

Comments Concerning Colorado House Bill 19-1076
“Clean Indoor Air Act Add E-cigarettes Remove Exceptions”

Submitted by:

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To:

Chair Lontine and Members

House Health and Insurance Committee

(February 20, 2019)

I write in support of Colorado House Bill 19-1076, a necessary expansion of the scope of the Colorado Clean Indoor Air Act to cover the various electronic cigarettes (also known as e-cigarettes, electronic nicotine delivery systems or vaping devices) that have entered the marketplace since the Act was passed in 2006. At that time, the law was intended to cover combustible tobacco products and the current emergence of electronic cigarettes could not have been anticipated as they first entered the US market around 2009. This expansion is needed to protect public health by assuring that the public generally and workers specifically are not exposed to the aerosols generated by these devices while they are airborne and then as they contaminate surfaces where they have been used.

As background, I am a pulmonary physician and public health scientist who has carried out research on the harms of tobacco products for four decades. My research has addressed the effects of active smoking, passive smoking, and most recently thirdhand smoke or THS. For decades, I have been involved in evidence-based tobacco control in multiple roles. Since 1984, I have been editor and author for multiple reports of the US Surgeon General on tobacco and health, including serving as editor for the two reports on involuntary smoking (1986 and 2006), Senior Scientific Editor for the 50th Anniversary 2014 report, and as Contributing Editor for the 2016 Report, *E-Cigarette Use Among Youth and Young Adults*. I was the first chair of the FDA's Tobacco Products Scientific Advisory Committee and have worked with the World Health Organization on global tobacco control efforts. Prior to coming to the Colorado School of Public Health, I was at the University of Southern California, where I was Co-Principal Investigator for an extensive research program directed at electronic cigarettes and other tobacco products funded by the Tobacco Regulatory Science Program of the National Institutes of Health.

As a Los Angeles resident until 2017, I worked closely as the City of Los Angeles was one of the first municipalities to expand its Municipal Codes to cover electronic cigarettes. The comments offered in 2014 remain relevant today (see the additional materials provided).

There have been two major reviews on electronic cigarettes and health: the Surgeon General's Report released in 2016 and the 2018 report from the National Academy of Medicine. The major conclusions from the Surgeon General's report are attached as are all conclusions of the National Academy of Medicine Committee. The latter are grouped by the strength of evidence for each item. A number of these conclusions are directly relevant as you consider HB 1076. The Surgeon General's report focuses on the rapid uptake of electronic cigarettes among youth and the harmful consequences of nicotine exposure during adolescence. With regard to HB 1076 specifically, Conclusion 3-1 of the National Academy of Medicine report addresses the contamination of indoor air by electronic cigarettes. Other conclusions of the report address the components of the aerosol and evidence showing that they are toxic. For some conclusions, the evidence remains limited because of the relatively brief time that electronic cigarettes have been on the market.

The findings of these reports and other scientific literature supports the following main points:

1. The public and workers have a right to breathe air that is free of toxic substances, including nicotine.
2. Use of electronic cigarettes contaminates both the air and the surfaces on which the aerosol generated by these devices settles.
3. Unfortunately, electronic cigarettes are widely used by youth and they lead to a pattern of dual use—both electronic and combustible cigarettes—in many adolescents and young adults.
4. Use of tobacco products in indoor spaces is no longer generally acceptable and that change in the social norm has contributed to the decline in smoking. Allowing use of electronic cigarettes in public places and workplaces could unfavorably alter this unfavorable view of using tobacco products.
5. Electronic cigarettes are not approved by the Food and Drug Administration for smoking cessation and there is no evidence supporting their effectiveness for smoking cessation when sold commercially.

The right to breathe clean air in public places and workplaces

The 1986 report of the US Surgeon General was the first to identify involuntary smoking as a cause of lung cancer in nonsmokers and to causally link smoking by parents to poor health of their children. The report was released by the renowned Surgeon General, Dr. Everett Koop; his preface ended with the following: "The right of smokers to smoke ends where their behavior affects the health and well-being of others; furthermore, it is the smokers' responsibility to ensure that they do not expose nonsmokers to the potential harmful effects of tobacco smoke." Following that report, the movement towards clean indoor air accelerated, given this strong scientific foundation for reducing the exposure of nonsmokers to tobacco smoke.

The statement of Surgeon General Koop can be readily extended to the aerosol of electronic cigarettes, which contains nicotine and other toxins. While electronic cigarettes are not yet so ubiquitous as smoked cigarettes, they also contaminate the air that people breath. Some of the components have been identified: nicotine, formaldehyde, and various metals for example.

Indoor smoking bans were first motivated by the need to protect workers from inhaling a carcinogen at their workplace. One vociferous group early on was the flight attendants who worked in aircraft cabins that were highly polluted with tobacco smoke. While there were

many compelling reasons to ban smoking on airplanes, worker protection was a pivotal motivation. And note, use of electronic cigarettes is not allowed on airplanes.

