VAPING ON TRIAL:
A comparison of U.K. and U.S. policies

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Contents

Summary

Smoking rates in Western nations have steadily declined over the past 50 years, as smokers realized the danger of their habit and quit, and fewer smokers started. Products were developed to help smokers reduce and even quit smoking, while sustaining a nicotine habit. The initial products were medically approved nicotine replacement therapy (NRT), such as patches, lozenges and gum made by pharmaceutical companies. More recently, alternative products for smokers have been supplied by the broader market, such as heat-not-burn tobacco products and non-tobacco nicotine vaping products. These products are not, as a rule, provided by the medical community, and they have split health advocates as to their risks and suitability for use in tobacco harm reduction (THR).

This paper details the different attitudes about use and uptake of this second type of THR between the U.S. and U.K. The U.K. government has a more permissive view of these secondary THR products, based on the assessment of Public Health England, a British government health body, that THR's risk is 95 percent less than smoking. Vaping products are already assisting harm reduction. Youth take-up is below ten percent and, crucially, offset by a fall in youth smoking.

While the U.K. presents the relative risk of vaping versus smoking, the U.S. evaluates the hazard or absolute risks of vaping products alone. U.S. health groups like the American Cancer Society are not providing context about the relative risks of vaping, and some anti-smoking experts argue that many U.S. health groups are willfully misleading the public, hampering the switch away from smoking.

> "While the U.K. presents the relative risk of vaping versus smoking, the U.S. evaluates the hazard or absolute risks of vaping products alone."

Large public surveys show that U.S. smokers are confused about the relative risks of smoking and vaping, and original small surveys of physicians in both the U.S. and U.K. show that this confusion even spreads to physicians in the U.S. In original research, far more U.K. physicians sampled (44 percent) believe vaping devices can be used as part of a harm reduction strategy, compared with only 4 percent in the U.S. Vaping has its own risks, and children should not have access to vaping products, but, based on the large reduction in relative risk, there are strong arguments for the Food and Drug Administration to approve vaping products, and then for the products to be taxed at far lower rates than cigarettes to reflect their lower risk profile.

Introduction

Smoking substantially increases a person's risk of being diagnosed with lung cancer, heart disease, and many other major health problems. Burning tobacco releases myriad carcinogens and the Centers for Disease Control and Prevention (CDC) associates smoking with over 480,000 premature deaths a year[1]. In the U.K., the death rate is similar: there are 74,600 deaths attributable to smoking[2] in a population of about 67 million.

Smoking bans have been tried in many places, but contraband and illicit markets always result, with all their attendant problems. Cigarettes are small and easily portable. Although relatively cheap, they are valuable enough to be used as currency in settings like prisons, where they are often banned. High tobacco taxes often encourage illicit markets, which have thrived in nations that have raised taxes too high[3]. It's not surprising that bans ultimately fail, which is why most societies acknowledge individual choice and maintain cigarettes' legality.

Over time, smoking rates have fallen in all Western nations and are beginning to fall in many lower- and middle-income countries too. Rates were over 40 percent in the 1960s and over 30 per cent until 1990[4]. According to the CDC, U.S. smoking prevalence has declined from over 20 percent in 2007 to about 12.5 percent in 2020[5]. Similarly, smoking rates have fallen in the U.K. from about 20 percent in 2011 to about 12 percent in 2020.[6] Social rejection, health messaging, and nicotine replacement therapies (gum, lozenges and patches) have helped those wishing to quit smoking and stopped more people from initiating the habit.

> "High tobacco taxes often encourage illicit markets, which have thrived in nations that have raised taxes too high.

But every year people continue to smoke, and others start smoking, and so new ways of providing choice have evolved. Many involve delivering nicotine in a manner without the need for burning tobacco, which creates the largest health risks from tobacco use. Heat-not-burn tobacco products and nicotine vaping products with no tobacco at all have become widely used by former and current smokers in many Western nations. In many instances governments, including the U.S., are unsure how to regulate them, with some products available for purchase, while the regulator, the U.S. Food and Drug Administration (FDA), decides whether to approve hundreds of others. The growth of these products has coincided with a nearly halving of smoking rates in the U.S. and U.K. In the U.K., the largest reduction in smoking prevalence has been among 18- to 24-year-olds: 25.7 percent of this group smoked in 2011 compared with 16.0 percent in 2019, a reduction of almost 10 percentage points.[7] And as will be discussed below, it is this age-group that has taken up vaping the most.

Absolute Risk Versus Relative Risk

While this sounds promising, it is important to understand the risks of the new products. Vaping is probably not harmless. The American Cancer Society says: "The long-term risks of exclusive use of e-cigarettes are not fully known but evidence is accumulating that e-cigarette use has negative effects on the cardiovascular system and lungs."[8] Additionally, significant amounts of nicotine delivered to any user can be worrying. Nicotine is poisonous in high doses, so devices delivering it must be well calibrated. It is also highly addictive, so its long-term use has potential risks, too.

