



# Electronic Vaping Systems: A Public Health Crisis

## January 24, 2019

# A Public Health Priority

- CDC: 680% increase in teen use from 2011 – 2017.<sup>1</sup>
- Vermont: cigarettes leveled off 9%, electronic vaping systems 12%<sup>2</sup>
- National Youth Tobacco Survey: 75% increase 2017 – 2018
- Aspects of JUUL of concern:
  - ▣ “Cool” device
  - ▣ Appealing flavors
  - ▣ Nicotine delivery system

1. Wang TW, MMWR Morb Mortal Wkly Rep 2018;67:629–633

2. 2017 Youth Risk Behavior Survey

# Why these devices are dangerous

- ❑ Prevalence of use.
- ❑ Lack of perception of harm by youth.
- ❑ The power of flavors.
- ❑ The risk of nicotine addiction and lack of understanding by youth.
- ❑ Potential harms including chemicals, contaminants, metals.
- ❑ Other impacts of nicotine addiction.
- ❑ Ease of access for youth.
- ❑ Risk of co-addiction.
- ❑ Attractive price and lack of regulatory framework.

# Prevalence: Tobacco Products & Electronic Vaping Systems

1. One quarter of high school students used a tobacco product in the past year.
2. Reduction in past 30 day use of any tobacco product (19% in 2017 from 25% in 2015).
3. One third tried to quit.
4. Highly addictive.
5. A significant increase in ever use (34% in 2017, up from 30% in 2015) while a decrease in current use, (12% in 2017, down from 15% in 2015).

Note: in 2017 the number reflects also asking about use of dissolvable tobacco.

Source: 2017 Youth Risk Behavior Survey

# Lack of perception of harm by youth

Perception of harm is a proven prevention strategy.

- High for cigarettes.

- 68% of Vermont high school students reported great risk of harm of smoking a pack of cigarettes a day (2017 YRBS).

- Low for e-cigarettes.

- Among 12<sup>th</sup> graders nationally (Monitoring the Future 2016)

- Cigarettes: 78% in 2014, declined to 76% in 2016

- E-Cigarettes: 38% in 2014, only at 39% in 2016

- Two years later, still low. Fewer than 50% of teens reported as harmful (Bernat et al, Sept 2018).

# The Power of Flavors

1. Thousands
2. Authentic and appealing
3. Recapitulating a dark history from cigarettes
4. Highly common entry point:
  - a) 80% of youth report using a flavored e-cig product the first time (National PATH Survey).
  - b) 1 in 5 Vermont high school students have ever tried a flavored tobacco product (YRBS 2017).
  - c) A leading reason for continuing.

# The greatest risk: nicotine addiction

1. Adverse consequences of nicotine use in the areas of:
  - Brain development
  - Cognitive function
  - Learning
  - Attention
2. Ease of addiction is greater in youth than adults.
3. 95% of adult smokers started before the age of 21 – susceptible brain.
4. “Entry drug” on pathway to more serious addictions.
5. Nicotine and the pregnant adolescent and young adult, impact on fetus.

# Youth Poorly Understand Addictive Potential

1. 37% of those age 15 – 24 were uncertain about nicotine content and potency (Truth Initiative).
2. Nicotine content of 1 flavor pod equals 1 pack of cigarettes.
3. Testimonials of regret (“If I had only known...”).



## Other potential harms:

1. Some known, many unknown
2. Vapors and aerosols – “volatile organic compounds”
3. Flavors
4. Contaminants
5. Metals
6. Ultra-fine particles and lung health

# Potential Downstream Impacts

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1. Return to use of combustible cigarettes
2. Carcinogenicity
3. Becoming an adult addicted to EVPs

# Ease of Access for Youth

1. Mainly (2/3) through diversion: borrow, gift, steal, buy from peer.
2. This is similar to abuse of prescription opioids.
3. Poorly regulated internet, eBay regarding age restrictions.
4. Role of retailers.

# Risk of Co-Addiction

1. A new era - legalized cannabis, CBD and THC infused fluids.
2. ? Other substances.
3. The 80:20 rule of industry.

# Attractive Price Point

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1. A JUUL pod is much cheaper than a pack of cigarettes.
2. Approximately 2 pods = price of 1 Pack of cigarettes.

# Until Now, Lack of Regulatory Framework

1. Internet seller age verification, no restriction on online purchases
2. Flavors and product testing
3. Flavors not banned as with cigarettes
4. Marketing strategies not limited
5. Late 2018: marked surge in interest by FDA Commissioner Gottlieb

# Loss of Gains We've Made in Smoking

Vermont Adult and Youth Smoking Prevalence & Tobacco Policy: 1987-2016

