



The American Consumer Institute
Center for Citizen Research

Transition from Tobacco to Vaping: The Health Impacts by State

By Justin Leventhal



Executive Summary

An estimated 480,000 current and former smokers die in the U.S. from smoking each year.[1] Thankfully, smoking rates have declined over time due to increased public knowledge, civic action, and technological advancements in quitting methods. For years, a great deal of effort has been put in by many groups to create a smoke-free future for the U.S., but what would a smoke-free future realistically look like?

Absent of outright banning the sale of nicotine products, some adults are likely to continue using them. This creates a dire need to transition to tobacco harm reduction technologies. Considering evidence that e-cigarettes are nearly twice as effective as nicotine replacement therapies, such as gums and patches, at getting smokers to quit,[2] this study estimates how many fewer people would die from smoking-related diseases in each state assuming e-cigarettes and vaping products entirely replaced smoking products. The following are four major highlights of this study:

- Nearly 300,000 fewer deaths each year nationwide;
- From 2010 through 2024 over four million fewer lives would have been lost across the country – about four times more than died from Coronavirus;
- State restrictions on adult use of vaping makes it more difficult for smokers to quit smoking, costing more lives for each year these regulations stay in place; and
- Removing barriers for adults to switch from smoking to vaping would drastically reduce deaths from smoking related diseases.

The results show significant lifesaving potential from tobacco harm reduction products. However, in recent years, policymakers have placed stiff regulations, high taxes, and outright bans on e-cigarette and vaping products, thereby discouraging smokers from switching from smoking to vaping and risking public safety and health. These restrictive policies need to be reevaluated to streamline the transition of smokers to safer products, which will prevent hundreds of thousands of deaths each year.

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[1] “The Health Consequences of Smoking – 50 Years of Progress,” U.S. Department of Health and Human Services, 2014, [aa](#).

[2] Peter Hajek, et al., “A Randomized Trial of E-Cigarettes Versus Nicotine Replacement Therapy,” *New England Journal of Medicine*, Vol. 380, February 14, 2019, pp. 629-637, <https://www.nejm.org/doi/full/10.1056/NEJMoa1808779>.



Background

Numerous studies have shown the effectiveness of vapes to help smokers quit.[3] While vaping is not risk-free, studies have shown it to be significantly less damaging to health than smoking.[4] For instance, the Royal College of Physicians in the U.K. found vaping product risks were “unlikely to exceed 5% of the harm from smoking tobacco.”[5]

Despite the benefits of these smoking cessation aids, in many cases, legislative and regulatory barriers have artificially limited or blocked smokers’ access to vaping products. Another factor limiting consumer access to tobacco harm reduction productions has been the Food and Drug Administration’s (FDA’s) slow approval of new vaping products. [6] In addition, many state legislatures and municipalities have enacted various laws and steep taxes limiting the availability of vapes to adults, making it more difficult for some smokers to quit.

Preventing access to vaping products removes options for adults to quit smoking, increasing the lives lost each year to smoking. This study examines the potential lives that could have been saved each year if smoking adults transitioned to vaping and e-cigarette products.

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[3] Better Health, UK National Health Services, accessed December 25, 2023, [aa](#); and Peter Hajek, et al., “A Randomized Trial of E-Cigarettes Versus Nicotine Replacement Therapy,” *New England Journal of Medicine*, Vol. 380, February 14, 2019, pp. 629-637.

[4] Michael Joseph Blaha, “5 Vaping Facts You Need to Know,” *Johns Hopkins Medicine*, accessed December 25, 2023, [aa](#).

[5] “Nicotine without smoke: Tobacco Harm Reduction,” *Royal College of Physicians*, accessed January 2, 2024, [aa](#).

[6] Letter to FDA regarding Premarket Tobacco Product Applications from the United States House of Representatives Committee on Oversight and Accountability, Chairman James Comer, March 20, 2023, [aa](#).