While there are legitimate concerns, respiratory risks have been inappropriately connected to legitimate nicotine vaping products. In 2019 and 2020, a vaping related issue killed 68 people and harmed thousands in the U.S. The CDC called this "e-cigarette, or vaping, product use-associated lung injury (EVALI)." [9]

Dr. Dana Meaney-Delman, head of the CDC team investigating the outbreak, reported in 2019, "We've narrowed this clearly to THC-containing products that are associated with most patients who are experiencing lung injury. The specific substance or substances we have not identified yet." THC is the main psychoactive component of cannabis, and the CDC has said that the products identified were being obtained off the street or from other informal sources (e.g., friends, family members or illicit dealers).

> "...Vaping should not be seen in isolation but as part of the broader risk environment.

The specific substance causing harm in the illicit products has since been identified. As a group of health experts commented, "EVALI has nothing to do with nicotine vaping – its cause was a cutting agent, Vitamin E acetate, used in THC vapes that cannot be added to nicotine liquids and would serve no purpose if it could."[10]

While there are potential risks from vaping, it is essential to acknowledge the relative risk of vaping versus smoking when making regulatory decisions. Most new products are not entirely risk-free: sugary snacks and drinks, alcoholic beverages, and the newest Volvo all come with risks. Some products might be riskier than currently available products, but often they lower risk. Motor vehicle deaths have fallen over time (as a percentage of miles traveled) as cars and traffic systems have become safer thanks to stronger materials used in car manufacturing safety innovations including seatbelts, airbags, better brakes, and camera alert systems, and better community traffic safety initiatives including traffic lights and stop signs. However, no car is safe with zero risk[11]. Viewed this way, vaping should not be seen in isolation but as part of the broader risk environment.

Vapor Products as a Tool for Quitting Smoking

There is also evidence that vaping products aid smoking cessation.[12] A systematic review of clinical trials using nicotine replacement to stop smoking identified 61 trials, most of which took place in the U.S. (26 studies), the U.K. (11), and Italy (7).

The review found that for every 100 people using nicotine e-cigarettes to stop smoking, 9 to 14 of 100 people might successfully stop, compared with only 6 of 100 people using nicotine-replacement therapy, 7 of 100 using nicotine-free e-cigarettes, or four of 100 people having no support or behavioral support only.

The conclusions are tentative due to uneven numbers of participants and different methods used across the studies. However, the uncertainties apply to all smoking cessation approaches, and what evidence there is shows that vaping is more successful at driving smoking cessation than other methods and no significant evidence that it is a gateway into smoking. Yet the main global health body, the World Health Organization demands evidence of safety from vaping products before it promotes it as a method of smoking cessation.[13]

U.K. Policy Is Grounded in Vaping's Lower Relative Risk

The U.K. government regulates the risks associated with vaping in context of other tobacco products and assesses the significant role vaping products played in the reduction in smoking over the past decade. Their assessment concluded:

> Vaping poses only a small fraction of the risks of smoking and switching completely from smoking to vaping conveys substantial health benefits over continued smoking. Based on current knowledge, stating that vaping is at least 95 percent less harmful than smoking remains a good way to communicate the large difference in relative risk unambiguously so that more smokers are encouraged to make the switch from smoking to vaping. It should be noted that this does not mean e-cigarettes are safe.[14]

Partly due to the potential risks from vaping, U.K. authorities say that e-cigarettes are not safe, and to discourage use among youth, these products (like cigarettes) are banned for those under the age of 18 and are regulated closely.

Yet the U.K. Health Minister has advocated for providing vapes free-of-charge to vulnerable groups within the NHS (National Health Service).[15] As far back as summer 2019, two NHS hospitals in England opened vaping shops[16] after a major clinical trial by the NHS[17] found that electronic cigarettes are twice as successful as NRT at helping smokers quit.

The following is part of the stop smoking advice given by the NHS[18]:

> How do I choose the right e-cigarette for me?
>
> A rechargeable e-cigarette with a refillable tank delivers nicotine more effectively and quickly than a disposable model and is likely to give you a better chance of quitting smoking.
>
> - If you're a lighter smoker, you could try a cigalike, vape pen or pod system.
> - If you're a heavier smoker, it's advisable to try a vape pen, pod system or mod.
> - It's also important to choose the right strength of e-liquid to satisfy your needs.
>
> A specialist vape shop can help find the right device and liquid for you.
>
> You can get advice from a specialist vape shop or your local stop smoking service.

Hospitals in England and Scotland are handing out free vaping starter kits to recruit smokers into a cessation program[19]. England's Department of Health has collected data on vaping since 2014. Public Health England's (PHE) Smoking Prevalence Report 2019[20] yielded the following:

- In Great Britain, 5.7 percent of respondents in 2019 said they currently used an e-cigarette, which equates to nearly 3 million adults.
- This proportion is significantly higher than that observed in 2014, when data collection began, when only 3.7 percent vaped.
- Those aged 25 to 34 years had the highest proportion of vapers, at 9.2 percent.

PHE surveys only cover adults, but health advocacy group Action on Smoking and Health (ASH) has been collecting data on 11- to 17-year-olds since 2013. The most important point in the 2021 survey[21] is the continuing decline of young smokers, falling to the lowest level ever recorded at 4.2 percent of 11- to 17-year-olds. Elsewhere, ASH reports[22] that in 1982, 11 percent of 15-year-olds were regular smokers, compared with 2 percent in 2018.

