



UNIVERSITY OF MINNESOTA
**RURAL HEALTH
RESEARCH CENTER**

Annual report, 2018-19

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

This has been a noteworthy year for the University of Minnesota Rural Health Research Center (RHRC) and for rural health in general, with continued political and policy attention to the challenges faced by rural residents. We welcome this attention, but also wish to ensure that the strength and resilience of rural communities do not go unrecognized as we focus on addressing challenges. We are hopeful that policy attention will translate into increased opportunities for better health and quality of life for all rural residents, and at RHRC, we are committed to being engaged in that work.

Over the past year, we have been busy with projects for the third year of our four-year grant cycle. Our projects this year focused on racial and ethnic disparities among rural residents, team-based primary care, maternal morbidity and mortality, and access to care for rural Medicare beneficiaries. Meanwhile, we continue work on past year's projects, as the process of translating and disseminating findings rarely ends within a 12-month cycle.

Opportunities to shape public dialogue, engage with rural communities, and impact policy discussions are a source of satisfaction and motivation for us. We enjoyed meeting with our new (and continuing) expert work group members, who represent a broad array of rural health interests from around the country. (See their profiles – and a photo from our annual meeting – later in this report.) A highlight of the past year was the passage of the federal Improving Access to Maternity Care Act, signed into law in December 2018. We are grateful to have had the opportunity to present our RHRC research on rural maternity care at a U.S. Senate briefing to inform that legislation. Our maternity care research also informed the development of a major HRSA grant program and a national forum and agenda on rural maternal health. Both of us are privileged to have regular dialogue with legislators at the state and federal levels on rural health topics covered by our research, and this year has also brought the opportunity for us to speak with several 2020 presidential candidates to inform their work on rural health.

We continue to actively partner with reporters and the media to disseminate our findings broadly, including in local print and radio, on podcasts, and in widely-read national media outlets. See a list of all outlets that covered over the past year our work later in this report. Without question, however, the true highlights of the year have been time spent with rural people and in rural places. Both of us have carved out time to get out of our Twin Cities base and spend time in diverse, vibrant rural communities, where we are inspired to continually improve our work.

Katy B Kozhimannil, PhD, MPA

Carrie Henning-Smith, PhD, MSW, MPH

Background

The University of Minnesota Rural Health Research Center is a federally-funded cooperative agreement between the 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 rural people, families, and communities that experience disproportionate health risks 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 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 health risks because of structural inequities, 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, 2018-19

- “Rural focus and representation in state maternal mortality review committees: review of policy and legislation.” *Women’s Health Issues*, August 2019.
- “Disparities in geographic access to hospital outpatient pulmonary rehabilitation programs in the U.S.” *Chest*, April 2019.
- “Structural factors shape the effects of the opioid epidemic on pregnant women and infants.” *JAMA*, January 2019.
- “Differences in social isolation and its relationship to health by rurality.” *The Journal of Rural Health*, January 2019.
- “Rural-urban differences in Medicare quality scores persist after adjusting for sociodemographic and environmental characteristics.” *The Journal of Rural Health*, December 2018.
- “Maternal opioid use disorder and neonatal abstinence syndrome among rural US residents, 2007-2014.” *The Journal of Rural Health*, November 2018.
- “Reversing the rise in maternal mortality.” *Health Affairs*, November 2018.
- “Rural-urban differences in risk factors for motor vehicle fatalities.” *Health Equity*, September 2018.
- “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.” *The 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
- “Geographic variation in transportation concerns and adaptations to travel-limiting medical conditions.” *Journal of Transport & Health*, March 2018
- “Racism and health in rural America.” *Journal of Health Care for the Poor and Underserved*, February 2018
- “Rural hospital employment of physicians and use of cesareans and non-indicated labor induction.” *The Journal of Rural Health*, February 2018

RESEARCH PRODUCTS, 2018-19

POLICY BRIEF
June 2019
Measuring Access to Care in National Surveys: Implications for Rural Health

Carrie Henning Smith, PhD
Ashley M Henderson, MPH
Alyssa Henderson, PhD
Morgan Latta, MPH
Key Findings
• Several nationally representative survey measures assess rural access to care.
• Access to care is measured across various domains, including need for care, need for preventive care, need for specialty care, need for transportation-related care, and need for information.
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• Access to care is measured across various domains, including need for care, need for preventive care, need for specialty care, need for transportation-related care, and need for information.

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POLICY BRIEF
June 2019
Unmet Need for Personal Care Assistance among Rural and Urban Older Adults

Carrie Henning Smith, PhD
Zhenghui Shi, MS
Morgan Latta, MPH
Key Findings
• Rural and urban older adults (65 years and older) with functional limitations report similar levels of unmet need for personal care assistance.
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POLICY BRIEF
March 2019
Dying Too Soon: County-level Disparities in Premature Death by Rurality, Race, and Ethnicity

Carrie Henning Smith, PhD
Ashley M Henderson, MPH
Morgan Latta, MPH
Key Findings
• County-level disparities in premature death by rurality, race, and ethnicity are evident.
• County-level disparities in premature death by rurality, race, and ethnicity are evident.
• County-level disparities in premature death by rurality, race, and ethnicity are evident.

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POLICY BRIEF
October 2018
Key Informant Perspectives on Rural Social Isolation and Loneliness

Carrie Henning Smith, PhD
Alexandra Eckstein, MPH
Morgan Latta, MPH
Key Findings
• Rural social isolation and loneliness are complex phenomena.
• Rural social isolation and loneliness are complex phenomena.
• Rural social isolation and loneliness are complex phenomena.

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POLICY BRIEF
August 2018
Non-Medical Opioid Use among Rural and Urban Pregnant Women, 2007-2014

Carrie Henning Smith, PhD
Carrie Henning Smith, PhD
Tongtong Chen, MPH
Alexandra Eckstein, MPH
Cecilia Jones, MD
Key Findings
• Nearly 7% of pregnant women reported non-medical opioid use.
• Nearly 7% of pregnant women reported non-medical opioid use.
• Nearly 7% of pregnant women reported non-medical opioid use.

