



# Vaping and Marijuana

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# Objectives

- Differentiate devices used in vaping, and review their function
- Identify the safety standards and regulations of electronic cigarettes
- Discuss Medical/Recreational Marijuana and other inhaled substances.

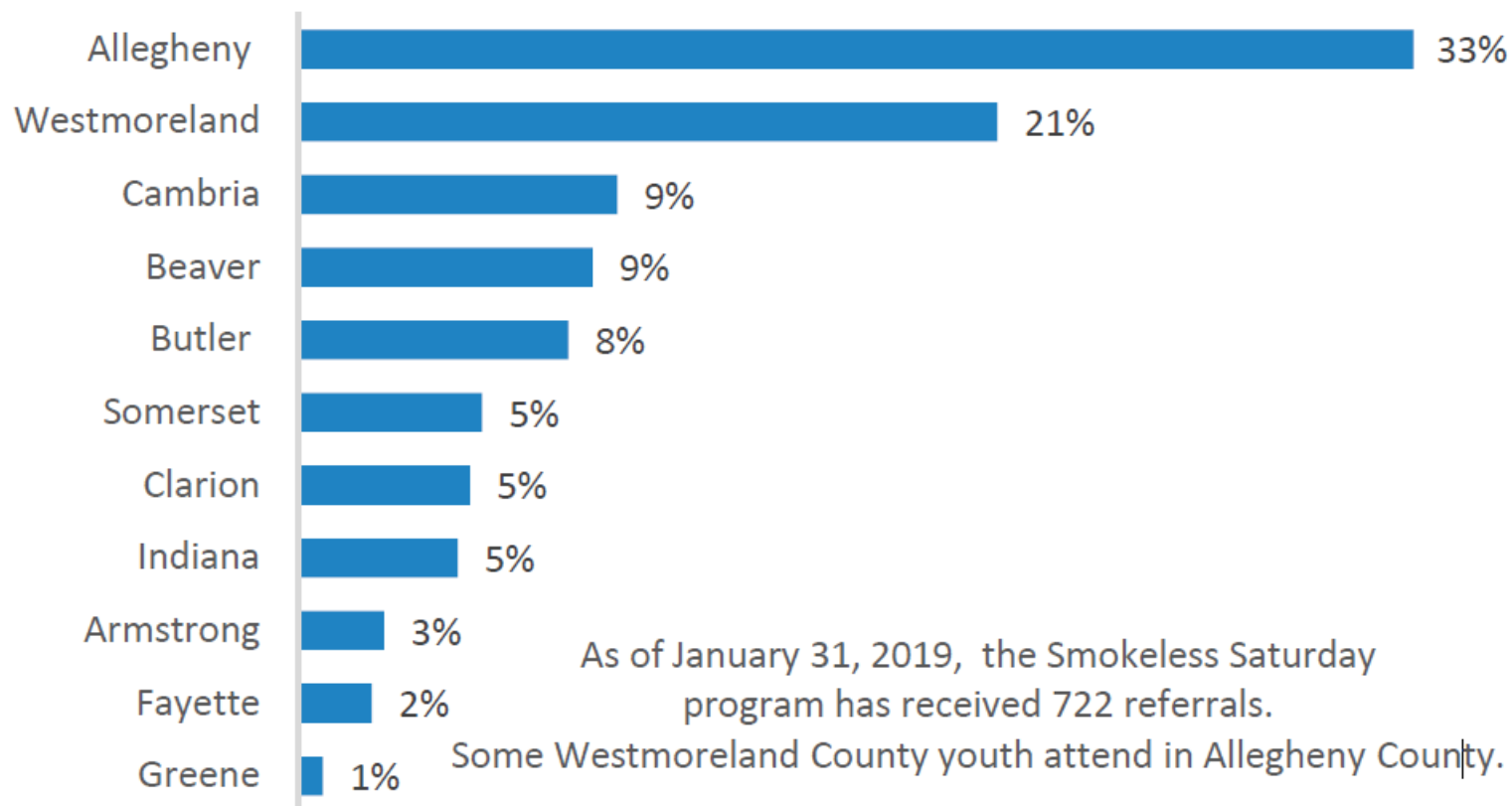


# CURRENT DATA

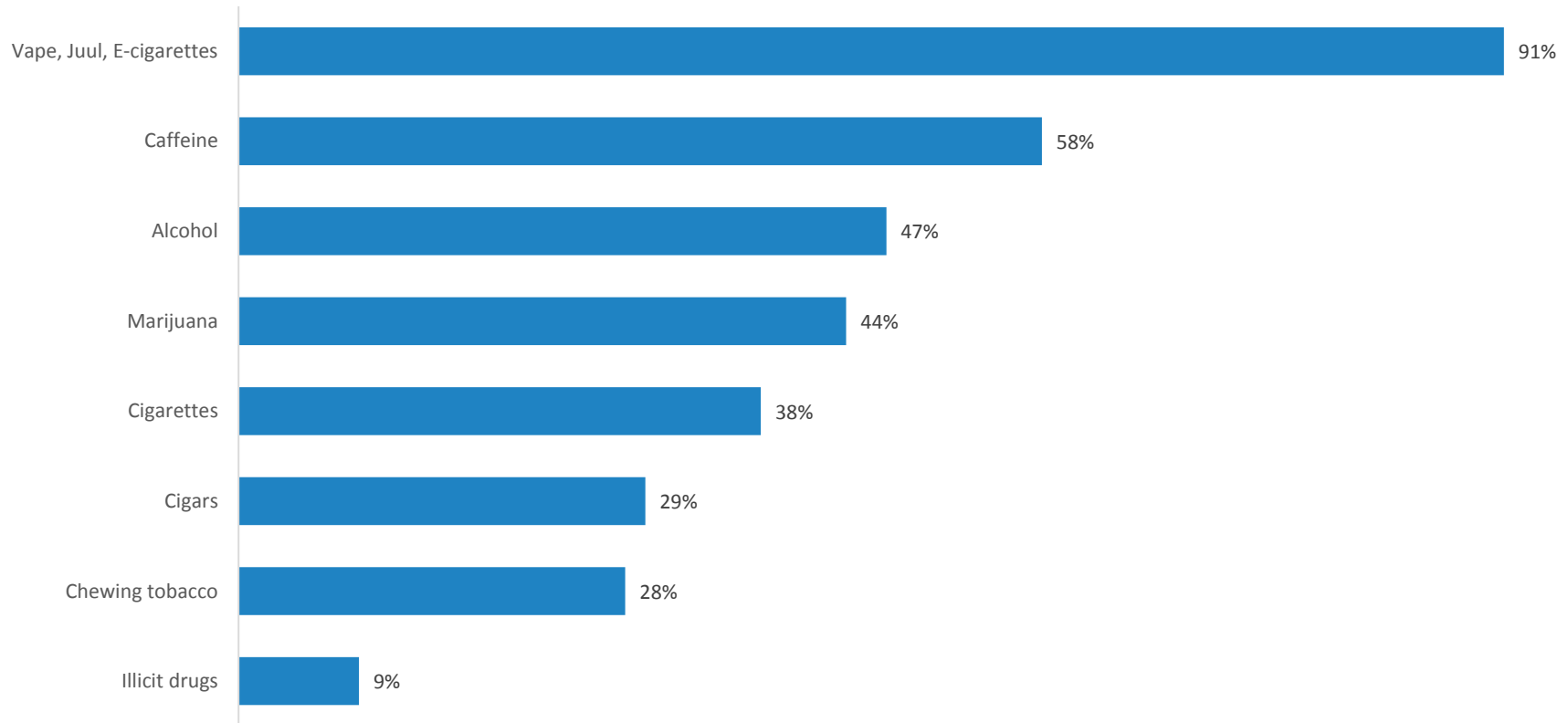
- Smokeless Saturday Data
- 2016-17                      333 Referrals
- 2017-18                      707 Referrals
- 2018-19                      1,100 Referrals



## Smokeless Saturday Programming July 2018-January 2019 (n=277)

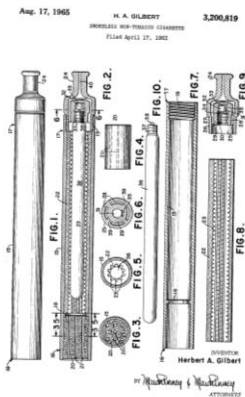


When asked to report the products they used in the past six months, over 90% of Smokeless Saturday attendees used a vape or Juul product, more than half used caffeine while 38% used cigarettes.