Since ASH started surveying use of e-cigarettes in children in 2013, there has been an increase in vaping from 0.3 percent who vaped more than once a week, to 1.2 percent in 2021, while 7.2 percent have tried vaping once or twice and 88.2 percent have either never tried e-cigarettes or heard of them.

As the ASH report states:

> If children are less likely to smoke but trial of e-cigarettes continues at its current level, then it will become more common for non-smoking children to have tried e-cigarettes. This trend must be monitored but overall, having fewer child smokers is to be welcomed.[23]

U.S. Policy's Counterproductive Focus on Absolute Risk

Smoking rates have declined across the U.S. over the past decade. In general, poorer, less educated, and older people (45 to 65) smoke the most. According to the CDC, smoking prevalence has declined from more than 20 percent 15 years ago to about 12.5 percent in 2020[24]. The causes of the decline in smoking rates are similar to the U.K.: increased knowledge of the dangers leading some smokers to quit and non-smokers not to start, as well as traditional harm reduction products assisting those who wish to quit. Also, similar to the U.K., there has been an uptake of non-combustible products, especially nicotine vaping.

Gallup has tracked adult Americans' smoking habits since 1944; its August 2021 report states that 16 percent of adults smoked any cigarettes in the past week, 72 percent of smokers would like to give up, and 6 percent had vaped in the past week.[25]

> "Without a strong statement from CDC that nicotine vaping is not the cause of EVALI, nicotine vaping remains under suspicion.

While the data and much of the experience of the U.S. is similar to the U.K., the public advice given varies significantly. The CDC does mirror some of the advice given by U.K. authorities:

> E-cigarettes have the potential to benefit adult smokers who are not pregnant if used as a complete substitute for regular cigarettes and other smoked tobacco products. E-cigarettes are not safe for youth, young adults, and pregnant women, as well as adults who do not currently use tobacco products.[26]

But here the comparison largely ends. The CDC does not promote the use of vaping as a significant part of THR, and its mention of smoking cessation is not an active policy position for it or other government agencies. And unlike the U.K. it still stresses the risks of nicotine vaping for EVALI-like issues. CDC scientists correctly identify that EVALI is caused by cannabis vaping additives, but CDC maintains that not every case of EVALI comes from cannabis products and implies that e-cigarettes may be a possible cause. Without a strong statement from CDC that nicotine vaping is not the cause of EVALI, nicotine vaping remains under suspicion.

As pro-vaping analysts commented, "Many tobacco control organizations have misrepresented the cause of EVALI, and this has led to adverse changes in relative risk perceptions in the United States.[27] It has been used tactically as a misleading basis to call for restrictions on e-cigarettes such as flavor bans at the state level. This confusion persists and little has been done to rectify it." [28]

Furthermore, the myriad large health groups in the U.S. that dominate health advice in the public space do not even mention smoking cessation when talking about vaping - the American Cancer Society (ACS) states that:

> E-cigarettes pose a threat to the health of users and the harms are becoming increasingly apparent. In the past few years, the use of these products has increased at an alarming rate among young people in significant part because the newest, re-engineered generation of e-cigarettes more effectively delivers large amounts of nicotine to the brain. Many e-cigarettes sold in the U.S.

> contain far more nicotine than e-cigarettes sold elsewhere, which increases the risk of addiction and harm to the developing brains of youth and young adults. Marketing tactics targeting young people have contributed to the rapid increase in use. The long-term risks of exclusive use of e-cigarettes are not fully known but evidence is accumulating that e-cigarette use has negative effects on the cardiovascular system and lungs. Without immediate measures to stop epidemic use of these products, the long-term adverse health effects will increase.[29]

While there was a substantial increase in adolescent e-cigarette use between 2017 and 2019, "most adolescent use was infrequent, and frequent use was highly concentrated in young people who had a prior history of tobacco use. This means that vaping can disrupt pathways that lead to smoking, a much more damaging youth risk behavior. Recent analysis suggests that e-cigarettes create a diversion from adolescent smoking."[30]

The fact that ACS makes no mention of smoking is instructive. It is discussing vaping as an isolated new activity with no history associated with smoking cessation and no discussion of relative risk, only the hazard or absolute risk of the product. Multiple agencies and health groups in the U.S. present the information as ACS does. For example, suburban Philadelphia's Montgomery County Health Department has run at least three different television commercials over the past year making these exact points without any smoking cessation context.

In short, the arguments made by health authorities and major groups like ACS, the American Heart Foundation (AHA), the American Lung Association (ALA), and the American Thoracic Society (ATS) are alarmist without context to the role vaping plays in smoking cessation.

The veteran anti-smoking campaigner and former ASH director Clive Bates is frustrated at the resistance to e-cigarettes among health care authorities and advocates in the U.S. In a recent blog[31], Bates criticizes the advice on e-cigarettes given by the above-listed four large and trusted healthcare charities:

> These groups stress unknowns and negative effects to the heart and lungs without any sense of magnitude or nature of these risks. It would not be possible to conclude from this that one study found cancer potency (mean lifetime cancer risk) for typical e-liquid aerosol consumption [vaping] is 99.6 percent lower than smoking 15 cigarettes per day.[32]

All four health advocacy groups send the same message of fear and skepticism and conflate EVALI with vaping, whereas none admit to a positive effect of vaping in quitting smoking. In addition, AHA reveals yet another unproven fear:

> E-cigarettes' biggest threat to public health may be this: The increasing popularity of vaping may "re-normalise" smoking, which has declined for years. Reversing the hard-won gains in the global effort to curb smoking would be catastrophic.

