

Study details effects of heat-related emergencies: Vulnerable populations found to be most at risk

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In the first national estimate of county-level disparities in heat-related emergencies, a new study led by investigators from the Harvard Pilgrim Health Care Institute found that vulnerable communities were at high

risk.

The study, "County-Level Disparities in Heat-Related Emergencies," was [published](#) in *JAMA Network Open*.

Climate change has led to significant heat waves with increasing frequency and intensity; the hottest on record occurred in July 2023. Prior studies have highlighted the role of extreme heat waves on significant [health](#)-related outcomes including cardiovascular and all-cause mortality at the local level, but there has been little information on a national level, which can better inform federal policy changes.

"The more specific we can be about how extreme heat impacts [vulnerable communities](#), the better," said senior author Hao Yu, Harvard Medical School associate professor of population medicine at the Harvard Pilgrim Health Care Institute. "Our study provides a county-level 'heat map' with precise data that has the potential to shape evidence-informed responses to these severe health threats."

This study examined the distribution of emergency [medical service](#) (EMS) activation during the July 2023 [heat wave](#) in the United States and described the characteristics of counties with high levels of heat-related EMS activation.

The study population included all residents in the U.S. in July 2023 using county-level data from the Department of Health and Human Services Office of Climate Change and Health Equity and the CDC, including heat-related EMS activation data, temperature and precipitation data, the CDC social vulnerability index, and the University of Wisconsin's Area Deprivation Index.

Study results showed that nearly one-quarter of U.S. counties had substantially high heat-related EMS action or greater than 200% of the

national average (3.6 per 100,000 residents). Those counties were concentrated in the South, Midwest, and Southwest. Additionally, high heat-related EMS activation was found in counties with higher social vulnerability index and area deprivation index.

"Our study shows that heat-related emergencies were widespread in communities already at risk for [cardiovascular disease](#) and with limited access to quality, [affordable care](#)," said senior author Hao Yu, Harvard Medical School associate professor of population medicine at the Harvard Pilgrim Health Care Institute. "Federal investment should target these vulnerable communities to improve heat resilience."

More information: County-Level Disparities in Heat-Related Emergencies, *JAMA Network Open* (2024). [DOI: 10.1001/jamanetworkopen.2024.2845](#).
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Provided by Harvard Pilgrim Health Care Institute

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