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POLICY BRIEF
August 2018
Perspectives on Rural Caregiving Challenges and Interventions

Carrie Henning Smith, PhD
Morgan Latta, MPH
Key Findings
• Rural caregiving challenges include lack of resources and support.
• Rural caregiving challenges include lack of resources and support.
• Rural caregiving challenges include lack of resources and support.

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POLICY BRIEF
August 2018
Resources for Caregiving in Rural Communities

Morgan Latta, MPH
Carrie Henning Smith, PhD
Key Findings
• Rural caregiving resources are limited and unevenly distributed.
• Rural caregiving resources are limited and unevenly distributed.
• Rural caregiving resources are limited and unevenly distributed.

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POLICY BRIEF
August 2018
Gender Differences in Social Isolation and Social Support among Rural Residents

Carrie Henning Smith, PhD
Alexandra Eckstein, MPH
Morgan Latta, MPH
Key Findings
• Gender differences in social isolation and social support are evident.
• Gender differences in social isolation and social support are evident.
• Gender differences in social isolation and social support are evident.

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POLICY BRIEF
July 2018
Addressing Commuting as a Public Health Issue: Strategies Should Differ by Rurality

Carrie Henning Smith, PhD
Ashley Henderson, PhD
Alyssa Henderson, PhD
Morgan Latta, MPH
Key Findings
• Commuting is a public health issue that affects rural and urban populations differently.
• Commuting is a public health issue that affects rural and urban populations differently.
• Commuting is a public health issue that affects rural and urban populations differently.

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POLICY BRIEF
June 2018
Availability of Respiratory Care Services in Critical Access and Rural Hospitals

Michelle Chang, MS
Ann Emmert, MS
Alexandra Eckstein, MPH
Zhenghui Shi, MS
Key Findings
• Respiratory care services are available in critical access and rural hospitals.
• Respiratory care services are available in critical access and rural hospitals.
• Respiratory care services are available in critical access and rural hospitals.

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POLICY BRIEF
April 2018
Critical Access Hospital Swing-Bed Quality Measures: Findings from Key Informant Interviews

Michelle Chang, MS
Alexandra Eckstein, MPH
Henry Smith, MPH
Key Findings
• Critical access hospital swing-bed quality measures are being implemented.
• Critical access hospital swing-bed quality measures are being implemented.
• Critical access hospital swing-bed quality measures are being implemented.

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CASE STUDY
February 2018
Challenges Related to Pregnancy and Returning to Work after Childbirth in a Rural, Tourism-Dependent Community

Amanda Corbett, MPH
Carrie Henning Smith, PhD
Kristin Oakland Wharton, BS
Key Findings
• Pregnancy and returning to work are challenging in a rural, tourism-dependent community.
• Pregnancy and returning to work are challenging in a rural, tourism-dependent community.
• Pregnancy and returning to work are challenging in a rural, tourism-dependent community.

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PRESENTATIONS, 2018-19

We have presented at an array of unique events, from academic conferences to congressional briefings, including:

- American Hospital Association's Allied Association for Rural (Webinar), March 2018
- AcademyHealth Annual Research Meeting: June 2019, Washington, D.C., June 2018, Seattle, WA
- Critical Access Hospitals Conference, September 2018, Kansas City, MO
- Centers for Medicare and Medicaid Services, A Conversation on Maternal Health Care in Rural Communities: Charting a Path to Improved Access, Quality and Outcomes, Washington, DC, June 2019
- Federal Office of Rural Health Policy Summit, June 2018, Rockville, MD
- Federal Office of Rural Health Policy Flex Program Reverse Site Visit, July 2018, Washington, DC
- Gerontological Society of America Annual Meeting, November 2018, Boston, MA
- Grantmakers in Aging Summit, May 2018, Berkeley, CA
- Health Resources & Services Administration (HRSA) Webinar, January 2019
- Interdisciplinary Research Leaders (Webinar), January 2019
- Life Course Center, March 2019, Minneapolis, MN
- Minnesota Department of Health Maternal and Child Health Advisory Task Force Meeting, September 2018, St. Paul, MN
- Minnesota Population Center, January 2019, Minneapolis, MN
- Minnesota Gerontological Society Annual Meeting, April 2019, Brooklyn Center, MN
- National Institutes of Health Summit, March 2018, Bethesda, MD
- National Rural Health Association Annual Meeting: May 2019, Atlanta, GA, May 2018, New Orleans, LA
- National Rural Health Association Health Equity Conference: May 2019, Atlanta, GA, May 2018, New Orleans, LA
- National Rural Health Association Rural Hospitals Interest Group Meeting, January 2018, in Washington, DC
- Public-Private Collaborations in Rural Health Meeting, June 2018, Washington, DC
- Reforming States Group, Milbank Foundation Meeting, November 2018, Portland, OR
- Rural Health Research Gateway (Webinar), April 2018
- State Health Access Data Assistance Center (SHADAC) Research Meeting, March 2019
- Texas A&M School of Public Health, April 2018, College Station, TX
- University of British Columbia, July 2019, Vancouver, British Columbia, Canada
- University of Minnesota School of Public Health Research Day, April 2019, Minneapolis, MN
- University of Minnesota School of Public Health, Division of Health Policy and Management Seminar Series, October 2018, Minneapolis, MN
- U.S. Senate Briefing: March 2018, in Washington, DC
- Winneshiek Medical Center, August 2019, Decorah, Iowa
- Women's Health Research Conference, October 2018, Minneapolis, MN

PUBLIC IMPACT, 2018-19

Our Website

We strive to maintain an accessible, user-friendly website where folks from all backgrounds can engage with our research. This effort resulted in metrics we are proud of for 2018-2019.

