

Exploring Factors That Affect Rural Health

Sarina Schragger, MD, MS, *WMJ* Editor-in-Chief

Approximately 20% of Americans live in rural areas—a number that is even higher in Wisconsin, with almost a third of Wisconsin citizens living in rural areas. The definition of rural is not always clear. In fact, the US Census Bureau defines a rural county as one that is not near a metropolitan area, and a metropolitan area is defined as having cities with a population of 50,000 or greater.¹ So rural areas are counties that do not have a metropolitan area within their geographic boundaries, nor are they adjacent to metropolitan areas. As defined, rural counties encompass small communities or towns and agricultural land masses.¹

Rural-urban health disparities are well documented.² Rural Americans are less likely to have health care, have decreased access to health care, and may often need to travel long distances to find a doctor or hospital. Rural areas face shortages in both primary care and specialty care clinicians. Overall, death rates are higher in rural areas, with significantly higher opioid overdoses as well.²

The COVID-19 pandemic has amplified many of these disparities. Rural intensive care units (ICU) are small and have not been able to keep up with the onslaught of COVID patients.³ Early data showed that patients with COVID were three times more likely to die from COVID-related factors if they were admitted to hospitals with fewer than 50 ICU beds as compared to hospitals with more than 100 ICU beds.⁴ Many rural hospitals have less

than 10 ICU beds, which would mean that people admitted to rural ICUs with COVID would have worse outcomes. In addition, a survey of a nationally representative group of 5000

within 30 minutes of a level III trauma center. Distance to trauma center has been correlated with successful outcomes, so the fact that so many children in Wisconsin live far away from

Rural Americans are less likely to have health care, have decreased access to health care, and may often need to travel long distances to find a doctor or hospital.

people found that rural residents were less likely to have performed behaviors to lessen the risk of contracting COVID (ie, wearing masks or social distancing).⁵ The transition to remote school and work environments also has been challenging for many rural residents, as access to reliable broadband internet can be unreliable.

The *WMJ* has a longstanding interest in rural health due to the high numbers of Wisconsin residents who live in rural areas.⁶ Three such papers are highlighted in this issue. Two studies characterize trauma care in rural Wisconsin and the third looks at national mortality trends in rural vs urban areas as well as mental health outcomes. Park et al⁷ used a Google Map interface to determine distance to trauma centers for children living all over Wisconsin. They found that only 31% of children in the state lived within 30 minutes of a level I trauma center, but over 80% lived

a level I trauma center could be concerning. The authors suggest that rural hospitals prepare to take care of pediatric trauma cases in all situations. Marshfield Clinic researchers⁸ looked at 18 years of data (2000-2018) from their level II trauma center and found that trends in deaths mirrored those in national-level data. They saw an older population and increased trauma from falls.

A third paper in this issue by Anderson et al used county-level data from every county in the US and found, counter to previous literature, that as the county became more rural, cardiac mortality decreased.⁹ Other literature has shown that people living in rural areas had increased risk of cardiac mortality,² but this study did not. The study also looked at number of “unhealthy mental health days” and found that as people’s county became more rural, they had fewer unhealthy mental health days.

One trend that has emerged from the last two years of a pandemic is the increase in attention to rural health and the promotion of telehealth options of care, which may be ideal for people who live long distances away from health care. The US Department of Health and Human Services designated \$1 billion to improve the COVID-19 response in rural areas. The money is designated to increase vaccine use and to support small hospitals by increasing infrastructure.¹⁰ We may not be finished with this pandemic, but hopefully, some progress in improving rural health will remain.

