



Call to Action: Rural Health
A Presidential Advisory from the American Heart Association
and American Stroke Association

Executive Summary

2/10/20

Understanding and addressing the unique health needs of people residing in rural America is critical to the American Heart Association's pursuit of a world of longer, healthier lives. Improving the health of rural populations is consistent with the Association's commitment to health equity and its focus on social determinants of health to reduce and, ideally, eliminate health disparities. The presidential advisory summarizes existing data on rural populations, communities and health outcomes; explores three major groups of factors underlying urban-rural disparities in health outcomes; proposes a set of solutions spanning health system innovation, policy and research; and concludes with a call to action for the Association and other stakeholders to make rural populations a priority in programming, research and policy.

Rural Populations, Communities and Health Outcomes

"Rural" generally describes areas with low or geographically diffuse populations; rural populations tend to be older,¹ have lower population growth,² and higher rates of poverty. While whites comprise almost 80% of the rural population,² there is great racial and ethnic diversity in rural America by geography² (e.g., non-Hispanic black individuals in the rural South, Hispanic individuals in the southwest, and American Indian/Alaska Natives in Oklahoma, the Great Plains, the American Southwest and Alaska).

There is a three-year life expectancy gap between rural and urban populations,³ with rural areas having higher death rates for cardiovascular disease (CVD) and stroke than urban areas;^{4, 5} similarly, rural women face higher maternal mortality rates as compared to urban women, with the growth in maternal mortality largely driven by an increase in cardiovascular deaths.⁶

Rural areas have significantly higher rates of uncontrolled traditional cardiovascular risk factors compared with urban areas. Among rural populations, there are higher rates of tobacco use,⁷ physical inactivity⁸ and obesity,⁹ as well as higher rates of diabetes and hypertension.¹⁰ Rural areas also experience less favorable mental and behavioral health,¹¹ and in recent years there has been a marked increase in drug

misuse and in drug overdose deaths in rural areas, such that by 2015, drug overdose death rates were higher in rural areas than in urban areas. This disparity is in large part integrally related with the opioid crisis, which has disproportionately impacted specific rural areas.^{12, 13}

Factors underlying urban-rural disparities in health outcomes

Inequalities in CVD, in part, relate back to the ways in which social determinants of health can negatively impact rural populations. Income, education, employment, housing, transportation and food insecurity each influence health outcomes, as does access to care. Rural Americans face unique challenges in each of these areas. From 2013–2017, the median household income in mostly rural counties was \$47,020 – \$10,000 less than the national median household income.¹⁴ While school age children in rural areas of the U.S. perform comparably to their peers on standardized tests and graduate from high school at higher than national rates,¹⁵ overall educational attainment is lower in rural compared with urban areas. Higher educational attainment is associated with lower odds of mortality in U.S adults across age category, sex and racial/ethnic subpopulations.¹⁶

The restructuring of the rural economy has been a source of stress in the rural United States. Unemployment in rural areas nearly doubled from 2000 to 2010, worse than the national trend,¹⁷ and rural areas have been slower to recover jobs following the “Great Recession.” Rental options are limited in rural areas¹⁷ and housing options in rural areas, overall, are often poor quality: almost six percent of rural homes are moderately or severely substandard, with inadequate heating or plumbing systems, leaks or pests.¹⁸ Transportation issues facing rural populations include infrastructure issues, high costs, lack of vehicle access and long travel distances, which can lead to delays in treatment, inappropriate medical treatment and unmet health care needs.¹⁹ Food insecurity disproportionately impacts rural communities; according to Feeding America, 2.4 million rural households are food insecure, and 86% of the counties with the highest rates of child food insecurity are rural.²⁰

There are also multiple health care delivery system factors that impact overall and cardiovascular health for rural residents. Hospital and outpatient facility care, clinician supply, insurance coverage and public health infrastructure all differ between urban and rural areas. Rural hospitals are markedly smaller and average lower volumes than urban hospitals. In addition, rural hospitals are often reimbursed differently from urban hospitals, although margins at rural hospitals are less than at urban ones, and have higher uncompensated care.²¹ Sixty percent of rural hospitals are designated as Critical Access Hospitals,²¹ which vary in size and capacity, but tend to have less capacity to provide intensive care and inpatient rehabilitation services than hospitals without a CAH designation,²² which limits access to certain services for rural residents. Access continues to worsen nationwide as hospital closures accelerate in an increasingly difficult financial scenario as rural hospitals provide jobs and important infrastructure for rural communities and thus many have importance beyond their health care delivery role alone.

