Established in 1980, at The University of North Dakota (UND) School of Medicine and Health Sciences in Grand Forks, ND
• One of the country’s most experienced state rural health offices
• UND Center of Excellence in Research, Scholarship, and Creative Activity
• Home to seven national programs
• Recipient of the UND Award for Departmental Excellence in Research

Focus on
– Educating and Informing
– Policy
– Research and Evaluation
– Working with Communities
– American Indians
– Health Workforce
– Hospitals and Facilities

ruralhealth.und.edu
The Importance of Values

Ultimately our values guide our perceptions toward health and our definition of health and what it is, our attitudes about the health care system, our view of the importance of “community”, and the development of public health policy. Our values shape how we see change and how accepting we are of change.

“It is not what we have that will make us a great nation, it is how we decide to use it”

Theodore Roosevelt

“Vision is the art of seeing things invisible”

Jonathan Swift

“Americans can always be relied upon to do the right thing...after they have exhausted all the other possibilities”

Sir Winston Churchill
What is this whole “community thing” and how does it relate to rural health and population health?

What Is Rural Health?

- Rural health focuses on population health for an area (“community”) and improving overall health status for rural community members.

- Rural health relies on infrastructure – the organizations, resources, providers, health professionals, staff, and other elements of a health delivery system working to improve population health (the rural health delivery system).

- Rural health is not urban health in a rural or frontier area.

- Rural health focuses on health equity and fairness.

- Rural health is very community focused and driven – interdependent and collaborative.

- Rural health is inclusive of community sectors – 1) health and human services, 2) business and economics, 3) education, 4) faith based, and 5) local government.
Rural and Urban Strengths and Weaknesses

**Rural**
- **Strengths**
  - Strong informal support network
  - Fundraising
  - Cohesive
  - Established interdependence
  - Collaboration
- **Weaknesses**
  - Skewed population demographics
  - Fluctuating economy
  - Resistance to change
  - Shortage of professionals
  - Lack of resources
  - Over-tapped staff

**Urban**
- **Strengths**
  - More stable/diversified economy
  - Availability of resources
  - Availability of professionals
  - Growing and diverse population
  - Change is natural
- **Weaknesses**
  - Lack of cohesiveness
  - Limited informal support
  - Competition among providers
  - Competition for fundraising
  - More contentious fractions
  - Less sense of "community"
Why is Community Engagement Important to Rural Health

• Health care providers and organizations cannot operate in isolation.

• Even more important as we implement health reform – new payment models – movement from volume payments to value based payments as more and more providers are assessed and reimbursed on outcomes and patient satisfaction.

• Community members input on needs, issues, and solutions more critical than ever – community involvement in finding solutions (CHNA) that reflect their needs – community ownership not just the health providers.

• Building local leadership and local capacity – think of the next generation of community leadership.

• Communication – listening to the community – educating the community.

• Simple answer: You need to be engaged because you need to survive.

Environmental Conditions
• Demographics
• Economics
• Policy
• Health Status
• Workforce
• Finance
• Technology
• Health System Change
• Rural Community Culture & Dynamics

Impact on Community or Health Organization
• Threat to survival
• Growth/Decline
• Identity
• Perception toward change
• Perception toward opportunity
• How we respond

Community Action
• What do people think, want, or need?
  • Assessments
  • Forums-Discussions
  • Interviews
• Community Ownership (not health system ownership)
  • Collaboration
  • Inclusion
  • Participation
  • Interdependence
• Community Capacity
  • Skills and knowledge
  • Leadership development
  • Planning and advocacy
  • Manage change – non reactive

Source: Brad Gibbens, Deputy Director
UND Center for Rural Health
What is population health and how does this relate to social determinants of health?
### Population Health

“Health outcomes of a group of individuals, including the distribution of such outcomes within the group.” (Kindig, *What is Population Health?*)

- Groups can be based on geography, race, ethnicity, age, language, or other arrangements of people
- Focus – Health Outcomes (what is changed, what are the impacts, what results?)
- What determines the outcomes (determinants of health)?
- What are the public policies and the interventions that can improve the outcomes?

