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Tobacco control initiatives cut the number of lung cancer deaths in California by 28%

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Key Points

Convincing young people not to start smoking is one of the most effective ways to curb tobacco-related illness and mortality.

Physicians and other health care practitioners play a vital role in helping patients who smoke pursue evidence-based cessation options.

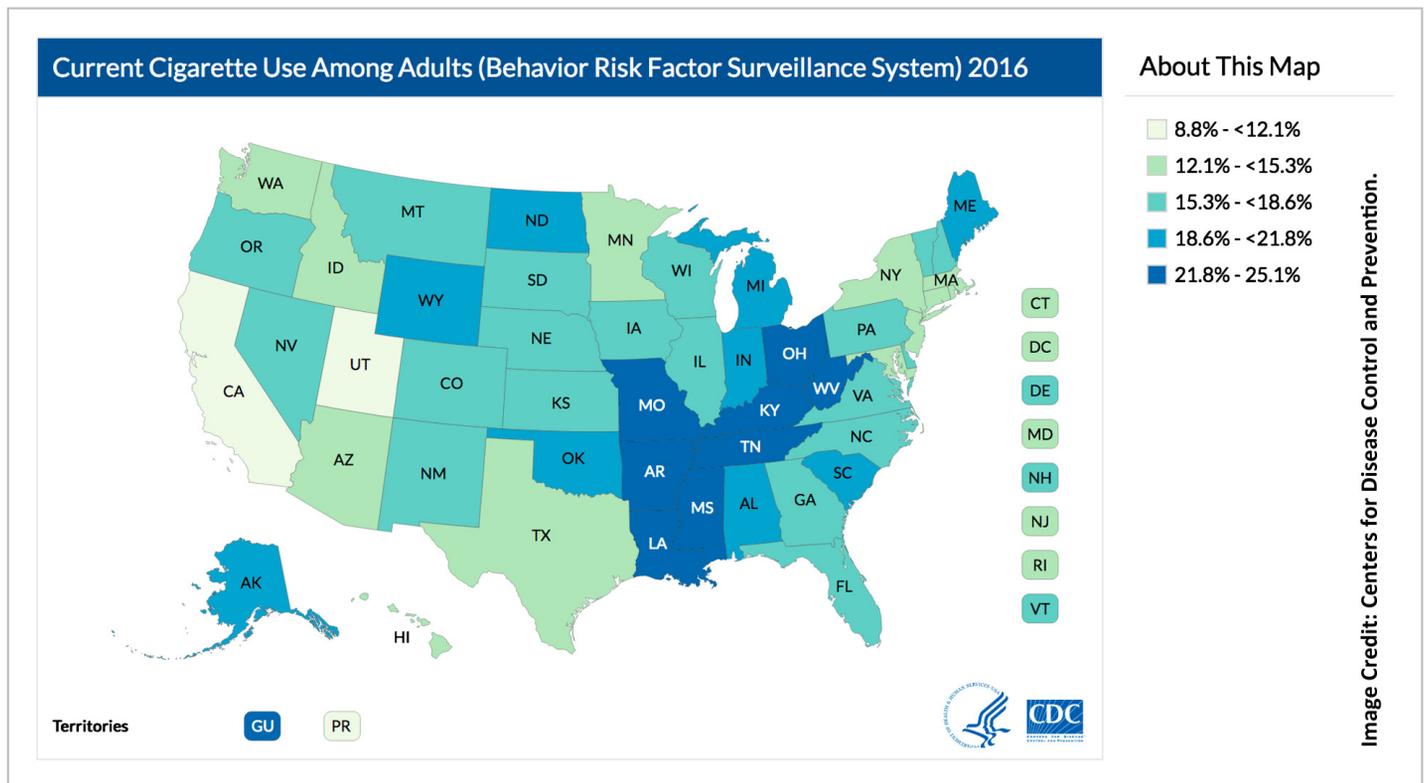
Clinicians can—and should be encouraged to—engage in the policy advocacy process.

California's early adoption of antismoking initiatives in the 1980s and 1990s—after tobacco use and lung cancer were indisputably linked—has resulted in a lung cancer mortality rate that is 28% lower in that state compared with the rest of the country, according to a new study published online in *Cancer Prevention Research* (published online ahead of print October 10, 2018. DOI:10.1158/1940-6207.CAPR-18-03411). What is more, researchers say, the gap between California's lung cancer death rate and the national average is growing by nearly a percentage point each year.

"It has long been recognized that California's tobacco control efforts, which are described well in this paper, have been more assertive, comprehensive, and overall effective than those in most of the rest of the US," says Cliff Douglas, JD, vice president of tobacco control for the

American Cancer Society (ACS) and director of the organization's Center for Tobacco Control "California served as a pioneer by developing and implementing these strategies years before others."

Led by the state's department of health, the California Tobacco Control Program began in the 1980s and accelerated in 1990 after the US Environmental Protection Agency released the first draft of a report that identified secondhand smoke as a class A carcinogen. The program highlighted tobacco marketing as a major influence on adolescent smoking and provided funding for local community organizers to develop programs centered on the harmful effects of tobacco. Soon after, local ordinances began enacting restrictions on where smoking was permitted and curbing cigarette advertising near schools. In 1994, California passed the first state legislation that mandated smoke-free workplaces, restaurants, and bars, well in advance of other states.