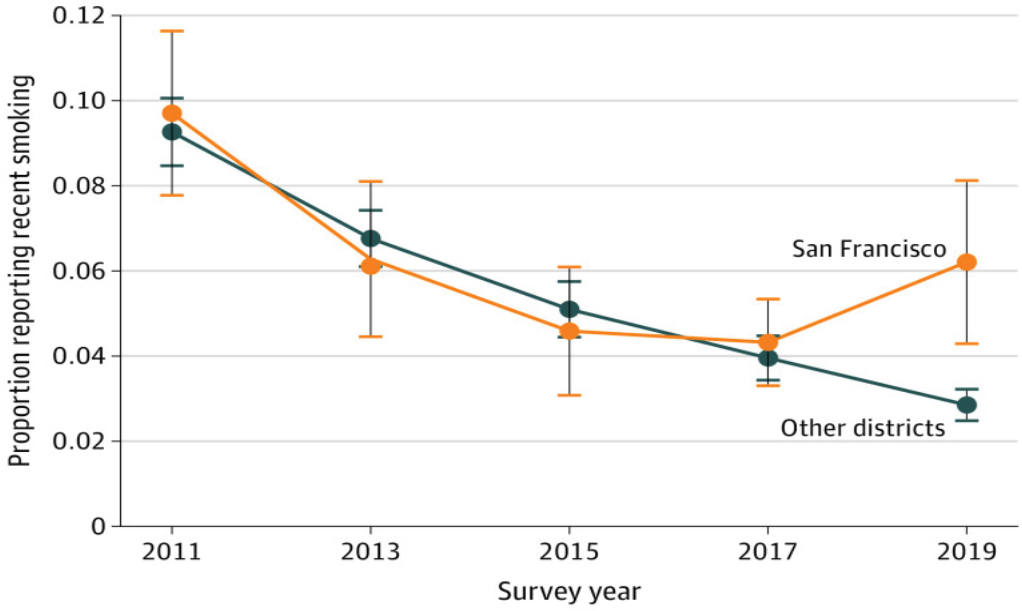
U.S. Precautionary Approach Creates Its Own Risks

U.S. policy is predicated on the belief that introducing any new nicotine or tobacco product is a danger, and hence precaution dictates fewer new products. But the precautionary approach creates risks of its own. Few new products are entirely safe, but they are often safer than what came before. Think of cars, washing machines, computers, and numerous other goods; problems with earlier versions are ironed out and become better and safer.

According to science writer and risk expert Dr. Matt Ridley, when based on reasonable initial evidence of safety, it is "much better to take the small risk that there are unknown hazards, than the known risk that there are huge hazards. Precaution should never be an excuse for defending an existing harm, yet all too often that is what it ends up being. The precautionary principle thus interpreted holds the new to a higher standard than the old."[33]

One of the most influential organizations promoting the precautionary approach is Bloomberg Philanthropies: It has spent over $160 million pushing for e-cigarette flavor bans and is front and center promoting vaping as an existential threat to young people's health. One of their "successes" has been San Francisco, which banned flavors in 2018. But the impact was not positive.

A study that has evaluated nicotine use before and after the San Francisco flavor ban found a sharp rise in adolescent smoking that was not replicated in districts that had not imposed a flavor ban. The figure from Friedman (2021)[34] is shown below:



N.B. Adjusting for complex survey design, annual, sample-weighted recent smoking rates and their 95% CIs were plotted using district-level Youth Risk Behavior Surveillance System data on recent smoking in high school students younger than 18 years in San Francisco, California, vs 7 other districts with representative data in 2011, 2013, 2015, 2017, and 2019: Broward County, Florida; Los Angeles, California; New York City, New York; Orange County, Florida; Palm Beach County, Florida; Philadelphia, Pennsylvania; and San Diego, California.

A group of health experts, including Clive Bates,[35] have been trying to get Bloomberg Philanthropies to change its focus:

> E-cigarettes function as substitutes for cigarettes for both adolescents and adults. While there was a substantial increase in adolescent e-cigarette use between 2017 and 2019, it is important to be clear that most adolescent use was infrequent, and frequent use was highly concentrated in young people who had a prior history of tobacco use.[36] This means that vaping can disrupt pathways that lead to smoking, a much more damaging youth risk behavior.

Most recent analysis indicates e-cigarettes create a diversion from adolescent smoking.[37] [38] This is consistent with observed U.S. adolescent population trends, which have seen a sharp decline in smoking as vaping has risen.[39]

As the pro-vaping health experts continue: "By 2020, youth smoking prevalence was far below the level expected when the Healthy People 2020 target for past-month adolescent cigarette use was set at 16.0 percent.[40] In 2020, cigarette prevalence was just 4.6 percent and any-combustible tobacco use was 9.4 percent.[41]

Matt Ridley suggests one possible reason to ignore relative risk in this context is "hatred of all things related to nicotine. So ingrained is the detestation of the tobacco industry as a purveyor of addictive death to the world that the prohibitionists cannot bring themselves to accept the harm-reduction argument that would be routinely easy to see in other cases."[42] Clive Bates went even further.

