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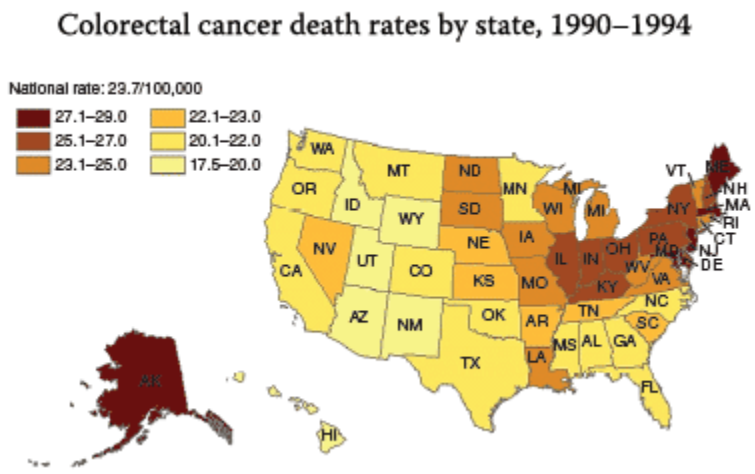
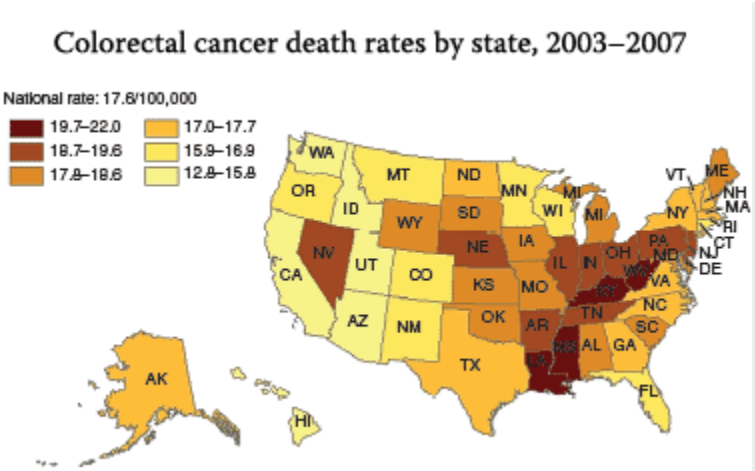
U.S. Colorectal Cancer Death Rates Continue to Drop, But Not Equally

Findings from two new studies show that death rates from colorectal cancer in the United States continue to fall, a trend that began more than two decades ago. The mortality decline has been geographically uneven, however, with far greater decreases in the Northeast than in many other areas, particularly in a number of southeastern states.





(Adapted and reprinted by permission from the American Association for Cancer Research: D Naishadham et al., State Disparities in Colorectal Cancer Mortality Patterns in the United States, *Cancer Epidemiol, Biomarkers & Prev*, 2011, 20(7); 1296-302)

Although the studies are ecologic in nature and can't directly demonstrate a cause-and-effect relationship, authors of both studies agreed that substantial improvements in colorectal cancer screening rates have been the chief contributor to the national downward trend in mortality. Other factors, such as reductions in smoking prevalence and better treatments, have also played a role, they noted.

Socioeconomic disparities that have been proven to influence cancer screening rates and the treatment of diagnosed cancers likely help explain the geographic discrepancies in cancer mortality rates, several researchers said.

"That's a key point," said Dr. Ahmedin Jemal of the American Cancer Society, who led one of the studies. "Poverty affects not only access to screening and treatment but also prevalence of known risk factors for colorectal cancer, including smoking and obesity."

Disparities Drive Geographical Differences

In the first study, published online July 5 in *Morbidity and Mortality Weekly Report*, researchers from the Centers for Disease Control and Prevention (CDC) showed that the age-adjusted colorectal cancer death rate fell by 3 percent per year from 2003 through 2007, from 19 per 100,000 people to 16.7 per 100,000 people, yielding a difference of approximately 32,000 fewer deaths. The rate of new cases of colorectal cancer also declined during this period, the CDC reported, from 52.3 per 100,000 in 2003 to 45.5 per 100,000 in 2007.

Using data from the agency's Behavioral Risk Factor Surveillance System phone survey, the CDC study showed that, nationally, the percentage of people who were screened for colorectal cancer according to commonly accepted clinical guidelines rose from 52.3 percent in 2002 to 65.4 percent in 2010.

Mortality fell furthest "in states with some of the highest screening prevalence," wrote Dr. Lisa Richardson and her colleagues.

