Rural Mortality and Health Disparities in the U.S. and Appalachia

National Advisory Committee on Rural Health and Human Services
May 2015

Alana Knudson, PhD

Examination of Trends in Rural and Urban Health: Establishing a Baseline for Health Reform

- CDC published *Health United States, 2001 With Urban and Rural Health Chartbook*
  - No urban/rural data update since 2001

- Purpose of this study:
  - Update of rural health status ten years later to understand trends
  - Provide baseline of rural/urban differences in health status and access to care prior to ACA implementation
Methods

- Replicated analyses conducted in 2001 using most recent data available (2006-2011)
- Used same data source, when possible:
  - National Vital Statistics System
  - Area Resource File (HRSA)
  - U.S. Census Bureau
  - National Health Interview Survey (NCHS)
  - National Hospital Discharge Survey (NCHS)
  - National Survey on Drug Use and Health (SAMHSA)
  - Treatment Episode Data Set (SAMHSA)
- Applied same geographic definitions, although classifications may have changed since 2001:
  - Metropolitan Counties: Large central, Large fringe, Small metro
  - Nonmetropolitan Counties: Micropolitan, Non-core
**Population: Age**

Population 65 years of age and over by rurality

<table>
<thead>
<tr>
<th>Rurality Type</th>
<th>1998</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large central</td>
<td>11.6%</td>
<td>11.8%</td>
</tr>
<tr>
<td>Large fringe</td>
<td>11.8%</td>
<td>12.7%</td>
</tr>
<tr>
<td>Small metro</td>
<td>13.0%</td>
<td>13.7%</td>
</tr>
<tr>
<td>Micropolitan</td>
<td>15.7%</td>
<td>15.3%</td>
</tr>
<tr>
<td>Non-core</td>
<td>17.5%</td>
<td>17.5%</td>
</tr>
</tbody>
</table>

**Population: Race and Ethnicity**

- Non-Hispanic white persons represent over half of the population in fringe counties of large metro areas, small metro counties, and nonmetro counties, but only 45% in central counties.
- In the Midwest, white persons represented 81% of its population. The Northeast had a larger proportion of residents of Hispanic and Asian or Pacific Island origin compared with the Midwest.
- In the South, non-Hispanic black persons constituted a larger proportion of the population than in any other region.
- The West had a disproportionately high concentration of persons of Hispanic origin.
Population: Poverty

Population in poverty by rurality, 2011

Population in poverty by region and rurality, 2011
Mortality: Infants

Infant mortality by rurality

Deaths per 1,000 live births

- Large central
- Large fringe
- Small metro
- Micropolitan
- Non-core

Deaths per 1,000 live births

1996-1998 vs 2008-2010

Mortality: Working-Age Adults

Death rates for all causes among persons 25-64 years of age by rurality

Deaths per 100,000 population

- Large central
- Large fringe
- Small metro
- Micropolitan
- Non-core

Deaths per 100,000 population

1996-1998 vs 2008-2010
Mortality: Chronic Obstructive Pulmonary Diseases

Death rates for chronic obstructive pulmonary diseases among persons 20 years of age and over by sex and rurality

Risk Factors: Adolescent Smoking

Cigarette smoking in the past month among adolescents 12-17 years of age by rurality
Risk Factors: Adult Smoking

Cigarette smoking among persons 18 years of age and older by rurality

Risk Factors: Obesity

Obesity among persons 18 years of age and older by rurality
Health Care Access and Use: Substance Abuse Treatment

Substance abuse treatment admission rates for opiates by rurality

![Graph showing admission rates for opiates by rurality.]

Health Care Access and Use: Substance Abuse Treatment

Substance abuse treatment admission rates by primary substance and rurality, 2010

![Graph showing admission rates by primary substance and rurality.]

Regional Mortality Study

**Purpose:** To examine the impact of rurality on mortality and to explore the regional differences in the primary and underlying causes of death.