Electronic cigarettes contaminate both the air and the surfaces on which the aerosol generated by these devices settles

A popular tagline for e-cigarette emissions has been “it’s only water vapor!” However, several studies measuring air and surface contamination by e-cigarette emissions have concluded that these emissions do in fact contain toxic compounds. A systematic review by Fernandez and colleagues (2015) of secondhand exposure to e-cigarette aerosol concluded that e-cigarette emissions contain nicotine, carbonyls, metals, and organic volatile compounds, in addition to particulate matter. Third hand exposure to nicotine can also occur through contact with surfaces on which e-cigarette emissions have been deposited, though the level of exposure has been shown to differ by surface and e-cigarette brand (Goniewicz and Lee, 2015). Although the extent of nicotine exposure from the aerosol from electronic cigarettes and contaminated solid surfaces is than from secondhand and thirdhand smoke, studies show that e-cigarette emissions are not just harmless water vapor. Tobacco smoke is not a relevant comparison for judging safety, given its extraordinary toxicity.

Unfortunately, electronic cigarettes are widely used by youth and they lead to a pattern of dual use—both electronic and combustible cigarettes—in many adolescents and young adults

From the public health perspective, one of the most alarming consequences of the emergence of electronic cigarettes is the rapid increase in their use by adolescents and young adults. Routinely collected survey data show a progressive increase in the prevalence of using electronic cigarettes by high school students with a disturbing pattern of so-called “dual use”, i.e., using electronic cigarettes and smoking combustible cigarettes. The latest data should be very disturbing to the Colorado General Assembly; the frequency of use of electronic cigarettes is now 20.8% (3.05 million) nationally among high school students (MMWR 2019) and Colorado is among the highest in the nation in the frequency of vaping at 26.2% (2017 Healthy Kids Colorado survey).

My research group at the University of Southern California was the first to report that electronic cigarette use was followed by a three-fold greater likelihood of smoking cigarettes than in non-users of electronic cigarettes (Leventhal et al. 2016?). That finding has now been replicated multiple times and the evidence is ever clearer: youth have access to electronic cigarettes and are using them and then moving on to smoking cigarettes. We know that nicotine leads to addiction and that nicotine is harmful to the still-developing brain of the adolescent. The 2014 report of the Surgeon General concluded that the evidence is suggestive that nicotine exposure during adolescence, a critical window for brain development, may have lasting adverse consequences for brain development. The conclusion of the 2016 report was even stronger in regards to nicotine and the adolescent brain (see attached document).

Colorado needs to protect all of its youth from electronic cigarettes and exposure to nicotine at a critical point in their development. Banning use of electronic cigarettes in public places and workplaces sends the right message: using electronic cigarettes is not acceptable when they harm others.

Use of tobacco products in indoor spaces is no longer generally acceptable and that change in the social norm has contributed to the decline in smoking. Allowing use of electronic cigarettes in public places and workplaces could unfavorably alter this unfavorable view of using tobacco products

One critical driver of the decline in smoking over the last three decades has been the increasingly unfavorable view of tobacco smoking, particularly in public places and workplaces. This shift in the public's perception of smoking has had impact on youth among whom cigarette smoking has declined progressively, reaching 8.1% for exclusive cigarette smoking and 14.8% for e-cigarette+cigarette dual use (MMWR 2019). Youth mistakenly perceive electronic cigarettes as "safe" and fail to recognize the risk of nicotine addiction. Progress among youth in reducing tobacco smoking is threatened by electronic cigarettes.

Not prohibiting use of electronic cigarettes in public places will be a setback to decades of efforts to change the social norm around tobacco products. Not banning their use signals that they are different from combustible cigarettes, a message that could have unintended, adverse consequences for youth. The social norm of unacceptability of all tobacco products needs to be maintained.

Electronic cigarettes are not approved by the Food and Drug Administration for smoking cessation and there is no evidence supporting their effectiveness for smoking cessation

When electronic cigarettes were first imported into the United States ten years ago, implicit cessation claims were made—that they would lead to successful smoking cessation. Such claims could not be made, absent appropriate clinical trials, and the courts determined that the FDA should regulate electronic cigarettes as tobacco products, as the nicotine delivered was derived from tobacco plants. Hence, they are regulated by the FDA under the Family Smoking Prevention and Tobacco Control Act, passed in 2009. Since the act was passed before the emergence of electronic cigarettes, the FDA needed to take authority for their regulation, done in 2016 through the Deeming Rule. Various regulatory provisions by the FDA will be implemented up to 2022 when new product applications for noncombustible products must be submitted.

The FDA Center for Drug Evaluation and Research evaluates therapeutic agents, such as nicotine replacement therapies for their efficacy in increasing smoking cessation. Electronic cigarettes have not been approved by the FDA as a smoking cessation modality and, in fact, no submissions have been made to the FDA for such approval. Several trials have been carried out to evaluate electronic cigarettes as a way to increase smoking cessation; one recent report

suggest efficacy when used in a clinical environment. There is no evidence suggesting that electronic cigarette aid quitting with routine use in the "real world" context.

Summary

The public health basis for House Bill 19-1076 is rock solid and there are no potential unanticipated adverse consequences. I urge a favorable recommendation on this bill, as it benefits all citizens of Colorado and particularly the state's youth and workers.