Current Vaping Laws

In the U.S., the FDA has been quick to ban flavored vapes and slow to address its backlog of premarket tobacco product applications.[7] Various state and local governments have levied taxes, banned flavors, or prohibited the sale of vaping products entirely.[8] Meanwhile, countries like the U.K. are embracing vaping as a smoking cessation tool for the sake of both the health of smokers[9] and the cost of providing healthcare.[10] In Scandinavian countries, alternatives to smoking are credited with a sharp reduction in deaths.[11]

Taxes not only increase the price of vapes, which creates a disincentive for people to use the product, but they also change the relative price of smoking compared to vaping. One study found that taxes on vaping decrease sales of vapes but also increase the rate of smoking due to the substitution effect.[12]

Flavor bans are often put in place for the purpose of addressing a “spike in youth vaping.” While well intentioned, the evidence suggests that while there was an increase in youth vaping from 2012 to 2020 there was also a drastic decrease in youth smoking rates that offset it.[13] This indicates that vaping is not drawing in more youth use of nicotine products let alone serving as a gateway for smoking; it almost entirely replaced smoking as the method of consumption. Minors should not be using any nicotine products of any kind and more can be done to prevent youth access, but vaping, whether flavored or not, is not increasing youth nicotine use.

However, flavored vapes have been shown to be the most effective tool for getting adults to quit smoking.[14] Despite the intentions of restricting flavored vaping products, the real effect is that it puts barriers between smokers and quitting that will result in avoidable deaths.

[7] “FDA Issues Marketing Denial Orders for Approximately 6,500 Flavored E-cigarette Products,” U.S. Food and Drug Administration, May 12, 2023, <https://www.fda.gov/tobacco-products/ctp-newsroom/fda-issues-marketing-denial-orders-approximately-6500-flavored-e-cigarette-products>.

[8] Jim McDonald, “Vape Bans: E-Cigarette Restrictions in the U.S. and Worldwide,” Vaping360, January 1, 2024, <https://vaping360.com/learn/countries-where-vaping-is-banned-illegal/>.

[9] “Using e-cigarettes to stop smoking,” UK National Health Service, updated October 10, 2022, <https://www.nhs.uk/live-well/quit-smoking/using-e-cigarettes-to-stop-smoking/>.

[10] Francesco Moscone, “Does switching from tobacco to reduced-risk products free up hospital resources?” British Journal of Healthcare Management, August 7, 2023, <https://www.magonlinelibrary.com/doi/abs/10.12968/bjhc.2023.0046>.

[11] Elizabeth Clarke, Keith Thompson, Sarah Weaver, Joseph Thompson, and Grant O’Connell, “Snus: a compelling harm reduction alternative to cigarettes,” Harm Reduction Journal, Volume 16, Article 62, November 27, 2019, <https://harmreductionjournal.biomedcentral.com/articles/10.1186/s12954-019-0335-1>; Karl Ritter and Charlene Pele, “Sweden close to becoming first ‘smoke free’ country in Europe as daily use of cigarettes dwindles,” Associated Press, May 31, 2023, <https://apnews.com/article/smoking-cigarettes-snus-sweden-7e3744800a4714bdee4bcb1736983586>.

[12] Chad D. Cotti, Charles J. Courtemanche, et al, “The Effects of E-Cigarette Taxes on E-Cigarette Prices and Tobacco Product Sales: Evidence from Retail Panel Data,” National Bureau of Economic Research, Cambridge, MA, revised April 2021, <https://www.nber.org/papers/w26724>.

[13] Steve Pociask and Justin Leventhal, “Tobacco Harm Reduction and the Teen Epidemic: Health Impacts from Vaping,” American Consumer Institute, June 2023, <https://www.theamericanconsumer.org/wp-content/uploads/2023/06/TeenEpidemic.pdf>.

