Thank you for joining today’s webinar. We will begin promptly at 2:00 pm Central.
Housekeeping

• Q & A to follow – Submit questions using Q&A area

• Slides are available at www.ruralhealthinfo.org/webinars/nchs-rural-mortality

• Technical difficulties please visit the Zoom Help Center at support.zoom.us

Featured Speakers

**Jennifer Burges, MPH**, Research Coordinator, Federal Office of Rural Health Policy, Health Resources and Services Administration

**Sally Curtin, MA**, Division of Vital Statistics, National Center for Health Statistics, Centers for Disease Control and Prevention

**Merianne Spencer, MPH**, Division of Analysis and Epidemiology, National Center for Health Statistics, Centers for Disease Control and Prevention

**Matthew Garnett, MPH**, Division of Analysis and Epidemiology, National Center for Health Statistics, Centers for Disease Control and Prevention

**Kami Anderson**, Executive Director, Armstrong-Indiana-Clarion Drug & Alcohol Commission

**Holly Hedegaard, MD, MSPH**, Division of Analysis and Epidemiology, National Center for Health Statistics, Centers for Disease Control and Prevention

**Michael Krafick**, Certified Recovery Specialist Supervisor, Armstrong-Indiana-Clarion Drug & Alcohol Commission
Urban-Rural Differences in Death Rates

Recent reports and findings from the National Center for Health Statistics

Sally C. Curtin, M.A.
Merianne Rose Spencer, M.P.H.
Matt F. Garnett, M.P.H.
Holly Hedegaard, M.D.

National Rural Health Day Webinar
November 16, 2020

Several recent NCHS reports have featured differences in death trends by urban-rural classification

In this presentation, we will discuss:

- All deaths
- Suicide
- Alcohol-induced deaths
- Deaths from motor vehicle traffic
- Drug overdose deaths
Mortality data from the National Vital Statistics System

- Information from death certificates from 50 states and DC
- Demographic information on age, race and ethnicity is supplied by an informant, usually the next of kin
- Underlying and multiple causes of death are supplied by physicians, medical examiners and coroners, and classified using the *International Classification of Diseases, 10th Revision* (ICD-10)
- Death rates are computed as the number of deaths per 100,000 population – age-adjusted to a standard 2000 population where indicated

Urban-rural classification

- Urban-rural classification of the decedent’s county of residence is based on standards and recommendations outlined in the 2013 NCHS urban-rural classification scheme
- Classifications are based on a combination of 2010 census populations and metropolitan or micropolitan statistical area designations, using 2010 Office of Management and Budget (OMB) definitions

Six classifications of urbanicity

U.S. counties by urban-rural classification

Age-adjusted death rates, by urban-rural classification: United States, 1999-2018

From 1999 through 2018, overall death rates declined but the urban-rural difference widened.

In 1999, rural rates were 7% higher than urban rates.

In 2018, rural rates were 19% higher than urban rates.

**Rural**

**Urban**

Significant decreasing trend from 1999 to 2010; stable trend from 2010 to 2018, \( p < 0.05 \).


From 1999 through 2018, overall death rates declined but the urban-rural difference widened.

Age-adjusted death rates, by urbanization level: United States, 1999-2018

From 1999 through 2018, the death rate decreased by 24% in the most urban counties (large central) but by only 9% in the most rural counties (noncore).

**Large central**

**Large fringe**

**Medium metro**

**Small metro**

**Micropolitan**

**Noncore**

Significant decreasing trend from 1999 to 2010; stable trend from 2010 to 2018, \( p < 0.05 \).

Definitions and methods

- Suicides were identified using ICD-10 underlying cause-of-death codes U03, X60–X84, and Y87.0
- Age-adjusted suicide rates were examined by:
  - Urban-rural classification of the decedent’s county of residence
  - Sex of decedent
  - 3 most frequent means of suicide (firearms, suffocation, and poisoning)
Age-adjusted suicide rates, by urban-rural classification: United States, 2000-2018

From 2000 through 2018, the suicide rate increased in both rural and urban counties.

The suicide rate in rural counties increased by 48% while the rate in urban counties increased by 34%.

Age-adjusted suicide rates, by sex and urban-rural classification: United States, 2000-2018

For both males and females, the difference in suicide rates between rural and urban areas widened from 2000 through 2018.
Age-adjusted **male** suicide rates, by leading method and urban-rural classification: United States, 2000-2018

Firearm-related suicide rates were higher for rural males than urban males. Among the 3 methods studied, rates for suffocation-related suicide showed the greatest increase over the study period for both urban and rural males.

