



AN EXCISE TAX ON DANGEROUS PRODUCTS USED BY THE FEW WILL SAVE SIGNIFICANT COST FOR THE MANY WHO DON'T USE THEM

As evidenced by statistically significant scientific data presented in this white paper, an 86% excise tax levied on e-cigarettes and vaping products will increase their retail price and cause a substantial number of youths who are regular users of those products to quit their use.

As a result of quitting, most of those youth will avoid e-cigarette and vaping-related illnesses and expensive treatment; and sizeable costs for that treatment will be averted, at least 60% of which most Utahns would pay, even though they don't use the products.¹

E-CIGARETTE USE AND VAPING BY YOUTH AGES 13 - 17 IS INCREASING AT EPIDEMIC RATES IN UTAH

The use of electronic cigarettes and other vaping products by Utah youth ages 13 - 17 has grown exponentially since they were introduced in the state in late 2006.

In 2018, use by youth in that age bracket saw its strongest spike in every state in the United States. With a 36.4% increase for middle schoolers and 77% for high school students.² While final data won't be available until later this year, every indication is that level of growth continued into 2019.

Considering these increases, it is projected that 18.3% or nearly 41,800 Utah youth ages 13 to 17 currently use e-cigarettes and vaping products on a daily basis.³

E-CIGARETTE USE AND VAPING BY UNDERAGE YOUTH IS HARMFUL TO HEALTH AND COSTLY FOR ALL UTAHNS

Use of E-Cigarettes and Vape Products With or Without Nicotine is Harmful to Health and Results in Costly Health Care for Which Most Utahns Pay.

Research shows that regular use of e-cigarettes and vaping products by youth and young adults causes lung disease including emphysema, chronic bronchitis, COPD and pneumonia,⁴ along with stroke and coronary heart disease.⁵ Products that contain nicotine are suspected to cause nicotine induced seizures.⁶

News stories across the United States substantiate the ever-increasing health harms of vaping to youth.⁷ A recent CBS News story cited a study at Johns Hopkins University where scientists found a number of e-cigarettes released vapors into the lungs with potentially unsafe levels of lead, chromium, manganese, and nickel.⁸

The story also cited a study from the NYU School of Medicine that found nicotine from e-cigarettes can cause cancer in mice; and the authors wrote, it's "possible that e-cigarette smoke may contribute to lung and bladder cancer."⁹

An August 17, 2019 story from CNN noted that more than 120 recent cases of lung disease in 15 states have been linked to vaping.¹⁰

A story on KSL Radio and TV reported cases at the University of Utah Hospital's Pulmonary and Critical Care Medicine Program of two young adult users admitted with shortness of breath, chronic coughing, coughing-up blood and chest pains. Both were ultimately diagnosed with lipoid pneumonia and are now undergoing costly, outpatient care. Physicians indicated they have seen a number of younger patients in the past few months with varying degrees of pulmonary conditions, including lipoid pneumonia, that "seem to be related to vaping."¹¹

If children in those age brackets who use e-cigarettes or vape products are uninsured, which many reportedly are,^{12, 13} their health care will likely be provided by public programs such as Medicaid and the Children's Health Insurance Program (CHIP) or charity care. Costs of which are funded by taxpayers, most who do not use e-cigarettes or vape products.¹⁴

E-Cigarettes are a Gateway to Nicotine Addiction and Tobacco Use and Costly Tobacco-Related Health Care for Which Most Utahns Pay.

Research indicates that youth who use e-cigarettes are four times more likely to use cigarettes than are non-users of e-cigarettes, with an average of 37.5% of youth users ages 13 - 17 taking up cigarette use within two years of initiating e-cigarette use.^{15, 16,17,18,19}

Considering research results, without intervention, nearly 16,000 of the 41,800 current Utah youth e-cigarette users age 13 to 17 will likely take-up cigarette use.²⁰

Each youth e-cigarette user who takes up tobacco will ultimately contribute \$3,036 annually to the current \$542 M yearly price tag for tobacco-related health care. All Utahns, whether they use the products or not, pay for that care via increased health insurance premiums, taxes to fund tobacco care in Medicaid, tobacco-related increases in costs of medical care generally, and charity care. Businesses pay \$2,321 each year for annual tobacco-related productivity costs of \$355.6 M.²¹

E-Cigarettes are a Gateway to Marijuana Use and Costly Marijuana-Related Health Care for Which Most Utahns Pay.