[14] Yoonseo Mok, Jihyoun Jeon, David T Levy, and Rafael Meza, “Associations Between E-cigarette Use and E-cigarette Flavors With Cigarette Smoking Quit Attempts and Quit Success: Evidence From a U.S. Large, Nationally Representative 2018–2019 Survey,” Nicotine & Tobacco Research, Volume 25, Issue 3, March 2023, Pages 541–552, <https://academic.oup.com/ntr/article/25/3/541/6761959>.

Results

In total, nearly 37 million Americans smoke with more than 300,000 deaths each year as a result. Using 2019 as a representative year and adjusting for population change, this study shows both the estimated deaths due to smoking and the lives that could be saved under a harm reduction model. [15]

Between 2010 and 2024 more than 4.3 million fewer lives would be lost under the harm reduction model.^[16] A projected 301,883 lives would be saved in 2024 alone.

Unsurprisingly, the most deaths due to smoking occur in the three most populous states. From 2010 through 2024 Florida will have lost a total of more than 304,000 people to smoking that would not have died in the harm reduction model. Texas and California each had more than 285,000 deaths from smoking that would not have occurred.

Even in the least populated states, hundreds fewer people would die each year from smoking-related diseases in the harm reduction model, while in the most populated states, tens of thousands of deaths could be avoided. The five states where the most deaths would be avoided each year are Florida (20,924), Texas (19,735), California (19,373), Ohio (15,626), and Pennsylvania (14,066).

This estimate assumes that all smoking throughout people's lives would have been replaced by vaping, which is not the case for people switching to vaping today but could be in the future if state regulations do not prevent smokers from switching to vaping.

It is difficult to predict the precise decreases in mortality in the short-term, this is because, as one study from the International Journal of Epidemiology explains, there are many complicating factors.[17] Some people who vape also smoke, and even those who quit often have greater health risks than those who never smoked. This makes exact estimates for any transition period more complex and difficult to make.

[15] The methodology for this study can be found in Appendix A.

[16] See Appendix F.

[17] Emily Banks, Amelia Yazidjoglou, and Grace Joshy, "Electronic cigarettes and health outcomes: epidemiological and public health challenges," International Journal of Epidemiology, volume 52, Issue 4, August 2023, page 984 to 992, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10396413/>.

Discussion

Regulations that prevent or make it more difficult for adults to switch from smoking to vaping slow the transition away from smoking, thereby resulting in the needless loss of life exemplified in this study.

Despite good intentions, flavor bans, restrictions on disposable vapes, and excessive taxes make it more difficult for smokers to quit while failing to address youth nicotine use.

Vaping products provide a way to quit smoking and are not a gateway to cigarettes. Research from the Progressive Policy Institute has shown that in recent years vaping is responsible for 70 percent of the accelerated decline in Americans quitting smoking.[18] Each regulation that makes it more difficult for adults to quit slows progress toward reaching a future with fewer deaths from smoking.

California, being the most populous state in the country, has more deaths due to smoking than almost any other state. Yet, despite more than 20,000 people dying in 2019, in 2022 California enacted a statewide law that banned all brick-and-mortar stores from selling vaping flavors except tobacco, making it even harder for smokers to find products to help them quit smoking. Based on this study's results, such regulatory and legislative actions lead to substantially more deaths. From 2010 through 2024 approximately 300,000 more people died than would have under the harm reduction model.

Flavor bans can result in the shuttering of vape stores, entirely denying smokers even non-flavored vaping options to help them quit smoking. Just as is happening in Louisiana, [19] shops closed in Washington, [20] other countries such as Canada, [21] and even nationally in the US after FDA flavor restrictions.[22] In all cases, when vape shops are unavailable, it raises the cost to smokers to find other options, thereby disincentivizing them to quit and leading to more deaths from smoking.

By enforcing flavor and disposable vape bans, states are wasting precious resources on enforcing laws that do not benefit consumers' health and could be used to directly address the sale of nicotine products to minors instead. This has a dual problem of preventing smokers from quitting and doing nothing to prevent minors from obtaining these products.