• Traffic

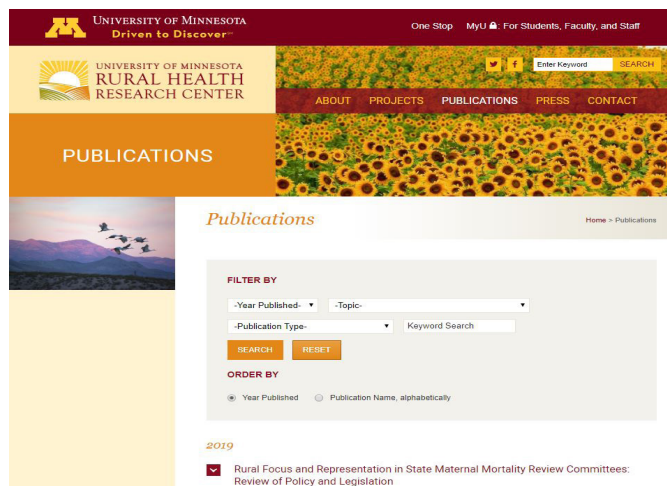
- Total # of sessions (single visit to the website): 12,322 (1.4 per user)
- Total # of pageviews (single visit to a page on the site): 29,328 (2.4 per session)
- Most users access our site by typing our URL directly (48%), others use a search engine (34%), some are referred from other sites (14%), and still others from social media or email (4%)

• People

- Total # of users: 8,907
- 87% new, 13% returning

• Content

- Top pages include: Publications, Staff, Current Projects, and Contact
- Top 5 publications accessed:
 - * Access To Obstetric Services In Rural Counties Still Declining, With 9 Percent Losing Services, 2004-14
 - * Closure of Hospital Obstetric Services Disproportionately Affects Less-Populated Rural Counties
 - * Critical Access Hospital Swing-Bed Quality Measures: Findings from Key Informant Interviews
 - * Rural Transportation: Challenges and Opportunities
 - * Dying Too Soon: Premature Death by Rurality, Race, and Ethnicity



PUBLIC IMPACT, 2018-19 (CONT.)

Rural Health Research Gateway

Our products are housed with all other federally-funded Rural Health Research Centers' on the Rural Health Research Gateway. University of Minnesota-produced research topped their list of "Alerts with the Most Users Engaged" with our policy brief, Rural Caregiving Challenges, Interventions, and Resources. Our top viewed/downloaded products on the Gateway included the following:

- A National Examination of Caregiver Use of and Preferences for Support Services: Does Rurality Matter?
- Association Between Loss of Hospital-Based Obstetric Services and Birth Outcomes in Rural Counties in the United States
- Key Informant Perspectives on Rural Social Isolation and Loneliness
- Closure of Hospital Obstetric Services Disproportionately Affects Less-Populated Counties
- Gender Differences in Social Isolation and Social Support among Rural Residents



PUBLIC IMPACT, 2018-19 (CONT.)

Press

We have been featured in a range of media outlets, from local print news to national television, including:

- Becker's Hospital Review
- Brainerd Dispatch
- Business Journal
- CBS Sunday Morning
- The Daily Yonder
- Duluth News Tribune
- Forbes
- The Fix
- Grand Forks Herald
- InForum
- The Minnesota Daily
- Minnesota Matters News Network
- The Morning Call
- NextAvenue
- New Hampshire Public Radio
- New Hampshire Union Leader
- News Medical Life Sciences
- The New York Times
- NPR
- Quartz
- Rural Health Leadership Radio
- The Rural Blog
- Rural Monitor
- The Rural Reporter
- Phys.org
- Pine City Pioneer
- Star Tribune
- TPT Almanac
- University of Minnesota
- U.S. News and World Report
- WABE Atlanta
- Wall Street Journal
- WebMD
- West Fargo Pioneer
- WJON St. Cloud
- WORT Madison





Staff, Students, and Affiliates, 2018-19

Leadership



KATY KOZHIMANNIL, PHD, MPA, 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.



CARRIE HENNING-SMITH, PHD, MPH, MSW, DEPUTY DIRECTOR

Dr. Henning-Smith is 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 (NRHA) and serves as the current editorial board chair for *The Journal of Rural Health*. She is also actively engaged with service and community engagement activities to improve rural health, including serving on NRHA's Health Equity Council and NRHA's Communications Committee, as well as serving on multiple advisory boards for the state of Minnesota and non-profit organizations to work on better serving older adults in rural areas.

Project Lead



HANNAH NEPRASH, PHD

Hannah Neprash is a Project Lead at 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.

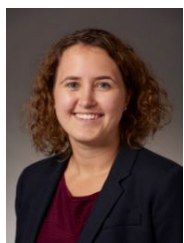
Dr. Neprash is an expert in physician behavior. Her research studies how physicians and other health care providers respond to financial and non-financial incentives, with a focus on time pressure, productivity, and market structure. She is experienced using novel sources of data to examine how physician decision-making drives utilization, spending, access, and quality in health care. Her applied research and policy experience includes time at the Medicare Payment Advisory Commission (MedPAC), the Health Subcommittee of the U.S. House of Representatives Ways & Means Committee, and the Massachusetts Health Policy Commission. She received her PhD in health policy (economics track) from Harvard University.

Staff



AMANDA CORBETT, MPH

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.



MEGAN LAHR, MPH

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, PHD

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.



MARIANA STORY TUTTLE, MPH

Ms. Tuttle is a Communications & Research Fellow, joining RHRC full-time in June of 2019. She has thus far contributed primarily to dissemination efforts for the 2018 projects as well as website management and strategic communications planning. In the coming year, Mariana will contribute to research on maternal health and on living alone in rural areas. In addition to working on research projects and managing communication, she also manages administration for grant-related activity.