"Matt Ridley suggests . . . so ingrained is the detestation of the tobacco industry as a purveyor of addictive death to the world that the prohibitionists cannot bring themselves to accept the harm-reduction argument that would be routinely easy to see in other cases.

> In my view, this is not an accident or bad luck...but an outcome that many have strived for. [It is] the aggregate effect of the confirmation biases of thousands of academics and advocates who want, *really want*, this to be the reality and really do not want e-cigarettes to be much safer than cigarettes. *(Emphasis in the original)* [43]

This tobacco control misdirection has adversely impacted health professionals, particularly primary care physicians, the ones most likely to interact with patients and be a trusted source of knowledge, understanding of the relative risk of vaping versus traditional cigarette use. A recent scientific study found that more than 60 percent of U.S.-based physicians believed all tobacco products – from traditional cigarettes to vaping pens – to be equally harmful.[44] And perhaps as concerning, vaping as an off-ramp from smoking was largely only discussed when the subject was brought up by the patients themselves, or if the physician was an ex-smoker.

The Adverse Health Consequences from Vapor Misinformation

The results of a very brief survey undertaken by a small group of practicing physicians in the U.K. and U.S. illustrates that the vaping misinformation has significant adverse health impacts. Out of 50 identified physicians in both the U.K. and the U.S., 25 physicians in the U.K. and 23 physicians in U.S. answered four questions about their patients' vaping and smoking cessation (with room to provide more information if they so wished about specifics of interactions with patients trying to quit, and their own experiences if they ever smoked or vaped).

Q1	**IF A PATIENT IS HAVING TROUBLE QUITTING SMOKING, DO YOU SUGGEST USING HARM REDUCTION PRODUCTS SUCH AS NICOTINE PATCHES OR GUM?**		
		U.K.	**U.S.**
	Yes	25	23
Q2	**DO YOU INCLUDE VAPING AND OTHER NON-PRESCRIPTION PRODUCTS IN YOUR HARM REDUCTION STRATEGIES?**		
		U.K.	**U.S.**
	Yes	15	6
	No	10	17
Q3	**DO YOU TELL PATIENTS THAT VAPING IS...?** **A. NOT SAFE BUT SAFER THAN SMOKING** **B. AS DANGEROUS AS SMOKING** **C. FAR SAFER THAN SMOKING AND CAN BE USED ALONGSIDE TRADITIONAL PATCHES OR GUM**		
		U.K.	**U.S.**
	A	3	5
	B	11	17
	C	11	1
Q4	**WOULD YOU BE IN FAVOR OF A VAPING BAN?**		
		U.K.	**U.S.**
	Yes	2	6
	No	23	17

All 48 physicians advise patients to use harm reduction strategies (question 1), but the replies to the second and third questions show there is a significant difference between the two countries.

First the similarities. The vast majority of physicians in both countries say vaping is safer than smoking, but only one physician in the U.S. (4 percent) actually recommended patients to use vaping as part of harm reduction, whereas 11 (44 percent) physicians in the U.K. said that they would. This is a sizeable difference and is consistent with the information provided by public authorities and health groups in the two nations. Two (8 percent) of U.K. physicians were in favor of a vaping ban while, six (25 percent) of American physicians were. Some of the participants engaged more anecdotally. There was a range of opinion once everyone acknowledges

the dangers of smoking. At least two U.S.-based physicians conflated EVALI with nicotine products, which shows the influence of information flows from powerful health organizations. U.S. physicians also were more focused on youth uptake than harm reduction of smokers, with all six who made anecdotal comments mentioning this point.

Perhaps most interesting were three physicians from the U.K. who were former smokers themselves and had used every harm reduction product available. Two of these physicians still vaped but didn't smoke, and one no longer did either. All credited vaping with helping them quit.

Of course, their comments are entirely anecdotal, but their answers provide an insight into how these products helped them quit smoking. One liked heat-not-burn products since they were similar to smoking, but without the high risk, while another liked pineapple- and bubble-gum-flavored vapes because they provided a "nicotine fix" but were totally unlike smoking (this person positively disliked tobacco flavored vaping because it was "too reminiscent of smoking").

Four of the U.K. physicians referred to similar examples among their patients, some being able to quit with patches or gum, some enjoying vaping and others preferring heat-not-burn tobacco products. The obvious conclusion was that a variety of types of products assisted people to quit, and of those who mentioned it, U.K. physicians were satisfied with having more options available to help patients stop smoking. Physicians in the U.K., like their U.S. equivalents, were worried about youth uptake of vaping, but they were more concerned about likely smoking behavior if vaping were banned. Implementing policies to keep vapes away from the young, while not foolproof, was their preferred approach.

"Physicians in the U.K., like their U.S. equivalents, were worried about youth uptake of vaping, but they were more concerned about likely smoking behavior if vaping were banned.

