

Uncontrolled blood pressure is sending more people to the hospital

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The number of people hospitalized for a hypertensive crisis—when blood pressure increases so much it can cause a heart attack, stroke or other sudden cardiovascular event—more than doubled from 2002 to

2014, according to Cedars-Sinai investigators.

The increase occurred during a period when some studies reported overall progress in [blood pressure](#) control and a decline in related cardiovascular events in the U.S. The findings are published in the *Journal of the American Heart Association*.

"Although more people have been able to manage their blood pressure over the last few years, we're not seeing this improvement translate into fewer hospitalizations for hypertensive crisis," said Joseph E. Ebinger, MD, a clinical cardiologist and director of clinical analytics at the Smidt Heart Institute and first author of the study.

Ebinger said there could be various explanations for why a growing number of people are being hospitalized for dangerously [high blood pressure](#). It could be that an increasing number may be unable to afford medications to control hypertension or are seeing their blood pressure rise after taking inadequate doses of these drugs. Socioeconomic factors may also make it difficult for people to avoid a high-salt diet, inactivity, smoking or other unhealthy behaviors that can contribute to hypertension. These factors may include limited access to [health care](#), financial insecurity, or work and family demands.

"We need more research to understand why this is happening and how clinicians can help patients stay out of the hospital," Ebinger said.

To conduct their study, the investigators analyzed data from the National Inpatient Sample, a publicly available database. The data include a subset of all hospitalizations across the U.S., providing a picture of nationwide trends. They found that annual hospitalizations for hypertensive crises more than doubled over a 13-year period. Hospitalizations related to hypertensive crises represented 0.17% of all admissions for men in 2002 but 0.39% in 2014. Hospitalizations related to hypertensive crisis

represented 0.16% of all admissions for women in 2002 but 0.34% in 2014.

The investigators estimated that from 2002 to 2014, there were 918,392 hospitalizations and 4,377 in-[hospital](#) deaths related to hypertensive crisis across the U.S.

The risk of dying from a hypertensive crisis, however, did decrease slightly overall during the studied time period. Women died at the same rate as men, even though they had fewer health issues than men who also were hospitalized for a hypertensive crisis.

"These findings raise the question: Are there sex-specific biologic mechanisms that place women at greater risk for dying during a hypertensive crisis?" said Susan Cheng, MD, MPH, director of the Institute for Research on Healthy Aging in the Department of Cardiology at the Smidt Heart Institute and senior author of the study. "By understanding these processes, we could prevent more deaths among women," added Dr. Cheng, who is also the Erika J. Glazer Chair in Women's Cardiovascular Health and Population Science and professor of cardiology.

Other Cedars-Sinai researchers who worked on this study are Yunxian Liu, Ph.D., MS; Matthew Driver, MPH; C. Noel Bairey Merz, MD; Florian Rader, MD, MSc; and Christine M. Albert, MD, MPH.

More information: Sex-Specific Temporal Trends in Hypertensive Crisis Hospitalizations in the United States, *Journal of the American Heart Association* (2022). [DOI: 10.1161/JAHA.121.021244](https://doi.org/10.1161/JAHA.121.021244)

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