Affiliates



RACHEL HARDEMAN, PHD, MPH

Rachel Hardeman is a project contributor at RHRC and an Assistant Professor in the Division of Health Policy and Management, University of Minnesota School of Public Health. Dr. Hardeman's research applies the tools of population health science and health services research to elucidate the complex determinants of health inequity. She has contributed to work looking at disparities in preventive care in rural areas.



SHAILENDRA PRASAD, MD, MPH

Dr. Prasad is an Associate Professor at the Department of Family Medicine and Community Health 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.



MARIZEN RAMIREZ, PHD, MPH

Marizen Ramirez is a project contributor at RHRC and an Associate Professor in the Division of Environmental Health Sciences, University of Minnesota School of Public Health. She is the Director of the Midwest Center for Occupational Health and Safety. She has contributed to work looking at disparities in preventive care in rural areas.

Students

JULIA INTERRANTE, MPH

Ms. Interrante is a PhD student in the Division of Health Policy and Management, University of Minnesota School of Public Health.

ALEXANDRIA KRISTENSEN-CABRERA, BS

Ms. Kristensen-Cabrera is an MD-PhD student at the University of Minnesota Medical School and the Division of Health Policy and Management.

ASHLEY HERNANDEZ, MSPH

Ms. Hernandez is a PhD candidate in the Division of Environmental Health Sciences focusing on occupational and environmental epidemiology.

PEGGYSUE IMIHY, MURP

Ms. Imihy was a graduate assistant when she worked with RHRC until May 2019, when she graduated with a Master of Urban and Regional Planning from the Humphrey School of Public Affairs, University of Minnesota.

ADRITA RAHMAN, MPH

Ms. Rahman is a PhD student in the Division of Epidemiology and Community Health focusing on obesity and nutrition.

LAURA SMITH, BA

Ms. Smith is a PhD candidate in the Division of Health Policy and Management with an emphasis in health economics.

Expert Work Group

At the University of Minnesota Rural Health Research Center, we have an Expert Work Group (EWG) comprised of national stakeholders that help us identify urgent and emerging issues in rural health and provide feedback on the projects we undertake each year. The goal of the EWG is to provide our center with strategic guidance, input on research questions and project design, connections to rural communities and stakeholders, advice on troubleshooting, feedback on research findings and implications, and support for effective dissemination and policy impact. Our current EWG includes the following members.



JENNIFER BACANI MCKENNEY, MD

Family Physician, Bacani/McKenney Clinic

Dr. Jennifer Bacani McKenney is a practicing family physician who owns and operates an independent practice in Fredonia, a community of approximately 2500 people in southeast Kansas. She provides outpatient, inpatient, emergency department, surgical, and endoscopic services to her community. She is heavily involved in practice-based improvement through the Aledade Kansas ACO.



MARCUS BERNARD, PHD

Director, Rural Training and Research Center, Federation of Southern Cooperatives/Land Assistance Fund

Marcus Bernard is the director of the Rural Training and Research Center for the Federation of Southern Cooperatives/ Land Assistance Fund in Epes, Alabama. Dr. Bernard's dedication to rural development originated in his own rural roots in North Carolina. As a rural organizer, he has worked with organizations such as the Concerned Citizens of Tillery, Cedar Grove Improvement Association, Operation Spring Plant, the Black Farmers and Agriculturalist Association, the North Carolina Black Farmers Association and the Black Belt Justice Center.



JENNIFER LUNDBLAD, PHD, MBA

President & CEO, Stratis Health

Dr. Lundblad is President and CEO of Stratis Health, an independent non-profit organization that leads collaboration and innovation in healthcare quality and safety, and serves as a trusted expert in facilitating improvement for people and communities. She is currently part of the Rural Health Value project team, to assist rural communities and provider organizations to succeed in a value-driven payment and care delivery environment, and the Rural Quality Improvement Technical Assistance (RQITA) team, to support rural quality measurement and improvement nationally.



LESLIE MARSH, BS, MSN, MBA, RN

CEO, Lexington Regional Health Center

Since 2010, Leslie Marsh has presided over Lexington Regional Health Center as the Chief Executive Officer through a transformational time. Under her tenure, LHRC expanded access to patient care through the addition of an Urgent/Primary Care clinic and three Rural Health Clinics. Leslie is the Treasurer for National Hospital Association; sits on the American Hospital Association's Region 6 Policy Board; and is a member of the National Rural Health Association's (NHRA) Board of Trustees and the Rural Health Policy Congress, where she serves as the NHRA Hospital and Health Systems Constituency Group Chair.



BROCK SLABACH, MPH

Senior Vice President for Member Services, National Rural Health Association

Brock joined NRHA in 2008. He has administrative responsibility for all areas of member services, including membership, communications and meetings/exhibitions. He was a rural hospital administrator for more than 21 years and cares deeply about population health and the varied payment programs moving rural providers into value based purchasing models. He serves on the CMS Star Rating Technical Expert Panel (TEP), the National Quality Forum's Measures Application Partnership (MAP) Hospital and Rural Health Workgroup and serves on the Board of Directors of the National Rural Accountable Care Consortium and Healthcare Facilities Accreditation Program (HFAP).



PEGGY WHEELER, MPH

Vice President, Rural Health Care & Governance, California Hospital Association

Peggy Broussard Wheeler serves as Vice President of the Rural Healthcare Center (RHC) at the California Hospital Association (CHA). RHC represents small and rural hospitals and other members of the sponsoring organizations who provide service to rural populations in the State of California. Ms. Wheeler is responsible for developing, advocating and executing public policies, legislation and regulations on behalf of rural hospitals at the state and national levels. Ms. Wheeler serves on the National Advisory Committee on Rural Health and Human Services.



