

## Progress Toward Achieving National Targets for Reducing Coronary Heart Disease and Stroke Mortality: A County-Level Perspective

The following is a synopsis of “Progress Toward Achieving National Targets for Reducing Coronary Heart Disease and Stroke Mortality: A County-Level Perspective” published January 2021 in the *Journal of the American Heart Association*.



### What is already known on this topic?

Cardiovascular diseases caused 1 in every 3 deaths in the United States in 2019. Over half of the 877,503 deaths were due to either coronary heart disease (CHD) or stroke.<sup>1</sup> These diseases, in many cases, are preventable. Given this, both Healthy People 2020 and the American Heart Association set national goals in 2010 to reduce cardiovascular disease mortality by 20% by 2020. The reduction of CHD and stroke death rates were included as target objectives to help meet overall cardiovascular health goals.<sup>2,3</sup>

Nationally, there has been progress towards these goals. Between 2010 and 2019, national CHD death rates declined from 113.6 to 88.0 per 100,000 and stroke death rates were stagnant (39.1 and 37.0 per 100,000).<sup>1</sup> However, there are wide variations in CHD and stroke death rates by region and by age group. People living in southeastern states have higher rates of heart disease and stroke mortality compared to

other parts of the country. Variation also exists within states at the county level; for example, people living in rural areas die more often of cardiovascular diseases compared to their urban counterparts.<sup>4</sup> Many consider CHD and stroke as only affecting the elderly population, but death rates by age group have varied over time with increasing rates recently appearing in younger adults. About 20% of CHD deaths occurred in adults younger than 65, and about 10% of strokes occurred among adults aged 15 to 44.<sup>5</sup>

### What is added by this article?

The authors of this article examine county-level progress towards the goals set out by Healthy People 2020 and the American Heart Association for reducing stroke and CHD death rates. Data from the National Vital Statistics System from 2007 and 2017 were used to calculate the percent change in death rates due to CHD and stroke. Counties were divided into three categories of progress: meeting the 20%



reduction goal, reducing death rates by less than 20%, or having an increase in death rates. These counties were classified on a six-level urban-rural classification scale (NCHS 2013 Scheme) and mapped to examine geographic trends. Additionally, county death rates were examined separately for adults aged 35-64 and those aged >65+ to determine if there were differences in death rate reductions between younger and older adults.

The authors found that about half of US counties met the reduction target for CHD death rates and about 40% of counties met the reduction target for stroke death rates from



2007 to 2017. Counties in more rural areas were less likely to have met the goal, while core metropolitan centers (the most urban on the six-level scale) generally performed the best. The only exception to this was stroke death rates for older adults, in which rural counties fared better in achieving the reduction compared to large population counties. When county death rates were estimated for younger (35-64) and older adults (65+) separately, it was evident that there was far less progress in both CHD and stroke death reductions for younger adults. In fact, many counties outside of the most urban saw increases in death rates due to CHD and stroke for younger adults.

These analyses provide a more granular snapshot of national progress in reducing CHD and stroke-related deaths.

### **What are the implications of these findings?**

Researchers found that there has been progress in reducing deaths caused by CHD and stroke in the US, but progress remains uneven. Younger adults, especially those living outside of big cities often did not meet national targets and have increasing death rates in many counties. These findings suggest that a renewed focus on cardiovascular disease prevention and management at early stages in life is warranted. This is especially important due to the increased risks for disability and death that accompany a diagnosis of CHD or stroke at an early age. Variations in progress by rurality may be due in part to the issues of healthcare access and other social determinants of health. These factors will need to be addressed to improve cardiovascular health for all. Geographic and age-specific trends in CHD and stroke death rates can help inform future efforts to reduce cardiovascular disease mortality across the U.S.

### **Resources:**

Centers for Disease Control and Prevention: Million Hearts 2022  
<https://millionhearts.hhs.gov/>

U.S. Department of Health and Human Services: Healthy People 2030 – Heart Disease and Stroke  
<https://health.gov/healthypeople/objectives-and-data/browse-objectives/heart-disease-and-stroke>

American Heart Association: Get With the Guidelines – Stroke  
<https://www.heart.org/en/professional/quality-improvement/get-with-the-guidelines/get-with-the-guidelines-stroke>

## References

1. Heart Disease and Stroke. *Healthy People* 2020. <https://www.healthypeople.gov/2020/topics-objectives/topic/heart-disease-and-stroke/objectives>. Updated June 2, 2021. Accessed June 9, 2021.
2. 2020 Impact Goal. *American Heart Association*. <https://www.heart.org/en/about-us/annual-report/impact-goal-2020>. Updated October 2020. Accessed June 9, 2021.
3. Heart Disease Mortality by State. *Centers for Disease Control and Prevention*. [https://www.cdc.gov/nchs/pressroom/sosmap/heart\\_disease\\_mortality/heart\\_disease.htm](https://www.cdc.gov/nchs/pressroom/sosmap/heart_disease_mortality/heart_disease.htm). Updated February 5, 2021. Accessed June 9, 2021.
4. Leppert, M.H., Ho, M.P., Burke, J, et al. Young Woman Had More Strokes Than Young Men in a Large, United States Claims Sample. *Stroke*. 2020;51(11):3352-3355. doi:10.1161/strokeaha.120.030803. <https://www.ahajournals.org/doi/full/10.1161/STROKEAHA.120.030803>

## Citation

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