In rural areas, acutely ill or injured persons may face geographic and other transportation barriers to reaching definitive care expediently. Outpatient care (including primary care, specialty care, and other services) in rural settings may also be more difficult to access, resulting in fewer preventive or chronic care visits, which can impact cardiovascular health.²³

Rural areas face significant workforce shortages across primary and specialty care. These shortages are expected to worsen in coming years as the population ages and demand for primary care physicians continues to rise.^{24,25} The provision of emergency care in the rural United States also faces challenges related to personnel. Adequate provision of acute care is further complicated by the national shortage of registered nurses, which is more significant in rural areas than urban, again leading to potential quality and access issues.^{26,27} The national nursing shortage also affects staffing in skilled nursing facilities and home health agencies.

Rural populations have higher rates of uninsurance than urban populations. A greater proportion of rural residents are covered by Medicaid than their suburban and urban counterparts.²⁸ The fact that many of the most rural states in the U.S. are those that have not elected to expand Medicaid, therefore, has had a significant adverse impact on rural communities, likely with a negative effect in terms of financial strain. This dynamic has also likely contributed to the widening gaps in health between urban and rural areas.^{29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43} Private insurance markets operate less efficiently in rural areas, leading to difficulties in the availability of affordable private plans.⁴⁴ Veterans Affairs hospitals and the Indian Health Service play a disproportionate role in rural health care provision. Rural local health departments provide direct patient care and do so more often than urban Local Health Departments.⁴⁵ Health departments often provide services such as immunizations as well as screening for and treatment of tuberculosis and sexually transmitted diseases, but more comprehensive primary care is much less commonly offered.⁴⁵ Despite the limited capacity and services, in many small communities, the local health department functions as the safety net provider.

Promising Solutions

Given the multi-factorial and highly complex nature of issues facing rural populations, broad, innovative and sustained approaches are needed, including those related to care delivery, complementary policy reforms and supporting research.

These approaches fall into the following four areas:

Expanding the workforce and fostering team-based care: Efforts to address the shortage of rural health care professionals, such as supporting medical schools and education in rural areas and of rural individuals, loan forgiveness and rural rotations, should be considered. Developing new rural-specific team-based care models that leverage a multi-disciplinary care team, including emergency medical technicians, pharmacists and community health workers, along with assuring scope of practice laws facilitate rural workforce development, should also be explored.

Exploring new models and sites of care delivery: Approaches that leverage telehealth and digitally enabled health care supported by an adequate digital technology infrastructure may improve access to health services for rural populations by connecting across geographies. Models that use existing infrastructure, such as schools, churches, pharmacies and retail sites, Federally Qualified Health Centers, Rural Health Centers, the Veterans Administration and Indian Health Service, should be leveraged. Regionalization that formally connects health care provider organizations and clinicians in rural areas to larger, urban systems of care with greater resources could be further utilized.

Fostering sustainable funding models and flexible payment to support rural care delivery: Sustainable funding models that recognize the unique elements of rural health care delivery must be created to enable rural facilities to remain viable and new or altered funding mechanisms developed that address barriers to sustainability in rural health facility and program funding.

Expanding affordable insurance coverage and broader economic development: Policies including Medicaid expansion and insurance market reform could be particularly impactful in rural areas to improve access to health insurance and health care services. The financial sustainability of health care systems will also rely on the overarching economic prosperity and revitalization of rural communities.

Research Gaps

In order to support these investments in workforce, retooling of infrastructure and policy reforms, a major research program is needed to fill current gaps and examine emerging areas of innovation. Research is needed to better understand which delivery models are most effective, scalable and efficient, as well as which configuration of clinicians and community-based practitioners and associated clinical and payment models are most effective. This includes assessing the training and competency needs for these clinicians and more robust and more systematic data collection. This data could be used to assess triage and transfer patterns across rural and rural-serving facilities and facilitate development of rural-specific quality measures. Across this research, more dedicated funding and support for community-centered approaches to research is necessary.

Call to Action

The American Heart Association is committed to working with strategic partners to develop solutions to improve rural health in America. We pledge to work with stakeholders across the ecosystem in support of our collective goals. Examples of focus areas include:

- Virtual expansion of quality improvement initiatives that have traditionally been facility-based.

- Advocacy in support of policy priorities that support an affordable, accessible and adequate system of care for all residents of the United States.
- Application of technologies to address health equity and drive a more accessible model in health care for all.
- Development of the evidence base in support of approaches to address the needs of rural populations.
- Examination and testing of emerging approaches in cardiovascular care that are particularly relevant to rural areas.
- Identification and support of the training needs of the variety of health care professionals.
- Facilitating the spread and coverage of new models.
- Extending reach of educational initiatives to rural consumers.
- Improving awareness of rural health challenges among lawmakers and policymakers.