SAM WILSON, MA

State Director, AARP Wisconsin

Sam has spent the past 17 years with AARP in both advocacy and management roles. He has spent the last 7 years as state director for AARP in Wisconsin and currently serves as an appointed member of the State of Wisconsin Long Term Care Advisory Committee and the State of Wisconsin SeniorCare Prescription Drug Benefit Advisory Committee. For the past six years, Sam has been a regular co-host of "Rural America Live," a television program on RFD-TV that focuses on health, finances, fraud prevention, and other aging-related concerns for rural families and communities.



Activity in 2018-19 on Projects Funded in 2017

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

Year funded: 2017

Lead Researcher: Carrie Henning-Smith, PhD, MPH, MSW

Investigators: Megan Lahr, MPH; Michelle Casey, MS

This project described rural-urban differences in the prevalence and intensity of informal caregiving for older adults and associated socio-demographic correlates, and identified potential policy interventions to improve the quality of life and health outcomes of rural caregivers. Most research activity was complete prior to the 2018-19 project year, but several publications and presentations stemmed from the project during the past year:

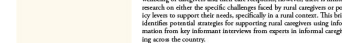
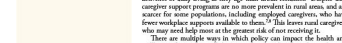
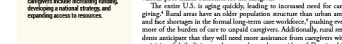
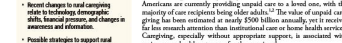
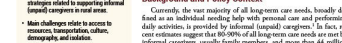
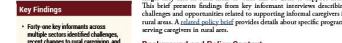
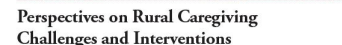
- Products include:
 - Policy brief: “Unmet Need for Personal Care Assistance among Rural and Urban Older Adults”
 - Policy brief: “Perspectives on Rural Caregiving: Challenges and Interventions”
 - Policy brief: “Resources for Caregivers in Rural Communities”
 - Manuscript: “Rural-Urban Differences in Caregiver Use of and Preference for Supportive Services” published in *Journal of Aging and Health*
 - Manuscript: “Rural-Urban Differences in Workplace Supports and Impacts for Employed Caregivers” published in *The Journal of Rural Health*
 - Special Focus Article: “Workplace supports for rural caregivers: what physicians should know” published in *Minnesota Physician*
- Presentations include: the AcademyHealth Annual Research Meeting, the National Rural Health Association Annual Conference, the Minnesota Gerontological Society of America Annual Meeting, the Minnesota Gerontological Society Annual Meeting, and the Life Course Center Seminar Series.
- Press coverage includes: The Daily Yonder, Forbes, Minnesota Public Radio (MPR), Next Avenue, The Rural Blog, Rural Health Leadership Radio, Rural Reporter, and The Wall Street Journal.

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Rural-Urban Differences in Opioid-Affected Pregnancies and Births

Year Funded: 2017

Lead Researcher: Katy Kozhimannil, PhD, MPA

Investigators: Carrie Henning-Smith, PhD, MPH, MSW; Tongtan Chantararat, MPH; Alexandra Ecklund, MPH; Cresta Jones, MD

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 helped policymakers and key stakeholders target resources to combat the opioid epidemic in rural communities. Research activity was complete prior to 2018-19, but several products and presentations stemmed from the project during the year:

- Products include:
 - Policy brief: "Rural-urban differences in non-medical opioid use among pregnant women, 2007-2014"
 - Practical Implications: "Opioid-Affected Births to Rural Residents"
 - Manuscript: "Maternal Opioid Use Disorder and Neonatal Abstinence Syndrome Among Rural US Residents, 2007-2014," published in *The Journal of Rural Health*
 - Editorial: "Structural Factors Shape the Effects of the Opioid Epidemic on Pregnant Women and Infants," published in *JAMA*
- Presentations include: the AcademyHealth Annual Research Meeting, and the National Rural Health Association Annual Conference
- Press coverage includes: Becker's Hospital Review, The Duluth News Tribune, The Fix, Minnesota Daily, Minnesota Matters News Network, News Medical Life Sciences, Quartz, and The Star Tribune



POLICY BRIEF
August 2018



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

Katy Kozhimannil, PhD

Carrie Henning-Smith, PhD

Tongtan Chantararat, MPH

Alexandra Ecklund, MPH

Cresta Jones, MD

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-related deaths. 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, programming, and clinical efforts to address this crisis.

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 the p < .05 level.

Use of alcohol, tobacco, and marijuana, and having a diagnosis of anxiety or depression were each associated with non-medical opioid use by 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, married, or widowed had increased odds of non-medical opioid use.

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 more common in rural areas.² 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).^{3,4} The incidence of NAS and the diagnosis of neonatal opioid use disorder in the U.S. increased more rapidly in rural counties relative to urban counties from 2004 to 2013.^{5,6} The effects of non-medical opioid use have a high potential for effective management when detected prior to and during pregnancy.⁷ 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 treatment (e.g., methadone, buprenorphine/naloxone), which require prescribing clinicians to obtain a waiver.⁸ 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 non-medical opioid use, 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 prevalence of non-medical opioid use among pregnant women, examined separately for rural and urban areas, this analysis

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Addressing Rural Social Isolation as a Health and Mortality Risk Factor

Year funded: 2017

Lead Researcher: Carrie Henning-Smith, PhD, MPH, MSW

Investigators: Katy Kozhimannil, PhD, MPA, Ira Moscovice, PhD, Alexandra Ecklund, MPH

This project described rural/urban differences in the prevalence of social isolation, as well identified challenges and strategies related to addressing rural social isolation in order to inform policy-making. Research activity was complete prior to 2018-19, but several products and presentations stemmed from the project during the current project year:

- Products include:
 - Policy brief: “Gender Differences in Social Isolation and Support among Rural Residents”
 - Policy Brief: “Key Informant Perspectives on Rural Social Isolation”
 - Manuscript: “Differences in Social Isolation and its Relationship to Health by Rurality,” published in the *The Journal of Rural Health*
- Presentations include: the Gerontological Society of America’s Annual Meeting, the University of Minnesota School of Public Health, Division of Health Policy and Management, the State Health Access Data Assistance Center, and the Women’s Health Research Conference.
- Press coverage includes: Brainerd Dispatch, Grand Forks Herald, InForum, Pine City Pioneer, Phys.org, The Rural Monitor, West Fargo Pioneer, WJON



POLICY BRIEF
August 2018



Gender Differences in Social Isolation and Social Support among Rural Residents

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

Purpose

Social isolation is an urgent public health problem, and there are documented 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.