A similar survey was conducted of those people identified as vaping in the U.K. (64 people out of 100 answered) and U.S. (54 people out of 100 answered). The aim was to ascertain how many of the people vaping had or still smoked, what type of vaping products they liked, and what their general opinion was with respect to vaping. The survey consisted of three questions that were easy to present in comparative quantitative fashion (see table below).

	U.K.	U.S.
Did you smoke?	92	94
Do you smoke?	34	48
Do you like tobacco flavors?	44	54

Nearly everyone in the U.K. (92 percent) and U.S. (94 percent) had smoked, but far fewer still smoked (U.K. 34 percent and U.S. 48 percent). It is interesting and possibly supportive of anti-vaping arguments that some vapers were not smokers, since they had begun vaping possibly without ever having tried cigarettes. But it's also possible that they tried vaping without ever trying smoking because vaping was available, had it not been they might have smoked instead. It is also arguably persuasive that vaping assists with smoking cessation, since

from the data more vapers are ex-smokers (92-34 = 58 percent) than current smokers in the U.K. and roughly equal (94-48 = 46 percent) in the U.S. Approximately half of all vapers in both nations liked tobacco flavors, and natural tobacco was the most popular flavor, with menthol, mint, and various fruit flavors all popular too.

With roughly half of vapers not liking tobacco-flavored vapes, it shows that many of these existing or former smokers like products that do not taste of tobacco in any way – a nicotine delivery system devoid of tobacco. In the discussions with vapers who commented (12 U.K. and 7 U.S.), all said that vaping helped them lower or "kick" their smoking habit. Many vapers would rather not smoke, and while all ex-smokers' stories are unique, there are many similarities. The story below is representative of many survey comments received:

> Ever since I had my first puff on a vape, I completely lost interest in cigarettes. I think I had one maybe two cigarettes in the last seven years or so. I get what I need (i.e., nicotine) from vapes. It was completely life-changing. My breath, clothes, and apartment do not stink…. And, to top it off, I am no longer killing myself. It was a God-send.

Discussion

Vaping is not safe, and it is even possible that we will discover it is less safe than currently thought. However, most claims of serious harm from vaping are not evidence-based.[45] Despite the evidence that vaping poses a lower-risk (not zero-risk) nicotine product, the U.S. policy position is to essentially discourage vaping, and its vastly safer health profile, in all circumstances. By failing to frame the vaping issue within the context of smoking, U.S. public health authorities are potentially exposing nicotine users to greater risks.

The fear, often expressed by ACS, that vaping might renormalize smoking, also seems to be unfounded. Surveys show that many vapers no longer wanted or needed to smoke or smoke as much. Far from normalizing smoking, vaping undermines it.

Vaping isn't harmless, and many products that are deemed harmful are taxed at higher rates than books or food. To reflect these harms, it could make sense for the government to tax vaping products at higher rates than essential products but at lower rates than cigarettes.

In contrast to the U.S. approach, the U.K. encourages vaping as part of the pathway to quit smoking, while still taxing it. As such, the U.K. policy position acknowledges human agency and the interactions of real life: the motivations and needs of existing smokers, as well as the appetite teenagers will always have for the "forbidden fruit."

Conclusion

There are risks with new technologies, but they often displace older and greater risks. Preventing new products denies the ability of people to try new products that could improve their lives or reduce their relative risks. Unfortunately, the FDA is very slow at approving new harm reduction products and seem to be buying into the alarmist voices from U.S. health groups. The FDA has approved very few new products (denying thousands) and many of those are old-style tobacco flavored, when the evidence discussed above shows that at least half of vapers preferred non-tobacco flavored products.[46]

Wildavsky tellingly writes that, it is "better to have trial and error than trial without error." Right now, vaping is on trial. As the initial evidence from San Francisco shows, banning flavored products (the ones desired by many vapers hoping to quit smoking entirely) led to an increase in smoking.

There are risks from vaping, but they are significantly lower compared with smoking. The U.K. encourages vaping as part of the pathway to quit smoking. As such, the U.K. policy position acknowledges human agency and the interactions of real life: the motivations and needs of existing smokers, as well as the appetite teenagers will always have for "forbidden fruit." Vaping bans and restrictions are bad ideas that will surely backfire.

> "There are risks from vaping, but they are significantly lower compared with smoking.

The CDC mentions that vaping can assist smoking cessation, and its scientists explain that EVALI is not likely linked to nicotine vaping. However, its position is equivocal and does not stress the value of vaping in any sense. Its passivity allows other health groups to misinform the public and demand vaping flavor bans, which appear to have already led to an uptick in smoking in San Francisco.

The anti-smoking movement has had successes with de facto bans on cigarettes by limiting where the product can be used. But given what we know about the role of vaping in smoking cessation, de facto bans on vaping will only drive more people back to smoking. This would be a bad public health outcome and one that is entirely preventable if suitable new products are approved by FDA.

