UNIVERSITY OF MINNESOTA
RURAL HEALTH RESEARCH CENTER

Annual report, 2017-18

We conduct policy-relevant research

to **improve** the **lives** of rural residents and families,
to **advance** health **equity**, and
to **enhance** the **vitality** of rural communities.

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A NOTE FROM LEADERSHIP

We were honored to take on the roles of Director and Deputy Director of the University of Minnesota's Rural Health Research Center in February of 2018. Building off a strong foundation established under the leadership of Ira Moscovice and Michelle Casey, who have been in these roles for 25 years, we come into these leadership roles with gratitude to Ira and Michelle for the many contributions they have made to the field of rural health and the support they've provided us personally. Ira Moscovice is a nationally-known expert in rural health, whose contributions on a wide range of topics have influenced health care delivery, access and outcomes in rural communities for decades. In particular, Ira and Michelle's leadership in developing rural-relevant metrics for evaluating the quality of care has provided the necessary foundation for the integration of rural health care delivery systems into value-based models of care. We are truly humbled to have the opportunity to continue their legacy of excellence in rural health research. Ira continues to work with us as a Senior Advisor, and while Michelle Casey retired in February of 2018, she has continued to work with us to bring her expertise to bear on topics about which she is passionate.

We are looking forward to the year ahead, with the University of Minnesota's Rural Health Research Center leading projects that address some of the most urgent issues in rural communities, from access to safe care during childbirth to accessing care in later life, and from primary care to preventive services. We are committed to both generating high-quality research and to communicating our findings to stakeholders in rural communities and in the halls of Congress. Over the past year, we have had the chance to do just that – from phone calls to rural hospitals to assess capacity for pulmonary rehabilitation to conversations with rural community leaders combating social isolation to addressing a Senate briefing on rural maternity care access. We are proud of the impact we've had on policy discussions and in bringing rural voices to the forefront of health care and public health discussions nationally.

Katy B Kozhimannil, Ph.D., M.P.A.

Carrie Henning-Smith, Ph.D., M.S.W., M.P.H.

Background

The University of Minnesota Rural Health Research Center is a Federally-funded cooperative agreement between Division of Health Policy and Management within the University of Minnesota School of Public Health and the Federal Office of Rural Health Policy, a division of the Health Resources and Services Administration within the U.S. Department of Health and Human Services.

VISION

Our dedicated team of experts at the University of Minnesota Rural Health Research Center (RHRC) conducts research to advance equity and improve health and well-being among those who are frequently absent from policy discussions, but whose lives are deeply impacted by policy decisions. Our work is informed by the lived experiences of people, families, and communities that experience disproportionate vulnerability and exhibit disproportionate resilience.

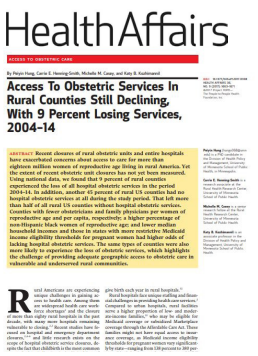
We study access to and quality of health care and population health outcomes in order to build the evidence base for policymaking. Our work maintains a focus on eliminating inequities based on geography, race, gender, nationality, age, and ability. We are committed to the highest standards of excellence in research and to communicating results to academic and policy audiences as well as to the people and communities to which our research pertains.

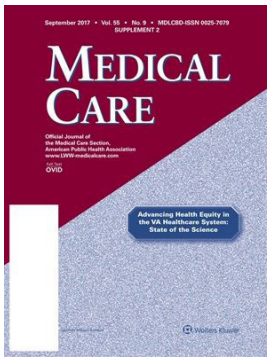
CORE PRINCIPLES

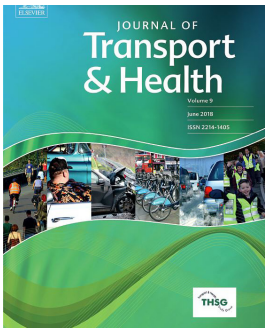
1. We conduct research to inform the development, implementation, and evaluation of health policy that impacts rural residents and communities.
2. We study the impacts of institutional and governmental policies that affect health care access and quality and population health outcomes across the lifespan, answering questions voiced by rural residents and communities.
3. We focus on groups that experience disproportionate vulnerability and resilience, including communities of color, women and girls, older adults, and low-income people in rural communities.
4. We educate policymakers about the consequences of their decisions for the communities and population groups we study.

JOURNAL ARTICLES, 2017-18

- A National Examination of Caregiver Use of and Preferences for Support Services: Does Rurality Matter? *Journal of Aging & Health*, July 2018
- Rural-Urban Difference in Workplace Supports and Impacts for Employed Caregivers. *Journal of Rural Health*, June 2018
- Association Between Loss of Hospital-Based Obstetric Services and Birth Outcomes in Rural Counties in the United States. *JAMA*, March 2018
- Beyond Clinical Complexity: Nonmedical Barriers to Nursing Home Care for Rural Residents. *Journal of Aging & Social Policy,* March 2018
- Rural Hospital Employment of Physicians and Use of Cesarians and Non-Indicated Labor Induction. *Journal of Rural Health,* February 2018
- Barriers to Nursing Home Care for Nonelderly Rural Residents. *Journal of Applied Gerontology,* December 2017
- Geographic Variation in Transportation Concerns and Adaptations to Travel-Limiting Health Conditions in the United States. *Journal of Transport & Health,* November 2017
- Rural-Urban Differences in the Impact of Risk-Adjustment on Quality Measures for Medicare Beneficiaries. *Medical Care*, September 2017
- Rural-Urban Differences in Medicare Quality Scores Persist after Adjusting for Sociodemographic and Environmental Characteristics. *Journal of Rural Health,* September 2017
- Access to Obstetric Services in Rural Areas Still Declining, with 9 Percent Losing Services, 2004-14. *Health Affairs,* September 2017







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RURAL HEALTH
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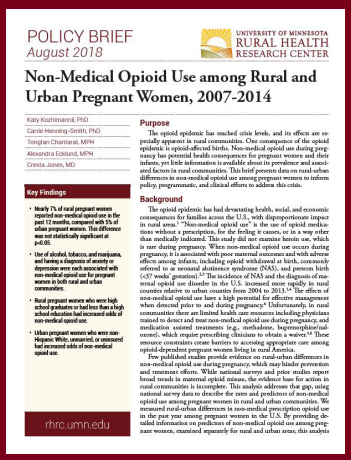
POLICY BRIEFS, 2017-18