REFERENCES

1. What is rural? Economic Research Service. US Department of Agriculture. Accessed Sept 2, 2021. <https://www.ers.usda.gov/topics/rural-economy-population/rural-classifications/what-is-rural/>
2. Warshaw R. Health disparities affect millions in rural US Communities. *AAMC News*. October 31, 2017. Accessed Sept 2, 2021. <https://www.aamc.org/news-insights/health-disparities-affect-millions-rural-us-communities>
3. Solenkova N. Op-ed: rural hospitals struggling with COVID care—ICUs stretched past the breaking point. *MedPage Today*. November 30, 2020. Accessed September 2, 2021. <https://www.medpagetoday.com/infectiousdisease/covid19/89930>
4. Gupta S, Hayek SS, Wang W, et al. Factors associated with death in critically ill patients with coronavirus disease 2019 in the US. *JAMA Intern Med*. 2020;180(11):1436–1447. doi:10.1001/jamainternmed.2020.3596
5. Callaghan T, Lueck JA, Trujillo KL, Ferdinand AO. Rural and urban differences in COVID-19 prevention behaviors. *J Rural Health*. 2021;37(2):287–295. doi:10.1111/jrh.12556
6. Schragger S. Rural health in Wisconsin—looking to the future. *WMJ*. 2019;117(5):192–193.
7. Park KY, Eithun BL, Havlena J, et al. Driving time to trauma centers for children living in Wisconsin. *WMJ*. 2021;120(3):174–177.
8. McClure DK, Cullinane DC, Maldonado, IL. Trends in mortality at a level II rural trauma center. *WMJ*. 2021;120(3):178–182.
9. Anderson D, Beinhoff P, Ruffalo L. Rural residence predicts lower cardiac mortality and better mental health outcomes. *WMJ*. 2021;120(3):183–187.
10. Rubin R. Funding for rural COVID-19 care. *JAMA*. 2021;325(24):2426. doi:10.1001/jama.2021.8995

Letters to the Editor

continued from page 168

REFERENCES

1. Terlizzi EP, Black LI. Shingles vaccination among adults aged 60 and over: United States, 2018. NCHS Data Brief, no 370. National Center for Health Statistics; 2020. Accessed August 19, 2021. <https://www.cdc.gov/nchs/products/databriefs/db370.htm>
2. Elekwachi O, Wingate LT, Clarke Tasker V, et al. A review of racial and ethnic disparities in immunizations for elderly adults. *J Prim Care Community Health*. 2021;12; 21501327211014071. doi:10.1177/21501327211014071
3. Vogelsang EM, Polonijo AN. Social determinants of shingles vaccination in the United States. *J Gerontol B Psychol Sci Soc Sci*. 2021;gbab074. doi:10.1093/geronb/gbab074
4. Straits-Tröster KA, Kahwati LC, Kinsinger LS, Orelien J, Burdick MB, Yevich SJ. Racial/ethnic differences in influenza vaccination in the Veterans Affairs healthcare system. *Am J Prev Med*. 2006;31(5):375–382. doi:10.1016/j.amepre.2006.07.018

5. Brewer NT, Chapman GB, Rothman AJ, Leask J, Kempe A. Increasing vaccination: putting psychological science into action. *Psychol Sci Public Interest*. 2017;18(3):149–207. doi:10.1177/1529100618760521

...

Corresponding Author: Marvin J. Bittner, MD, Veterans Health Administration Nebraska-Western Iowa Healthcare System, 4101 Woolworth Ave (111D), Omaha, NE 68105; email marvin.bittner@va.gov; ORCID ID 0000-0002-2464-8819.

Author Affiliations: Veterans Health Administration Nebraska-Western Iowa Healthcare System, Omaha, Nebraska (Bittner); Creighton University School of Medicine, Omaha, Nebraska (Bittner, Truong, Creech).

Financial Disclosures: None declared.

Funding/Support: None declared.

Let us hear from you!

If an article strikes a chord or you have something on your mind related to medicine, share it with your colleagues. Email your letter to the editor to wmj@med.wisc.edu.

WMJ

Let **MatchingDonors.com** Help You
FIND YOUR LIVING ORGAN DONOR TODAY

Search over **15,000+** Willing Donors

Many of our patients receive their transplant in just **6 months**

a 501(c)(3) nonprofit organization
1-781-821-2204

MatchingDonors



advancing the art & science of medicine in the midwest

WMJ

WMJ (ISSN 1098-1861) is published through a collaboration between The Medical College of Wisconsin and The University of Wisconsin School of Medicine and Public Health. The mission of *WMJ* is to provide an opportunity to publish original research, case reports, review articles, and essays about current medical and public health issues.

© 2021 Board of Regents of the University of Wisconsin System and The Medical College of Wisconsin, Inc.

Visit www.wmjonline.org to learn more.