

Heart attacks continue notable 15-year decline in Northern California

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Credit: Kaiser Permanente

Heart attack rates among an ethnically diverse population of more than 3.8 million Kaiser Permanente members in Northern California fell 23 percent from 2008 to 2014, as reported today in the *Journal of the American College of Cardiology*.

"Our findings show [heart attack](#) rates have continued to decline since 2008, overall and in key patient subgroups, within a large community that reflects racial, ethnic and socioeconomic diversity," said senior author Alan S. Go, MD, chief of Cardiovascular and Metabolic Conditions at the Kaiser Permanente Northern California Division of Research.

Researchers studied rates of heart attacks by severity, age, gender, and

diabetes status. While the incidence of heart attacks was highest in men, older age groups, and people with diabetes, similar declines in heart attack rates were seen across all subgroups—including those most at risk and with the highest rates, as well as among lower-risk patients, such as younger patients and women.

"This persistent reduction in the risk of heart attack is a testament to Kaiser Permanente's ongoing primary and secondary prevention efforts at a community level," said lead author Matthew D. Solomon, MD, PhD, of the Division of Cardiology, Kaiser Permanente Oakland Medical Center and adjunct investigator at the Kaiser Permanente Northern California Division of Research. "We have implemented system-wide programs for the management of blood pressure and cholesterol, diabetes, and other chronic illnesses, which has resulted in nation-leading reductions in heart disease among our members."

The findings of this latest Kaiser Permanente study build on research published in 2010 in the *New England Journal of Medicine* that demonstrated a 24 percent decline in heart attacks between 1999 and 2008.

A key difference in the two time periods studied was the type of heart attack that accounted for the majority of the declines. More severe but less common heart attacks, known as ST-elevation [myocardial infarction](#) or STEMI, which typically require an immediate procedure to open a blocked artery, fell by 62 percent from 1999 to 2008. The number of these heart attacks fell by an additional 10 percent from 2008 to 2014, resulting in a total reduction of 72 percent in these severe heart attacks from 1999 to 2014.

The more common but less severe heart attacks, known as non-ST-elevation myocardial infarction or NSTEMI, showed the greatest decline from 2008 to 2014. These types of heart attacks peaked in 2004 and

have fallen 33 percent through 2014. When taken together, there was a 40 percent reduction in all types of heart attacks across Kaiser Permanente in Northern California from the peak in 2000 through 2014, the most recently studied year.

"While the decline in severe heart attacks across our population has been astonishing, we now see consistent declines in all types of heart attacks," Dr. Solomon said. "Reductions in less severe heart attacks, which are nearly four times as common as the severe heart attacks, drove the bulk of the recent decline. But what is most heartening is that these reductions were consistent across every demographic and risk group we examined."

The current analysis identified 29,087 patients who experienced acute myocardial infarction (AMI) between 2008 and to 2014, from nearly 4 million patients aged 18 years or older. The study is one of the first to examine AMI rates by type of myocardial infarction, demographics and diabetes. The rates of AMI in the Kaiser Permanente population in Northern California were lower than those observed in Medicare nationally and in comparable international populations.

More information: Robert W. Yeh et al. Population Trends in the Incidence and Outcomes of Acute Myocardial Infarction, *New England Journal of Medicine* (2010). [DOI: 10.1056/NEJMoa0908610](https://doi.org/10.1056/NEJMoa0908610)

Provided by Kaiser Permanente

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