POLICY BRIEF
August 2018
UNIVERSITY OF MINNESOTA RURAL HEALTH RESEARCH CENTER
Non-Medical Opioid Use among Rural and Urban Pregnant Women, 2007-2014
Kaity Kozhimannil, PhD
Carrie Henning-Smith, PhD
Tongtan Chantarat, MPH
Alexandra Ecklund, MPH
Cresta Jones, MD
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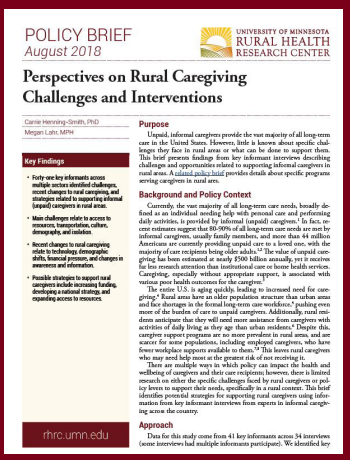
POLICY BRIEF
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Perspectives on Rural Caregiving Challenges and Interventions
Carrie Henning-Smith, PhD
Megan Lahr, MPH
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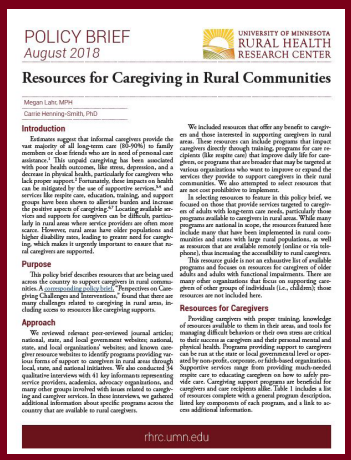
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Resources for Caregiving in Rural Communities
Megan Lahr, MPH
Carrie Henning-Smith, PhD
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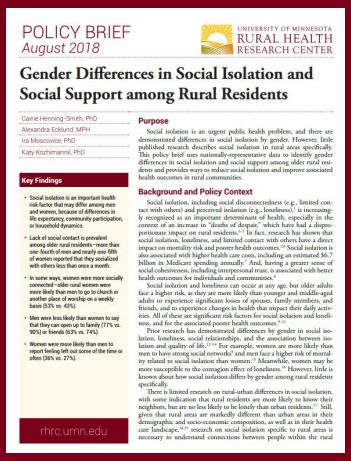
POLICY BRIEF
August 2018
UNIVERSITY OF MINNESOTA RURAL HEALTH RESEARCH CENTER
Gender Differences in Social Isolation and Social Support among Rural Residents
Carrie Henning-Smith, PhD
Alexandra Ecklund, MPH
Ira Moscovice, PhD
Katy Kozhimannil, PhD
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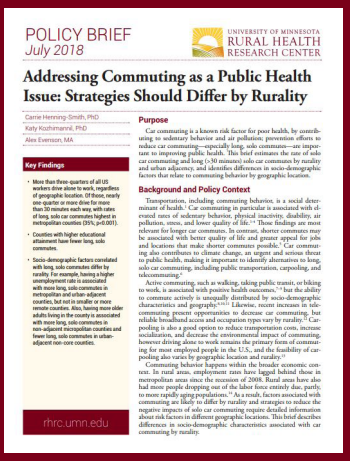
POLICY BRIEF
July 2018
UNIVERSITY OF MINNESOTA RURAL HEALTH RESEARCH CENTER
Addressing Commuting as a Public Health Issue: Strategies Should Differ by Rurality
Carrie Henning-Smith, PhD
Katy Kozhimannil, PhD
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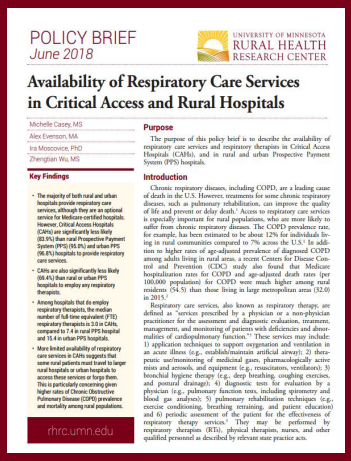
POLICY BRIEF
June 2018
UNIVERSITY OF MINNESOTA RURAL HEALTH RESEARCH CENTER
Availability of Respiratory Care Services in Critical Access and Rural Hospitals
Michelle Casey, MS
Alex Evenson, MA
Ira Moscovice, PhD
Zhengjian Wu, MS
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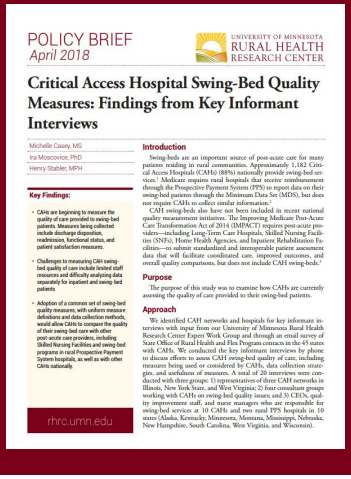
POLICY BRIEF
April 2018
UNIVERSITY OF MINNESOTA RURAL HEALTH RESEARCH CENTER
Critical Access Hospital Swing-Bed Quality Measures: Findings from Key Informant Interviews
Michelle Casey, MS
Ira Moscovice, PhD
Henry Stabler, MPH
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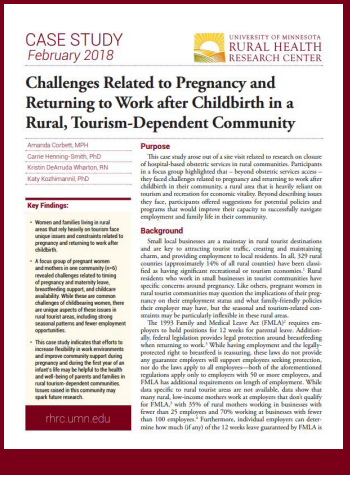
CASE STUDY
February 2018
UNIVERSITY OF MINNESOTA RURAL HEALTH RESEARCH CENTER
Challenges Related to Pregnancy and Returning to Work after Childbirth in a Rural, Tourism-Dependent Community
Amanda Corbett, MPH
Carrie Henning-Smith, PhD
Kristin DeArruda Wharton, RN
Katy Kozhimannil, PhD
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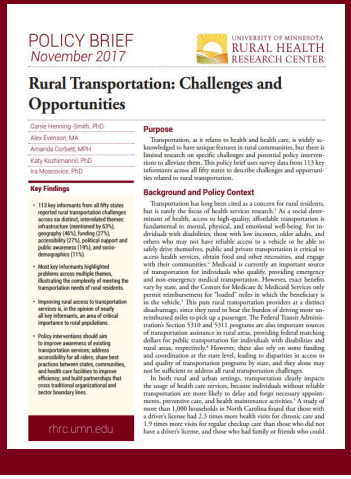
POLICY BRIEF
November 2017
UNIVERSITY OF MINNESOTA RURAL HEALTH RESEARCH CENTER
Rural Transportation: Challenges and Opportunities
Carrie Henning-Smith, PhD
Alex Evenson, MA
Amanda Corbett, MPH
Katy Kozhimannil, PhD
Ira Moscovice, PhD
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PRESENTATIONS, 2017-18

- National Rural Health Association Rural Hospitals Interest Group Meeting, January 2018, in Washington DC:
  "Maternity Care Access in Rural America" (Carrie Henning-Smith)
- Congressional (U.S. Senate 783) briefing: March 2018, in Washington DC:
  "Improving access to maternity care in the United States" (Carrie Henning-Smith)
- American Hospital Association's Allied Association for Rural, March 2018, via webinar:
  "Maternity Care in Rural America" (Carrie Henning-Smith)
- National Institutes of Health Summit: "COPD & Rural Health," March 2018, in Bethesda MD:
  Attended & participated (Alex Evenson)
- Texas A&M School of Public Health, April 2018, in College Station TX:
  "Relevant Rural Health Quality Measurement Issues" (Ira Moscovice)
- Webinar presentation, Rural Health Research Gateway, April 2018:
  "Diminishing Access to Rural Maternity Care and Associated Changes in Birth Location and Outcomes" (Carrie Henning-Smith)
- Grantmakers in Aging Summit, "Beyond Here and There: Transforming Mobility in Rural America Through New Technology," May 2018, in Berkeley CA:
  "Transportation as a Social Determinant of Rural Health" (Amanda Corbett)
- National Rural Health Association Annual Meeting, May 2018, in New Orleans LA:
  "Effects of the Opioid Epidemic in for Rural Women and Families" (Katy Kozhimannil)
  "Quality Measures for CAH Swing Bed Patients" (Ira Moscovice)
  "Rural Transportation: Challenges and Opportunities" (Alex Evenson)
- Rural Health Leadership Radio (Podcast), May 2018:
  "A Conversation with Carrie Henning-Smith"
- AcademyHealth Annual Research Meeting, June 2018, in Seattle WA:
  "Maternal Opioid Use Disorder Among Rural Residents" (Katy Kozhimannil)
- Public-Private Collaborations in Rural Health Meeting, June 2018, in Washington, DC:
  "Loss of Rural Obstetric Services and Changes in Birth Location and Outcomes." (Carrie Henning-Smith)
- Federal Office of Rural Health Policy Summit: "Rural Response to COPD Action Plan," June 2018, in Rockville MD:
  Attended & participated (Alex Evenson)
- Federal Office of Rural Health Policy Flex Program Reverse Site Visit, July 2018, in Washington DC:
  "Quality Measures for CAH Swing Bed Patients" (Ira Moscovice)

Staff, Students, and Affiliates, 2017-18

Leadership

KATY KOZHIMANNIL, PH.D., DIRECTOR

Dr. Kozhimannil is the Director of the University of Minnesota Rural Health Research Center and an Associate Professor in the Division of Health Policy and Management, University of Minnesota School of Public Health.

Dr. Kozhimannil conducts research to inform the development, implementation, and evaluation of health policy that impacts health care delivery, quality, and outcomes during critical times in the lifecourse, including pregnancy and childbirth. The goal of her scholarly work is to contribute to the evidence base for clinical and policy strategies to advance racial, gender, and geographic equity and to collaborate with stakeholders in making policy change to address social determinants and structural injustice in order to facilitate improved health and well-being.

Her research, published in major journals such as *Science*, the *New England Journal of Medicine*, *JAMA*, *Health Affairs*, *American Journal of Public Health*, *Medical Care*, and the *American Journal of Managed Care*, has been widely cited. Media coverage of her research, including feature stories by the *New York Times*, *Washington Post*, *National Public Radio*, *Wall Street Journal*, *US News & World Report*, and the *Huffington Post*, has generated dialogue, interest, and policy action at local, state, and national levels. In addition to conducting research, Dr. Kozhimannil teaches courses that build skills for effective engagement in the policy process, and works extensively with community organizations and state and federal policy makers on efforts to improve the health and well-being of individuals, families, and communities, starting at birth.