Key Findings

- Social isolation is an important health risk factor that may differ across men and women, because of differences in life expectancy, community participation, or household structure.
- 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 associated 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 (55% vs. 43%).
- Men were less likely than women to say that they can open up to family (77% vs. 80%) or friends (53% vs. 54%).
- Women were more likely than men to report feeling left out some of the time or often (26% vs. 27%).

Background and Policy Context

Social isolation, including social disconnection (e.g., limited contact with school and professional isolation (e.g., loneliness), is increasingly recognized as an important determinant of health, especially in the context of an increase in “death of despair,” which have had a disproportionate impact on rural residents.^{1,2} 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.^{3,4} Social isolation is also associated with higher health care costs, including an estimated \$1.7 billion in Medicare spending annually.⁵ And, having a greater sense of social cohesion, including experienced trust, is associated with better health outcomes for individuals and communities.⁶

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.^{7,8}

There are limited research on rural older differences in social isolation, loneliness, social relationships, and the association between isolation and quality of life.^{9,10} For example, women are more likely than men to have strong social networks¹¹ and men face a higher risk of mortality related to social isolation than women.¹² Meanwhile, women may be more susceptible to the contagion effect of loneliness.¹³ However, little is known about how social isolation differs by gender among rural residents specifically.

There is limited research on rural older 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.¹⁴ 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,^{15,16} research on social isolation specific to rural areas is necessary to understand connections between people within the rural

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

Year Funded: 2017

Lead Researcher: Ira Moscovice, PhD

Investigators: Michelle Casey, MS; Alex Evenson, MA; Zhengtian Wu, MS

This project aimed 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. It assessed access to care and availability of needed care and services for rural COPD patients. Research activity was complete prior to 2018-19, but one product stemmed from the project during the year:

- Product:
- Manuscript: "Disparities in geographic access to hospital outpatient pulmonary rehabilitation programs in the U.S.," published in *CHEST*



POLICY BRIEF
June 2018



Availability of Respiratory Care Services in Critical Access and Rural Hospitals

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

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.

Key Findings

- The majority of both rural and urban hospitals provide respiratory care services, although they are not equal in terms of the number of respiratory therapists. However, Critical Access Hospitals (CAHs) are significantly less likely (55.1%) than rural Prospective Payment System (PPS) hospitals (68.1%) and urban PPS (86.8%) hospitals to provide respiratory care services.
- CAHs are also significantly less likely (38.1%) 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 hospitals 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 travel there. This is particularly concerning given higher rates of Chronic Obstructive Pulmonary Disease (COPD) prevalence and mortality among rural populations.

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. 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. 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 (14.5) than those living in large metropolitan areas (12.4) in 2015.

Respiratory care services, also known as respiratory therapy, are defined as "services provided by a physician or a non-physician practitioner for the assessment and diagnosis, evaluation, treatment, management, and monitoring of patients with deficiencies and abnormalities of cardiopulmonary function." These services may include: 1) application techniques to support oxygenation and ventilation in an acute illness (e.g., endotracheal intubation, ventilation); 2) therapeutic nebulization of medicinal gases, pharmacologically active gases and aerosols, and nebulization (e.g., nebulization, ventilation); 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 arterial blood gas analysis); 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. They may be performed by respiratory therapists (RTs), physical therapists, nurses, and other qualified personnel as described by relevant state practice acts.

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Clockwise from right: reunited with Expert Work Group members at the 2019 NRHA conference in Atlanta; exploring the local attractions after a community meeting on aging in Chisago County, Minnesota; just before a site visit to the Winneshiek Medical Center in Decorah, Iowa; a beautiful sunset in Sunburg, Minnesota, after presenting there to a discussion group meeting.





Activity in 2018-19 on Projects Funded in 2018

Developing Rural-Relevant Strategies to Reduce Maternal Mortality

Year funded: 2018

Lead Researcher: Katy Kozhimannil, PhD, MPA

Investigators: Carrie Henning-Smith, PhD, MPH, MSW; Amanda Corbett, MPH; Cori Blauer-Peterson, MPH; Angela Thompson, MD, Julia Interrante, MPH

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, etc.). The rate of severe maternal morbidity doubled between 1998 and 2011, as did maternal mortality, increasing dramatically between 1990 and 2013. 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.

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.

- Products include:
 - Manuscript: “Rural focus and representation in state and federal policies to address maternal morbidity and mortality” published in *Women’s Health Issues*
 - Blog: “Beyond The Preventing Maternal Deaths Act: Implementation and Further Policy Change” published in *Health Affairs* Blog
 - Manuscript: “Rural-Urban Differences in Severe Maternal Morbidity and Mortality in the United States” under review
- Products in preparation:
 - Policy Brief: on severe maternal morbidity among rural women by transfer status
- Presentations include: the AcademyHealth Annual Research Meeting, the National Rural Health Association Annual Conference, the University of British Columbia, and Winnishiek Medical Center



Team-Based Primary Care in Rural Communities

Year funded: 2018

Lead Researcher: Hannah Neprash, PhD

Investigators: Shailendra Prasad, MD, MPH; Ira Moscovice, PhD, MS, Laura Smith, PhD Candidate)

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.