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- ¹ United States Department of Agriculture Economic Research Service. *Rural America at a Glance: 2018 Edition*. Washington, DC: USDA; November 2018.
- ² Parker K, Horowitz J, Brown A, Fry R, Cohn D, Igielnik R. *What Unites and Divides Urban, Suburban, and Rural Communities*. Washington, DC: Pew Research Center;2018
- ³ Singh GK, Daus GP, Allender M, et al. Social Determinants of Health in the United States: Addressing Major Health Inequality Trends for the Nation, 1935-2016. *Int J MCH AIDS*. 2017;6(2):139-164.
- ⁴ Garcia MC, Faul M, Massetti G, et al. Reducing Potentially Excess Deaths from the Five Leading Causes of Death in the Rural United States. *Morbidity and mortality weekly report Surveillance summaries (Washington, DC : 2002)*. 2017;66(2):1-7.
- ⁵ Moy E, Garcia MC, Bastian B, et al. Leading Causes of Death in Nonmetropolitan and Metropolitan Areas- United States, 1999-2014. *Morbidity and mortality weekly report Surveillance summaries (Washington, DC : 2002)*. 2017;66(1):1-8.
- ⁶ Centers for Disease Control and Prevention. Pregnancy Mortality Surveillance System. 2019. <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pregnancy-mortality-surveillance-system.htm>. Accessed January 2, 2020.
- ⁷ Matthews KA, Croft JB, Liu Y, et al. Health-Related Behaviors by Urban-Rural County Classification - United States, 2013. *Morbidity and mortality weekly report Surveillance summaries (Washington, DC : 2002)*. 2017;66(5):1-8
- ⁸ Patterson PD, Moore CG, Probst JC, Shinogle JA. Obesity and physical inactivity in rural America. *J Rural Health*. 2004;20(2):151-159
- ⁹ Lundeen EA, Park S, Pan L, O'Toole T, Matthews K, Blanck HM. Obesity Prevalence Among Adults Living in Metropolitan and Nonmetropolitan Counties - United States, 2016. *MMWR Morbidity and mortality weekly report*. 2018;67(23):653-658.
- ¹⁰ Centers for Disease Control and Prevention, National Center for Health Statistics. *Summary Health Statistics: National Health Interview Survey, 2017*. 2018.
- ¹¹ Goldstein BI, Carnethon MR, Matthews KA, et al. Major Depressive Disorder and Bipolar Disorder Predispose Youth to Accelerated Atherosclerosis and Early Cardiovascular Disease: A Scientific Statement From the American Heart Association. *Circulation*. 2015;132(10):965-986.
- ¹² Monnat S, Rigg K. *The Opioid Crisis in Rural and Small Town America*. Durham, NH: University of New Hampshire, Carsey School of Public Policy;2018.
- ¹³ Pullen E, Oser C. Barriers to substance abuse treatment in rural and urban communities: counselor perspectives. *Subst Use Misuse*. 2014;49(7):891-901
- ¹⁴ Guzman G, Posey KG, Bishaw A, Benson C. Poverty Rates Higher, Median Household Income Lower in Rural Counties Than in Urban Areas. *Differences in Income Growth Across U.S. Counties* 2018; <https://www.census.gov/library/stories/2018/12/differences-in-income-growth-across-united-states-counties.html>.
- ¹⁵ Institute of Education Sciences. *The Status of Rural Education*. National Center for Education Statistics;2013.
- ¹⁶ Hummer RA, Hernandez EM. The Effect of Educational Attainment on Adult Mortality in the United States. *Popul Bull*. 2013;68(1):1-16.
- ¹⁷ Housing Assistance Council. *Taking Stock: Rural People, Poverty, and Housing in the 21st Century*. 2012.
- ¹⁸ National Rural Housing Coalition. Barriers to Affordable Rural Housing. 2018; <http://ruralhousingcoalition.org/overcoming-barriers-to-affordable-rural-housing/>.
- ¹⁹ Syed ST, Gerber BS, Sharp LK. Traveling towards disease: transportation barriers to health care access. *J Community Health*. 2013;38(5):976-993.
- ²⁰ Feeding America. Millions of rural children struggle with hunger. 2018; <https://www.feedingamerica.org/hunger-in-america/rural-hunger-facts>.
- ²¹ Snyder JE, Samson LW, Joynet KE. *Rural Hospital Participation and Performance in Federal Health Care Delivery System Reform Initiatives*. Washington, D.C.: Office of the Assistant Secretary for Planning and Evaluation, United States Department of Health and Human Services;2016
- ²² Gadzinski AJ, Dimick JB, Ye Z, Zeller JL, Miller DC. Transfer rates and use of post-acute care after surgery at critical access vs non-critical access hospitals. *JAMA surgery*. 2014;149(7):671-677.