Endnotes

1 Current Cigarette Smoking Among Adults in the United States, Centers for Disease Control and Prevention, accessed June 16th 2022 https://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm

2 Statistics on Smoking, England, National Health Service, accessed June 16th 2022 https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-smoking/statistics-on-smoking-england-2020

3 The Perverse Effects of Sin Taxes, American Enterprise Institute accessed June 16th 2022 https://www.aei.org/research-products/working-paper/the-perverse-effect-of-sin-taxes-the-rise-of-illicit-white-cigarettes/

4 Smoking Prevalence Among U.S. Adults, 1955-2013 Infoplease, accessed June 16th 2022 https://www.infoplease.com/math-science/health/substance-abuse/smoking-prevalence-among-us-adults-1955-2013

5 Fast Fact Sheets, Centers for Disease Control and Prevention, accessed June 16th 2022 https://www.cdc.gov/tobacco/data_statistics/fact_sheets/index.htm

6 Adult smoking habits in the UK: 2019, Office of National Statistics, accessed June 16th 2022 https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/bulletins/adultsmokinghabitsingreatbritain/2019 and Statistics on Smoking, England, National Health Service, accessed June 16th 2022 https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-smoking/statistics-on-smoking-england-2020#

7 Adult smoking habits in the UK: 2019, Office of National Statistics, accessed June 16th 2022 https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/datasets/smokinghabitsintheukanditsconstituentcountries

8 American Cancer Society Position Statement on Electronic Cigarettes, accessed June 16th 2022 https://www.cancer.org/healthy/stay-away-from-tobacco/e-cigarettes-vaping/e-cigarette-position-statement.html

9 Bloomberg Philanthropies reply to Cummings et al June 2 2021, accessed June 16th 2022 https://docs.google.com/document/d/1GtAkuw9E-7yQpnJrdjpsH2Q_urGsXmT5CZGTDD4u8o0/edit

10 The outbreak of lung injuries often known as "EVALI" was nothing to do with nicotine vaping. Clive Bates *Qeios* 2021 https://www.qeios.com/read/ZGVHM7.3.

11 For a discussion of risks, especially from driving, see *Risk* John Adams: London UCL Press 1995

12 A Randomized Trial of E-Cigarettes versus Nicotine-Replacement Therapy. New England Journal of Medicine. 380 (7): 629–637. doi:10.1056/NEJMoa1808779. ISSN 0028-4793. PMID 30699054. Electronic cigarettes for smoking cessation, Jamie Hartmann-BoyceHayden McRobbieAilsa R ButlerNicola LindsonChris BullenRachna BeghAnnika TheodoulouCaitlin NotleyNancy A RigottiTari TurnerThomas R FanshawePeter Hajek https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010216.pub6/full

13 Tobacco: Key Facts, World Health Organization, accessed June 16th 2022 https://www.who.int/news-room/fact-sheets/detail/tobacco

14 Vaping in England: evidence update February 2021, Public Health England, accessed June 16th 2022 https://www.gov.uk/government/publications/vaping-in-england-evidence-update-february-2021

15 Britons love e-cigarettes - and ministers want to encourage them, *The Economist,* November 6th 2021 accessed June 16th 2022 https://www.economist.com/britain/2021/11/06/britons-love-e-cigarettes-and-ministers-want-to-encourage-them

16 Vape shops open in two UK hospitals to help smokers kick the habit, *The Guardian,* July 10th 2019, accessed June 16th 2022 https://www.theguardian.com/society/2019/jul/10/vape-shops-hospital-smokers-kick-habit-west-midlands

17 Using E-Cigarettes to Stop Smoking, National Health Service UK, accessed June 16th 2022 https://www.nhs.uk/live-well/quit-smoking/using-e-cigarettes-to-stop-smoking.

18 Using E-Cigarettes to Stop Smoking, National Health Service UK, accessed June 16th 2022 https://www.nhs.uk/live-well/quit-smoking/using-e-cigarettes-to-stop-smoking.

19 Starter vape packs to be handed out in hospitals, UEA Press, accessed June 16th 2022 https://www.uea.ac.uk/news/-/article/starter-vape-packs-to-be-handed-out-in-hospitals

20 Smoking habits in UK and its constituent countries, Office of National Statistics, accessed June 16th 2022 https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/datasets/smokinghabitsintheukanditsconstituentcountries

21 Action on Smoking and Health (ASH) 2021. Use of e-cigarettes among young people in Great Britain. Accessed June 16th 2022 https://ash.org.uk/information-and-resources/fact-sheets/statistical/use-of-e-cigarettes-among-young-people-in-great-britain-2021/

22 Young People and Smoking, Action on Smoking and Health (ASH) 2019, accessed June 16th 2022 https://ash.org.uk/wp-content/uploads/2019/09/190913-ASH-Factsheet_Youth-Smoking.pdf

23 ASH 2021 op cit.

24 Fast Fact Sheets, Centers for Disease Control and Prevention, accessed June 16th 2022 https://www.cdc.gov/tobacco/data_statistics/fact_sheets/index.htm

25 Smoking and Vaping remain steady and Low in US, Gallup, accessed June 16th 2022 https://news.gallup.com/poll/353225/smoking-vaping-remain-steady-low.aspx

26 Electronic Cigarettes, Centers for Disease Control and Prevention, accessed June 16th 2022 https://www.cdc.gov/tobacco/basic_information/e-cigarettes/index.htm

27 News that takes your breath away: risk perceptions during an outbreak of vaping-related lung injuries. Dave D, Dench D, Kenkel D, Mathios A, Wang H. *J Risk Uncertain* 2020;60(3):281–307. (*Cited in Cummings et al. 2021)*

