence, 2017



¹Significantly higher than urban rate, $p < 0.05$.

²Significantly higher than rural rate, $p < 0.05$.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Summary

In 2017:

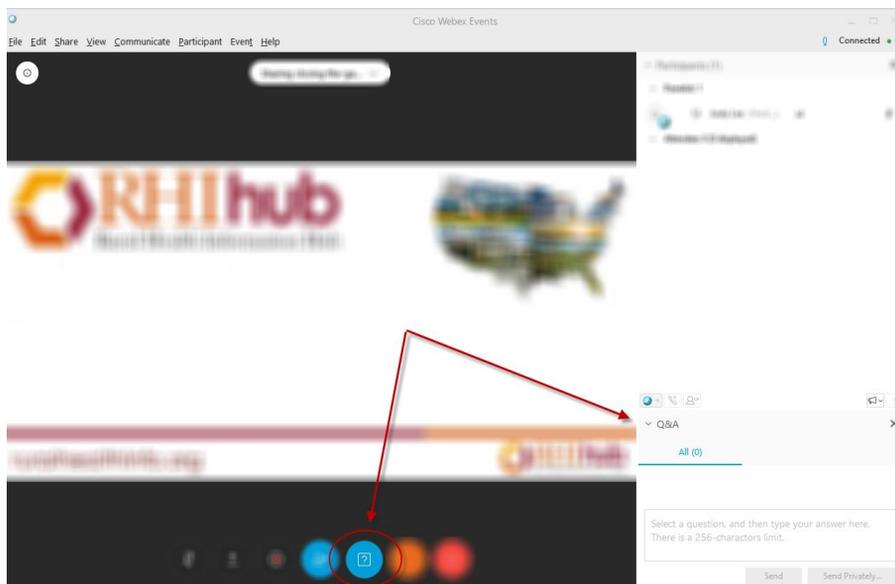
- Drug overdose death rate was higher in urban than in rural counties
- For females, the rate was higher in rural; for males, the rate was higher in urban
- Rate was highest for ages 25-44 for both urban and rural
- Rates for drug overdose deaths involving natural/semisynthetic opioids (e.g., oxycodone, hydrocodone) or psychostimulants (e.g., methamphetamine) were higher in rural
- Rates for drug overdose deaths involving synthetic opioids (e.g., fentanyl), heroin, or cocaine were higher in urban

For more information

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Hedegaard H, Miniño AM, Warner M. Urban– rural differences in drug overdose death rates, by sex, age, and type of drugs involved, 2017. NCHS Data Brief, no 345. Hyattsville, MD: National Center for Health Statistics. 2019. Available from: <https://www.cdc.gov/nchs/data/databriefs/db345-h.pdf>

Questions?



Thank you!

- Contact us at ruralhealthinfo.org with any questions
- Please complete webinar survey
- Recording and transcript will be available on RHIhub website