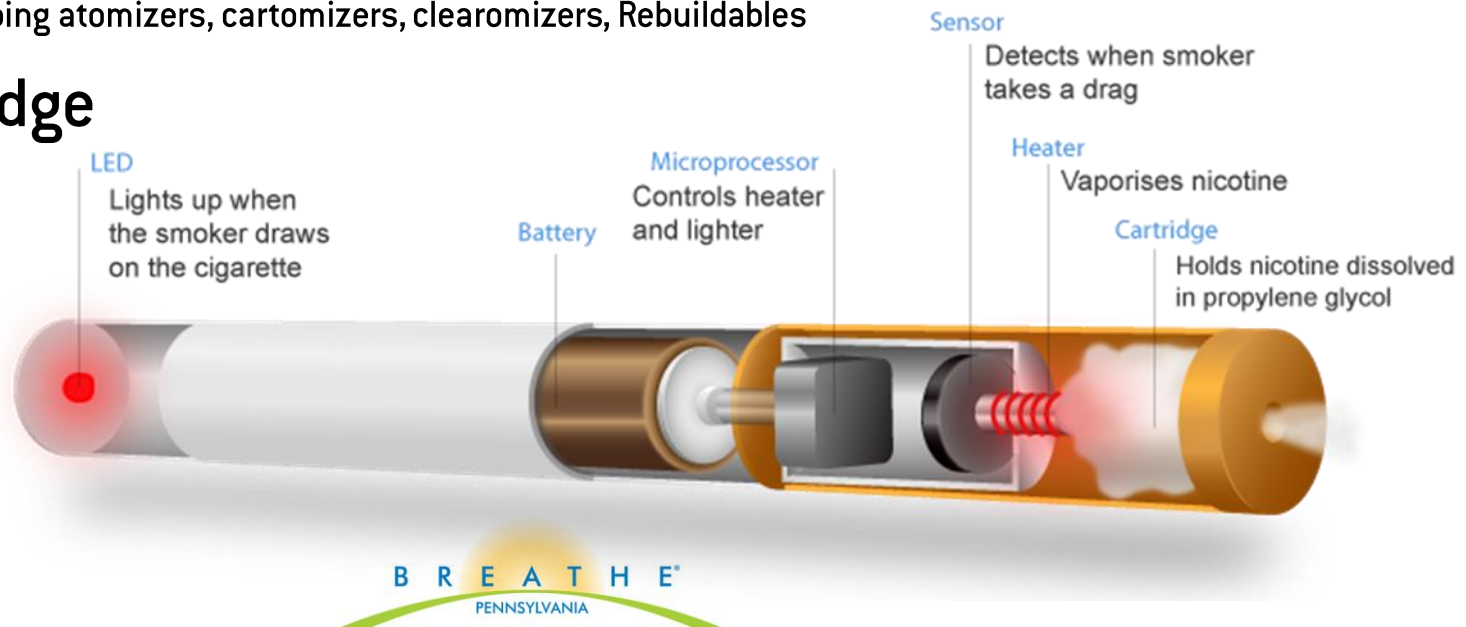
# Brief History of E-Cigs

- **1963** Herbert A. Gilbert from Beaver Falls, PA files a patent for an electronic smoking device
- **2003** The electronic cigarette is developed in Beijing, China by Hon Lik, a 52-year-old pharmacist, inventor, and smoker. He reportedly invents the device after his father, also a heavy smoker, dies of lung cancer
- **2007** Electronic cigarettes introduced to the U.S.