An article in *Morbidity and Mortality Weekly Report* describing data from the Centers for Disease Control and Prevention's 2017 National Health Interview Survey noted that the number of adults who smoke cigarettes has dropped to approximately 34 million, the lowest level ever recorded in the United States (2018;67:1225). However, that means that, when surveyed, approximately 14% of all adults had smoked cigarettes within the past 30 days. Although that is down 15.5% from the previous year and 67% since 1965, the figure is still too high, experts say, especially when cigarette smoking remains the leading preventable cause of death and disease in the United States.

Study Details

John P. Pierce, PhD, the lead author of the study published in *Cancer Prevention Research* and professor emeritus of cancer prevention at the University of California at San Diego School of Medicine, says California's success can be attributed to its commitment to 3 main goals: 1) to encourage people (especially youngsters) not to start smoking; 2) to reduce the amount of tobacco used by those who do smoke; and 3) to help smokers quit at a younger age. Of those 3 goals, discouraging smoking initiation by young people has been the most effective, Dr. Pierce says, because it is more difficult to break a nicotine addiction once it becomes well established over time. "This study is the first to clearly demonstrate that changes in initiation behavior in young Californians in the 60s and 70s has had a major impact and continuing impact on lung cancer rates," he says.

Dr. Pierce and his team compared smoking trends and behaviors in California and other states using data from the National Health Interview Survey (1974-2014), a representative sampling of 962,174 residents in the United States, approximately 10% of whom lived in California. They also compared trends in lung cancer mortality rates in California and other states plus the District of Columbia based on death certificate data in the National Cancer Institute's Surveillance, Epidemiology, and End Results program (1970-2013).

The researchers found lung cancer mortality in California declined from an annual rate of 108 per 100,000 population aged older than 35 years in 1985 to 62.6 per 100,000 population in 2013, which is 33% faster than the rest of the United States.

In 1978, smoking intensity was similar among smokers aged 18 to 34 years in California and their counterparts in other states (18.4 cigarettes per day; 95% confidence interval [95% CI], 17.6-19.1 cigarettes per day). However, after 1978 and through the year 2000, smoking intensity numbers in California dropped at a 45% faster annual rate compared with the rest of the country (-0.48 cigarettes per day [95% CI, -0.40 to -0.56 cigarettes per day] vs -0.33 cigarettes per day [95% CI, 0.29 to -0.36 cigarettes per day]). Between 2012 and 2014, smoking intensity among smokers aged 18 to 34 years was 30% lower in California (6.3 cigarettes per day; 95% CI, 5.6-7.0 cigarettes per day) compared with the rest of the United States (9.2 cigarette per day; 95% CI, 9.0-9.5 cigarettes per day). In addition, approximately 45.7% of California smokers quit by age 35 years (95% CI, 41.1%-50.4%), in comparison with only 37.8% of smokers in other states (95% CI, 36.1%-39.4%) ($P=.0007$).

In 1985, lung cancer mortality rates were similar between California and the rest of the country, but by 2013 rates in California were 28% lower (62.6 vs 87.5 per 100,000 population, respectively).

Study Implications

Mr. Douglas says a major takeaway from the study is that tobacco control policies work extremely well in reducing the incidence and mortality of lung cancer and other smoking-related diseases. "In essence, the paper reaffirms in an impressive, data-driven manner what is prescribed by [the CDC's] Best Practices for Comprehensive Tobacco Control Programs." Not only does California's success substantiate the validity of those evidence-based recommendations, he says, it also affirms the value of their robust implementation. This makes the study a valuable tool "that may be used by tobacco control and lung cancer advocates in working to persuade decision makers to enact such policy changes," he says.

Of course, he adds, the policy-setting process can be challenging. "If it weren't, many states as well as the federal government would have done much more in this area than they have." However, if used wisely, the new data may help to convince additional lawmakers to support the adoption of effective tobacco control policies, he says.

Jeffrey Drope, PhD, scientific vice president of economic and health policy research at the ACS, applauds the strides California has made, but also recognizes the need for a greater emphasis on quitting at the clinical level. "We [at ACS] are amazed at the number of primary care visits that do not incorporate discussions about quitting smoking at all. This is really a huge contribution clinicians can make to this effort because individuals tend to listen to their primary care provider."

What is more, smokers of every age would be well served by those conversations. Although the decline in lung cancer has been faster in California because of the emphasis it placed on convincing younger people not to take up the habit, Dr. Pierce says this should not deter older smokers from quitting. "Quitting smoking at any age will improve a person's quality of life," he says. "Even quitting by age 50 could reduce a person's risk of disease by almost half."

Another important point to remember, according to Dr. Drope, is that clinicians' voices can be very useful for influencing policy. "For example, when clinicians talk about raising tobacco taxes to fund programs, we find that policymakers are even more receptive to this strategy, which is arguably the most effective way to mitigate initiation, drive down consumption, and enhance quitting."

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