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[18] "More Americans Quit Smoking with Assist from E-Cigarettes," Progressive Policy Institute, August 1, 2019, <https://www.progressivepolicy.org/pressrelease/press-release-more-americans-quit-smoking-with-assist-from-e-cigarettes/>.

[19] Louisiana's Vape Shop Ban Slashes Smoke Shop Profits," LinkedIn, November 25, 2023, <https://www.linkedin.com/pulse/louisianas-vape-ban-slashes-smoke-shop-profits-ecigator-00qbc/>.

[20] "Some vape shops closing due to Washington's flavored vape ban," King 5 News, December 16, 2019, <https://www.king5.com/article/news/local/vape-shops-close-washington-flavored-vape-ban/281-2cad0409-6528-4a17-8fa1-273cdcebae4f>.

[21] "Quebec ban on vape flavors will shut down 400 shops, merchants group says," The Montreal Gazette, April, 2023, <https://montrealgazette.com/news/local-news/quebec-ban-on-vape-flavours-will-shut-down-400-shops-merchants-group-says>.

[22] Katherine Ellen Foley, "Vape makers struggle to stay in business after FDA bans flavored e-cigs," Politico, September 22, 2021, <https://www.politico.com/news/2021/09/22/fda-flavored-vape-bans-small-shops-513522>.

Conclusion

This study has focused on preventable deaths due to smoking, but it is also worth considering the quality of life of smokers. Diseases related to smoking are not always immediately fatal and there can be long-term health problems, such as Chronic Obstructive Pulmonary Disease (COPD), the effects of nonlethal strokes, and other conditions that last a lifetime. Removing the barriers to quitting smoking has the potential to not only add years to peoples' lives, but also reduce their health burdens throughout their lives.

The question we face is not whether vaping should be banned, but rather what policymakers in each state can do to remove the barriers for smokers to switch and quit, thereby reducing deaths from smoking-related diseases by hundreds, thousands, or even tens of thousands each year in their state? While vaping and e-cigarette products are not completely safe, they are significantly safer than smoking. Policymakers and health officials need to help protect lives, and, in this case, doing so means streamlining and encouraging smokers to transition to safer products and quit.



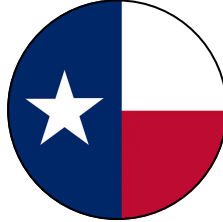
15-Year Deaths from Smoking and Potential Lives Saved from Tobacco Harm Reduction Alternatives

Top Twelve States: Lives Saved 2010 to 2024



Florida

Deaths: 321,293
Lives Saved: 305,228



Texas

Deaths: 303,414
Lives Saved: 288,243



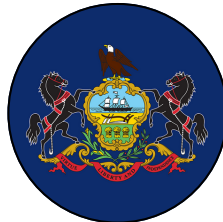
California

Deaths: 301,077
Lives Saved: 286,023



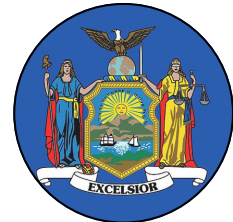
Ohio

Deaths: 247,002
Lives Saved: 234,652



Pennsylvania

Deaths: 223,627
Lives Saved: 212,446



New York

Deaths: 215,050
Lives Saved: 204,297



Michigan

Deaths: 190,049
Lives Saved: 180,546



Illinois

Deaths: 172,572
Lives Saved: 163,943



North Carolina

Deaths: 170,482
Lives Saved: 161,958



Georgia

Deaths: 147,744
Lives Saved: 140,356



Tennessee

Deaths: 144,991
Lives Saved: 137,742



Indiana

Deaths: 133,158
Lives Saved: 126,500

Appendix A: Methodology

Approach

The World Health Organization (WHO) uses a standard model for calculating the health impacts of smoking in various countries called the Population Attributable Fraction (PAF) method which this study uses to model state-level smoking mortality.[23] PAF is a measure of what percentage of deaths from a specific disease are attributable to smoking, accounting for differences in the risks of various diseases, between genders, as well as differences in state smoking rates.