![Graph showing suicide rates by leading method and urban-rural classification](image)

1. Significant decreasing trend from 2000 to 2006; significant increasing trend from 2006 to 2018, p <0.05.
2. Significant increasing trend from 2000 to 2018 with different rates of change over time, p <0.05.
3. Significant increasing trend from 2000 to 2010; significant decreasing trend from 2010 to 2018, p <0.05.
4. Significant decreasing trend from 2000 to 2006; significant increasing trend from 2006 to 2018, p <0.05.
5. Significant decreasing trend from 2000 to 2018, p <0.05.


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Age-adjusted **female** suicide rates by leading method and urban-rural classification: United States, 2000-2018

Firearm-related suicide rates were higher for rural females than urban females. The suffocation-related suicide rate for rural females was more than 4 times higher in 2018 than in 2000.

![Graph showing suicide rates by leading method and urban-rural classification](image)

1. Significant increasing trend from 2000 to 2014 with different rates of change over time; stable trend from 2014 to 2018, p <0.05.
2. Significant increasing trend from 2000 to 2010; significant decreasing trend from 2010 to 2018, p <0.05.
3. Significant decreasing trend from 2000 to 2006; significant increasing trend from 2006 to 2018, p <0.05.
4. Significant increasing trend from 2000 to 2018, p <0.05.

Definitions and methods

• Alcohol-induced deaths:
  – Are deaths from dependent and nondependent use of alcohol, as well as accidental poisoning by alcohol
  – Exclude unintentional injuries, homicides, and other causes indirectly related to alcohol use, as well as newborn deaths associated with maternal alcohol use
  – Were identified using ICD-10 underlying cause-of-death codes: E24.4, F10, G31.2, G62.1, G72.1, I42.6, K29.2, K70, K85.2, K86.0, R78.0, X45, X65, Y15

• Study includes adults aged 25 and over
  – Accounts for 99% of alcohol-induced deaths in the United States
Age-adjusted rates of alcohol-induced deaths, adults aged 25 and over, by sex and urban-rural classification: United States, 2000-2018

The rate of alcohol-induced deaths has increased in recent years for all groups.

For both males and females, the urban-rural difference in alcohol-induced death rates widened from 2000 to 2018.

1. Significant increasing trend from 2000 through 2018, with different rates of change over time, \( p < 0.05 \).
2. Rates in rural areas were higher than in urban areas from 2007 through 2018, \( p < 0.05 \).
3. Stable trend from 2000 to 2005; significant increasing trend from 2005 through 2018, with different rates of change over time, \( p < 0.05 \).
4. Rates in rural areas were higher than in urban areas from 2011 through 2018, \( p < 0.05 \).
5. Stable trend from 2000 to 2007; significant increasing trend from 2007 through 2018, \( p < 0.05 \).


The rate of alcohol-induced deaths has increased in recent years for all groups.

For both males and females, the urban-rural difference in alcohol-induced death rates widened from 2000 to 2018.

Age-adjusted rates of alcohol-induced deaths, males aged 25 and over, by urbanization level: United States, 2000 and 2018

• In 2000, the highest rate for males occurred in large central metropolitan counties and the lowest in large fringe areas. Rates in medium metro, small metro and rural areas were similar.
• In 2018, the pattern of rates by urbanicity changed from 2000 with rates highest for medium metro, small metro, micropolitan, and noncore areas.
• Rates were higher in 2018 than in 2000 for every urbanization level.
Age-adjusted rates of alcohol-induced deaths, females aged 25 and over, by urbanization level: United States, 2000 and 2018

Deaths per 100,000 standard population

2000

- In 2000, the rate for females was highest in large central metro counties. Rates were lowest in non-core and large fringe counties, although the differences among noncore, small metro, and micropolitan counties were not significant.

- In 2018, the pattern of rates by urbanicity changed from 2000 with rates highest for medium metro, small metro, micropolitan, and noncore areas.

- Rates were higher in 2018 than in 2000 for every urbanization level.