Evidence-based studies indicate nearly 30% of youth e-cigarette users ages 13 - 17, who were never-users of marijuana at the outset of the studies, reported being regular, heavy users of marijuana within one year after the studies began. Conversely, an average of only 7.7% of non-e-cigarette users were reported as marijuana users at the end of that period.²²

Considering research results, without intervention, over 12,000 Utah youth e-cigarette users ages 13 - 17 will likely take-up marijuana use, most using e-cigarette devices to vaporize marijuana oil or wax plugs laden with marijuana.^{23, 24}

Each Utah youth e-cigarette user who takes up marijuana use will be subject to marijuana related physical and mental health concerns costly to themselves and all Utahns, including:²⁵

- Compromised memory, attention and ability to think clearly, making it difficult to concentrate, learn new things, and make sound decisions.
- Increased school drop-out rates without graduating.
- Immature sexual activity, which can result in unplanned pregnancy.
- Increased risk of driving while under the influence of marijuana; marijuana use more than doubles a driver's risk of being in an accident.
- Increased likelihood to suffer from depression, anxiety, psychosis, or other mental illness.

INCREASING THE PRICE OF E-CIGARETTES AND VAPING PRODUCTS BY LEVYING AN EXCISE TAX IS AN EXTREMELY EFFECTIVE WAY TO DECREASE YOUTH USE.

According to the micro-economic theory of Price Elasticity of Demand (PED), if the price for a product changes, demand for the product will increase, decrease or stay the same depending on disposable income of the purchaser and if the product is viewed a necessity, such as if it feeds an addiction.²⁶

Most Utah youth e-cigarette users purchase e-cigarette and vaping paraphernalia and liquids from gas stations, convenience and grocery stores, and tobacco and e-cigarette shops.²⁷

PED indicates that since they are purchasers, are not highly addicted to nicotine, and they have little disposable income, youth e-cigarette users are highly sensitive to price increases for e-cigarettes and vape products, and that more than 15% of regular youth users will quit for every 10% increase in price for those products.²⁸

SIGNIFICANT BENEFITS WILL ACCRUE FOR MOST UTAHNS AS A RESULT OF PLACING AN EXCISE TAX ON E-CIGARETTES.

Levying an excise tax of 86% of Manufacturers Sales Price (MSP) on e-cigarettes and vaping products will increase the retail price of those products by 50%, cause a great number of youth users to quit or not take up the products, and generate enormous value for all Utahns:

- More than 30,000 of the nearly 42,000 Utah youth e-cigarette users ages 13 - 17 will quit e-cigarettes almost immediately in response to the state levying an excise tax of 86% of MSP on e-cigarettes.
- Over 12,000 of the nearly 16,000 Utah youth ages 13 - 17 who have been or may be compelled to regularly use tobacco because of e-cigarette use will quit or avoid tobacco use as a result of quitting e-cigarettes.
- More than 9,000 of the 12,000 Utah youth ages 13 - 17 who have been or may be compelled to regularly use marijuana will quit or avoid marijuana use as a result of quitting e-cigarettes.
- **Utah taxpayers, including individuals and businesses, will avoid having to pay an additional \$64,000,000 per year of healthcare and productivity costs due to youth ages 13 - 17 quitting e-cigarette and vaping use.**

SUMMARY AND CONCLUSIONS

E-cigarette use and vaping is growing exponentially in Utah. In 2018 e-cigarette use and vaping increased by an average of 57% between middle school and high school age adolescents. Tens of thousands of Utah kids in

that age bracket now use e-cigarettes or vape products on a daily basis; which, by itself, has serious health consequences.

However, the problem doesn't end with just e-cigarette use. Recent evidence-based research has unequivocally shown that e-cigarette use is a gateway to tobacco and marijuana use and all the health and social problems incumbent with that use.

