

## Written Testimony of Michael Siegel, MD, MPH on H.R. 2339

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Dear Chairwoman Eshoo and Members of the Health Subcommittee:

I am a physician and a professor in the Department of Community Health Sciences at the Boston University School of Public Health. For the past 32 years, I have been a tobacco control researcher and anti-tobacco advocate. I played a major role in lobbying across the nation for 100% smoke-free bar and restaurant regulations. I have testified as an expert witness for plaintiffs in eight different lawsuits against the tobacco industry, including the Engle case, which resulted in an unprecedented \$145 billion verdict against the cigarette companies. I have published nearly 100 peer-reviewed journal articles relating to smoking and tobacco use. In short, I am a long-time, committed anti-tobacco researcher and advocate.

My message today is simple: H.R. 2339 has the potential to help curtail the youth vaping epidemic, but first, you must eliminate one subsection that, if enacted, will have severe, negative public health consequences. Several of the bill's provisions are well-founded and will contribute towards the protection of the public's health: these include raising the age of sale for all tobacco products to 21, eliminating online sales of tobacco products, and restricting electronic cigarette advertising so that it does not target youth. However, subsection (d) of Section 103 – which bans flavored electronic cigarettes – will have severe, negative public health consequences.

As you know, we are in the midst of an outbreak of severe, acute respiratory disease that has affected more than 1,000 people – mostly youth and young adults – and has resulted in more than 20 deaths. Why are people getting so sick? Why are so many youth – as young as age 17- developing complete respiratory failure that often requires mechanical ventilation? Last week, we learned that a 17-year-old boy from the Bronx died of sudden respiratory failure. Can we prevent these tragic deaths by banning the retail sale of vaping products?

As far as we can tell, the answer is — surprisingly — no. In the vast majority of cases, the victims were not purchasing vaping products from retail stores. Instead, they were obtaining vape cartridges from the completely unregulated black market. These products originate from illegal drug operations that are producing tens of thousands of contaminated THC vape cartridges, loaded with a thick, viscous oil – vitamin E acetate oil. This oil is destroying the ability of the lungs to work, either because of the oil itself or because it is contaminated with a respiratory toxin.

So why would a ban on flavored e-cigarettes create a public health disaster? It's because it would create a new black market for flavored e-liquids. These products will not be purchased at stores, but off the street. Consumers will have no way to know what is in these e-liquids, and it is nearly certain that we are going to see more outbreaks similar to what we are experiencing now with the tainted THC vape cartridges.

Banning flavored e-liquids is not going to do anything to curtail the respiratory disease outbreak, but it may make the outbreak worse. Why? Because the supply of e-liquids that youth are vaping is going to transition from one dominated by nicotine products to one dominated by THC products, exactly the products that are causing this outbreak. This is not the time to be playing around with prohibition. We know what happens when extremely popular products are banned. Yes, it reduces consumption. But those who do consume are now dealing with a much more dangerous product, one that we have no control over.

There is a second reason why banning e-liquid flavors would have devastating health consequences. More than 2.5 million adult smokers in the U.S. have quit smoking completely by switching to electronic cigarettes, and most of these ex-smokers rely on flavored e-liquids to keep them off of real cigarettes. If flavored e-cigarettes are banned, there is no question in my mind that many of these ex-smokers will return to cigarette smoking. Most of those who don't will turn to a new, potentially dangerous black market that would be created by this legislation.

I want to suggest to you today that the way to address the problem of youth e-cigarette use is not to ban these products, but to strictly regulate them; and second, to focus on the aspect of e-cigarettes that is actually causing harm to our youth.

The real danger of youth e-cigarette use is not the flavors. It's not the flavors that are causing the harm. It's the high levels of nicotine and the special nicotine formulations being used in some of these products that are resulting in youth addiction to vaping.

For example, prior to the introduction of JUUL, three-fourths (74%) of nonsmoking youth e-cigarette users reported using e-cigarettes no more than about once a week and only 4% used them every day, a sure sign of addiction.<sup>1</sup> But by 2018, 12% of nonsmoking youth used e-cigarettes every day, a tripling of the percentage of youth e-cigarette users who were addicted, and less than half (42%) of non-smoking youth e-cigarette users only used them less than once a week.<sup>2</sup>

This change is what has created a public health crisis. So what explains this change?

What changed is that products like JUUL, Suorin, SMOK, and Phix entered the market and quickly became popular among teenagers. All of these brands use a different nicotine formulation from virtually all other e-cigarettes. They use a nicotine salt at very high concentrations, as much as 50 mg/mL, compared to most other e-cigarettes on the market, which do not use nicotine salts and generally have nicotine concentrations that are less than 25 mg/mL. The use of nicotine salts allows the nicotine to be absorbed into the bloodstream much more quickly, simulating the pattern you get with a real cigarette. This is why so many youth are now becoming addicted to vaping. It's not the flavors. It's the nicotine.

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<sup>1</sup> Data are from the 2014 National Youth Tobacco Survey, CDC.

<sup>2</sup> Data are from the 2018 National Youth Tobacco Survey, CDC.

In addition to the youth access and advertising restrictions that are outlined in H.R. 2339, regulating the nicotine formulations and levels allowable in e-liquids is the single most effective step you can take to help reverse the youth e-cigarette epidemic.

In summary, most of the provisions of H.R. 2339 are going to help reverse the youth e-cigarette epidemic. However, the ban on flavored e-liquids is going to have devastating public health effects. It is going to create a new black market for flavored e-liquids, result in more youth vaping dangerous THC oils, eliminate our ability to monitor and regulate the e-liquids that are being consumed, and force more than 2 million ex-smokers to either return to smoking or turn to the newly created black market. Instead of regulating e-cigarette flavors, I recommend that you regulate the nicotine content in e-cigarettes. This will allow you to balance the need to reverse the epidemic of youth vaping and the need to keep flavored e-cigarettes available to adults who have quit smoking or are trying to quit. The art of public health and public policy is being able to balance competing objectives. I think we can do that in a way that protects the health of both youth and adults.

Thank you, and I am happy to answer any questions that you may have.