For example, while smoking drastically increases the chance of lung cancer, there are still some cases of lung cancer in people who never smoked. The PAF for lung cancer for women in Florida would be an estimate of the percentage of lung cancer cases in Florida among women caused by smoking. This estimate will be different than the PAF for lung cancer cases among men in Maine or for other diseases in the same state.

Calculating the PAFs requires the relative risk (RR) that smoking poses for individual diseases as compared to a non-smoker and the prevalence of tobacco use (P) in each state. With this data the PAF values are calculated by the formula:

$$PAF = \frac{P(RR - 1)}{P(RR - 1) + 1}$$

Once calculated, the PAF was multiplied by the number of people in a state that died from the smoking-related disease it was calculated for to determine the total number of deaths caused by smoking for each disease in a state. Deaths were added together for the total number of deaths due to smoking in that state. This process was repeated for every state and the District of Columbia.

Similar methodology is used by other health organizations as well, such as the U.S. Department of Health and Human Services (HHS), though with different RR values and categorization smoking-related causes of death.[24]

The WHO and HHS methodologies differ in both RR values and how age groups are analyzed. For example, the WHO splits ischemic/coronary heart disease and stroke each into five age groups: 30 to 44, 45 to 59, 60 to 69, 70 to 79, and 80 years or older, with separate RR values.[25] Whereas, HHS only splits ages into two groups: 35 to 64 and 65 or older.[26] For ischemic/coronary heart disease, the WHO's RRs for males range from 1.1 to 5.5, while the HHS's RRs for the same disease are 1.51 and 2.8. Because of this, estimates

[23] "WHO Global Report Mortality Attributable to Tobacco," World Health Organization, 2012, https://iris.who.int/bitstream/handle/10665/44815/9789241564434_eng.pdf?sequence=1.

[24] "The Health Consequences of Smoking – 50 Years of Progress," U.S. Department of Health and Human Services, Chapter 12, 2014, https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf_NBK179276.pdf.

[25] "WHO Global Report Mortality Attributable to Tobacco," World Health Organization, 2012, page 9, https://iris.who.int/bitstream/handle/10665/44815/9789241564434_eng.pdf?sequence=1.

[26] "The Health Consequences of Smoking – 50 Years of Progress," U.S. Department of Health and Human Services, 2014, page 652, https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf_NBK179276.pdf.

of deaths attributable to smoking vary. Using Florida's male smoking rate of 15.7% as an example, a RR of 2.8 predicts a PAF of 22 percent. A RR of 5.5 predicts the PAF would be 41 percent, resulting in a significant difference.

Both the WHO and HHS have applied this formula to the U.S. on a national level. This study instead applies this method to state mortality and smoking rates to estimate the number of deaths in each state. After applying this method to estimate state-level smoking mortality, research on the relative difference in risks of smoking and vaping were used to estimate how many fewer deaths from causes associated with smoking there would have been in a harm reduction model of each state in which smoking is replaced by tobacco harm reduction technologies, in this case vaping.

Next, using research reported by the Royal College of Physicians[27] in the U.K. the total deaths in each state are assumed to be reduced by 95 percent in the harm reduction model. From this calculation, a comparison of total deaths due to smoking-related diseases versus vaping-related diseases can be made for each state.

The year 2019 was chosen to avoid having to differentiate between the effects of smoking and the COVID-19 pandemic. Data for 2023 was also considered; however, it was not available at the time of this study. Adult nicotine use rates are assumed to remain the same in each state as they were in that state in 2019.

Data

This study uses the WHO's RR values and the breakdown of smoking-related diseases,[28] as well as state-level mortality data[29] and state smoking rates[30] from the Centers for Disease Control and Prevention. Mortality data was grouped by state, disease,[31] gender, and age (where applicable).