### Factors Contributing to Health

<table>
<thead>
<tr>
<th>Outside Health Care System</th>
<th>Related to the Health Care System</th>
<th>Regulatory Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Societal Factors</td>
<td>Care Delivery</td>
<td></td>
</tr>
<tr>
<td>• Food Safety</td>
<td>• Quality of care</td>
<td>• Medicare payment rates and policies</td>
</tr>
<tr>
<td>• Health food availability</td>
<td>• Efficiency</td>
<td>• Medicare and Medicaid care delivery innovation</td>
</tr>
<tr>
<td>• Housing conditions</td>
<td>• Access</td>
<td>• CON regulation</td>
</tr>
<tr>
<td>• Neighborhood violence</td>
<td>• Physician training</td>
<td>• Medicaid/CHIP policies (payment rates, eligibility)</td>
</tr>
<tr>
<td>• Open space and parks/recreation availability</td>
<td>• Health IT system availability</td>
<td>• Implementation of ACA</td>
</tr>
<tr>
<td>• Genetic inheritance</td>
<td>• Distance to and number of hospitals, primary and urgent care centers, retail clinics, etc.</td>
<td>• Local coverage determinations (LCDs)</td>
</tr>
<tr>
<td>• Disease prevalence</td>
<td>• Provider supply (MDs, RNs, etc.)</td>
<td>• Other local, state, and federal laws that impact the way health care is delivered and which treatments are provided</td>
</tr>
<tr>
<td>• Income levels</td>
<td>• Physician mix (primary versus specialty care)</td>
<td></td>
</tr>
<tr>
<td>• Poverty rates</td>
<td>• Payer contracts</td>
<td></td>
</tr>
<tr>
<td>• Geographic location</td>
<td>• Physician employment and payment structure</td>
<td></td>
</tr>
<tr>
<td>• Unemployment rate</td>
<td>• Disease management</td>
<td></td>
</tr>
<tr>
<td>• Uninsured/underinsured rate</td>
<td>• Populations subgroup disparity</td>
<td></td>
</tr>
<tr>
<td>• Median age</td>
<td>• Advanced technology availability</td>
<td></td>
</tr>
<tr>
<td>• Sex</td>
<td>• Care integration and coordination</td>
<td></td>
</tr>
<tr>
<td>• Race/ethnicity</td>
<td>• Behavioral health availability</td>
<td></td>
</tr>
<tr>
<td>• Pharmacy availability</td>
<td>• Cultural and linguistic access</td>
<td></td>
</tr>
<tr>
<td>• Care-seeking behaviors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Health literacy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Morbidity rates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Transportation availability</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Social Determinants

World Health Organization definition:

"the circumstances in which people are born, grow up, live, work and age, and the systems put in place to deal with illness. These circumstances are in turn shaped by a wider set of forces: economics, social policies, and politics."
Social Determinants of Health

Population Health

- Physical Environment
  - Environmental quality
  - Built environment
- Socio-Economic Factors
  - Education
  - Employment
  - Income
  - Family/social support
  - Community safety
- Health Behaviors
  - Tobacco use
  - Diet & exercise
  - Alcohol use
  - Unsafe sex
- Health Care
  - Access to care
  - Quality of care

Source: Authors' analysis and adaptation from the University of Wisconsin Population Health Institute's County Health Rankings model ©2010, http://www.countyhealthrankings.org/about-project/background

Figure 1
Impact of Different Factors on Risk of Premature Death

Health and Well Being
- Genetics: 30%
- Individual Behavior: 40%
- Social and Environmental Factors: 20%
- Health Care: 10%

Social Determinants of Health

![Diagram showing the relationships between Health Outcomes and various factors such as Economic Stability, Neighborhood and Built Environment, Health and Health Care, Education, Social and Community Context.]

Social Determinants of Health

<table>
<thead>
<tr>
<th>Economic Stability</th>
<th>Neighborhood and Physical Environment</th>
<th>Education</th>
<th>Food</th>
<th>Community and Social Context</th>
<th>Health Care System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>Housing</td>
<td>Literacy</td>
<td>Hunger Access to healthy options</td>
<td>Social integration</td>
<td>Health coverage</td>
</tr>
<tr>
<td>Income</td>
<td>Transportation</td>
<td>Language</td>
<td>Access to healthy options</td>
<td>Support systems</td>
<td>Provider availability</td>
</tr>
<tr>
<td>Expenses</td>
<td>Safety</td>
<td>Early childhood education</td>
<td>Community engagement</td>
<td>Community engagement</td>
<td>Provider linguistic and cultural competency</td>
</tr>
<tr>
<td>Debt</td>
<td>Parks</td>
<td>Vocational training</td>
<td>Discrimination</td>
<td>Discrimination</td>
<td>Quality of care</td>
</tr>
<tr>
<td>Medical bills</td>
<td>Playgrounds</td>
<td>Higher education</td>
<td>Stress</td>
<td>Stress</td>
<td></td>
</tr>
<tr>
<td>Support</td>
<td>Walkability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Zip code / geography</th>
<th>Health Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations</td>
<td></td>
</tr>
</tbody>
</table>

KFF
Social Determinants of Rural Health

Rural residents tend to be poorer than urban residents
- Average median household income is $52,386 for rural counties ($54,296 for urban counties) (2015).
- The average percentage of children living (ages 0-17) in poverty is 28.7% in rural counties (23.1% urban) (2014).
- American Indian and AN in rural had higher poverty levels than urban AI/AN.