Prior to starting her academic career, Dr. Kozhimannil worked on HIV/AIDS prevention and policy as well as education and youth development both domestically and abroad. She served as a Peace Corps Volunteer in rural Mozambique and has worked for Ibis Reproductive Health, the World Bank, Population Services International, the American Red Cross, and the YMCA.

CARRIE HENNING-SMITH, PH.D., DEPUTY DIRECTOR

Dr. Henning-Smith is the Deputy Director of the University of Minnesota Rural Health Research Center and an Assistant Professor in the Division of Health Policy and Management, University of Minnesota School of Public Health. She has been with the RHRC since 2015.

Dr. Henning-Smith applies her interdisciplinary training in health services research, public health, social work, gerontology, and demography to study policy-relevant issues for rural populations. She has led multiple research projects at the Rural Health Research Center, with a wide range of topics including the social determinants of health, access to and quality of care, and aging and long-term care. She was chosen as a 2017 Rural Health Fellow by the National Rural Health Association and serves as a current editorial board member for the *Journal of Rural Health*.

Staff

MICHELLE CASEY, M.S.

A Senior Research Fellow, Ms. Casey has been with the RHRC since 1994. She has led and contributed as a key investigator for numerous Rural Health Research Center projects involving primary data collection as well as statistical analyses of secondary data. Her research interests include quality of care, patient safety, critical access hospitals, access to care for underserved populations, and end-of-life care. She was the recipient of the National Rural Health Association's Outstanding Rural Health Researcher award in 2006, and served as the Assistant Director of the Minnesota Office of Rural Health from 1992 to 1994.

AMANDA CORBETT, M.P.H.

Ms. Corbett, a qualitative researcher, joined the RHRC team in December 2015. She has contributed to research projects looking at transportation barriers in rural communities and work/life balance challenges faced by pregnant mothers and new families in rural communities. Her research interests include maternal and child health; social determinants of health; community engagement; health equity; and policy, systems, and environmental change.

ALEX EVENSON, M.A.

Mr. Evenson has managed RHRC communications, dissemination, and website resources since February 2013. Over that time, he has also contributed to research projects focused on health insurance recruitment and education in rural communities, reducing health care-associated infections in Critical Access Hospitals (CAHs), measuring quality performance in CAHs, identifying barriers to transportation among rural residents, and improving access to care for rural patients with COPD.

MEGAN LAHR, M.P.H.

Ms. Lahr is a Research Fellow and Project Manager at the RHRC, hired in September of 2017. During her time, she has contributed to research projects focused on caregiving and social isolation in rural populations, and will continue to focus on access to care issues in rural communities in the coming year. In her role as Project Manager, she helps to manage the operations of all RHRC projects and grant-related activity.

IRA MOSCOVICE, PH.D.

Dr. Moscovice is the Mayo Professor in the Division of Health Policy and Management, School of Public Health. He was the director of the Rural Health Research Center from its inception in 1992 through 2018. He currently serves as Senior Advisor and is a full-time researcher. He has served as the principal investigator for numerous rural health projects funded by federal and state agencies and private foundations, including the Federal Office of Rural Health Policy, the Centers for Medicare and Medicaid, the Agency for Healthcare Research and Quality, the Robert Wood Johnson Foundation and the Northwest Area Foundation.

PAM SUNESON, B.A.

Ms. Suneson joined the RHRC staff in 2017 as our Administrative Specialist. She holds a Bachelor's degree from the University of Minnesota and has previous experience within health care, printing, financial, education, and travel industries. She also provides administrative and finance support for the State Health Access Data Assistance Center, housed within the University of Minnesota's School of Public Health, and has been employed there since 2015.

Affiliates

CRESTA JONES, M.D.

Dr. Jones is a maternal-fetal medicine physician and assistant professor at the University of Minnesota Medical School. She completed her medical degree at the Medical College of Wisconsin, and her OB/gyn residency and maternal-fetal medicine fellowship at the University of Vermont College of Medicine. Her clinical focus is opioid use disorders in pregnancy, and she currently serves as the physician lead in an inpatient substance use disorders in pregnancy program in the Minneapolis-St. Paul area.

SHAILENDRA PRASAD, M.D., M.P.H.

Dr. Prasad is an Associate Professor at the Department of Family Medicine and Community Health at the University of Minnesota and the Executive Director of the Center for Global Health and Social Responsibility at the University of Minnesota. He provides a clinical perspective on a wide range of RHRC projects. He practiced as a primary care physician for several years in rural southern Mississippi and in rural and tribal areas in South India before coming to the University of Minnesota. His current work focuses on quality of care, coordination of care, methods of care delivery, and appropriate resource utilization.

Student Research Assistants

TONGTAN CHANTARAT, M.P.H.

Mr. Chantarat is a Ph.D. student in Health Services Research, Policy, and Administration. He holds a M.P.H. in Epidemiology from Columbia University.

PEIYIN HUNG, PH.D.

Dr. Hung was a Ph.D. student in Health Services Research, Policy, and Administration during the 2017-18 academic year. She completed her Ph.D. in May 2018 and recently accepted a faculty position at the University of South Carolina.

HENRY STABLER, M.P.H.

Mr. Stabler is a Ph.D. student in Health Services Research, Policy, and Administration. He holds an M.P.H. in Health Management & Policy from the University of Michigan.

ZHENGTIAN WU, M.S.

Ms. Wu is pursuing a M.A. in Public Health Administration & Policy. She holds a M.S. in Agricultural and Resource Economics from the University of California, Davis.

Expert Work Group

TOM DEAN, M.D.

Family Physician, Wessington Springs, SD

JENNIFER LUNDBLAD, PH.D.

CEO, StratisHealth

CATHLEEN PFAFF, RN, BSN

Senior VP, Clinical Services, Cypress Healthcare

TIM SIZE, M.B.A.

Executive Director, Rural Wisconsin Health Cooperative

BROCK SLABACH, M.P.H.

Senior Vice President, National Rural Health Association

JOHN SUPPLITT, M.P.A., M.B.A.

Senior Director, American Hospital Association

Activity in 2017-18 on Projects Funded in 2016

Obstetric Unit and Hospital Closures and Maternal and Infant Health in Rural Communities

Year Funded: 2016

Project Lead: Katy Kozhimannil, Ph.D.

Project Staff: Carrie Henning-Smith, Ph.D.; Peiyin Hung, Ph.D.; Shailendra Prasad, Ph.D.; Michelle Casey, M.S.

This project examined the relationship between closure of an obstetric unit or hospital and maternity care and outcomes of childbirth in rural U.S. counties including prenatal care, distance to delivery hospital, out-of-hospital birth, and infant health outcomes.

Findings from this project have been published in major journals, engaged by major media outlets, and had substantial impact on policy dialogue. One manuscript was published in *Health Affairs* in September and a second manuscript was published in *JAMA* in March. Both received significant media attention, and *JAMA* accelerated the publication date to coincide with an invited Congressional briefing by Dr. Carrie Henning-Smith. Dr. Katy Kozhimannil co-authored an op/ed piece published in *The Washington Post* in November featuring findings from this project, and our research findings were cited in stories by *The New York Times, NBC Nightly News*, and *Full Frontal with Samantha Bee*.

Products:

- "Access to Obstetric Services in Rural Counties Still Declining, with 9 Percent Losing Services, 2004–14" published in *Health Affairs*. (Sep 2017)
- "Association between Loss of Hospital-Based Obstetric Services and Birth Outcomes in Rural Counties in the United States" published in *JAMA*. (Mar 2018)
- Dr. Kozhimannil co-authored an op/ed in the *Washington Post*, "Rural America's Disappearing Maternity Care." (Nov 2017)
- Dr. Henning-Smith presented "Maternity Care Access in Rural America" at the NRHA Rural Hospitals Interest Group Meeting in Washington, DC. (Jan 2018)
- Dr. Henning-Smith gave invited Congressional testimony at a lunch briefing. (Mar 2018)
- Dr. Henning-Smith featured this project's research findings in a webinar hosted by the Rural Health Research Gateway, "Diminishing Access to Rural Maternity Care and Associated Changes in Birth Location and Outcomes." (Apr 2018)

JAMA
The Journal of the American Medical Association

HealthAffairs

The Washington Post

The New York Times

NIGHTLY NEWS

FULL FRONTAL WITH SAMANTHA BEE

Paving the Way: Addressing Transportation as a Social Determinant of Health for Rural Residents

Year Funded: 2016

Project Lead: Carrie Henning-Smith, Ph.D.