Limitations

Unlike the HHS' estimation of deaths from smoking, certain factors are not considered in this study such as former smokers, secondhand smoke, perinatal conditions, and residential fires. This study produces a more conservative estimate of smoking-related deaths by focusing only on current smokers. Considering these other factors would likely reveal more avoidable deaths from smoking due to the lower health risks of vaping, and because without an ignited product, residential fire due to vaping isn't a consideration. As more data becomes available, this study's methodological approach can be updated to reflect risk differences based on individual disease categories and factors omitted from this study.

[27] "Nicotine without smoke: Tobacco Harm Reduction," Royal College of Physicians, accessed January 2, 2024, <https://www.rcplondon.ac.uk/projects/outputs/nicotine-without-smoke-tobacco-harm-reduction>.

[28] "WHO Global Report Mortality Attributable to Tobacco," World Health Organization, 2012, pages 9 and 11, https://iris.who.int/bitstream/handle/10665/44815/9789241564434_eng.pdf?sequence=1.

[29] "CDC Wonder," Centers for Disease Control and Prevention, accessed January 2, 2024, <https://wonder.cdc.gov/ucd-icd10-expanded.html>.

[30] "BRFSS Prevalence & Trends Data," Centers for Disease Control and Prevention, accessed January 2, 2024, https://nccd.cdc.gov/BRFSSPrevalence/rdPage.aspx?rdReport=DPH_BRFSS.ExploreByTopic&irbLocationType=StatesAndMMSA&isClass=CLASS17&isTopic=TOPIC15&isYear=2022&rdRnd=68701; See appendix C.

[31] Causes of death were grouped by ICD-10 113 code. See Appendix B.

Appendix B: Disease Categories By ICD-10 113 Cause List

1. Upper aerodigestive cancer (C00-C15; C32-34)
2. Stomach cancer (C16)
3. Liver cancer (C22)
4. Pancreas cancer (C25)
5. Cervix uteri cancer (C53)
6. Bladder Cancer (C67)
7. Myeloid Leukemia (C92)
8. Kidney & other urinary cancer (C64-66; C68)
9. Ischemic heart disease (I20-25)
10. Stroke (I60-69)
11. Hypertensive heart disease (I10 - I16)
12. Other cardiovascular diseases (I00-I09; I26-I52; I70-I99)
13. COPD (J40-44)
14. Other respiratory diseases (J10-18; J20-22; J30-39; J45-98)
15. Tuberculosis (A15-19; B90)

**Disease categories were determined using data provided by the WHO[31] as well as other sources.[32]

[31] "WHO Global Report Mortality Attributable to Tobacco," World Health Organization, 2012, pages 9 and 11, https://iris.who.int/bitstream/handle/10665/44815/9789241564434_eng.pdf?sequence=1.

[32] "ICD Coding: 113 Causes of Death (ICD-10)," Oklahoma Statistics On Health Available for Everyone, accessed December 12, 2023, https://www.health.state.ok.us/stats/Vital_Statistics/Death/113_causes.shtml; "Free 2024 ICD-10-CM Codes," ICD10Data.com, accessed January 3, 2024, <https://www.icd10data.com/ICD10CM/Codes>.

Appendix C: Smoking Rates and Total Adult Smokers Per State (2019)

	Male Smoking Rate	Female Smoking Rate	Total Smokers
Alabama	22.4%	18.4%	735,349
Alaska	19.0%	15.7%	91,531
Arizona	17.5%	12.5%	799,353
Arkansas	21.7%	18.8%	444,123
California	12.7%	7.4%	2,910,780
Colorado	15.1%	11.9%	577,757
Connecticut	13.7%	10.6%	324,431
Delaware	15.8%	16.0%	116,592
District of Columbia	16.1%	9.8%	69,573
Florida	15.7%	13.9%	2,439,784
Georgia	19.0%	13.9%	1,253,078
Hawaii	15.2%	9.4%	131,194
Idaho	16.8%	13.9%	194,632
Illinois	17.0%	12.1%	1,355,322
Indiana	21.2%	17.3%	936,550
Iowa	17.9%	14.9%	375,387
Kansas	16.4%	16.0%	338,059
Kentucky	22.1%	25.1%	777,818
Louisiana	24.1%	19.8%	740,506
Maine	19.9%	15.4%	184,095
Maryland	14.2%	11.3%	568,250
Massachusetts	14.5%	9.8%	630,358
Michigan	20.2%	17.2%	1,389,264
Minnesota	16.3%	13.0%	603,284
Mississippi	24.3%	16.9%	440,099
Missouri	20.6%	18.7%	888,686

