Building an Empire

The tactics and science behind vaping’s rise, and ideas about where we go from here

Aaron Weiner, PhD
aaron@weinerphd.com
E-Cigs and & Vaporizers – What are they?

- Devices to heat a substance, create a vapor, release a chemical

Figure 1. Parts of an e-cigarette.
(Giroud et al., 2015)
Wet & Dry Vaping

- Cartridges = wet
  - Refillable or closed
- Cannabis or THC wax = dry
### 2019 Monitoring the Future Survey

#### Key Findings: Percent Reporting Use of Selected Substances

<table>
<thead>
<tr>
<th></th>
<th>8th Grade</th>
<th>10th Grade</th>
<th>12th Grade</th>
<th>8th Grade</th>
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<td>9.6</td>
<td>19.9</td>
<td>25.5</td>
<td>Narcotics Other than Heroin</td>
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<td></td>
<td>Past Year</td>
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<tr>
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<td>7.0</td>
<td>19.4</td>
<td>20.8</td>
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<td>½ Pack +/Day</td>
<td>0.2</td>
<td>0.5</td>
<td>0.9</td>
<td>Binge</td>
<td>3.8</td>
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#### Change from 2018 to 2019

- **Red**: Significant Increase
- **Green**: Significant Decrease
How did we get into this mess?
Juul’s explosive growth

In just two years, Juul captured 40% of the U.S. e-cigarette market.

**MARKET SHARE**

- Juul Labs Inc: 42.3%
- Reynolds American Inc
- Imperial Brands PLC
- Altria Group Inc
- Japan Tobacco Inc

Source: Euromonitor International
Juul’s nicotine rush

A chart filed with the patent on Juul’s nicotine liquid shows how the formula delivers much more nicotine than earlier vaping devices – and more than a Pall Mall cigarette.

HOW QUICKLY DIFFERENT FORMS OF NICOTINE ENTER THE BLOODSTREAM

Juul tested their formula with various organic acids and found that adding benzoic acid to nicotine makes it taste milder, so users can inhale deeply.

Source: Ploom Inc. patent, World Intellectual Property Organization
Saying one thing but doing another...

Juul Maker to Invest $30M to Combat Underage Vaping

The maker of the much-debated e-cigarette brand Juul says it will spend $30 million to try to keep its products from underage users.

April 25, 2018, at 6:11 a.m.

new study reveals teens 16 times more likely to use juul than older age groups
MOST POPULAR E-CIGARETTE FLAVORS, 2017-19
Flavors used by high school students in the previous 30 days.

FRUIT
- '17: 25% of responses
- '19: 50% of responses

MENTHOL OR MINT
- '17: 25% of responses
- '19: 50% of responses

CANDY OR DESSERT
- '17: 25% of responses
- '19: 50% of responses

OTHER
- '17: 25% of responses
- '19: 50% of responses

Note: In each year’s survey, alcohol, chocolate or clove or spice flavors got less than 10% of responses each.
Sources: National Youth Tobacco Survey, U.S. Food and Drug Administration; Juul
Did Juul Lure Teenagers and Get ‘Customers for Life’?

The e-cigarette company says it never sought teenage users, but the F.D.A. is investigating whether Juul intentionally marketed its devices to youth.
54. JUUL knowingly used images of models that “registered” or appeared in photographs to be inappropriately or unsuitably young. JUUL’s employees and its board of directors acknowledged concern that models photographed for the Vaporized Campaign appeared to be too young, particularly the models Nicole Winge and Peter Giang.

55. JUUL nonetheless used images of Ms. Winge and Mr. Giang in the Launch Campaign. The following images are photographs of Ms. Winge and Mr. Giang that JUUL used in the Vaporized Campaign.
Cultural vs. Explicit Marketing

108. Grit provided free e-cigarettes in person to Luka Sabbat. Sabbat, known as the “the Internet’s Coolest Teenager,” was, at most, 18 years old during the summer of 2015. Luka Sabbat had approximately 100,000 Instagram followers at the time Grit gave him free JUUL e-cigarettes. In an interview published in the summer of 2015, Luka Sabbat commented, “Being a kid, there are only two ways you can go: You’re either an influencer or you’re influenced. You’re either a leader or a follower.” The following is an image of Sabbat from 2015.
Cultural vs. Explicit Marketing
Juul went into a ninth-grade classroom and called its device 'totally safe,' teens testify

By Arman Azad, CNN
Updated 10:31 AM ET, Thu July 25, 2019

Juul targeted teens by spending over $200K on influencers

By Amanda Woods
July 26, 2019 | 3:53pm | Updated

David Hammond, PhD, Jessica L. Reid, MSc, Robin Burkhalter, MMath, Vicki L. Rynard, MSc