Project Staff: Amanda Corbett, M.P.H.; Alex Evenson, M.A.

Rural areas face unique challenges related to transportation, including distance to health care and other services, the impact of adverse weather on travel conditions, and limited availability of public and private transportation services. Rural residents cannot receive health care services without transportation to access facilities and providers. Beyond direct access to care, transportation is essential for accessing basic necessities for health and wellness, such as food, recreation, employment, education, and social support.

This project used a mixed-methods design to examine ways in which transportation operates as a social determinant of health for vulnerable rural residents, and to identify exemplar transportation programs that are successfully improving health and well-being of those residents. Work on this project continued during 2017-18:

- Policy brief: "Rural Transportation: Challenges and Opportunities." (Nov 2017)
- Policy brief: "Addressing Commuting as a Public Health Issue: Strategies Differ by Geography." (Jul 2018)
- "Geographic Variation in Transportation Concerns and Adaptations to Travel-Limiting Medical Conditions" published in *Journal of Transport and Health*. (Nov 2017)
- Amanda Corbett Presented "Transportation as a Social Determinant of Rural Health" at a Grantmakers in Aging Summit, "Beyond Here and There: Transforming Mobility in Rural America Through New Technology" in Berkeley, CA. (May 2018)
- Alex Evenson presented "Rural Transportation: Challenges and Opportunities" at the National Rural Health Association's annual conference in New Orleans, LA. (May 2018)


POLICY BRIEF
November 2017

UNIVERSITY OF MINNESOTA RURAL HEALTH RESEARCH CENTER

Rural Transportation: Challenges and Opportunities

Carrie Henning-Smith, PhD
Alex Evenson, MA
Amanda Corbett, MPH
Katy Kozhimannil, PhD
Ira Moscovice, PhD

Key Findings

- 113 key informants from all fifty states reported rural transportation challenges across six distinct, interrelated themes: infrastructure (mentioned by 63%), geography (46%), funding (27%), accessibility (27%), political support and public awareness (19%), and socio-demographics (11%).
- Most key informants highlighted problems across multiple themes, illustrating the complexity of meeting the transportation needs of rural residents.
- Improving rural access to transportation services is, in the opinion of nearly all key informants, an area of critical importance to rural populations.
- Policy interventions should aim to improve awareness of existing transportation services; address accessibility for all riders; share best practices between states, communities, and health care facilities to improve efficiency; and build partnerships that cross traditional organizational and sector boundary lines.

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Purpose

Transportation, as it relates to health and health care, is widely acknowledged to have unique features in rural communities, but there is limited research on specific challenges and potential policy interventions to alleviate them. This policy brief uses survey data from 113 key informants across all fifty states to describe challenges and opportunities related to rural transportation.

Background and Policy Context

Transportation has long been cited as a concern for rural residents, but is rarely the focus of health services research.[1] As a social determinant of health, access to high-quality, affordable transportation is fundamental to mental, physical, and emotional well-being. For individuals with disabilities, those with low incomes, older adults, and others who may not have reliable access to a vehicle or be able to safely drive themselves, public and private transportation is critical to access health services, obtain food and other necessities, and engage with their communities.[2] Medicaid is currently an important source of transportation for individuals who qualify, providing emergency and non-emergency medical transportation. However, exact benefits vary by state, and the Centers for Medicare & Medicaid Services only permit reimbursement for "loaded" miles in which the beneficiary is in the vehicle.[3] This puts rural transportation providers at a distinct disadvantage, since they need to bear the burden of driving more unreimbursed miles to pick up a passenger. The Federal Transit Administration's Section 5310 and 5311 programs are also important sources of transportation assistance in rural areas, providing federal matching dollars for public transportation for individuals with disabilities and rural areas, respectively.[4] However, these also rely on some funding and coordination at the state level, leading to disparities in access to and quality of transportation programs by state, and they alone may not be sufficient to address all rural transportation challenges.

In both rural and urban settings, transportation clearly impacts the usage of health care services, because individuals without reliable transportation are more likely to delay and forgo necessary appointments, preventive care, and health maintenance activities.[5] A study of more than 1,000 households in North Carolina found that those with a driver's license had 2.3 times more health visits for chronic care and 1.9 times more visits for regular checkup care than those who did not have a driver's license, and those who had family or friends who could


POLICY BRIEF
July 2018

UNIVERSITY OF MINNESOTA RURAL HEALTH RESEARCH CENTER

Addressing Commuting as a Public Health Issue: Strategies Should Differ by Rurality

Carrie Henning-Smith, PhD
Katy Kozhimannil, PhD
Alex Evenson, MA

Key Findings

- More than three-quarters of all US workers drive alone to work, regardless of geographic location. Of those, nearly one-quarter or more drive for more than 30 minutes each way, with rates of long, solo car commutes highest in metropolitan counties (35%, p<0.001).
- Counties with higher educational attainment have fewer long, solo commutes.
- Socio-demographic factors correlated with long, solo commutes differ by rurality. For example, having a higher unemployment rate is associated with more long, solo commutes in metropolitan and urban-adjacent counties, but not in smaller or more remote counties. Also, having more older adults living in the county is associated with more long, solo commutes in non-adjacent micropolitan counties and fewer long, solo commutes in urban-adjacent non-core counties.

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Purpose

Car commuting is a known risk factor for poor health, by contributing to sedentary behavior and air pollution; prevention efforts to reduce car commuting—especially long, solo commutes—are important to improving public health. This brief estimates the rate of solo car commuting and long (>30 minutes) solo car commutes by rurality and urban adjacency, and identifies differences in socio-demographic factors that relate to commuting behavior by geographic location.

Background and Policy Context

Transportation, including commuting behavior, is a social determinant of health.[1] Car commuting in particular is associated with elevated rates of sedentary behavior, physical inactivity, disability, air pollution, stress, and lower quality of life.[2-6] Those findings are most relevant for longer car commutes. In contrast, shorter commutes may be associated with better quality of life and greater appeal for jobs and locations that make shorter commutes possible.[7] Car commuting also contributes to climate change, an urgent and serious threat to public health, making it important to identify alternatives to long, solo car commuting, including public transportation, carpooling, and telecommuting.[8]

Active commuting, such as walking, taking public transit, or biking to work, is associated with positive health outcomes,[9-12] but the ability to commute actively is unequally distributed by socio-demographic characteristics and geography.[13,14] Likewise, recent increases in telecommuting present opportunities to decrease car commuting, but reliable broadband access and occupation types vary by rurality.[15] Carpooling is also a good option to reduce transportation costs, increase socialization, and decrease the environmental impact of commuting, however driving alone to work remains the primary form of commuting for most employed people in the U.S., and the feasibility of carpooling also varies by geographic location and rurality.[16]

Commuting behavior happens within the broader economic context. In rural areas, employment rates have lagged behind those in metropolitan areas since the recession of 2008. Rural areas have also had more people dropping out of the labor force entirely due, partly, to more rapidly aging populations.[17] As a result, factors associated with commuting are likely to differ by rurality and strategies to reduce the negative impacts of solo car commuting require detailed information about risk factors in different geographic locations. This brief describes differences in socio-demographic characteristics associated with car commuting by rurality.

Measuring the Quality of Swing-Bed Care in Critical Access Hospitals

Year Funded: 2016

Project Lead: Ira Moscovice, Ph.D.

Project Staff: Michelle Casey, M.S.; Henry Stabler, M.P.H.

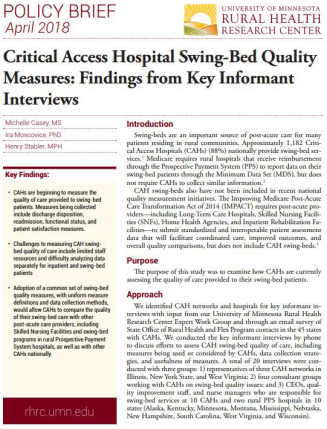
The lack of nationally comparable swing-bed quality measure data for Critical Access Hospitals (CAHs) means that they are not able to demonstrate the quality of care provided to swing-bed patients, and limits their ability to participate in alternative payment models that include post-acute care.

This project has identified quality measures to be used by CAHs to assess the quality of care provided to their swing-bed patients. Researchers are in the process of implementing a field test of these measures in 107 CAHs in 13 states, in collaboration with Stroudwater Associates. This included the completion of staff training, an inter-rater reliability process, IRB approval, and the development of a web application.

The goal is to obtain eventual endorsement of the measures by the National Quality Forum, and recommend them for use by CMS for assessing the value of CAH swing beds.