Rural residents’ educational attainment (2009-2013) - Averaged across counties
- 16.5% have < high school education (14.7% urban)
- 36.3% have only a high school diploma (31.9% urban)
- 17.4% have a Bachelor’s degree or higher (24% urban)

2000-2015 urban with at least a bachelor’s degree increased from 26-33% but rural increased from 15-19%
Poverty rates by metro/nonmetro residence, 1959-2012

Source: Poverty Overview, USDA Economic Research Service
Population: Poverty

Population in poverty by rurality

Annual Median Earnings, Age 25 and Older, by Education Level
Source: USDA ERS 2015 American Community Survey

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than high school graduate</td>
<td>21,235</td>
<td>21,332</td>
</tr>
<tr>
<td>High school graduate/GED</td>
<td>27,327</td>
<td>29,415</td>
</tr>
<tr>
<td>Some college or associate's degree</td>
<td>30,969</td>
<td>35,247</td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>41,030</td>
<td>51,564</td>
</tr>
<tr>
<td>Graduate or professional degree</td>
<td>51,996</td>
<td>70,146</td>
</tr>
</tbody>
</table>
Economic outcomes for low-education rural counties and all other rural counties, 2011-15

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Low-education rural counties</th>
<th>All other rural counties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average poverty rate, 2011-2015</td>
<td>24</td>
<td>16</td>
</tr>
<tr>
<td>Average child poverty rate, 2011-2015</td>
<td>34</td>
<td>23</td>
</tr>
<tr>
<td>Average unemployment rate, 2011-2015</td>
<td>8</td>
<td>7</td>
</tr>
</tbody>
</table>

Note: 2013 metropolitan area definitions from the Office of Management and Budget apply.
Social Determinants Impact on Access to Health Care

• Poverty, income, and employment status contribute to:
  – Health insurance coverage
  – The ability to pay out-of-pocket costs such as co-pays and prescription drug costs
  – Time off work to go to an appointment
  – A means of transportation to visit a healthcare provider

• The skills to effectively communicate with healthcare providers

• An expectation that they will receive quality care, whatever their race/ethnicity or income level.

Mortality

• Cause-specific mortality is often higher in rural counties than urban counties

• Risk factors contribute to high mortality rates in rural areas
  • Smoking
  • Obesity
  • Physical inactivity

• High mortality rates and risk factors are a reflection of the physical and social environment in which people live and work.
Life Expectancy at Birth in Metro and Nonmetro Areas, 1969-2009

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
- Metropolitan
- Non-core

Mortality: Chronic Obstructive Pulmonary Diseases
Death rates for chronic obstructive pulmonary diseases among persons 20 years of age and over by rurality

Deaths per 100,000 population
Changes in ND Mortality Rates from 2000 – 2016 for Metropolitan, Micropolitan, and Rural Areas

Information by the North Dakota Healthcare Workforce Group, 2018
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

[Diagram showing obesity rates by rurality and time periods (1997-1998 vs. 2010-2011).]
Ok, I get the rural and community angle, and I get the population health and determinants of health but where does health reform come into this picture?
Key Concepts in Health Reform

- **2 Primary Changes: Insurance** and Health System Redesign
- **Population health** – improve outcomes, emphasize prevention, care coordination, less hospital admissions/readmissions, less inappropriate ED visits
- **Social determinants of health**
- **Volume to value** (changing how we pay for services to be less volume and more value – quality and outcomes)
- **Accountable Care Organization** (ACO) is an example: National Rural Accountable Care Consortium (Caravan Health – 7 ND CAHs) - 20% of ND CAHs are associated with an ACO

The 35,000 Foot View of the ACA and Rural Health

**Insurance Access**
- About 2/3 of rural without insurance in a state without Medicaid Expansion.
- Almost 8 million uninsured rural Americans (under 65) and another 10 million uninsured in urban areas have insurance now.
- Higher percentage of rural uninsured (44%) would be eligible for Medicaid Expansion than urban (39%).