	Male Smoking Rate	Female Smoking Rate	Total Smokers
Montana	16.7%	16.5%	132,883
Nebraska	15.7%	13.6%	201,509
Nevada	17.5%	13.9%	358,881
New Hampshire	17.1%	14.7%	166,736
New Jersey	13.9%	10.2%	790,533
New Mexico	18.3%	13.8%	245,914
New York	14.2%	11.3%	1,862,755
North Carolina	20.7%	16.4%	1,430,525
North Dakota	18.1%	16.0%	93,807
Ohio	21.6%	20.0%	1,797,185
Oklahoma	21.1%	16.8%	537,474
Oregon	15.4%	13.6%	463,767
Pennsylvania	18.2%	16.5%	1,673,047
Rhode Island	15.3%	11.4%	106,707
South Carolina	19.5%	15.8%	673,163
South Dakota	18.8%	17.8%	115,660
Tennessee	20.9%	18.9%	1,006,220
Texas	18.2%	11.3%	2,994,846
Utah	10.0%	5.8%	168,279
Vermont	16.5%	13.9%	72,614
Virginia	15.3%	12.8%	887,628
Washington	13.6%	11.7%	718,753
West Virginia	24.4%	23.2%	325,352
Wisconsin	17.2%	13.6%	664,353
Wyoming	18.9%	17.9%	77,866
US Total			36,882,313

*State populations were taken from the United States Census Bureau's "Annual Estimates of the Resident Population by Single Year of Age and Sex: April 1, 2010 to July 1, 2019" (<https://www.census.gov/data/tables/time-series/demo/popest/2010s-state-detail.html>) using ages 21 and above to calculate the total adult smokers in each state.

**Smoking rates for New Jersey were not reported for 2019. An average was taken from the rates reported in 2018 and 2020.

Appendix D: Deaths Caused by Preventable Smoking Deaths under the Harm Reduction Model (2019)

	Smoking	Preventable Deaths
Alabama	7,724	7,338
Alaska	457	434
Arizona	6,121	5,815
Arkansas	4,782	4,543
California	20,450	19,427
Colorado	3,677	3,494
Connecticut	2,597	2,467
Delaware	978	929
District of Columbia	367	348
Florida	22,093	20,988
Georgia	10,050	9,548
Hawaii	917	871
Idaho	1,551	1,474
Illinois	11,428	10,857
Indiana	8,944	8,497
Iowa	3,547	3,370
Kansas	3,169	3,010
Kentucky	7,698	7,313
Louisiana	6,255	5,942
Maine	1,848	1,756
Maryland	4,433	4,211
Massachusetts	5,040	4,788
Michigan	12,692	12,057
Minnesota	4,303	4,088
Mississippi	4,787	4,548
Missouri	8,405	7,985

	Smoking	Preventable Deaths
Montana	1,184	1,124
Nebraska	1,799	1,709
Nevada	3,041	2,889
New Hampshire	1,399	1,329
New Jersey	6,213	5,902
New Mexico	1,905	1,810
New York	14,216	13,505
North Carolina	11,640	11,058
North Dakota	700	665
Ohio	16,497	15,673
Oklahoma	5,757	5,469
Oregon	3,715	3,530
Pennsylvania	14,861	14,118
Rhode Island	918	872
South Carolina	6,087	5,783
South Dakota	1,001	951
Tennessee	9,798	9,308
Texas	20,846	19,804
Utah	983	934
Vermont	626	594
Virginia	7,075	6,721
Washington	5,298	5,033
West Virginia	3,501	3,326
Wisconsin	5,644	5,362
Wyoming	621	590
US Total	309,640	294,158