Products:

- Policy brief: "CAH Swing Bed Quality Measures: Findings from Key Informant Interviews." (Apr 2018)
- Presented "Relevant Rural Health Quality Measurement Issues" at the Texas A&M School of Public Health. (Apr 2018)
- Presented "Quality Measures for CAH Swing Bed Patients" at the NRHA annual meeting. (May 2018)
- Presented "Quality Measures for CAH Swing Bed Patients" on the field test at the Federal Office of Rural Health Policy Flex Program Reverse Site Visit in Washington, DC. (Jul 2018)


POLICY BRIEF
April 2018

UNIVERSITY OF MINNESOTA RURAL HEALTH RESEARCH CENTER

Critical Access Hospital Swing-Bed Quality Measures: Findings from Key Informant Interviews

Michelle Casey, MS
Ira Moscovice, PhD
Henry Stabler, MPH

Key Findings:

- CAHs are beginning to measure the quality of care provided to swing bed patients. Measures being collected include discharge disposition, readmission, functional status, and patient satisfaction measures.
- Challenges to measuring CAH swing-bed quality of care include limited staff resources and difficulty analyzing data separately for inpatient and swing-bed patients
- Adoption of a common set of swing-bed quality measures, with uniform measure definitions and data collection methods, would allow CAHs to compare the quality of their swing-bed care with other post-acute care providers, including Skilled Nursing Facilities and swing-bed programs in rural Prospective Payment System hospitals, as well as with other CAHs nationally.

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Introduction

Swing-beds are an important source of post-acute care for many patients residing in rural communities. Approximately 1,182 Critical Access Hospitals (CAHs) (88%) nationally provide swing-bed services.[1] Medicare requires rural hospitals that receive reimbursement through the Prospective Payment System (PPS) to report data on their swing-bed patients through the Minimum Data Set (MDS), but does not require CAHs to collect similar information.[2]

CAH swing-beds also have not been included in recent national quality measurement initiatives. The Improving Medicare Post-Acute Care Transformation Act of 2014 (IMPACT) requires post-acute providers—including Long-Term Care Hospitals, Skilled Nursing Facilities (SNFs), Home Health Agencies, and Inpatient Rehabilitation Facilities—to submit standardized and interoperable patient assessment data that will facilitate coordinated care, improved outcomes, and overall quality comparisons, but does not include CAH swing-beds.[3]

Purpose

The purpose of this study was to examine how CAHs are currently assessing the quality of care provided to their swing-bed patients.

Approach

We identified CAH networks and hospitals for key informant interviews with input from our University of Minnesota Rural Health Research Center Expert Work Group and through an email survey of State Office of Rural Health and Flex Program contacts in the 45 states with CAHs. We conducted the key informant interviews by phone to discuss efforts to assess CAH swing-bed quality of care, including measures being used or considered by CAHs, data collection strategies, and usefulness of measures. A total of 20 interviews were conducted with three groups: 1) representatives of three CAH networks in Illinois, New York State, and West Virginia; 2) four consultant groups working with CAHs on swing-bed quality issues; and 3) CEOs, quality improvement staff, and nurse managers who are responsible for swing-bed services at 10 CAHs and two rural PPS hospitals in 10 states (Alaska, Kentucky, Minnesota, Montana, Mississippi, Nebraska, New Hampshire, South Carolina, West Virginia, and Wisconsin).

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NRHA
NATIONAL RURAL HEALTH ASSOCIATION

U.S. Department of Health & Human Services
HRSA
Federal Office of Rural Health Policy

Skilled Nursing Facility Care for Rural Residents with Complex Care Needs

Year Funded: 2016

Project Lead: Carrie Henning-Smith, Ph.D.

Project Staff: Michelle Casey, M.S.; Shailendra Prasad, MD; Katy Kozhimannil, Ph.D.

With the aging of the U.S. population, the number of adults with complex care needs is rising, particularly in rural areas. Despite this, nursing homes often lack the staffing, funding, and infrastructure to adequately care for them. As a result, access to appropriate, timely long-term care in skilled nursing facilities may be constrained for rural residents who need it most.

This project examined barriers to skilled nursing facility placement for rural residents with complex care needs (including obesity, dementia, and behavioral health problems) and explored potential implications for access to and quality of care.

In addition to the products published during this project's funding cycle, the following were released in 2017-18:

- "Beyond clinical complexity: non-medical barriers to nursing home care for rural residents" published in *Journal of Aging and Social Policy. (Mar 2018)*
- "Barriers to nursing home care for non-elderly rural residents" published in *Journal of Applied Gerontology*. (Dec 2017)

Activity in 2017-18 on Projects Funded in 2017

Caring for Caregivers: Available Support for Unpaid Caregivers in Rural Areas

Year Funded: 2017

Project Lead: Carrie Henning-Smith, Ph.D.

Project Staff: Megan Lahr, M.P.H.; Michelle Casey, M.S.

Currently, more than 80% of all long-term care is provided by informal (unpaid) caregivers, usually family members, and more than 44 million Americans are currently providing unpaid care to a loved one, the majority of whom are older adults. The value of unpaid caregiving has been estimated at nearly $500 billion annually, yet it receives far less research attention than institutional care or home health services. Caregiving, especially without appropriate support, is associated with various poor health outcomes for the caregiver. While the entire U.S. is aging quickly, rural areas are aging at a faster rate and have greater long-term care needs. Further, rural areas face shortages in the formal long-term care workforce, pushing even more of the burden of care to unpaid caregivers. Yet, caregiver support programs are scarcer in rural areas, leaving caregivers who may need help most at the greatest risk of not receiving it.

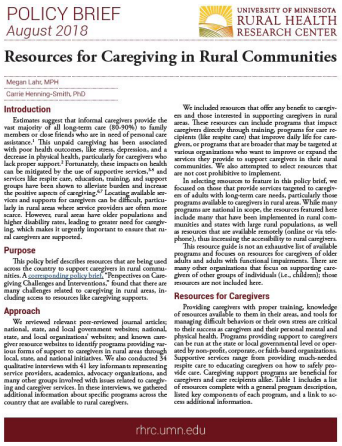
This project aimed to describe rural-urban differences in the prevalence and intensity of informal caregiving for older adults and associated socio-demographic correlates, and identify potential policy interventions to improve the quality of life and health outcomes of rural caregivers.

Research activity during 2017-18:

- Completed analysis of 2015 Caregiving in the U.S. Survey to examine rural-urban differences in caregiver burden, strain, health, and service use as well as rural-urban differences among employed caregivers in workplace supports and impacts.
- Conducted thorough literature review on informal caregiving in rural areas.
- Conducted 34 key informant interviews, with a total of 41 key informants, with experts on rural caregiving issues.
- Coded themes from interviews, identifying areas of challenge, recent change, and potential policy interventions.
- Compiled detailed list of programs supporting rural caregivers at the local, state, and federal level.

Products:

- Policy brief: "Perspectives on Rural Caregiving: Challenges and Interventions." (Aug 2018)
- Policy brief: "Resources for Caregivers in Rural Communities." (Aug 2018)
- "Rural-Urban Differences in Caregiver Use of and Preference for Supportive Services" published in *Journal of Aging and Health. (Jun 2018)*
- "Rural-Urban Differences in Workplace Supports and Impacts for Employed Caregivers" published in *Journal of Rural Health. (Jun 2018)*


POLICY BRIEF
August 2018
UNIVERSITY OF MINNESOTA RURAL HEALTH RESEARCH CENTER
Resources for Caregiving in Rural Communities
Megan Lahr, MPH
Carrie Henning-Smith, PhD
Introduction
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POLICY BRIEF
August 2018
UNIVERSITY OF MINNESOTA RURAL HEALTH RESEARCH CENTER
Perspectives on Rural Caregiving Challenges and Interventions
Carrie Henning-Smith, PhD
Megan Lahr, MPH
Key Findings
Purpose
Background and Policy Context
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rhrc.umn.edu

Rural-Urban Differences in Opioid-Affected Pregnancies and Births

Year Funded: 2017

Project Lead: Katy Kozhimannil, Ph.D.

Project Staff: Carrie Henning-Smith, Ph.D.; Tongtan Chantarat, M.P.H.; Alexandra Ecklund, M.P.H.; Cresta Jones, MD

The opioid epidemic has had devastating health, social, and economic consequences for families across the U.S., with a disproportionate impact in rural areas. Non-medical opioid use and opioid use disorder during pregnancy are associated with poor maternal outcomes and adverse effects among infants. The diagnosis of maternal opioid use disorder in the U.S. increased disproportionately in rural counties from 2004 to 2013, indicating the need for rural-tailored information to inform opioid programs and policies.

