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TO: The Honorable Nancy Nathanson, Chair  
House Committee on Revenue

FROM: Katrina Hedberg, MD, MPH  
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SUBJECT: Public health harms of electronic cigarettes

Chair Nathanson and members of the committee, I am Dr. Katrina Hedberg, Health Officer and State Epidemiologist with the Public Health Division of the Oregon Health Authority. I am here to provide information on the public health impacts of electronic cigarettes.

Substantial scientific evidence shows that electronic cigarettes, also known as inhalant delivery systems, e-cigarettes or vape products, can cause harmful health effects in users. These products have been heavily marketed to youth, leading to a sharp increase in use and nicotine addiction among youth.

Nearly all electronic cigarettes contain nicotine which, in addition to being highly addictive, can cause other adverse health effects, including increased or abnormal heart rate and increased blood pressure—risk factors for heart disease and stroke. Nicotine is toxic at high doses and can produce agitation, confusion, and convulsions. Electronic cigarettes pose a risk of nicotine poisoning, especially in children, for whom drinking or ingesting e-liquids can be fatal. Nicotine is harmful to developing fetuses and to brain development in youth. Electronic cigarettes also contain or produce other chemicals that are known carcinogens or are otherwise harmful. Furthermore, the flavorings and solvents in e-liquids have not been adequately studied to understand their health effects when they are heated and inhaled.<sup>1</sup> Finally, scientific data are lacking on the long-term health effects of use of electronic cigarettes and exposure to the chemicals they contain.

Electronic cigarette use has surpassed that of combustible cigarettes among Oregon youth. While youth use of cigarettes and other tobacco products has steadily declined over the past several decades, youth use of electronic cigarettes and JUUL have substantially increased in recent years. Recent data from the Oregon Student Wellness Survey show that in 2018, 21% of Oregon 11th graders currently used electronic cigarette products like JUUL. This is an increase of nearly 50% from 2016. Marketing and flavors are key factors in making electronic cigarette use attractive to youth. Electronic cigarettes come in more than 15,000 candy flavors like “Neon Dream,” melon and mango. Among Oregon high school students who use electronic cigarettes exclusively, nearly 90% use flavored products.

While electronic cigarettes may help some smokers quit, they are neither FDA-approved tobacco cessation devices nor a covered cessation benefit on public health plans. To date, no e-cigarette company has applied for FDA approval of its device for tobacco cessation. Most adults who use electronic cigarettes don’t quit smoking cigarettes, but end up using both electronic cigarettes and combustible tobacco products.<sup>2</sup> Tobacco use continues to be the leading preventable cause of death in Oregon, killing nearly 8,000 Oregonians each year, and costing Oregon more than \$2.9 billion each year in medical care costs and lost productivity.

In summary, one of the greatest health concerns of electronic cigarettes is increased use by youth and addiction to nicotine. Youth and young adults can be protected from the harms of electronic cigarettes through actions such as comprehensive smoke- and vape-free policies, price and tax policies, and further marketing and retail sale regulations. Oregon has taken several of these steps already and should consider more options as allowed by federal law.

Thank you for the opportunity to testify today. I am happy to answer any questions you may have.

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<sup>1</sup> National Academy of Sciences. Public Health Consequences of E-Cigarettes. A consensus study report of the National Academies of Sciences, Engineering, and Medicine. Washington, D.C. National Academy of Sciences, Board on Population Health and Public Health Practice, Health and Medicine Division, 2018.

<sup>2</sup> Centers for Disease Control and Prevention. About Electronic Cigarettes (E-Cigarettes). Available at: [https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/about-e-cigarettes.html#seven](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/about-e-cigarettes.html#seven).