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

- Products in in preparation:
 - Policy Brief: on antibiotic prescribing by nurse practitioners and physicians in rural vs. urban settings
 - Policy Brief: on access to same-day primary care visits in rural vs. urban practices
 - Policy Brief: on opioid prescribing by nurse practitioners and physicians in rural vs. urban practices
- Presentations include: the AcademyHealth Annual Research Meeting, and the University of Minnesota School of Public Health Research Day



Disparities in Preventive Care by Race and Ethnicity among Rural Adults

Year funded: 2018

Lead Researcher: Carrie Henning-Smith, PhD, MSW, MPH

Investigators: Katy Kozhimannil, PhD, MPA; Rachel Hardeman, PhD, MPH;
Marizen Ramirez, PhD, Ashley Hernandez, MPSH

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 may go 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. 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.

The purpose of this project is to identify differences in health and 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.

- Products include:
 - Policy Brief: “Dying too soon: county-level disparities in premature death by rurality, race, and ethnicity.”
 - Manuscript: “Missing Voices in America’s Rural Health Narrative,” commentary published in *Health Affairs*
- Products in preparation:
 - Policy Brief: Racial and ethnic differences in preventive care among rural residents
 - Manuscripts: Racial and ethnic differences in health and in access to care among rural residents; County-level correlates of premature death among rural residents
- Presentations include: the AcademyHealth Annual Research Meeting, and the National Rural Health Association
- Press coverage includes: The Duluth News Tribune and Minnesota Daily



HEALTH AFFAIRS BLOG

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Missing Voices In America's Rural Health Narrative

Katy S. Kozhimannil, Carrie Henning-Smith

APRIL 18, 2019

10.1377/hlthaff.2019.009.12256



POLICY BRIEF March 2019



Dying Too Soon: County-level Disparities in Premature Death by Rurality, Race, and Ethnicity

Carrie Henning-Smith, PhD

Ashley M. Hernandez, MPSH

Marizen Ramirez, PhD

Rachel Hardeman, PhD

Katy Kozhimannil, PhD

Purpose

In this brief, we examined county-level differences in premature death (years of potential life lost before age 75) per 100,000 people by county-level racial and ethnic composition, across rural and urban counties. We also calculated whether these were racial/ethnic disparities in mortality rates consistent with similar racial and ethnic compositions.

Background and Policy Context

Many rural communities in the United States have long been home to people of color (defined as Black, Asian, Hispanic – also called Latinx, and mixed-race individuals) and American Indian/Alaskan Natives (also called Indigenous peoples). Also, its more diverse rural America has become increasingly diverse, with a growth in immigrant populations.^{1,2} Currently, 1 in 5 rural residents is a person of color or an American Indian/Alaskan Native. There are 10 million rural residents who identify as Black, Hispanic, American Indian/Alaskan Native, Asian, or mixed-race.^{3,4}

Recent publications by the Centers for Disease Control and Prevention have highlighted several public health concerns regarding disparities by rurality and race and ethnicity: rates of premature death, all-cause mortality, and poor health outcomes are generally worse in urban residents, and the burden of some chronic health problems is disproportionately higher in rural Hispanic Whites.⁵ The literature on social determinants of health has definitively established the importance of community context in shaping all aspects of health, including mortality. This analysis examined county-level rates of premature death (defined as years of potential life lost before age 75), looking at how the public health problem affects communities based on their geography and racial and ethnic composition.

Approach

Data for this brief came from the 2017 County Health Rankings (CHRs) on all U.S. counties and county-like equivalents (to states that do not have counties, i.e., Louisiana, Alaska, and Virginia) for this analysis. The CHRs are a collection of county-level data compiled by the University of Wisconsin Population Health Institute, with funding from the Robert Wood Johnson Foundation. We used the CHR to compare county-level rates of premature death, which is an age-adjusted measure defined as years of potential life lost before age 75 per 100,000 people.⁶ The data were self-reported population rates of life lost due to premature death. In the example of an individual, who was reported to live up to 75 years but died at age 55, would have 20 years of potential life lost. This measure originally came from the National Center for Health Statistics Mortality Files.



Access to Care for Rural Medicare Beneficiaries

Year funded: 2018

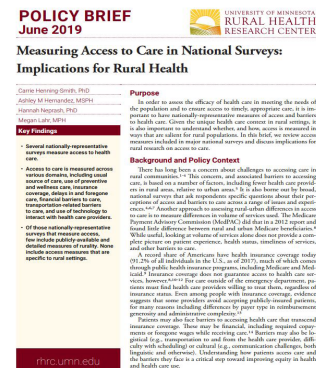
Lead Researcher: Carrie Henning-Smith, PhD, MSW, MPH

Investigators: Megan Lahr, MPH; Hannah Neprash, PhD, Ashley Hernandez, MSPH

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 insurance does not ensure access and that some Medicare beneficiaries—including rural residents—still struggle to access care when they need it.

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.

- Products include:
 - Policy brief: “Measuring Access to Care in National Surveys: Implications for Rural Health”
- Products in preparation:
 - Policy briefs: Addressing access to care for rural Medicare beneficiaries in Rural Health Clinics; Access to specialty care for rural Medicare beneficiaries; Rural-urban differences in access to care for rural Medicare beneficiaries
 - Manuscripts: Financial barriers to care for rural Medicare beneficiaries; Barriers and recommendations for improving access to care for rural Medicare beneficiaries; Rural-urban differences in satisfaction with care for rural Medicare beneficiaries
- Presentations include: the AcademyHealth Annual Research Meeting, and the National Rural Health Association Conference





Upcoming Projects, 2019-20

Emergency Obstetrics in Communities without Hospital-Based Maternity Care

Lead Researcher: Katy Backes Kozhimannil, PhD, MPA

Investigators: Julia Interrante, MPH, Mariana Tuttle, MPH

Increasingly, rural hospitals are closing obstetric units, and local families have to travel far from home to give birth. Our research has documented the potential health risk of losing hospital-based obstetric services, including increases in preterm delivery, out-of-hospital births, and emergency room births. Limited information is available about local preparedness and capacity to support emergency obstetric services in rural communities with no hospital that provides this care or those that close this service line.