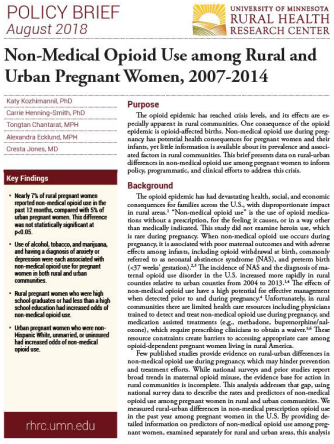
This analysis described the rates and predictors of non-medical opioid use prior to and during pregnancy and maternal diagnosis of opioid use disorder at birth, based on rural or urban maternal residence and rural or urban hospital location. Findings will help policymakers and key stakeholders target resources to combat the opioid epidemic in rural communities.

Research Activity during 2017-18:

- Completed analyses of National Inpatient Sample (NIS) data from 2007-2014 to examine maternal opioid use disorder among rural residents, by birth hospital location.
- Conducted literature review for maternal opioid use disorder and neonatal abstinence syndrome in rural communities.
- Began a new collaboration with Cresta Jones, MD, a maternal-fetal medicine doctor at the University of Minnesota who specializes in substance use during pregnancy.
- Completed a manuscript, "Maternal opioid disorder among rural residents, by hospital location and type" and submitted to a peer-reviewed journal.
- Completed a new type of "practical implications" product which describes the real-world meaning of research findings from a clinician's perspective and submitted to FORHP for review.

Products:

- Policy brief: "Rural-urban differences in non-medical opioid use among pregnant women, 2007-2014." (Aug 2018)
- Dr. Katy Kozhimannil presented "Effects of the opioid epidemic in for rural women and families" at the National Rural Health Association's Annual Meeting in New Orleans, LA. (May 2018)
- Dr. Katy Kozhimannil presented "Maternal opioid use disorder among rural residents" at the AcademyHealth Annual Research Meeting in Seattle, WA. (Jun 2018)


POLICY BRIEF
August 2018
UNIVERSITY OF MINNESOTA RURAL HEALTH RESEARCH CENTER

Non-Medical Opioid Use among Rural and Urban Pregnant Women, 2007-2014

Katy Kozhimannil, PhD
Carrie Henning-Smith, PhD
Tongtan Chantarat, MPH
Alexandra Ecklund, MPH
Cresta Jones, MD

Key Findings

- Nearly 7% of rural pregnant women reported non-medical opioid use in the past 12 months, compared with 5% of urban pregnant women. This difference was not statistically significant at p≤0.05.
- Use of alcohol, tobacco, and marijuana, and having a diagnosis of anxiety or depression were each associated with non-medical opioid use for pregnant women in both rural and urban communities.
- Rural pregnant women who were high school graduates or had less than a high school education had increased odds of non-medical opioid use.
- Urban pregnant women who were non-Hispanic White, unmarried, or uninsured had increased odds of non-medical opioid use.

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Purpose

The opioid epidemic has reached crisis levels, and its effects are especially apparent in rural communities. One consequence of the opioid epidemic is opioid-affected births. Non-medical opioid use during pregnancy has potential health consequences for pregnant women and their infants, yet little information is available about its prevalence and associated factors in rural communities. This brief presents data on rural-urban differences in non-medical opioid use among pregnant women to inform policy, programmatic, and clinical efforts to address this crisis.

Background

The opioid epidemic has had devastating health, social, and economic consequences for families across the U.S., with disproportionate impact in rural areas.[1] "Non-medical opioid use" is the use of opioid medications without a prescription, for the feeling it causes, or in a way other than medically indicated. This study did not examine heroin use, which is rare during pregnancy. When non-medical opioid use occurs during pregnancy, it is associated with poor maternal outcomes and with adverse effects among infants, including opioid withdrawal at birth, commonly referred to as neonatal abstinence syndrome (NAS), and preterm birth (<37 weeks' gestation).[2,3] The incidence of NAS and the diagnosis of maternal opioid use disorder in the U.S. increased more rapidly in rural counties relative to urban counties from 2004 to 2013.[3,4] The effects of non-medical opioid use have a high potential for effective management when detected prior to and during pregnancy.[5] Unfortunately, in rural communities there are limited health care resources including physicians trained to detect and treat non-medical opioid use during pregnancy, and medication assisted treatments (e.g., methadone, buprenorphine/naloxone), which require prescribing clinicians to obtain a waiver.[6,7] These resource constraints create barriers to accessing appropriate care among opioid-dependent pregnant women living in rural America.

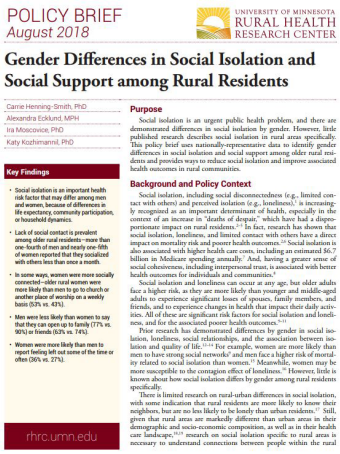
Few published studies provide evidence on rural-urban differences in non-medical opioid use during pregnancy, which may hinder prevention and treatment efforts. While national surveys and prior studies report broad trends in maternal opioid misuse, the evidence base for action in rural communities is incomplete. This analysis addresses that gap, using national survey data to describe the rates and predictors of non-medical opioid use among pregnant women in rural and urban communities. We measured rural-urban differences in non-medical prescription opioid use in the past year among pregnant women in the U.S. By providing detailed information on predictors of non-medical opioid use among pregnant women, examined separately for rural and urban areas, this analysis

Addressing Rural Social Isolation as a Health and Mortality Risk Factor

Year Funded: 2017

Project Lead: Carrie Henning-Smith, Ph.D.

Project Staff: Katy Kozhimannil, Ph.D.; Ira Moscovice, Ph.D.; Alexandra Ecklund, M.P.H.


POLICY BRIEF
August 2018

UNIVERSITY OF MINNESOTA
RURAL HEALTH
RESEARCH CENTER

Gender Differences in Social Isolation and Social Support among Rural Residents

Carrie Henning-Smith, PhD
Alexandra Ecklund, MPH
Ira Moscovice, PhD
Katy Kozhimannil, PhD

Key Findings

- Social isolation is an important health risk factor that may differ among men and women, because of differences in life expectancy, community participation, or household dynamics.
- Lack of social contact is prevalent among older rural residents—more than one-fourth of men and nearly one-fifth of women reported that they socialized with others less than once a month.
- In some ways, women were more socially connected—older rural women were more likely than men to go to church or another place of worship on a weekly basis (53% vs. 43%).
- Men were less likely than women to say that they can open up to family (77% vs. 90%) or friends (63% vs. 74%).
- Women were more likely than men to report feeling left out some of the time or often (36% vs. 27%).

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Purpose

Social isolation is an urgent public health problem, and there are demonstrated differences in social isolation by gender. However, little published research describes social isolation in rural areas specifically. This policy brief uses nationally-representative data to identify gender differences in social isolation and social support among older rural residents and provides ways to reduce social isolation and improve associated health outcomes in rural communities.

Background and Policy Context

Social isolation, including social disconnectedness (e.g., limited contact with others) and perceived isolation (e.g., loneliness),[1] is increasingly recognized as an important determinant of health, especially in the context of an increase in "deaths of despair," which have had a disproportionate impact on rural residents.[2,3] In fact, research has shown that social isolation, loneliness, and limited contact with others have a direct impact on mortality risk and poorer health outcomes.[4,5] Social isolation is also associated with higher health care costs, including an estimated $6.7 billion in Medicare spending annually.[6] And, having a greater sense of social cohesiveness, including interpersonal trust, is associated with better health outcomes for individuals and communities.[7]

Social isolation and loneliness can occur at any age, but older adults face a higher risk, as they are more likely than younger and middle-aged adults to experience significant losses of spouses, family members, and friends, and to experience changes in health that impact their daily activities. All of these are significant risk factors for social isolation and loneliness, and for the associated poorer health outcomes.[8-11]

Prior research has demonstrated differences by gender in social isolation, loneliness, social relationships, and the association between isolation and quality of life.[12-14] For example, women are more likely than men to have strong social networks[8] and men face a higher risk of mortality related to social isolation than women.[15] Meanwhile, women may be more susceptible to the contagion effect of loneliness.[16] However, little is known about how social isolation differs by gender among rural residents specifically.

There is limited research on rural-urban differences in social isolation, with some indication that rural residents are more likely to know their neighbors, but are no less likely to be lonely than urban residents.[17] Still, given that rural areas are markedly different than urban areas in their demographic and socio-economic composition, as well as in their health care landscape,[18,19] research on social isolation specific to rural areas is necessary to understand connections between people within the rural

The purpose of this project was to describe rural/urban differences in the prevalence of social isolation, as well as identify challenges and strategies related to addressing rural social isolation in order to inform policy-making.