# Electronic Cigarettes

- Electronic cigarettes (e-cigarettes) are devices that consist of three components
  - Battery
    - Dripping atomizers, cartomizers, clearomizers, Rebuildables
  - Atomizer
  - Cartridge



# Types of Electronic Cigarettes

- Disposable cigalike
- Rechargable cigalike
- Pen-style refillable
- Tank-style “MOD”
- Electronic cigar
- Vapor pipe



# Cigalike



Blu: \$7.99



Mistic: \$21.99



# PEN STYLE REFILLABLE



# MODS



# OTHER MODS



# SUORIN AIR \$22.99



# Suorin Drop(\$28.99-\$31.99)



# Suorin Vagon(\$28.99)



# Smok (\$28.99-\$31.99)



Smok Infinix-\$17.99



Smok Fit- \$14.99



# Rolo Badge- \$24.99



# Aspire Breeze- \$25.00



KADO- \$21.95



# JUUL-\$35-\$50



mango



cool  
mint



virginia  
tobacco



fruit  
medley



creme  
brulee



# JUUL FACTS

- The JUUL has two components: the bottom part is the device, which includes the battery and temperature regulation system, and the top part is the e-liquid cartridge that you stick into the device.
- The nicotine content is 0.7mL (or 59 mg/mL) per pod, which is approximately equivalent to one pack of cigarettes, or 200 puffs.
- JUUL device costs between \$35 to \$50 and a package of four JUUL pods costs \$15.99.
- Flavors: Virginia Tobacco, Classic Tobacco, Mint, Mango, Cucumber, Menthol, Fruit Medley, Crème Brulee, Multipack



# Who owns Juul?

- 2015-2017 Pax Labs
- 2017-2018 Independent
- December 20, 2018 Juul received \$12.8 billion in funding from Altria, the maker of Marlboro
- This purchase for 35% of the company was by far the biggest investment ever in a U.S. Venture backed company
- July 12, 2018 the Juul was valued at \$15 Billion
- Annual revenue of \$2 billion



# Update on JUUL products

- JUUL announced on Tuesday, November 13<sup>th</sup> that they will suspend selling most e-cigarette pods in stores and would discontinue its social media promotions.
- To prevent some users from reverting to menthol cigarettes, JUUL said it would keep mint, tobacco and menthol flavors for its devices in retail stores.
- The company will stop accepting retail orders for mango, fruit, crème brulee, and cucumber JUUL pods. (those account for 45 % of sales for the \$16 billion dollar company).
- Requiring an online age verification that will have a real time photo along with an uploaded government issued ID.
- Restrictions on quantity of online ordering (two devices and 15 pod packages per month and no more than 10 devices per year).
- JUUL said it would shut down its Facebook and Instagram accounts in the US



# Instagram

## JUUL UPDATE



6,223 likes

**juulvapor** JUUL labs has made the decision that this official #JUUL Instagram account will no longer be active as of November 13, 2018. We will not be posting any future content here and will not respond to any direct messages.

The JUUL community and our customers are very important to us. If you need customer support our team can assist you at <http://support.juulvapor.com> and on our official Twitter account (<http://twitter.com/juulvapor>). To learn more about our decision visit [JUUL.com](http://JUUL.com) and to continue to hear from us make sure to subscribe to our newsletter.



# E-Cig Terminology

- Vape or vaping
  - Refers to “smoking” an e-cigarette
- Juice
  - Liquid solution that typically consists of propylene glycol or vegetable glycerin, nicotine, water, flavoring and other additives/preservatives
    - AKA e-liquid, e-juice, or smoke juice
    - Nicotine content of 0-36 mg/mL
  - <https://www.ejuiceconnect.com>



# Nicotine Salts vs. Freebase Vape Juice: What's the Difference?

- The main difference between nicotine salt and free base vape juice is the nicotine content and the devices that can be used with them.
  - E-liquid contains nicotine salts found in the tobacco leaf, rather than free-base nicotine used in most e-cigarettes and vaporizers.
  - Nicotine Salts are less acidic making it easier to inhale
  - More readily absorbed into the bloodstream
- So how are nicotine salts claiming up to 60 mg strength? The researchers at PAX (manufacturer of JUUL Pods) discovered that by adding benzoic acid to their patented nicotine salt they were able to increase the bioavailability of the nicotine in the vape juice while simultaneously making the nicotine much less harsh by lowering the pH of the juice and creating a smoother vape.
- Benzoic acid amounts
  - Juul 44.8mg/ml
  - Other Brands 0.2-2mg/ml