Appendix E: Projected Deaths Caused by Smoking and Preventable Deaths under the Harm Reduction Model (2024)

	Smoking	Preventable Deaths
Alabama	8,102	7,697
Alaska	459	436
Arizona	6,305	5,990
Arkansas	4,895	4,650
California	20,128	19,121
Colorado	3,777	3,588
Connecticut	2,641	2,509
Delaware	1,049	997
District of Columbia	357	339
Florida	23,634	22,452
Georgia	10,550	10,022
Hawaii	927	881
Idaho	1,728	1,641
Illinois	11,288	10,724
Indiana	9,157	8,699
Iowa	3,614	3,433
Kansas	3,202	3,042
Kentucky	7,824	7,433
Louisiana	6,134	5,828
Maine	1,928	1,832
Maryland	4,544	4,316
Massachusetts	5,133	4,877
Michigan	12,761	12,123
Minnesota	4,396	4,177
Mississippi	4,730	4,493
Missouri	8,512	8,086

	Smoking	Preventable Deaths
Montana	1,266	1,202
Nebraska	1,850	1,757
Nevada	3,170	3,012
New Hampshire	1,445	1,373
New Jersey	6,520	6,194
New Mexico	1,922	1,826
New York	14,227	13,516
North Carolina	12,181	11,571
North Dakota	725	688
Ohio	16,671	15,838
Oklahoma	5,948	5,650
Oregon	3,724	3,538
Pennsylvania	15,035	14,283
Rhode Island	952	904
South Carolina	6,460	6,137
South Dakota	1,051	998
Tennessee	10,336	9,819
Texas	22,271	21,157
Utah	1,059	1,006
Vermont	650	617
Virginia	7,255	6,892
Washington	5,455	5,182
West Virginia	3,450	3,278
Wisconsin	5,749	5,462
Wyoming	629	598
US total	317,772	301,883

Appendix F: Deaths Caused by Smoking and Preventable Deaths under the Harm Reduction Model (2010 – 2024)

	Smoking	Preventable Deaths
Alabama	116,352	110,535
Alaska	6,872	6,528
Arizona	88,137	83,731
Arkansas	71,281	67,717
California	301,077	286,023
Colorado	53,170	50,511
Connecticut	39,232	37,270
Delaware	14,523	13,797
District of Columbia	5,202	4,941
Florida	321,293	305,228
Georgia	147,744	140,356
Hawaii	13,784	13,095
Idaho	22,768	21,630
Illinois	172,572	163,943
Indiana	133,158	126,500
Iowa	52,956	50,309
Kansas	47,483	45,109
Kentucky	115,036	109,284
Louisiana	93,253	88,590
Maine	27,845	26,453
Maryland	66,270	62,956
Massachusetts	74,998	71,248
Michigan	190,049	180,546
Minnesota	63,608	60,427
Mississippi	71,681	68,097
Missouri	125,399	119,129

	Smoking	Preventable Deaths
Montana	17,579	16,700
Nebraska	26,698	25,363
Nevada	43,896	41,701
New Hampshire	20,915	19,869
New Jersey	94,432	89,710
New Mexico	28,581	27,152
New York	215,050	204,297
North Carolina	170,482	161,958
North Dakota	10,300	9,785
Ohio	247,002	234,652
Oklahoma	85,660	81,377
Oregon	54,040	51,338
Pennsylvania	223,627	212,446
Rhode Island	13,904	13,209
South Carolina	88,862	84,419
South Dakota	14,775	14,036
Tennessee	144,991	137,742
Texas	303,414	288,243
Utah	14,302	13,587
Vermont	9,512	9,036
Virginia	104,928	99,682
Washington	76,810	72,970
West Virginia	53,228	50,566
Wisconsin	84,395	80,175
Wyoming	9,320	8,854
US total	4,592,444	4,362,822