Research Activity during 2017-18:

- Completed analyses of the National Social Life, Health, and Aging Project (NSHAP) dataset to examine rural urban differences in social isolation and self-reported health outcomes.
- Conducted literature review on social isolation and its effects on health.
- Completed 22 key informant interviews to learn more about rural social isolation throughout the life course. Interviewees from across the U.S. included community-level program directors, academic experts, and leaders of national advocacy groups.
- Completed qualitative coding of key informant interviews.
- Drafted and submitted manuscript "Rural-Urban Differences in Social Isolation and its Relationship to Health" to a peer-reviewed journal.
- Policy Brief drafted and submitted to FORHP.
- Proposal for podium presentation at the Gerontological Society of America Annual Meeting accepted; will take place November 14-18, 2018 in Boston, MA.

Products:

- Policy brief: "Gender Differences in Social Isolation and Support among Rural Residents"

Access to and Quality of Care for Rural Patients with Chronic Obstructive Pulmonary Disease

Year Funded: 2017

Project Lead: Ira Moscovice, Ph.D.

Project Staff: Michelle Casey, M.S.; Alex Evenson, M.A.; Zhengtian Wu, M.S.

Chronic Obstructive Pulmonary Disease (COPD) is a set of progressive lung diseases including chronic bronchitis, emphysema, asthma, and other small-airways disease. An estimated 16 million individuals in the U.S. have COPD, resulting in over 800,000 hospitalizations per year with a hospital readmission rate close to 25%. COPD is the fourth leading cause of death in the U.S.; COPD-related direct and indirect health costs have been estimated to be approximately $50 billion per year.

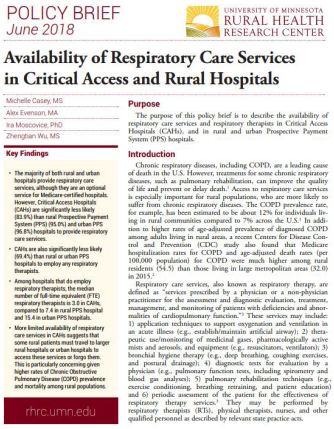
This project aims to address the large gap in the literature on key access and quality issues for the rural population with COPD by describing the prevalence of COPD in rural areas, and demographic characteristics and health status measures for rural patients with COPD; assessing access to care and availability of needed care and services for rural COPD patients.

Research Activity during 2017-18:

- Conducted review of literature on rural COPD and collected information from websites of COPD organizations.
- Downloaded publicly-available AHRF, POS, Hospital Compare, and NHATS data.
- Obtained data on pulmonary rehabilitation program locations from the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR) and the COPD Foundation.
- Completed initial review of all U.S. hospitals, aiming to identify those that offer pulmonary rehab services regardless of AACVPR certification.
- Began statistical analyses of secondary data.

Products:

- Policy brief: "Provision of Respiratory Care in Rural Hospitals." (Mar 2018)
- Attended & participated in "COPD & Rural Health: A Dialogue on the National Action Plan" at National Institutes of Health, Bethesda MD. (Mar 2018)
- Attended & participated in "Rural Response to COPD & Rural Health Summit" at Federal Office of Rural Health Policy, Rockville MD. (Jun 2018)


POLICY BRIEF
June 2018

UNIVERSITY OF MINNESOTA
RURAL HEALTH
RESEARCH CENTER

Availability of Respiratory Care Services in Critical Access and Rural Hospitals

Michelle Casey, MS
Alex Evenson, MA
Ira Moscovice, PhD
Zhengtian Wu, MS

Key Findings

- The majority of both rural and urban hospitals provide respiratory care services, although they are an optional service for Medicare-certified hospitals. However, Critical Access Hospitals (CAHs) are significantly less likely (83.9%) than rural Prospective Payment System (PPS) (95.0%) and urban PPS (96.9%) hospitals to provide respiratory care services.
- CAHs are also significantly less likely (69.4%) than rural or urban PPS hospitals to employ any respiratory therapists.
- Among hospitals that do employ respiratory therapists, the median number of full-time equivalent (FTE) respiratory therapists is 3.0 in CAHs, compared to 7.4 in rural PPS hospital and 15.4 in urban PPS hospitals.
- More limited availability of respiratory care services in CAHs suggests that some rural patients must travel to larger rural hospitals or urban hospitals to access these services or forgo them. This is particularly concerning given higher rates of Chronic Obstructive Pulmonary Disease (COPD) prevalence and mortality among rural populations.

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Purpose

The purpose of this policy brief is to describe the availability of respiratory care services and respiratory therapists in Critical Access Hospitals (CAHs), and in rural and urban Prospective Payment System (PPS) hospitals.

Introduction

Chronic respiratory diseases, including COPD, are a leading cause of death in the U.S. However, treatments for some chronic respiratory diseases, such as pulmonary rehabilitation, can improve the quality of life and prevent or delay death.[1] Access to respiratory care services is especially important for rural populations, who are more likely to suffer from chronic respiratory diseases. The COPD prevalence rate, for example, has been estimated to be about 12% for individuals living in rural communities compared to 7% across the U.S.[2] In addition to higher rates of age-adjusted prevalence of diagnosed COPD among adults living in rural areas, a recent Centers for Disease Control and Prevention (CDC) study also found that Medicare hospitalization rates for COPD and age-adjusted death rates (per 100,000 population) for COPD were much higher among rural residents (94.5) than those living in large metropolitan areas (32.0) in 2015.[3]

Respiratory care services, also known as respiratory therapy, are defined as "services prescribed by a physician or a non-physician practitioner for the assessment and diagnostic evaluation, treatment, management, and monitoring of patients with deficiencies and abnormalities of cardiopulmonary function."[4] These services may include: 1) application techniques to support oxygenation and ventilation in an acute illness (e.g., establish/maintain artificial airway); 2) therapeutic use/monitoring of medicinal gases, pharmacologically active mists and aerosols, and equipment (e.g., resuscitators, ventilators); 3) bronchial hygiene therapy (e.g., deep breathing, coughing exercises, and postural drainage); 4) diagnostic tests for evaluation by a physician (e.g., pulmonary function tests, including spirometry and blood gas analyses); 5) pulmonary rehabilitation techniques (e.g., exercise conditioning, breathing retraining, and patient education) and 6) periodic assessment of the patient for the effectiveness of respiratory therapy services.[5] They may be performed by respiratory therapists (RTs), physical therapists, nurses, and other qualified personnel as described by relevant state practice acts.

National Institutes of Health

U.S. Department of Health & Human Services
HRSA
Federal Office of Rural Health Policy

Upcoming Projects, 2018-19

Developing Rural-Relevant Strategies to Reduce Maternal Morbidity

Year Funded: 2018

Project Lead: Katy Kozhimannil, Ph.D.

Project Staff: Carrie Henning-Smith, Ph.D.; Amanda Corbett, M.P.H.; Cori Blauer-Peterson, M.S.; Angela Thompson, M.D.; Julia Interrante, M.P.H.

The purpose of this project is to distinguish and analyze predictors of maternal morbidity during childbirth hospitalization by geography and to develop recommendations to improve the safety of childbirth for rural residents. It will also assess the degree of rural focus and representation in current policy efforts to address this crisis.

Description:

Most people enter pregnancy without anticipating major risks to their health, yet every year, at least 50,000 experience potentially life-threatening complications of childbirth (e.g., blood clots, acute renal failure, shock, cardiac arrest, respiratory distress, amniotic fluid embolism, eclampsia, complications of anesthesia). The rate of severe maternal morbidity doubled between 1998 and 2011, as did maternal mortality, doubling between 1990 and 2013.1 In the general population, there are divergent morbidity trends in rural and urban areas, leading to excess mortality among rural residents. Both of these troubling trends render residents of rural areas particularly vulnerable to illness and death following childbirth.

Several national clinical efforts are underway to address severe maternal morbidity, but many national efforts do not address the specific conditions of care provided in rural contexts (e.g., limited access to specialty providers, lack of a dedicated operating room for obstetrics, use of general - vs. specialized - nursing staff in labor and delivery units). Attention to the particular challenges faced by rural patients and health care facilities is crucial to the success of efforts to reduce maternal morbidity and mortality in rural areas. Additionally, state and federal legislators have increasingly proposed and adopted policies in the wake of rising rates of maternal morbidity and mortality. Many policy efforts focus on the establishment of committees to review cases of maternal morbidity or mortality, and clinical leaders have argued for the importance of these efforts at federal, state, and local levels. As these efforts gain strength, it is not clear to what extent rural populations are recognized and explicitly included in policies designed to address this growing crisis. No prior studies have examined rural-urban differences in current trends in maternal morbidity. Such evidence is urgently needed to inform geographically-tailored clinical and policy efforts to reverse the rising rates of maternal morbidity and mortality nationally.

