

# Cancer passing heart disease as leading cause of death

December 20 2018, by Todd Hollingshead

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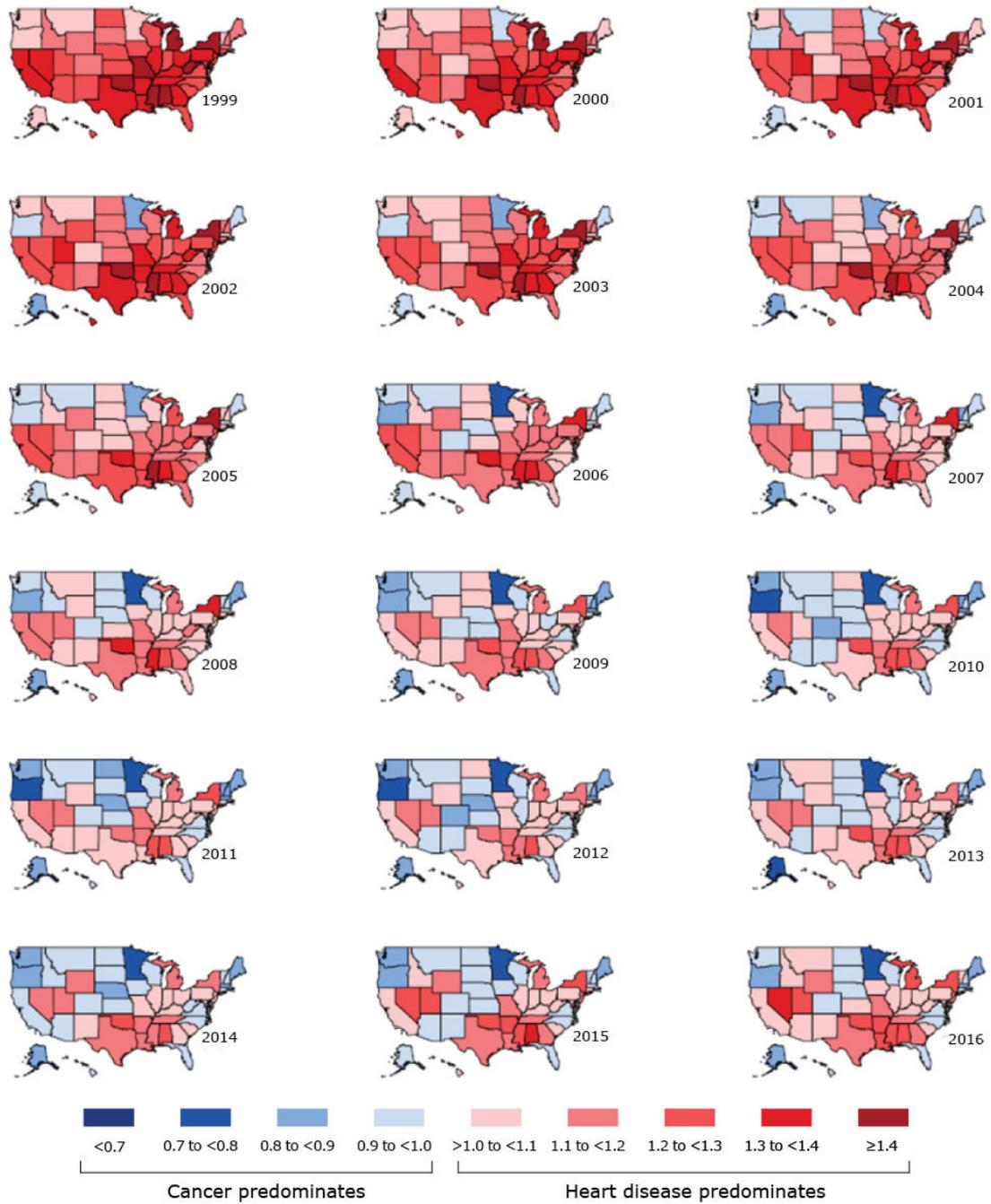


Chart showing leading cause of death by state since 1999. Credit: Preventing Chronic Disease