RESULTS: The percentage of youth surveyed who reported noticing e-cigarette promotions often or very often approximately doubled between 2017 and 2019 (13.6% vs 26.0%; adjusted odds ratio [AOR] = 2.24, 95% confidence interval [CI] = 1.97–2.56). Overall exposure to marketing was generally more prevalent in provinces with fewer regulatory restrictions. Respondents who reported noticing marketing often or very often were more likely to report vaping in the past 30 days (AOR = 1.41, 95% CI = 1.23–1.62), past week (AOR = 1.44, 95% CI = 1.22–1.70), and ≥20 days in the past month (AOR = 1.42, 95% CI = 1.11–1.81, P = .005). Provinces with low restrictions on marketing had higher prevalence of vaping in the past 30 days (AOR = 1.50, 95% CI = 1.25–1.80, P < .001), and in the past week (AOR = 1.65, 95% CI = 1.33–2.05, P < .001).
Perceived Risk vs. Use Rate

Figure 2. Past Month Binge Drinking and Marijuana Use among Adolescents Aged 12 to 17, by Perceptions of Risk: 2011

Difference between those perceiving great risk and those perceiving moderate, slight, or no risk is statistically significant at the .05 level.
Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHs), 2002 to 2011 (revised March 2012).

(Lipari, 2013)
Marlboro Modernizes Its Method Of Peddling Death To Kids

Altria Buys 35 Percent Stake In E-Cigarette Maker Juul

Juul Labs gets $12.8 billion investment from Marlboro maker Altria Group

Juul workers get $2 billion bonus from tobacco giant investment

BY KATE GIBSON
UPDATED ON: DECEMBER 21, 2018 / 1:35 PM / MONEYWATCH

After a $2 Billion Company Bonus, Employees at Juul Just Became Overnight Millionaires

Approximately 1,500 Juul employees will get an average of $1.3 million.
Ahead Of Congressional Hearing, Juul Crosses $1 Million In Quarterly Lobbying Payouts For The First Time

Vaping Industry Group Sues FDA To Delay E-Cigarette Review

San Francisco Chronicle

Juul dominates SF ballot measure spending, shelling out $4.3 million to defend vaping
Current e-cigarette use has **INCREASED DRAMATICALLY**, while current cigarette use has dropped, **UNDERMINING PROGRESS** toward reducing overall tobacco use.
Why do people vape?

• Perceived as healthier than regular cigarettes
  • PG and VG based solutions are viewed as “natural”
  • “Vapor” sounds like water
• Smoking cessation
  • Easy to change dosages
• Adolescents
  • Flavors
  • It “looks cool”
  • Entry into a social group/identity
Conclusion 5-1. There is conclusive evidence that in addition to nicotine, most e-cigarette products contain and emit numerous potentially toxic substances.

Conclusion 5-4. There is substantial evidence that e-cigarette aerosol contains metals. The origin of the metals could be the metallic coil used to heat the e-liquid, other parts of the e-cigarette device, or e-liquids. Product characteristics and use-patterns may contribute to differences in the actual metals and metal concentrations measured in e-cigarette aerosol.

Conclusion 10-4. There is substantial evidence that some chemicals present in e-cigarette aerosols (e.g., formaldehyde, acrolein) are capable of causing DNA damage and mutagenesis. This supports the biological plausibility that long-term exposure to e-cigarette aerosols could increase risk of cancer and adverse reproductive outcomes. Whether or not the levels of exposure are high enough to contribute to human carcinogenesis remains to be determined.
number of toxic chemicals Berkeley Lab researchers found at significant levels in e-cigarettes vapor

maximum number of puffs per day, on average (survey of 983 vapers)

Cancer-causing chemicals in e-cigarette vapor

1. Benzene
2. Cadmium
3. Isoprene
4. Lead
5. Nickel
6. Formaldehyde
7. Acetaldehyde
8. Toluene
9. N-Nitrosonornicotine
10. Nicotine

EMISSIONS OF TOXIC CHEMICALS FROM SINGLE-COIL E-CIGARETTE

- acrolein
- acetaldehyde
- formaldehyde
- nicotyrine
- glycidol
- diacetyl
- acetol

0 5 10 15 20 25 30 35 40 45

initial puffing steady state
Conclusion 5-1. There is *conclusive evidence* that in addition to nicotine, most e-cigarette products contain and emit numerous potentially toxic substances.