2018

Urban-Rural Differences in Motor Vehicle Traffic Deaths, 1999-2018
Definitions and methods

- Motor-vehicle traffic deaths were identified using ICD-10 underlying cause-of-death codes V02–V04 (.1–.9), V09.2, V12–V14 (.3–.9), V19 (.4–.6), V20–V28 (.3–.9), V29–V79 (.4–.9), V80 (.3–.5), V81.1, V82.1, V83–V86 (.0–.3), V87 (.0–.8), and V89.2
- Decedents included motor vehicle occupants, motorcyclists, pedal cyclists, and pedestrians
- Traffic deaths include those that occur on public roadways
  - Do not include deaths that occur on private roads, driveways, in parking lots, etc.

Age-adjusted rates of motor vehicle traffic deaths, by urban-rural classification: United States, 1999-2018

Both urban and rural rates were stable from 1999 to 2006, followed by a period of decline through 2010.

Over the past two decades, the urban-rural difference in rates has narrowed slightly.

1Rates for rural residents were higher than for urban residents over the study period, \( p < 0.05 \).
2Stable trend from 1999 through 2006, significant decreasing trend from 2006 through 2010, and a stable trend from 2010 through 2018, \( p < 0.05 \).
3Stable trend from 1999 through 2006, significant decreasing trend from 2006 through 2010, and a significant increasing trend from 2010 through 2018, \( p < 0.05 \).

Age-adjusted rates of motor vehicle traffic deaths, by sex and urban-rural classification: United States, 1999-2018

For all groups, rates were stable until about 2005-2006, then began to decline.

Since 2010, rates in rural areas have remained stable, while rates in urban areas have increased slightly.

Age-adjusted rates of motor vehicle traffic deaths, by urbanization level: United States, 2018

The rate of motor vehicle traffic deaths increases with rurality.

The rate in the most rural area (noncore) was 2.6 times higher than in the most urban area (large central).
Age-adjusted rates of motor vehicle traffic deaths, by road-user type and urban-rural classification: United States, 2018

The rate of deaths involving vehicle occupants in rural areas was 2.3 times higher than the rate in urban areas.

Deaths per 100,000 standard population

<table>
<thead>
<tr>
<th>Road-User Type</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupant</td>
<td>15.1</td>
<td>6.5</td>
</tr>
<tr>
<td>Pedal Cyclist</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>2.0</td>
<td>1.9</td>
</tr>
<tr>
<td>Motorcyclist</td>
<td>1.3</td>
<td>1.8</td>
</tr>
</tbody>
</table>

1Rates were significantly higher than for all other road-user types, p < 0.05.
2Rates were significantly lower than for all other road-user types, p < 0.05.

NOTE: The occupant category includes occupant and unspecified road-user types.

Definitions and methods

- Drug overdose deaths were identified using ICD-10 underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14
- Deaths involving specific drugs or drug types were identified using multiple cause-of-death codes:
  - Natural/semisynthetic opioids (e.g., hydrocodone, oxycodone), T40.2
  - Heroin, T40.1
  - Synthetic opioids other than methadone (e.g., fentanyl, tramadol), T40.4
  - Cocaine, T40.5
  - Psychostimulants with abuse potential (e.g., methamphetamine), T43.6
- Deaths involving more than one drug (e.g., a death involving both heroin and cocaine) were counted in both categories

Age-adjusted rate of drug overdose deaths, by urban-rural classification: United States, 1999-2018

Drug overdose death rates have increased in both urban and rural counties.

In recent years (2016-2018), rates were higher in urban than in rural counties.

\(^1\) Significant increasing trend from 1999 through 2018 with different rates of change over time, \(p < 0.05\).
\(^2\) Rates were higher in urban than in rural counties from 1999 through 2003 and from 2016 through 2018. 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. \(p < 0.05\).
\(^3\) Significant increasing trend from 1999 through 2016 with different rates of change over time, \(p < 0.05\).

Age-adjusted rates of drug overdose deaths, by sex and urban-rural classification: United States, 2018

In 2018, drug overdose death rates were higher for urban males than for rural males.

The rate for rural females was higher than for urban females.

Rates of drug overdose deaths, by age group and urban-rural classification: United States, 2018

For both urban and rural counties, rates were highest for adults ages 25-44.

For this age group, the rural and urban rates were similar.
Age-adjusted rates of drug overdose deaths involving selected types of drugs, by urban-rural classification: United States, 2018

For both rural and urban counties, the highest rates were for drug overdose deaths involving synthetic opioids.