Nor does the problem end with just e-cigarette users. As youth users move to cigarette, tobacco and marijuana use, they are incurring tobacco-related illnesses and marijuana related social problems, the care for which in many cases is provided by the state Medicaid program or charity care. The costs for which are typically paid by Utahns who don't use e-cigarettes, vape, tobacco or marijuana products.

It's time for lawmakers to realize that "an excise tax on dangerous products used by the few will save significant cost for the majority who don't use those products."

That is:

- Levying an excise tax of 86% of MSP on e-cigarettes and vaping products will substantially decrease the number of youths who use those products.
- Quitting use of the products will greatly decrease the number of youths who will experience e-cigarette, vaping, tobacco, and marijuana related disease.
- Avoiding those diseases will reduce or completely eliminate e-cigarette, vaping, tobacco, and marijuana related health care costs for those youths; 60% of which would typically be paid by a majority of Utahns, even though they don't use those products.

ENDNOTES

¹ Xin Xu, PhD, Ellen E. Bishop, MS, Sara M. Kennedy, MPH, Sean A. Simpson, MA, Terry F. Pechacek, PhD. Annual Healthcare Spending Attributable to Cigarette Smoking. [https://www.ajpmonline.org/article/S0749-3797\(14\)00616-3/fulltext](https://www.ajpmonline.org/article/S0749-3797(14)00616-3/fulltext). (August 2019).

² United States Food and Drug Administration (USFDA). 2018 NYTS Data: A Startling Rise in Youth E-cigarette Use. <https://www.fda.gov/tobacco-products/youth-and-tobacco/2018-nyts-data-startling-rise-youth-e-cigarette-use>. (August 2019).

³ Utah State Office of Education. Data Reports – Enrollment and Demographics. <http://www.schools.utah.gov/data/Reports/Enrollment-Demographics.aspx>. (October 2017).

⁴ M.F. Perez, N. Atuegwu, E. Mead, C. Oncken, E.M. Mortensen. E-Cigarette Use Is Associated with Emphysema, Chronic Bronchitis and COPD. https://www.atsjournals.org/doi/abs/10.1164/ajrccm-conference.2018.197.1_MeetingAbstracts.A6245. (August 2019).

⁵ The American Heart and Stroke Association. E-cigarette smokers may have higher odds of stroke, heart attack and coronary heart disease. <https://newsroom.heart.org/news/e-cigarettes-linked-to-higher-risk-of-stroke-heart-attack-diseased-arteries>. (August 2019).

⁶ United States Food and Drug Administration (USFDA). Potential safety issue related to seizures reported following e-cigarette use, particularly in youth and young adults. <https://www.fda.gov/news-events/press-announcements/statement-fda-commissioner-scott-gottlieb-md-and-principal-deputy-commissioner-amy-abernethy-md-phd>. (August 2019).

⁷ CNN Wire. (August 3, 2019). 4 people hospitalized after vaping; health officials say. <https://fox5sandiego.com/2019/08/03/14-people-hospitalized-after-vaping-health-officials-say/>. (August 2019).

