

Study indicates US rural counties have higher diabetes-related deaths

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Credit: AI-generated image ([disclaimer](#))

In a new study published in *JAMA Network Open*, Mayo Clinic researchers identified substantial health disparities in rural versus urban areas in diabetes-related deaths, with other disparities based on gender.

Using nationwide data from the Centers for Disease Control and

Prevention, the researchers examined rates and trends from 1999 to 2018, in [diabetes](#)-related deaths among adults based on county urbanization, gender, age group, and region. In 2017–2018 compared with 1999–2000, diabetes-related deaths increased in men living in [rural areas](#) but decreased in women living in rural areas. Furthermore, [death rates](#) increased in adults 25 to 54 years old living in rural areas, and death rates increased in the rural South but not in other regions.

"Our goal was to examine the trends below a national level in diabetes-related deaths to guide the development of rural interventions to reduce deaths," says Sagar Dugani, M.D., Ph.D., lead author of the study. "Our results highlight the importance of exploring individual and community factors for diabetes-related deaths in rural areas."

Diabetes is a chronic condition that requires lifelong care. In the U.S., the prevalence of diabetes and access to diabetes care are affected by several factors, including residency in rural areas.

According to Dr. Dugani, the prevalence of diabetes is determined, in part, by trends in death rates. However, in rural populations, information is sparse on trends in diabetes-related deaths, thereby limiting the development of rural interventions to reduce death rates.

He notes that national trends in death rates, as reported for prevalence and incidence, do not necessarily reflect trends existing below a national level, which may be more meaningful for targeted efforts to monitor, manage and improve diabetes care.

"This study identifies the burden of diabetes in rural counties and highlights the unfinished business of improving rural health," says Dr. Dugani.

"The important message here is that while net improvements in diabetes-

related outcomes seem to have occurred over the span of the study, this improvement is not uniform and should at the very least spur additional investigation into the causes of these differences," says Adrian Vella, M.D., senior author of the study.

The researchers continue to focus on rural counties with high diabetes-related deaths. They will use artificial intelligence approaches to combine individual and community factors to understand the determinants of death rates. This approach will guide interventions personalized for different counties.

Dr. Dugani notes that in the U.S., diabetes is the costliest chronic disease and has a high burden of disability and death. "Our work is focused on reducing this risk to help people live healthier, happier lives," he says.

More information: Sagar B. Dugani et al, Assessment of Disparities in Diabetes Mortality in Adults in US Rural vs Nonrural Counties, 1999-2018, *JAMA Network Open* (2022). [DOI: 10.1001/jamanetworkopen.2022.32318](https://doi.org/10.1001/jamanetworkopen.2022.32318)

Provided by Mayo Clinic

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