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- ²³ Arcury TA, Preisser JS, Gesler WM, Powers JM. Access to transportation and health care utilization in a rural region. *J Rural Health*. 2005;21(1):31-38.
- ²⁴ U.S. Department of Health & Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis. *National and Regional Projections of Supply and Demand for Primary Care Practitioners: 2013-2025*. Rockville, Maryland. 2016.
- ²⁵ Barnes H, Richards MR, McHugh MD, Martsolf G. Rural And Nonrural Primary Care Physician Practices Increasingly Rely On Nurse Practitioners. *Health Aff (Millwood)*. 2018;37(6):908-914
- ²⁶ Buerhaus PJ. Current and Future State of the US Nursing Workforce. *JAMA*. 2008;300(20):2422-2424.
- ²⁷ Cramer M, Nienaber J, Helget P, Agrawal S. Comparative analysis of urban and rural nursing workforce shortages in Nebraska hospitals. *Policy Polit Nurs Pract*. 2006;7(4):248-260.
- ²⁸ Kaiser Family Foundation. The Role of Medicaid in Rural America. 2017; <https://www.kff.org/medicaid/issue-brief/the-role-of-medicaid-in-rural-america/>. Accessed June 18, 2019.
- ²⁹²⁹ Baicker K, Taubman SL, Allen HL, et al. The Oregon experiment--effects of Medicaid on clinical outcomes. *N Engl J Med*. 2013;368(18):1713-1722.
- ³⁰ Hu L, Kaestner R, Mazumder B, Miller S, Wong A. The effect of the Patient Protection and Affordable Care Act Medicaid expansions on financial well-being. *National Bureau of Economic Research*. 2016.
- ³¹ Wadhera RK, Bhatt DL, Wang TY, et al. Association of State Medicaid Expansion With Quality of Care and Outcomes for Low-Income Patients Hospitalized With Acute Myocardial Infarction. *JAMA Cardiol*. 2019;4(2):120-127.
- ³² Sommers BD, Blendon RJ, Orav EJ, Epstein AM. Changes in Utilization and Health Among Low-Income Adults After Medicaid Expansion or Expanded Private Insurance. *JAMA Intern Med*. 2016;176(10):1501-1509.
- ³³ Sommers BD, Gunja MZ, Finegold K, Musco T. Changes in Self-reported Insurance Coverage, Access to Care, and Health Under the Affordable Care Act. *JAMA*. 2015;314(4):366-374.
- ³⁴ Wherry LR, Miller S. Early Coverage, Access, Utilization, and Health Effects Associated With the Affordable Care Act Medicaid Expansions: A Quasi-experimental Study. *Ann Intern Med*. 2016;164(12):795-803.
- ³⁵ Kaufman HW, Chen Z, Fonseca VA, McPhaul MJ. Surge in newly identified diabetes among medicaid patients in 2014 within medicaid expansion States under the affordable care act. *Diabetes Care*. 2015;38(5):833-837.
- ³⁶ Cole MB, Galarraga O, Wilson IB, Wright B, Trivedi AN. At Federally Funded Health Centers, Medicaid Expansion Was Associated With Improved Quality Of Care. *Health Aff (Millwood)*. 2017;36(1):40-48.
- ³⁷ Ghosh A, Simon K, Sommers BD. The effect of state Medicaid expansions on prescription drug use: evidence from the Affordable Care Act. *National Bureau of Economic Research*. 2017.
- ³⁸ Ghosh A, Simon K, Sommers BD. The effect of state Medicaid expansions on prescription drug use: evidence from the Affordable Care Act. *National Bureau of Economic Research*. 2017.
- ³⁹ Sommers BD, Baicker K, Epstein AM. Mortality and access to care among adults after state Medicaid expansions. *N Engl J Med*. 2012;367(11):1025-1034.
- ⁴⁰ Sommers BD, Long SK, Baicker K. Changes in mortality after Massachusetts health care reform. *Ann Intern Med*. 2015;162(9):668-669.
- ⁴¹ Miller S, Wherry LR. Health and Access to Care during the First 2 Years of the ACA Medicaid Expansions. *N Engl J Med*. 2017;376(10):947-956.
- ⁴² Health Insurance Coverage of Adults 19-64. *The Kaiser Family Foundation* 2017; <https://www.kff.org/other/state-indicator/adults-19-64/?currentTimeframe=0&sortModel=%7B%22colld%22:%22Location%22,%22sort%22:%22asc%22%7D>. Accessed November 1st, 2017.
- ⁴³ Khatana SAM, Bhatla A, Nathan AS, et al. Association of Medicaid Expansion With Cardiovascular Mortality. *JAMA Cardiol*. 2019;4(7):671-679
- ⁴⁴ Kaiser Family Foundation. How Affordable are 2019 ACA Premiums for Middle-Income People? 2019; <https://www.kff.org/health-reform/issue-brief/how-affordable-are-2019-aca-premiums-for-middle-income-people/>. Accessed June 18, 2019.
- ⁴⁵ National Association of County and City Health Officials. *2016 National Profile of Local Health Departments*. Washington, DC2016.