This project is national in scope and will have relevance for policy making at the federal, state, local, and institutional levels. We will conduct analyses using both a 20% sample of births (2004-2014) to assess trends and on a 100% sample of hospital-based 2014 births that occurred in 9 states across the four U.S. Census regions. We also plan to conduct a review of state and federal legislation (including proposed legislation) related to maternal mortality and maternal morbidity review committees, as well as a site visit to a rural hospital providing obstetric services. The purpose of the visit is to discuss management of care during pregnancy and childbirth with clinicians and hospital administrators; how a high-risk designation affects care for rural residents (e.g., referrals to specialized or subspecialized care); and how decisions are made to transfer rural patients in the intrapartum period.

Team-Based Primary Care in Rural Communities

Year Funded: 2018

Project Lead: Hannah Neprash, Ph.D.

Project Staff: Shailendra Prasad, M.D.; Ira Moscovice, Ph.D.; Katy Kozhimannil, Ph.D.; Laura Smith, B.A.

This project will describe primary care practice structure in rural communities and quantify characteristics of primary care teams associated with high-quality care.

Description:

Roughly one in six Americans live in a rural area, but only 10 percent of primary care physicians (PCPs) practice in these communities. Physicians in rural areas are older on average, suggesting that the rural PCP shortages will intensify in coming years. In the face of a looming PCP shortage nationwide, some researchers advocate team-based care—defined as collaborative care provided by groups of physician and nonphysician clinicians—as one way to accommodate the care needs of an aging population in rural and urban areas alike. Nonphysician clinicians such as nurse practitioners (NPs) and physician assistants (PAs) are already integral members of the rural primary care workforce. Compared to physicians, NPs and PAs are more than twice as likely to locate in rural areas. As a result, NPs and PAs provide 1 in 6 office visits in rural areas, compared to 1 in 10 in urban areas. For this reason, rural areas provide an opportunity to learn about the structure, functioning, and quality of care provided by primary care teams.

While considerable research has focused on the productivity and quality of care provided by individual clinician types, data limitations have hampered researchers' ability to study team-based provision of care. In particular, few data are currently available on rural-urban differences in the structure and quality of care provided by primary care teams.

This analysis will address that gap by describing the size, clinician types, specialty composition, and workload allocation of primary care teams, based on rural versus urban practice location. It will also quantify associations between attributes of primary care teams and the quality of care they provide. By providing detailed information on the organization, workflow, and care quality of primary care teams in rural communities, this project will inform the policy conversation regarding workforce adequacy and access to high-quality primary care.

This project is national in scope and will have relevance for policy making at the federal, state, local, and institutional levels. We will analyze two national datasets, one of clinician characteristics and the second comprising all-payer claims and electronic health record data.

We plan to compare attributes of primary care teams—including size (total number of clinicians and size of patient panel) and composition (ratio of physician to nonphysician clinicians)—in rural and urban communities; describe workload allocation (number of visits and total time scheduled for patient care) and complexity (number, type, and severity of patient diagnoses) among primary care team members and compare by rural/urban location; assess patterns of high-quality care delivery within and between primary care teams; and identify characteristics of successful team-based primary care structure in rural settings that may inform the shift to patient-centered team-based case nationwide.

Disparities in Preventive Care by Race and Ethnicity among Rural Adults

Year Funded: 2018

Project Lead: Carrie Henning-Smith, Ph.D.

Project Staff: Katy Kozhimannil, Ph.D.; Rachel Hardeman, Ph.D.; Marizen Ramirez, Ph.D.; Ashley Hernandez, M.S.

The purpose of this project is to identify differences in access to and use of preventive care by race and ethnicity among rural residents. Results from this project will identify racial/ethnic disparities that exist within rural communities and may guide targeted interventions to improve equity and increase access to high-quality health care for all rural residents.

Description:

The majority of research on rural health disparities focuses on rural-urban differences in health. By focusing only on rural-urban differences, the variability in health among rural residents is unseen. Rural racial and ethnic diversity has increased in recent decades, with a growth in immigrant populations in rural areas. Currently, 1 in 5 rural residents is a person of color or American Indian, adding up to nearly 10 million rural residents who are black, Latinx, Indigenous, Asian, or mixed-race.

Recent work by the CDC (James et al.) was a crucial first step toward a more nuanced understanding of racial/ethnic disparities within rural populations. However, there are several important next steps that are necessary to inform targeted policies to improve the health of rural communities and populations. This project will build on the James et al. paper by examining within-rural racial and ethnic differences in preventive care use over time, adding socio-demographic controls, looking at the experience of residents of micropolitan rural counties, and also addressing potential state and regional variation in disparities among rural people. Preventive care use is a fundamental measure of health care quality and is essential for population health; disparities in access to and use of preventive services by race and ethnicity will signal where to focus policy and practice efforts to improve the health of rural populations.

This project is national in scope and will have relevance for policy-making and health care delivery at the federal, regional, state, and local levels. The sample will include adults from rural communities across the United States, and will be weighted to generate nationally-representative estimates.

We plan to analyze racial and ethnic disparities among rural adults in preventive care use from 2007-2016, including having an annual flu shot, a usual provider, annual dental visit, and use of routine cancer screenings, as well as unmet need for physical, mental, dental, and vision care; examine whether disparities in preventive care persist after adjusting for socio-demographic characteristics; identify state and regional differences in within-rural racial and ethnic disparities in preventive care; and compare micropolitan and non-core rural residents to examine whether any racial and ethnic disparities in non-core rural residents are similar in micropolitan counties.

Access to Care for Rural Medicare Beneficiaries

Year Funded: 2018

Project Lead: Carrie Henning-Smith, Ph.D.

Project Staff: Megan Lahr, M.P.H.; Hannah Neprash, Ph.D.; Ashley Hernandez, M.S.

This project will examine multiple dimensions of access to care, with a focus on rural Medicare beneficiaries, including rural-urban differences in access to care, and within-rural differences in access to care by region, coverage type (traditional fee-for-service vs. supplemental Medigap coverage), and socio-demographic characteristics. Results from this project will be useful in designing targeted interventions and policies to improve access to care—and ultimately, health outcomes—for rural Medicare beneficiaries.

Description:

Access to timely, appropriate, and affordable health care is important for health outcomes and overall wellbeing. Access to care is partially determined by access to insurance coverage to help make such care affordable and attainable. Because Medicare provides nearly-universal insurance coverage for older adults in the United States, as well as for some non-elderly adults with disabilities, access to care should in theory be guaranteed for individuals with Medicare coverage. However, there is ample evidence showing that some Medicare beneficiaries—including rural residents—still struggle to access care when they need it.

Rural Medicare beneficiaries face particular hurdles in accessing care, including longer distances to health care facilities, lower median incomes, fewer supplemental Medigap and Medicare Advantage plan options, higher disability rates (leading to greater need), and health care workforce shortages. Given these differences, current information is needed about access to care for rural Medicare beneficiaries in order to inform policies and programs to ensure the best possible health care access and health outcomes.

This project is national in scope and will have relevance for policy making and health care delivery at the federal, regional, state, and local levels. The sample will include Medicare beneficiaries from across the country, and will be weighted to generate nationally-representative estimates. Key informants will be selected from each of the four Census regions to ensure national coverage.

We will analyze rural-urban differences in multiple dimensions of access to care, including use of routine and preventive care, as well as difficulty getting necessary care due to concerns about cost, coverage type, inability to find a provider, difficulty with transportation, and difficulty with scheduling; analyze within-rural differences in multiple dimensions of access to care by coverage type, rurality, region, health status, and socio-demographic characteristics; describe the experiences of rural safety net providers in helping to provide access to care for Medicare beneficiaries; and identify policy and programmatic interventions to improve access to care for rural Medicare beneficiaries.

In primary data collection, we will ask key informants about their experiences providing safety net care to rural Medicare beneficiaries, including their perceptions the most challenging aspects of accessing care. We will also ask them about potential policy and programmatic interventions. We will code the interviews to identify themes and policy implications.

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Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

Supported by the Federal Office of Rural Health Policy (FORHP), Health Resources and Services Administration (HRSA), U.S. Department of Health and Human Services (HHS) under PHS Grant No. 5U1CRH03717. The information, conclusions, and opinions expressed in UMNRHRC products and publications are those of the authors and no endorsement by FORHP, HRSA, or HHS is intended or should be inferred.

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