# E-Cig Terminology

- **Cloud chasing**

Vapers who try to achieve the largest vape cloud

- **Throat hit**

The tingling feeling one feels in the back of the throat when vaporizing juice that contains nicotine. Typically, since nicotine is a large contributing factor in throat hit, when a juice that contains zero nicotine is vaporized, there is no throat hit

- **Vapehole**

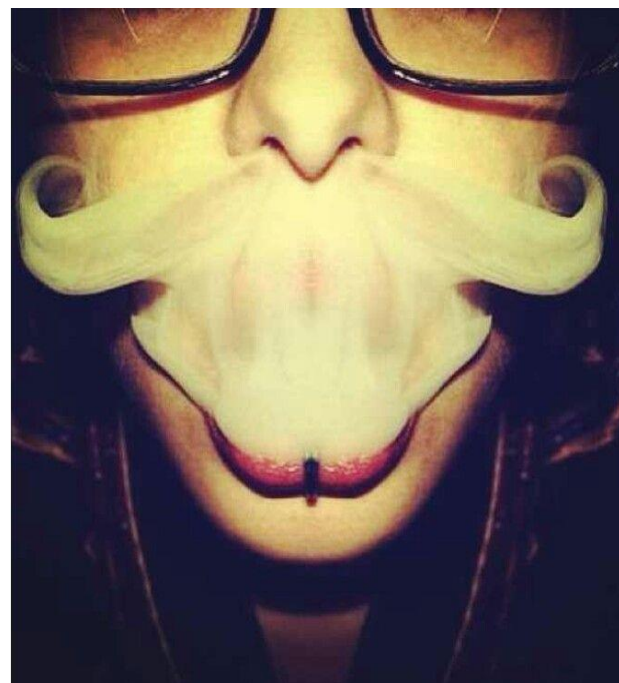
— Someone who vapes in a deliberately obnoxious manner or in areas where vaping is frowned upon.



# What is the Allure?



- Many negatives that exist with cigarettes aren't applicable to e-cigs
  - Tobacco-free
  - Flavors
  - Smoke tricks
- Customizable devices
  - Cost savings



# Marketing strategies E-cigarette companies use to target youth



# Scholarships

- Several e-cigarette companies are offering scholarships, ranging from \$250 to \$5,000, that involve asking students to write essays on topics like whether vaping could be a safer alternative.
- At least one company asks applicants to write about different types of e-cigarettes and which one they recommend.



## \$4000 Scholarship

Are you a student? Apply for the  
Vape Craft scholarship today!

APPLY NOW



# Creating a buzz on social media

- E-cigarettes make frequent appearances on social media newsfeeds and timelines. Most recently, emerging e-cigarette brands, like JUUL, have relied heavily on social media to market and promote their products.
- #JUULpods      #JUULnation      #JUULtricks
- For its launch in 2015, JUUL spent more than \$1 million to market the product on the internet, according to one research study. The brand has paid for campaigns on Twitter, Instagram and YouTube to promote images and company-sponsored ads that associate JUUL with being cool, having fun, relaxation, freedom and sex appeal.



# Sponsoring music festivals and events

- In 2013, blu eCigs sponsored the Sasquatch Music Festival in Washington, which featured a vapor lounge with surprise guest appearances from top performers, device charging stations, and interactive social media photo booth and samples of blu eCigs.
- More recently, JUUL sponsored a “Music in Film Summit” at the 2018 Sundance Film Festival in Utah



# Introducing appealing flavors

- The 2009 Family Smoking Prevention and Tobacco Control Act banned flavors in cigarettes — except menthol— to curb youth appeal, but flavors are still allowed in other tobacco products.
- E-cigarette companies capitalize on this gap in regulation by offering kid-friendly flavors, such as Pop rocks, Swedish fish and gummi bear, and packaging e-liquids to look like common food items.