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- ⁸ CBS News. (February 26, 2018). Concerns over health effects of vaping - and rising use among teens. <https://www.cbsnews.com/news/vaping-health-effects-rising-use-among-teens/>. (August 2019).
- ⁹ Ibid.
- ¹⁰ Nedelman, M. (August 17, 2019). More than 120 cases of lung disease in 15 states could be linked to vaping. <https://www.cnn.com/2019/08/17/health/vaping-lung-disease-states/index.html>. (August 2019).
- ¹¹ Bojorquez, K. (August 6, 2019). What doctors are saying about vaping. <http://www.ksl.com/article/46612217/>. (August 2019).
- ¹² Annie E. Casey Foundation. *Child population by age group in Utah*. <https://datacenter.kidscount.org/data/tables/101-child-population-by-age-group?loc=46&loct=2#detailed/2/46/false/871,870,573,869,36,868,867,133,38,35/62,63,64,6,4693/419,420>. (August 2019).
- ¹³ Annie E. Casey Foundation. Children 17 and below without health insurance in Utah. <https://datacenter.kidscount.org/data/tables/8810-children-17-and-below-without-health-insurance?loc=46&loct=2#detailed/2/46/false/870,573,869,36,868,867,133,38,35/any/17657,17658>. (August 2019).
- ¹⁴ Ibid, endnote 1.
- ¹⁵ Jessica L. Barrington-Trimis, PhD, Robert Urman, PhD, Kiros Berhane, PhD, Jennifer B. Unger, PhD, Tess Boley Cruz, PhD, Mary Ann Pentz, PhD, Jonathan M. Samet, MD, Adam M. Leventhal, PhD, Rob McConnell, MD. E-Cigarettes and Future Cigarette Use, <http://pediatrics.aappublications.org/content/pediatrics/early/2016/06/10/peds.2016-0379.full.pdf>. (July 2019).
- ¹⁶ Jieming Zhong, Shuangshuang Cao, Weiwei Gong, Fangrong Fei, and Mein Wang. Association of Electronic Cigarette Use with Initiation of Combustible Tobacco Product Smoking in Early Adolescence. *JAMA* 2015; 314:700-707, <https://www.acc.org/latest-in-cardiology/journal-scans/2015/08/18/16/12/association-of-electronic-cigarette-use-with-initiation>. (July 2019).
- ¹⁷ Richard Miech, Megan E. Patrick, Patrick M. O'Malley, and Lloyd D. Johnston. E-cigarette Use as a Predictor of Cigarette Smoking: Results from a One-Year Follow up of a National Sample of 12th Grade Students. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5545162/>. (March 2019).
- ¹⁸ Brian A. Primack, Samir Soneji, Michael Stoolmiller, Michael J. Fine, James D. Sargent. Progression to Traditional Cigarette Smoking After Electronic Cigarette Use Among US Adolescents and Young Adults. *JAMA Pediatrics*, 2015; 1 DOI: 10.1001/jamapediatrics.2015.1742.
- ¹⁹ Leventhal A.M, Strong D.R., Kirkpatrick M.G., Unger J.B., Sussman S, Riggs N.R., Stone M.D., Khoddam R, Samet J.M., Audrain McGovern. Association of Electronic Cigarette Use with Initiation of Combustible Tobacco Product Smoking in Early Adolescence. <https://www.ncbi.nlm.nih.gov/pubmed/26284721>. (March 2019)
- ²⁰ Ibid.
- ²¹ Ibid, endnote 1.
- ²² Hongying Dai, PhD, a, b, c Delwyn Catley, PhD, a, c Kimber P. Richter, PhD, d Kathy Goggin, PhD, a, c, e Edward F. Ellerbeck, MDd. Electronic Cigarettes and Future Marijuana Use: A Longitudinal Study. <http://pediatrics.aappublications.org/content/pediatrics/early/2018/04/19/peds.2017-3787.full.pdf>. (August 2019).
- ²³ 15 Meghan E. Morean, PhD, a, b Grace Kong, PhD, b Deepa R. Camenga, MD, c Dana A. Cavallo, PhD, b and Suchitra Krishnan-Sarin, PhD. High School Students' Use of Electronic Cigarettes to Vaporize Cannabis. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4586732/#!po=47.7273>. (March 2019).
- ²⁴ Ibid.
- ²⁵ Alcohol and Drug Abuse Institute, University of Washington. Adolescents and Marijuana. <http://learnaboutmarijuanawa.org/factsheets/adolescents.htm>. (March 2019).

²⁶ Frank J. Chaloupka, Rosalie Liccardo Pacula (1998). The Impact of Price on Youth Tobacco Use. Smoking and Tobacco Control Monograph No. 14 (Dec. 2015).

²⁷ Utah Department of Health Tobacco Prevention and Control Program. Youth E-Cigarette Use, 2015 Utah Data Update. <http://le.utah.gov/interim/2016/pdf/00000733.pdf>. (February 6, 2017).

²⁸ Huang J, Tauras J, Chaloupka F. The impact of price and tobacco control policies on the demand for electronic nicotine delivery systems. Tobacco Control 2014; 23: iii 41-iii 47. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4145658/>. (March 2019).