The purpose of this project is to 1) to describe rural hospitals that do not provide obstetric services, 2) to survey a sample of these hospitals regarding their capacity for emergency obstetrics locally, and 3) to describe emergency obstetrics capacity at rural hospitals that do not routinely offer childbirth services.



Meeting with a local Ob/Gyn physician and the CEO of the hospital in Bigfork, Minnesota.

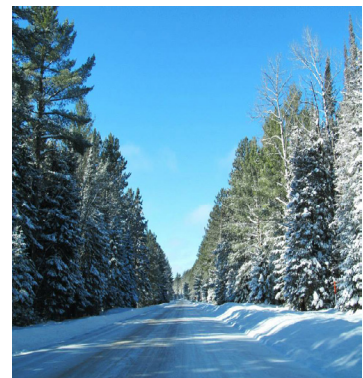
Community Context and Rural Strategies to Support the Oldest Old

Lead researcher: Carrie Henning-Smith, PhD, MPH, MSW

Investigators: Megan Lahr, MPH, Minnesota Population Center

The population of adults age 85 and older makes up one of the fastest-growing segments of the U.S. population. People in this age group are more likely to have chronic conditions and complex care needs. Meanwhile, rural areas are aging faster than urban, but it is unclear to what extent the “oldest old” are concentrated in rural areas and what the characteristics of their communities and strategies to support them are. Underlying all of these trends is the fact that there is limited information characterizing older adults in rural areas in general, and how they differ from older adults in urban areas.

The purpose of this project is to: 1) develop a chartbook describing the characteristics of older adults in rural areas (e.g., health status, disability, age, gender, race, ethnicity, educational attainment, insurance status, receipt of SSI, living arrangements), as well as rural-urban differences among older adults, 2) assess rural-urban differences in the prevalence of the “oldest old” by county, 3) identify where in the U.S. rural residents age 85 and older are most likely to live, including what rural counties have experienced the fastest growth in this population, and 4) to identify rural-relevant strategies to support growing populations of the oldest old.



Rural places are stunningly beautiful, yet can present particular challenges (e.g. winter driving) for aging residents.

Living Alone: Rural-Urban Differences in Prevalence, Socio-Demographic Correlates, and Health Needs Across the Lifespan

Year funded: 2019

Lead researcher: Carrie Henning-Smith, PhD, MPH, MSW

Investigators: Ashley Hernandez, MSPH, Mariana Tuttle, MPH, Katy Kozhimannil, PhD, MPA, Minnesota Population Center

There has been a steady increase in the prevalence of living alone across the U.S. over the past century, with more people living alone today than ever before. Living alone is a primary risk factor for social isolation and has been associated with poorer health. However, very little is known about the prevalence and correlates of living alone for rural residents and how those differ from urban residents.

The purpose of this project is: 1) to document rural-urban differences in the prevalence of living alone, across different age groups, 2) to describe rural-urban differences in the socio-demographic correlates and health needs of individuals living alone, and 3) to identify rural-relevant policies and programs to support rural residents living alone, across the lifespan.



Rural residents living alone may experience challenges and joys that differ from folks living alone in urban areas.

Making Rural Maternity Care Work: Models of Success

Year funded: 2019

Lead researcher: Katy Backes Kozhimannil, PhD, MPA

Investigators: Megan Lahr, MPH, Julia Interrante, MPH, Carrie Henning-Smith, PhD, MSW, MPH

Across the U.S. a growing number of rural hospitals are no longer offering obstetric services. Some rural hospitals are defying national trends by maintaining pregnancy and childbirth services locally. Understanding the factors that underlie successful models of rural maternity care can inform communities and hospitals that struggle to keep this service available locally.

The purpose of this project is to 1) to update information on access to obstetric services in rural counties, and 2) to discern common factors across rural communities that have maintained local obstetric services, and 3) to describe best practices associated with successfully supporting birth locally in rural communities.



We are grateful to collaborate with physicians like John Cullen and hospital administrators like Benjamin Anderson, who are using innovative means to care for their rural communities. Here we are at NRHA 2019.

Acknowledgements

Funding

We are grateful for generous funding support from the Federal Office of Rural Health Policy (FORHP). Part of the Health Resources and Services Administration, FORHP coordinates activities related to rural health care within the U.S. Department of Health and Human Services. For more information about all of the Rural Health Research Centers funded by FORHP, visit www.ruralhealthresearch.org. To support our work: <https://give.umn.edu/giveto/ruralhealth>.

Acknowledgment of Native Lands

The University of Minnesota Rural Health Research Center acknowledges the Dakota people, who are the First People of Mni Sota Makoce. The Dakota people have an ancient historical and spiritual connection to the land that the University of Minnesota Twin Cities was built and remains on. It is essential to acknowledge that we illegally and unjustly occupy unceded Dakota land. We commit ourselves to actions and practices that address the injustices from which our school benefits.

Today, the state of Minnesota is home to twelve federally and non-federally recognized indigenous nations, including five Dakota Nations and seven Ojibwe Nations. Those nations include the Prairie Island Indian Community, Shakopee Mdewakanton Indian Community, Lower Sioux Indian Community, Upper Sioux Community, Mendota Mdewakanton Tribal Community, Bois Forte Band of Chippewa, Red Lake Nation, Leech Lake Band of Ojibwe, Mille Lacs Band of Ojibwe, White Earth Nation, Fond du Lac Band of Ojibwe, and Grand Portage Band of Lake Superior Chippewa.

University of Minnesota Environment

Our Center is located within the University of Minnesota, and we benefit from the breadth of expertise available among our colleagues at the University. Our Center's home is the Division of Health Policy and Management in the School of Public Health.

Photography

Kathleen Henning is a photographer who beautifully captures the awe-inspiring nature of rural places. Her work is reproduced with her permission on our website, and throughout this report.



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Funded by the Federal Office of Rural Health Policy
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