# Health Concerns And Considerations

- **Acute nicotine toxicity** – Liquid Nicotine
- **Impaired cough**
- **Lipoid pneumonitis** - Lipoid pneumonia is a rare respiratory illness that may occur from aspiration or inhalation of fatlike material in the lung; this has been reported after accidental ingestion of oil-based laxatives
- **Acute Respiratory Distress Syndrome (Wet Lung)** is a condition that causes fluid to leak into your lungs, blocking oxygen from getting to your organs. Fluid leaks from small blood vessels and builds up in the tiny air sacs in your lungs. Your lungs are then unable to fill up with enough air.



# Teen Develops “Wet Lung” after vaping for just 3 weeks

- 18 year old Pennsylvania woman
- Admitted to Children’s Hospital Pediatric ICU
- Presented with cough, difficulty breathing, stabbing pains in chest
- Unable to get enough oxygen into her blood from her lungs and required a mechanical ventilator to breathe
- Tubes were inserted on both sides of her chest to drain fluid from her lungs
- Intubated for 5 days and treated with Antibiotics and Steroids
- <http://www.cnn.com/2018/05/17/health/case-study-teen-caping-wet-lung/index.html>



## Bronchiolitis Obliterans – Popcorn Lung

- Serious Irreversible condition where tiny air sacs in the lungs become scarred
- Diacetyl can cause stinging or burning of the eyes, skin irritation, dry cough, shortness of breath and sore throat
- A study published in 2015 in the journal Environmental Health Perspectives showed that harmful chemicals associated with "popcorn lung" are present in many types of flavored e-cigarettes, particularly those with flavors like fruit and candy that may appeal to young smokers.
  - Of the 51 flavored e-cigarettes tested, flavoring chemicals were found in 47 and diacetyl specifically in 39 samples

- **U.S. poison control center calls**

- As of August poison control centers have managed 1,946 exposure cases about e-cigarette devices and liquid nicotine in 2018