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Conclusion 8-1. There is *substantial evidence* that e-cigarette use results in symptoms of dependence on e-cigarettes.
First death linked to vaping reported in Illinois

City of Milwaukee urges residents to stop vaping 'immediately'; 89% of Wisconsin sick cite THC

The New York Times

One in six vaping lung illnesses linked to commercially purchased THC, federal data finds

John Bacon and Jayne O'Donnell  USA TODAY
Published 3:08 p.m. ET Jan. 14, 2020 | Updated 1:51 p.m. ET Jan. 20, 2020
‘It’s going to attack your lungs’: Gurnee teen hospitalized for vaping has message for his peers

By KATE THAYER
CHICAGO TRIBUNE | SEP 04, 2019 | 12:32 PM

“You literally don’t know what you’re inhaling into your body.”

—— Dylan Nelson, 26, of Burlington, Wisconsin, was
Concerns for Children and Adolescents

**Conclusion 14-2.** There is *conclusive evidence* that intentional or accidental exposure to e-liquids (from drinking, eye contact, or dermal contact) can result in adverse health effects including but not limited to seizures, anoxic brain injury, vomiting, and lactic acidosis.

**Conclusion 14-3.** There is *conclusive evidence* that intentionally or unintentionally drinking or injecting e-liquids can be fatal.

**Conclusion 16-1.** There is *substantial evidence* that e-cigarette use increases risk of ever using combustible tobacco cigarettes among youth and young adults.

**Conclusion 16-2.** Among youth and young adult e-cigarette users who ever use combustible tobacco cigarettes, there is *moderate evidence* that e-cigarette use increases the frequency and intensity of subsequent combustible tobacco cigarette smoking.
Areas of Benefit – Current Smokers

**Conclusion 5-3.** There is *substantial evidence* that except for nicotine, under typical conditions of use, exposure to potentially toxic substances from e-cigarettes is significantly lower compared with combustible tobacco cigarettes.

**Conclusion 18-5.** There is *moderate evidence* that second-hand exposure to nicotine and particulates is lower from e-cigarettes compared with combustible tobacco cigarettes.

**Conclusion 18-1.** There is *conclusive evidence* that completely substituting e-cigarettes for combustible tobacco cigarettes reduces users’ exposure to numerous toxicants and carcinogens present in combustible tobacco cigarettes.

**Conclusion 18-2.** There is *substantial evidence* that completely switching from regular use of combustible tobacco cigarettes to e-cigarettes results in reduced short-term adverse health outcomes in several organ systems.

**Conclusion 8-2.** There is *moderate evidence* that risk and severity of dependence are lower for e-cigarettes than combustible tobacco cigarettes.

**Conclusion 17-4.** While the overall evidence from observational trials is mixed, there is *moderate evidence* from observational studies that more frequent use of e-cigarettes is associated with increased likelihood of cessation.
What’s keeping us here?
JUUL + Youth = Money
Trump moves to ban flavored e-cigarettes

Citing surge in youth vaping, president endorses crackdown.

The Trump White House announced Sept. 11 that the Food and Drug Administration intends “to clear the market of flavored e-cigarettes.” (The Washington Post)
Juul Spent Record $1.2 Million Lobbying as Regulators Stepped Up

THE AMERICAN PROSPECT

Big Tobacco Lobbied to Save Vaping. Now It Controls the Leading E-Cigarette Company.

Altria lobbying helped strike down a ban on flavored vaping liquids. Later bought into Juul.

BY DAVID DAYEN  OCTOBER 4, 2019

Politics

Trump’s Vaping Ban Is Stalled After an Industry Lobbying Push

By Josh Wingrove and Gerald Porter Jr.
November 15, 2019, 12:03 PM CST  Updated on November 15, 2019, 4:12 PM CST
Arguments made by lobbyists

1. Economic
THE VALUE OF VAPOR

The U.S. vapor industry is a major part of the modern economy

TOTAL ECONOMIC IMPACT

THE VAPOR INDUSTRY GENERATES $24,457,512,300 FOR THE UNITED STATES ECONOMY

THE VAPOR INDUSTRY IS PROUD TO CREATE 166,007 JOBS FOR THE AMERICAN WORKFORCE

JOBS CREATED

A WIDE RANGE OF INDUSTRIES & SMALL BUSINESSES BENEFIT FROM JOBS DERIVED FROM THE VAPOR MARKET

TOTAL WAGES EARNED IN THE UNITED STATES

VAPOR BUSINESSES PAID OVER $7,897,889,500 IN WAGES AND BENEFITS TO THEIR EMPLOYEES

VAPOR BUSINESSES GENERATED $15,094,584,600 IN FEDERAL, STATE & LOCAL TAXES

Vaportechtechnology.org

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Facebook /VaporTechAssoc Twitter /VaporTechAssoc Instagram vaportechtechnology.org