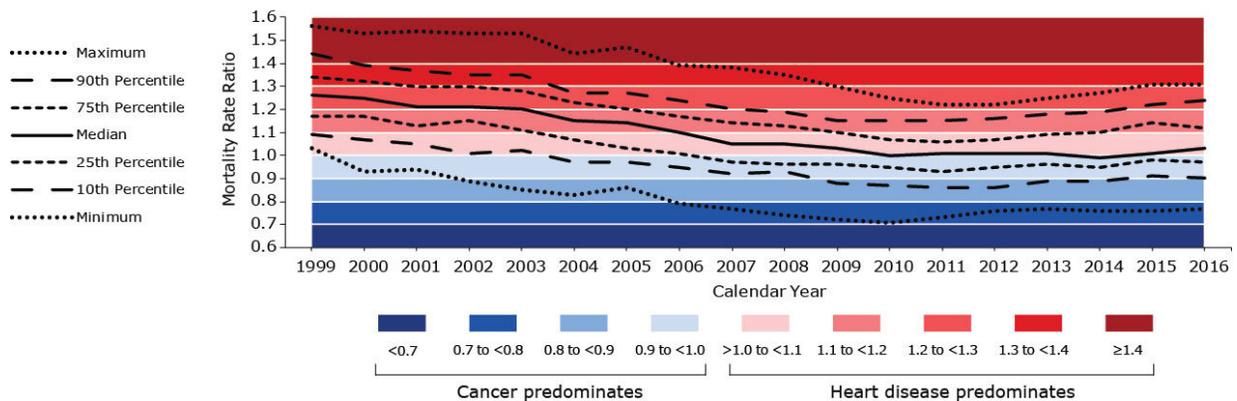
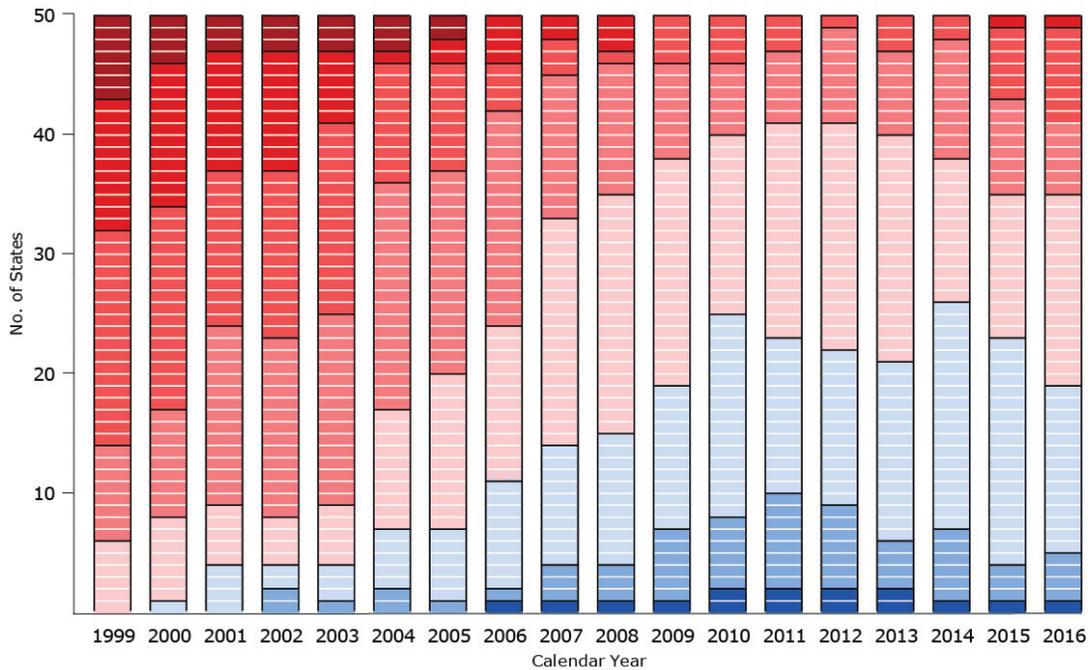
Heart disease has been the leading cause of death in the United States for more than a century, ever since the early 1900s when it displaced acute diseases for the distinction. Now a growing number of states are crowning a new leading cause of death: cancer.

A new study authored by BYU undergraduate public health major Michael Harding and professor Evan Thacker analyzes the trend by breaking down state-specific mortality patterns in the country. After controlling for the effects of age—leveling the field for relatively young states such as Utah and relatively old states such as Florida—the research shows that heart [disease](#) mortality has fallen below [cancer](#) mortality at some point in 31 states over the last two decades.

The study appears in *Preventing Chronic Disease*, an academic journal published by the Centers for Disease Control and Prevention (CDC).

"The U.S. is experiencing an important epidemiologic transition," Thacker said. "Heart disease remains the leading cause of death in the U.S. as a whole, but when we look at individual states, we see that so many have transitioned to cancer."

As recently as 1999, age-standardized heart disease mortality rates still exceeded those for cancer in all 50 states. Then, in 2000, Minnesota became the first state where cancer beat heart disease as the top killer. Montana, Oregon and Alaska followed Minnesota in 2001. That trend continued to 2014, the first year in which a majority of states (26 to be exact) had cancer mortality higher than heart disease mortality.



Credit: Preventing Chronic Disease

And while heart disease mortality has inched up a bit since then (leading in 31 states in 2016, compared with cancer leading in 19 states), Thacker still believes it is only a matter of time before cancer takes over as the leading cause of death nationwide. The analysis showed that from 1999 to 2016:

- 11 states had cancer death higher than heart disease death for at least 10 years
- 13 states had higher cancer death for 5-9 years
- 3 states had higher cancer death for 2-4 years
- 4 states had higher cancer death for only 1 year
- 19 states had higher heart disease death every year

The transitions were driven by sharp declines in heart disease mortality rates and affected all ethnicities. "The gradual shift is fascinating to see, but more research is needed to identify all of the reasons behind these shifts," Thacker said.

The [research team](#), including BYU geography major Tiffany Harding and [public health](#) professors Chantel Sloan and Ray Merrill, and Arizona College of Osteopathic Medicine student Brian Thacker, said one possible cause for the patterns is state-level variability in tobacco smoking. Smoking prevalence in the United States peaked in 1964 and began falling thereafter. The effects of quitting smoking are felt within one to two years for heart health, but show up only decades later for reductions in cancer. Therefore, state-by-state differences in smoking cessation over time could partially explain why cancer has become the leading cause of death in some states, while heart disease is still the leading cause in other states .

Harding said they found a reduction in heart disease mortality rate correlates closely with the reduction in tobacco smoking. However, while [tobacco smoking](#) is strongly associated with lung cancer, the decrease in lung cancer mortality rate was only 31 percent from 1999 to 2016, while the decrease for [heart disease mortality](#) rate was 38 percent.

"This suggests that other risk factors for [heart disease](#) were declining during the same time," Harding said.

**More information:** Michael C. Harding et al. Transitions From Heart Disease to Cancer as the Leading Cause of Death in US States, 1999–2016, *Preventing Chronic Disease* (2018). [DOI: 10.5888/pcd15.180151](https://doi.org/10.5888/pcd15.180151)

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