The rate of drug overdose deaths involving psychostimulants was higher in rural than in urban counties.

Deaths per 100,000 standard population

For both rural and urban counties, the highest rates were for drug overdose deaths involving synthetic opioids.

The rate of drug overdose deaths involving psychostimulants was higher in rural than in urban counties.

1Significantly higher than the rural rate, p<0.05.
2Significantly higher than the urban rate, p<0.05.

NOTE: In 2018, at least one specific drug was identified in 92% of drug overdose deaths.

Differences in death trends by urban-rural classification

- All deaths
- Suicide
- Alcohol-induced deaths
- Deaths from motor vehicle traffic
- Drug overdose deaths
Summary (1)

• **All-cause**: Age-adjusted death rates are higher in rural than urban areas. The urban-rural difference has widened over the last two decades.

• **Suicide**: The suicide rate in rural counties increased by 48% from 2000 through 2018. The urban-rural difference in suicide rates widened for both males and females. Firearms remain the leading means of suicide for both rural males and females, but rates for suffocation-related suicide are also increasing.

• **Alcohol-induced deaths**: The urban-rural difference in alcohol-induced death rates has widened in recent years for both males and females. The pattern of rates by urbanicity level shifted from higher rates in more urban areas in 2000 to higher rates in more rural areas in 2018.

Summary (2)

• **Motor vehicle traffic**: Rural rates are consistently higher than urban rates. In 2018, the rate in the most rural area was 2.6 times higher than in the most urban area. The rate of deaths involving vehicle occupants in rural areas was 2.3 times higher than the rate in urban areas.

• **Drug overdose**: From 2016 to 2018, rates were higher in urban than in rural areas. In 2018, rates were higher for rural females than urban females. In 2018, in rural areas, rates were highest for deaths involving synthetic opioids (e.g., fentanyl). The rate of deaths involving psychostimulants with abuse potential (e.g. methamphetamine) was higher in rural compared to urban areas.
**Presenters from NCHS**

**Sally C. Curtin, M.A.**  
Division of Vital Statistics  
sac2@cdc.gov

**Matt F. Garnett, M.P.H.**  
Division of Analysis and Epidemiology  
pqr2@cdc.gov

**Merianne Rose Spencer, M.P.H.**  
Division of Analysis and Epidemiology  
kvd1@cdc.gov

**Holly Hedegaard, M.D.**  
Division of Analysis and Epidemiology  
hdh6@cdc.gov

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**Recent reports from NCHS with information on urban-rural differences in health conditions**


https://www.cdc.gov/nchs/products/databriefs/db383.htm

**Health of American Indian and Alaska Native Adults, by Urbanization Level: United States, 2014–2018**  

https://www.cdc.gov/nchs/data/nhsr/nhsr139-508.pdf

**Chronic Pain and High-impact Chronic Pain Among U.S. Adults, 2019**  
Recent reports from NCHS with information on urban-rural differences in health conditions

Increase in Drug Overdose Deaths Involving Cocaine: United States, 2009–2018

Increase in Suicide Mortality in the United States, 1999–2018
https://www.cdc.gov/nchs/data/databriefs/db362-h.pdf

Urban–rural Differences in Drug Overdose Death Rates, by Sex, Age, and Type of Drugs Involved, 2017
https://www.cdc.gov/nchs/data/databriefs/db345-h.pdf

Unintentional Injury Death Rates in Rural and Urban Areas: United States, 1999–2017
https://www.cdc.gov/nchs/data/databriefs/db343-h.pdf

https://www.cdc.gov/mmwr/volumes/68/wr/mm6825a4.htm

QuickStats: Birth Rates by Urbanization Level and Age Group of Mother — National Vital Statistics System, United States, 2017
https://www.cdc.gov/mmwr/volumes/67/wr/mm6745a9.htm
ABOUT US:

- Located in Western Pennsylvania
- Single County Authority for three rural counties
- Non-profit 501 (c)3 corporation
- Receive federal, state, and local funding for prevention, intervention, treatment, case management, and recovery support services.
- Opiate issues rose in the early 2000’s
- Fentanyl entered the area around 2015-2016, overdose deaths rampant
A Registered Nurse is available in each outpatient facility to help coordinate physical health with behavioral health needs, i.e. diabetes, hypertension, and obesity