28 Bates C, Holding the Bloomberg anti vaping propaganda complex to account, April 1 2021, accessed June 16th 2022, https://clivebates.com/holding-the-bloomberg-anti-vaping-propaganda-complex-to-account/

29 American Cancer Society Position Statement on Electronic Cigarettes, accessed June 16th 2022 https://www.cancer.org/healthy/stay-away-from-tobacco/e-cigarettes-vaping/e-cigarette-position-statement.html

30 Cummings letter to Bloomberg Philanthropies accessed June 16th 2022 https://docs.google.com/document/d/1GtAkuw9E-7yQ_pnJrdjpsH2Q_urGsXmT5CZGTDD4u8o0/edit

31 Bates C, E-cigarette risk misperceptions and American crime scene, accessed June 16th 2022 https://clivebates.com/e-cigarette-risk-perceptions-an-american-crime-scene/

32 Stephens W, Comparing the cancer potencies of emissions from vapourised nicotine products including e-cigarettes with those of tobacco smoke, accessed June 16th 2022 https://tobaccocontrol.bmj.com/content/27/1/10.

33 Ridley M, "The Freedom to Save Your Life," May 8, 2019, https://www.rationaloptimist.com/blog/vaping-and-freedom/

34 Analysis of Youth Smoking and a Ban on Sales of Flavored Tobacco Products in San Francisco, Friedman AS. *JAMA Pediatrics* 2021; 175 (8) 863-865. https://jamanetwork.com/journals/jamapediatrics/fullarticle/2780248

35 Cummings et al letter to Bloomberg Philanthropies September 1 2021.BloombergBriefingSept2021.PDF

36 Jarvis M, Jackson S, West R, Brown J. Epidemic of youth nicotine addiction? What does the National Youth Tobacco Survey 2017-2019 reveal about high school e-cigarette use in the USA? *Quits* 2020, (*Cited in Cummings et al. 2021)*

37 Selma AS, Foxon F. Trends in electronic cigarette use and conventional smoking: quantifying a possible 'diversion' effect among US adolescents. *Addiction* 2021;add.15385. (*Cited in Cummings et al. 2021)*

38 Sokol N, Feldman J. High school seniors who used e-cigarettes may have otherwise been cigarette smokers: evidence from Monitoring the Future (United States, 2009-2018). *Nicotine Tob Res* 2021. (*Cited in Cummings et al. 2021)*

39 Levy DT, Warner KE, Cummings KM, et al. Examining the relationship of vaping to smoking initiation among US youth and young adults: a reality check. *Tob Control* 2019;28(6):629–635. (*Cited in Cummings et al. 2021)*

40 Healthy People 2020. Target TU-2.2 Reduce use of cigarettes by adolescents from 19.5% in 2009 to 16 percent in 2020. (*Cited in Cummings et al. 2021)*

41 Gentzke AS, Wang TW, Jamal A, et al. Tobacco Product Use Among Middle and High School Students — United States, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:1881–1888. Past-30-day smoking prevalence among high school students. (*Cited in Cummings et al. 2021)*

42 Ridley M, "Why Vaping Causes Harm in the U.S. But Not in the UK," October 28, 2019, https://www.rationaloptimist.com/blog/vaping-us-vs-uk/

43 Bates C, E-cigarette risk misperceptions and American crime scene, accessed June 16th 2022 https://clivebates.com/e-cigarette-risk-perceptions-an-american-crime-scene/

44 Delnevo C, Jeong M, Teotia, A, et al. Communication Between US Physicians and Patients Regarding Electronic Cigarette Use, accessed June 16th 2022 https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2791164

45 English C, Lousy Vaping Studies: A Master List Of Junk Science, ACSH, accessed June 16th 2022 https://www.acsh.org/news/2022/02/24/lousy-vaping-studies-master-list-junk-science-16142

46 Minton M, "Mitch Zeller's Legacy of Lost Tobacco Harm Reduction Opportunities," Filter, April 26, 2022, https://filtermag.org/mitch-zeller-tobacco-harm-reduction/

About the Author

Roger Bate researches international health and development policy, with a special interest in medicines and health policy. He has a PhD in economics from Cambridge University. His writings have appeared in, among others, the *Wall Street Journal, Financial Times, New York Times, Washington Post, Lancet, PLoS Medicine, Journal of Health Economics, Journal of Economics and Management Strategy,* the *Malaria Journal,* and the *British Medical Journal.* He has been an advisor to the South African Government.

Dr Bate conducted extensive research in India and numerous Africa countries on the public health consequences of the counterfeit and substandard medicine trade. He has published over two dozen peer reviewed papers on the problem, especially with respect to antimalarial medicines and is author of *Phake: The Deadly World of Falsified and Substandard Medicines* (AEI Press, May 2012). He is the author or editor of 14 books and over 1,000 journal and newspaper articles (selected examples are listed below).

His broader interests include aid policy in the developing world, evaluating the performance and effectiveness of both US Government agencies (especially FDA and USAID) and global agencies (especially World Bank and WHO).

He was the co-founder of the Frederic Bastiat Journalism Prize, co-founder with Richard Tren of Africa Fighting Malaria, where he remains on the board of directors. He is also a fellow at the Institute of Economic Affairs in London.

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