**Methods:** Mortality data from National Vital Statistics System (NVSS) from 2011-2013

Data are grouped by:
- 2013 NCHS Urban-Rural Classification Scheme for Counties (Large Central, Large Fringe, Small/Medium Metro, Micropolitan, Non-core)
- 10 HHS Regions
- Age and Gender
- Cause of Death
  - Top 10 nation-wide causes of death for each age group
**Mortality: Short Gestation/Low birth weight – Infants (<1yr)**

**Mortality: Suicide – Males, 15-24 years**
Mortality: Suicide – Females, 15-24 years

Mortality: Unintentional Injuries – Males, 25-64 years
Mortality: Unintentional Injuries – Females, 25-64 years

Mortality: Diabetes – Males, 25 – 64 years
Mortality: Diabetes – Females, 25 – 64 years

Mortality Rates by Age, Sex, HHS Region, Rural-Urban Status, and Cause

NOTE: Rates are age-adjusted. Areas of the U.S. map without a color indicate that the data for that region are either unstable or suppressed.

- Age: 25 to 64
- Sex: Female
- Cause of Death: Diabetes
- Mortality Rate (per 100,000 pop)


Mortality: Heart Disease – Males, 65+ years

Mortality Rates (per 100,000 pop) by Age, Sex, HHS Region, Rural-Urban Status, and Cause

NOTE: Rates are age-adjusted. Areas of the U.S. map without a color indicate that the data for that region are either unstable or suppressed.

- Age: 65 and older
- Sex: Male
- Cause of Death: Heart Disease
- Mortality Rate (per 100,000 pop)
Mortality: Heart Disease – Females, 65+ years

Appalachian Region: Counties by Urban-Rural Status
Mortality Rates (per 100,000 pop) Among People Ages 25 to 64 Years in the Appalachia Region Compared to the National Rates by Gender, Rural-Urban Status, and Cause

Mortality Index
*The line where status=100 indicates the point at which the Appalachia and National rates are equal.

Rural Health Reform Policy Research Center
ruralhealth.und.edu/research

Mortality Index
*The line where status=100 indicates the point at which the Appalachia and National rates are equal.

Appalachia and National* Mortality Rates by Urban-Rural Status
* National rates are the mortality rates for the entire U.S. for the age-range, gender, and cause specified, regardless of urban-rural status.
Mortality Rates (per 100,000 pop) Among People Ages 26 to 64 Years in the Appalachia Region Compared to the National Rates by Gender, Rural-Urban Status, and Cause

Select:
- Gender
- Race
- Cause of Death

Appalachia and National Mortality Rates by Urban-Rural Status

*National rates are the mortality rates for the entire U.S. for the age range, gender, and race specified, regardless of urban-rural status.

Rural Assistance Center

Rural Community Health Gateway

Build What Works
The Rural Community Health Gateway can help you build effective community health programs and improve services you offer. Resources and examples in this Gateway are chosen for effectiveness and adaptability and drawn from programs with a strong history of service and community success. By starting from approaches that are known to be effective, you can make the best use of limited funding and resources.

Evidence-Based Toolkits
- Care Coordination Toolkit
  Resources and best practices to help you identify and implement a care coordination program.
- Community Health Workers Toolkit
  Resources to help you develop a community health worker (CHW) program to reach underserved populations, using evidence-based approaches from other rural communities.
- Health Promotion and Disease Prevention Toolkit
  Resources and best practices to help you identify and implement a health promotion program in your community.
- Mental Health and Substance Abuse Toolkit
  Resources to develop and implement programs to improve community mental health using proven approaches and strategies.
- Obesity Prevention Toolkit
  Resources to help you develop an obesity prevention program, building on best practices of successful obesity prevention programs.
- Oral Health Toolkit
  Resources and best practices to help you develop and implement a program to address oral health disparities in your community.
Rural Health Reform Policy
RESEARCH CENTER

Gary Hart, PhD, Director
Center for Rural Health
University of North Dakota
School of Medicine & Health Sciences, Room 4909
501 North Columbia Road, Stop #9037
Grand Forks, ND 58202-9037
701.777.3848 • ruralhealth.und.edu • gary.hart@med.und.edu

Alana Knudson, PhD, Deputy Director
NORC Walsh Center for Rural Health Analysis
4350 East West Highway, Suite 700
Bethesda, Maryland 20814
301.634.9326 • walshcenter.norc.org • knudson-alana@norc.org

A Consortium of
Center for Rural Health
The University of North Dakota
School of Medicine & Health Sciences
The Walsh Center
for Rural Health Analysis
NORC at the University of Chicago