- Assists clients with making appointments, talking to their physicians about their substance use disorders
- Assists facility with Medication Assisted Treatment
- Provides Hepatitis C testing and education
- Prepares a wellness plan with the client
- Educates therapists and other staff on medical concerns and drug interactions, etc.
- Began with a federal grant from Health Resources and Services Administration (HRSA)

- Buprenorphine available at all outpatient treatment facilities
- Vivitrol available at all outpatient treatment facilities and through Positive Recovery Solutions (mobile unit that travels to all three counties with doctor and nurse on board)
- Methadone available at 2 clinics (one in Armstrong, and one in Indiana County)
- Now all three versions of MAT are available at all residential facilities in County. In July 2021, all three versions of MAT will be available at all residential facilities in the state of Pennsylvania.
PERINATAL MOMS

- Program currently at Indiana Hospital and may start at Armstrong Hospital
- No wrong door for Moms to enter program
- OB/GYN has X waiver
- Monitors perinatal moms on Subutex or Methadone
- Includes referral to peer CRS

RECOVERY ‘N MOTION

- Exercise and Wellness program in partnership with the local YMCA
- Limited to persons in Recovery
- 2-3 exercise sessions per week
- 1-2 wellness sessions per week, including nutrition, etc.
- https://www.facebook.com/RecoveryNMotionIndiana
OVERDOSE PREVENTION AND NALOXONE DISTRIBUTION

- Overdose Prevention Education – Training on signs and symptoms of an opioid overdose and how to respond, what to do and what not to do in the event of a drug overdose.

- Naloxone Distribution – AICDAC provides a FREE 2 dose kit of Naloxone to people that have participated in the Overdose Prevention Education class. Naloxone is available to anyone at risk of drug overdose as well as friends and family members of those at risk of drug overdose. Distribution sites include all AICDAC offices, the County Jails, Hospitals, treatment providers, and community trainings. Also make Naloxone lock boxes available in public locations.

- Have added a Narcan mail out program to those who cannot get transportation to our office or to a treatment provider.
ADDICTION RECOVERY MOBILE OUTREACH TEAM (ARMOT) - HOSPITAL SERVICES:

- ARMOT – Case Managers and Certified Recovery Specialists (CRS) are available to meet with individuals who become patients of their local emergency department, hospital acute care wing, behavioral health unit or present to their medical practitioner with substance use disorder concerns.

- Hospital Liaisons, Case Managers, and CRS, are available to Armstrong, Indiana, and Clarion County medical professionals to provide Drug & Alcohol Assessments, Case Coordination, Recovery Support and Aftercare assistance.

- A Certified Recovery Specialist works closely with the Case Managers to provide peer-based Recovery Support Services.

- Drug & Alcohol Screening and Assessments within the hospital setting
- Referrals to Drug & Alcohol treatment
- Coordination of Care
- Aftercare planning/coordination
- Assistance navigating health insurance benefits for Drug & Alcohol treatment
- Consultation on substance abusing and suspected co-morbid Drug & Alcohol patients
- Recovery Support and Checkups
- Telephone Recovery Support
- Recovery Planning
- Recovery and Addiction Education
- Introduction and Engagement to the Recovery Community
- Recovery Support Groups
- Outreach to individuals in early recovery
ARMOT OUTCOMES

- Over 1900 patients referred to the ARMOT Program since 2015
- 75% of patients referred were screened by ARMOT staff
- 87% of patients that were assessed went to treatment directly from the hospital
- 264 patients re-engaged with ARMOT staff after a relapse and were placed back into treatment

WARM LINE

- 24/7 warm line to connect Crisis Line calls to an SCA Certified Recovery Specialist
- Manned by the SCA staff
- First responder calls the Crisis Line, who then places a three-way call to a CRS
- CRS attempts to talk the person into going to the Emergency Department
- If not willing to go to the ED, the SCA has open appointments daily at 9:00 am and 3:00 pm for warm line callers or walk-in clients
- Success rates for callers attending walk-in appointments has been as high as 75%
CONTACT US:

Kami Anderson, Executive Director
kanderson@aicdac.org
724-354-2746, ext. 302

Mike Krafick, CRS Supervisor
mkrafick@aicdac.org
724-354-2746, ext. 315

Questions?
Thank you!

• Contact us at ruralhealthinfo.org with any questions

• Please complete webinar survey

• Recording and transcript will be available on RHIIhub website