**Health Care System Access – Nursing Workforce**
- Projected impact of 15 million to 26 million additional primary care visits annually requiring 4,300 to 7,200 additional primary care physicians.
- Since ACA added nationwide 4,500 nursing positions.
- Change in system – change in location of care – more demand for nurses in care coordination, case management, and community health care (public health).
The 35,000 Foot View of the ACA and Rural Health

- **3 Aims** – better health, better care, lowered cost curve
  - **Health care inflation** – health costs rising at lowest rate in nearly 50 years in 2014-2015. However NHE dropped during the recession and moderated in early ACA, but increased 2014-2016 then dipped down but basically static from 2017 to 2020.
  - As of 2018 out of pocket costs down under the ACA but premiums have increased.
  - Nationally, **ACOs** reduced Medicare spending by $1 B in first 3 years (82% improved quality of care)
  - **Rural ACOs** have saved Medicare $83 million in net spending.
  - Health care as % of GDP still over 17% but not growing as fast.
The 35,000 Foot View of the ACA and Rural Health

- **3 Aims** – better health, better care, lowered cost curve.
  - Since 2010, **rate of patient harm** has declined by 17% (1.3 million avoided patient harms such as infections and medication errors and an estimated 50,000 avoided deaths.) $ savings was $12 billion
  - **Readmission rates** – 150,000 avoided readmissions from 2012-2013.
  - **APM – Alternative Payment Models** “volume to value” – CMMI- link medical and health outcomes to payments (value), not simply payment for a service (volume).
    - **Accountable Care Organizations (ACO)** – Almost 600 Medicare ACO serving 12.6 million beneficiaries – Pioneer ACO or Medicare Shared Savings Program. National Rural Accountable Care Consortium/Caravan Health (ND has 7 rural hospitals) – 46 rural Medicare rural ACOs in 36 states.
    - **Bundled Payment models** – 1 payment per 1 episode -over 6,000 hospitals.
    - **PCMH** – care coordination based on primary care – elements of PMPM FSS
    - **Pay for Performance (P4P)** – pay based on pre-determined quality measures.
    - **MACRA – Medicare Access and CHIP Reauthorization Act** – physicians 5% annual lump sum payment for participating in a qualified APM
Community Benefit

- **Language conversion** (conceptualization changes) – moving population health, outcomes, and determinants of health into the language of the Affordable Care Act and making it more relevant to the hospital or other segments in the health care delivery system

- Program or activities that provide treatment and/or promote health in response to an identified community need. Key criteria:
  - Generates a low or negative margin (financial performance measurement)
  - Responds to needs of special populations (e.g., uninsured)
  - Supplies a service/program that would likely be discontinued if it were based on financial criteria
  - Responds to public health needs but you first need to identify them
  - Involves education or research that improves overall community health
Community Benefit- Program and Activities

- Community Benefit Services Categories
  - Community health improvement services
  - Health professional education
  - Subsidized health services
  - Research
  - Financial and in-kind contributions
  - Community building activities (community health improvement services) – IRS says do not generate inpatient or outpatient bills
  - Community Benefit Operations (CHNA)
Community Benefit Examples that Show the Connection to Population Health

St. Francis Memorial Hospital (San Francisco) – gang ridden Tenderloin district – “Corner Captains” mothers of school children patrol area watching out for the children – part of Safe Passage initiative of Tenderloin Health Improvement Partnership funded by hospital – targeting social determinants of health such as violence, poverty, hunger, education, nutrition, and housing

Adventist Health System – increased spending on health and wellness programs by 14% - example placing full time community health workers in ED to provide care-management to patients to improve heath and lower inappropriate use of the ED – charity care has decreased by over 5% of gross patient service revenue.

Dignity Health (San Francisco) – awarded social innovations grant to Silicon Valley entrepreneurs who seek to tackle community health improvement in low-income neighborhoods
Community Benefit Examples that Show Connection to Population Health

Other Examples:
• Lifestyle education – focusing on self-care, early detection, and disease management
• Targeted resources to “at risk” populations such as domestic abuse, chemical dependency, mental illness, HIV, and socio-economic disadvantage
• Grant assistance to community non-profit agencies addressing community health
• Internship for students working with low income patients – connect with services
2014-2016 CHNA Analysis

- 41 CHNA analyzed out of 45 (CRH conducted 24 -59%)
- 182 ranked needs (range 2 to 9 ranked needs, most 4-5)

Issues

- Behavioral Health
- Mental Health
- Health Workforce
- Obesity/overweight
- Elderly services
- Wellness (lifestyle, exercise, physical activity)
- Costs (Healthcare, insurance, prescriptions)
- Childcare/daycare
- Jobs with livable wages
- Ability to attract young families
- Illness and disease (heart disease, cancer, diabetes, hypertension)
- Housing
- EMS
- Access to healthcare
- Poverty
- Violence prevention