Survey View Research, 2018
Arguments made by lobbyists

1. Economic
2. Hammer vs scalpel issue
3. Government overreach
4. Harm reduction – pushing people back to smoking
5. Political cost
### Comparing adult vapers and 2016 presidential election win margins in battleground states

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<th>Estimated Number of Adult Vapers</th>
<th>2016 Election Win Margin</th>
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<td>Florida</td>
<td>873k</td>
<td>+113k GOP</td>
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<tr>
<td>Ohio</td>
<td>558k</td>
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Teens Find a Big Loophole in the New Flavored Vaping Ban

The policy allows mint, dessert and fruit flavors to continue to be sold in disposable e-cigarettes, prompting many teens to switch from Juul to those devices.

FLAVORED VAPING BAN GOES INTO EFFECT TODAY IN THE US, BUT THERE ARE LOOPOLES

By Praveen Nagaraj  |  February 6, 2020
So Much for the Loophole: FDA Orders Puff Bar Off the Market

July 20, 2020

Jim McDonald
STIG | DISPOSABLE POD DEVICE

Convenient & Effective

TROPICAL MANGO
Buy 10 and get 20% off now!
A dense yet drippingly silky and sweet juicy mango.

MIGHTY MINT
Buy 10 and get 20% off now!
Revitalizing cool sensations of spearmint menthol imparts invigorating satisfaction.

LUSH ICE
Buy 10 and get 20% off now!
Fresh watermelon with splashes of mixed melon undertones with an exhilarating menthol finish.

VGOD BOMB
Sweet, juicy and tangy citrusy mango with a cool menthol finish.

WARNING: THIS PRODUCT CONTAINS NICOTINE. NICOTINE IS AN ADDICTIVE CHEMICAL.

$20.00
1 + – ADD TO CART

Out of stock

$20.00
1 + – ADD TO CART

$20.00
1 + – ADD TO CART

$20.00
1 + – ADD TO CART
The policy allows mint, dessert and fruit flavors to continue to be sold in disposable e-cigarettes, prompting many teens to switch from Juul to those devices.

FLAVORED VAPING BAN GOES INTO EFFECT TODAY IN THE US, BUT THERE ARE LOOPOHLES

By Praveen Nagaraj | February 6, 2020

How lobbyists succeeded in watering down Utah anti-vaping measures

By Bethany Rodgers • Published: March 24
Updated: March 24, 2020
Vaping Industry Group Sues FDA To Delay E-Cigarette Review

Vapor Technology Association Files Yet Another Lawsuit Against the FDA

A recent lawsuit filed by the Vapor Technology Association (VTA) against the FDA and the Department of Health and Human Services asked a federal court to prevent both government agencies from implementing the new PMTA guidelines. In contrast to previous deadlines set by the FDA, the new PMTA guidelines give the vaping industry little time to prepare for a large number of different vaping manufacturing and distribution standards. The FDA initially established deadlines...
What can we do about it?
Percentage of high school students (grades 9-12) who were current users of cigarettes, cigars, or smokeless tobacco by sex, 1999-2017

Source: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. Youth Risk Behavior Surveillance System. Data are not age-adjusted.
Tobacco Control Best Practices

• State and Community Interventions
• Mass-Reach Health Communication Interventions
• Cessation Interventions
• Surveillance and Evaluation
• Infrastructure Administration and Management

(CDC, 2014)
Your Platform

(Covey, 1989)
Tobacco Control Best Practices

- State and Community Interventions
- Mass-Reach Health Communication Interventions
- Cessation Interventions
- Surveillance and Evaluation
- Infrastructure Administration and Management
Your Platform – How to Communicate

• First: what’s going on around you?
  • State campaigns?
  • DFC groups?

• Media – Who defines the narrative?
  • Local
  • Social media
  • National?

• Political
  • Local reps want local experts
Content - Intervention Angles

• Lead with emotions, follow with facts
• Perceived risk
• Culture war, not information war
  • Who are relevant influencers? Are any with you?
  • Are you speaking your audience’s language?
• Effective health messaging (CDC, 2018)
  • Scope down to your core audience
  • State the issue
  • Include credible supporting facts
  • Evoke a shared value
  • Call to action

Aaron Weiner, PhD
In Summary

• A persistent, multi-faceted effort brought us to where we are now…
  …and a similar effort will be required to get us out of it
• We have the same tools at our disposal, if we’re willing to use them
• Think local
• Remember: Every voice counts
Thank You!

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www.weinerphd.com