In the second study, Dr. Jemal and his colleagues, reporting in the July 7 *Cancer Epidemiology, Biomarkers & Prevention* (*CEBP*), identified significant geographic disparities in colorectal mortality rates. In the northeastern states of Massachusetts, Rhode Island, and New York (as well as Alaska) mortality fell more than 33 percent between 1990–1994 and 2003–2007. In many southern states, particularly along the Appalachian corridor, the decreases were much smaller; in Mississippi (as well as Wyoming), the rates were nearly unchanged between the early 1990s and mid-2000s.

Why Have Colorectal Cancer Mortality Rates Fallen?

Several years ago, research groups supported by NCI's Cancer Intervention and Surveillance Modeling Network, or CISNET, developed computer models that estimated the impact of different factors on colorectal cancer mortality rates in the United States.

They estimated that approximately half of the reduction in colorectal cancer mortality was due to increased screening, just over a third was due to reductions in risk factors such as smoking, and a smaller proportion, 12 percent, was due to improved treatment.

The overall colorectal cancer mortality rate decline is welcome news, said Dr. Electra Paskett of the Ohio State University Research Foundation Comprehensive Cancer Center, a leading researcher on cancer health disparities. The higher mortality rates in the Appalachian corridor, however, were not a surprise, she continued. Her research group at Ohio State has been studying the problem for some time and is investigating ways to improve screening rates there. (See the box at the bottom of the page.)

"Detecting colorectal cancer early and getting it treated—that's what affects mortality," she said.

When it comes to screening uptake, the role of socioeconomic disparities can't be ignored, Dr. Jemal and colleagues stressed. "Southern states have a larger proportion of the population that is poor and uninsured, among whom screening rates are lower," they wrote.

Lower socioeconomic status, lower education levels, and lack of health insurance affect whether people get screened and whether they receive the appropriate follow-up and treatment after diagnosis, Dr. Jemal said in an interview.

For example, a 2010 study by NCI researchers showed that, among participants in the Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial who had been screened for colorectal cancer via sigmoidoscopy, black participants were substantially less likely to undergo a prescribed follow-up colonoscopy than white patients. Although study participants' socioeconomic status was not known, black participants had lower education levels—which often correlate with lower socioeconomic status—than white participants.

Dr. Paul Doria-Rose of NCI's Division of Cancer Control and Population Sciences (DCCPS) agreed with the study authors on the likely primary cause of the differences. "The disparities in colorectal cancer are well established at this point," he said. "I think the regional differences we're seeing reflect those disparities."

Improving Screening Rates

A number of research groups are studying ways to improve screening rates for various cancers, particularly in populations for which notable disparities have been identified in cancer incidence and mortality and for whom barriers, such as lack of access to care, exist.

A major step forward came with the passage of the Affordable Care Act, which, as of January 2011, mandates that Medicare beneficiaries and individuals with new health insurance plans or policies beginning on or after September 23, 2010, receive certain recommended preventive health screenings, including those for colorectal and breast cancer, for free.

In addition, DCCPS staff have just finished reviewing applications for an NCI-funded initiative called Population-Based Research Optimizing Screening through Personalized Regimens, or PROSPR, that aims to improve the screening process for all cancers for which there are established, effective tests.

The aim of the initiative is "to take a holistic approach to the entire screening process, see where the shortcomings are, and identify ways to improve them," Dr. Doria-Rose explained. "In many cases, we have screening tests that work. The biggest opportunities now are in getting more people to be appropriately screened."

—*Carmen Phillips*

An Intervention Tailored to the Community

Working with several community-based coalitions in the Appalachian region of Ohio, Dr. Electra Paskett is leading a study aimed at reducing the high colorectal cancer death rates in that region by increasing screening.

Based on feedback from community leaders, the study's primary intervention uses a decidedly low-tech tool. "They said that fancy things like the Internet and smart phones don't work here," Dr. Paskett explained. "The best thing to use, they said, is billboards."

The billboards in some counties advertise the importance of getting screened, whereas billboards in the "control" counties encourage eating more fruits and vegetables. Phone surveys will be used to measure outcomes, such as awareness of the need for people 50 years of age and older to be screened and whether more people are being screened. Dr. Paskett and her research team are also working with community groups to help residents who are screened obtain appropriate follow-up care.

Interventions to improve screening awareness and uptake have to be tailored to target communities, Dr. Paskett stressed. "An approach that works in New York City may not work very well in rural Ohio," she said.