North Dakota CAHs/Public Health and Community Benefit

- Obesity and physical activity
  - Community farmer’s market
  - Pilot wellness programs with hospital staff
  - Monthly cooking classes
  - 12 week weight management program
  - Community run and/or walk
  - Community access to school fitness center
  - Chronic Disease Mgmt. monitor program
  - Target fitness and exercise to elderly (stretching and movement)
  - Step competitions (pedometers)
  - Hospital, public health, and Extension work together to promote PA
  - Local media campaign –radio, newspaper, and web for education
  - Nutrition coaching and weight management program
  - Become part of an Accountable Care Organization – be paid for population health
North Dakota CAHs and Community Benefit

• Healthcare workforce
  ○ Increase use of social media
  ○ Create community marketing group – hospital, economic development, chamber of commerce
  ○ Support local students, financial support for nursing and medicine, and other health professions
  ○ Create local Recruitment & Retention committee with representatives from community – school, bank, business, realtor, church, local govt., younger people
  ○ Create a promotional video
  ○ Work with Center for Rural Health workforce specialist and AHEC
North Dakota CAHs and Community Benefit

• Mental health and Behavioral health
  o Develop mental health screenings in schools
  o Support groups
  o Work with UND MSW, counseling, and psychology programs for student interns
  o Tele-mental health
  o Shared social worker (school and clinic)- multiple towns
  o Community Behavioral Health Task Force – invite content experts
  o Train ED on mental health Committals and transportation.
Exploring Rural and Urban Mortality Differences

Table of Contents

1. Background
2. Methodology
3. Results
4. Discussion
5. Conclusion
6. References
7. Appendices

Introduction

This study aims to analyze the impact of rural and urban areas on mortality differences. The data used in this study were obtained from the National Vital Statistics System (NVSS) and the American Community Survey (ACS).

Methodology

The methodology involved the analysis of mortality rates in rural and urban areas. The data were stratified by age groups and regions to identify any significant differences. The analysis included statistical tests to determine the significance of the findings.

Results

The results showed that mortality rates are significantly higher in rural areas compared to urban areas. This trend was observed across all age groups and regions. The analysis also revealed that certain health conditions, such as cardiovascular diseases and respiratory infections, are more prevalent in rural areas.

Discussion

The findings highlight the importance of addressing the health disparities between rural and urban areas. Policies and interventions are needed to improve health outcomes in rural communities.

Conclusion

In conclusion, the study found that mortality rates are higher in rural areas compared to urban areas. This trend is significant across all age groups and regions. Future research should focus on understanding the underlying causes of these disparities and developing effective strategies to address them.

References


Appendices

[Appendix A: Data Analysis Tools]
[Appendix B: Full Dataset]

This study was supported by the National Institutes of Health (NIH) grants R01 HL140480 and R01 HL136436.
User Guides and Technical Notes

- Users Guide for Graph Interaction
  Index for Mortality Rates by Cause Related to the National Rate among Persons by Age, Region, and Rural-Urban Status: United States, 2011-2013 Online Tool
  This user’s guide demonstrates ways to display graphs of mortality rate indices by Health and Human Services (HHS) region, cause of death, age, and rural-urban status. Graphs can be created dynamically for 10 mortalities or for a single mortality. Figures display standardized differences between urban, rural, and national death rates. Results drawn upon the data available from the National Vital Statistics System (NVSS) at CDC WONDER.

- Users Guide for Map Interaction
  Mortality Rates among Persons by Cause of Death, Age, and Rural-Urban Status: United States, 2011-2013 Online Tool
  This user’s guide demonstrates ways to view maps of mortality rates from the Top 10 Causes of Mortality as reported by the Centers of Disease Control and Prevention. This document guides users to create dynamic maps for a single cause of mortality by Health and Human Services (HHS) region, cause of death, age, and rural-urban status. Results drawn upon the data available from the National Vital Statistics System (NVSS) at CDC WONDER.

- Technical Notes: Exploring Rural and Urban Mortality Differences
  Review technical notes related to the study’s methods and data analyses. This study examines the impact of rural vs. urban mortality and explores regional differences in mortality rates. The study used a quantitative analysis approach drawing upon the data available from the National Vital Statistics System (NVSS) at CDC WONDER for the top 10 leading causes of death as reported by the Centers of Disease Control and Prevention.
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Tailored Searches of Funding Sources for Your Project

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info@ruralhealthinfo.org
1-800-270-1898

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The Rural Health Research Gateway provides access to all publications and projects from seven different research centers. Visit our website for more information.

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