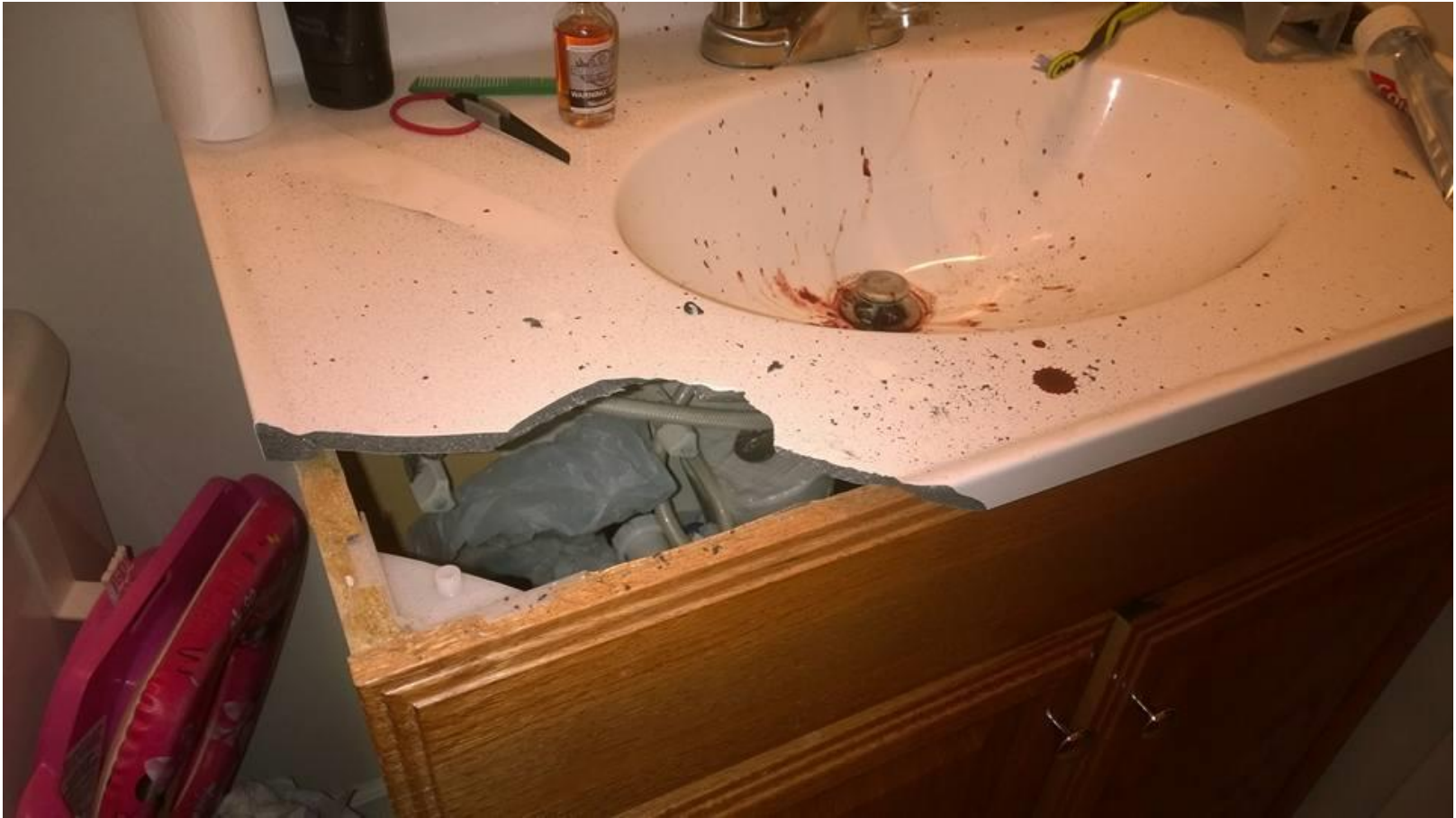
# Device explosion pictures



# Device Explosion pictures



# Device explosion pictures



# After



June 6, 2018

# E-Cig Regulations

- In 2016, the FDA extended its regulatory authority over e-cigarettes
  - All vaping products currently on the market will be required to submit a pre-market approval application to stay on the market.
  - Manufacturers must submit ingredient lists and quantities of harmful and potentially harmful ingredients. This includes vape shops that mix their own e-cigarette liquids and modify parts of e-cigarettes.
  - Vaping shops must check a photo ID of everyone under the age of 27, and sell to only those age 18 or older.
  - Products must be labeled with the following statement: “WARNING: This product contains nicotine. Nicotine is an addictive chemical.”



# E-Cig Regulations

## Tips to Help Avoid Battery Explosions

- <https://www.fda.gov/tobaccoproducts/labeling/productsingredientscomponents/ucm539362.htm>





# Marijuana



June 6, 2018

# Medical Vs. Recreational

## Medical Marijuana:

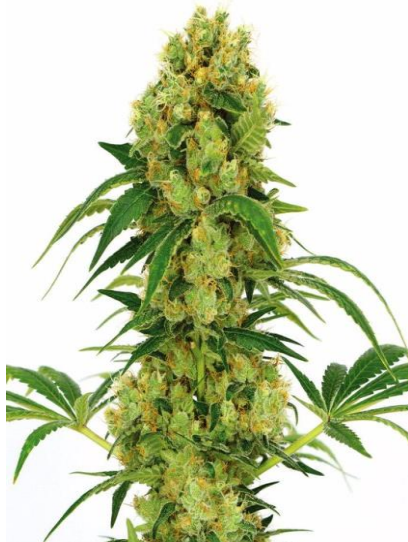
- The term **medical marijuana** refers to using the whole unprocessed marijuana plant or its basic extracts to treat a disease or symptom. The marijuana plant contains chemicals that may help treat a range of illnesses or symptoms, prompting a growing number of states – including Pennsylvania – to legalize marijuana for medical use

## Recreational Marijuana:

- Marijuana use with the sole intention of getting high



# Marijuana

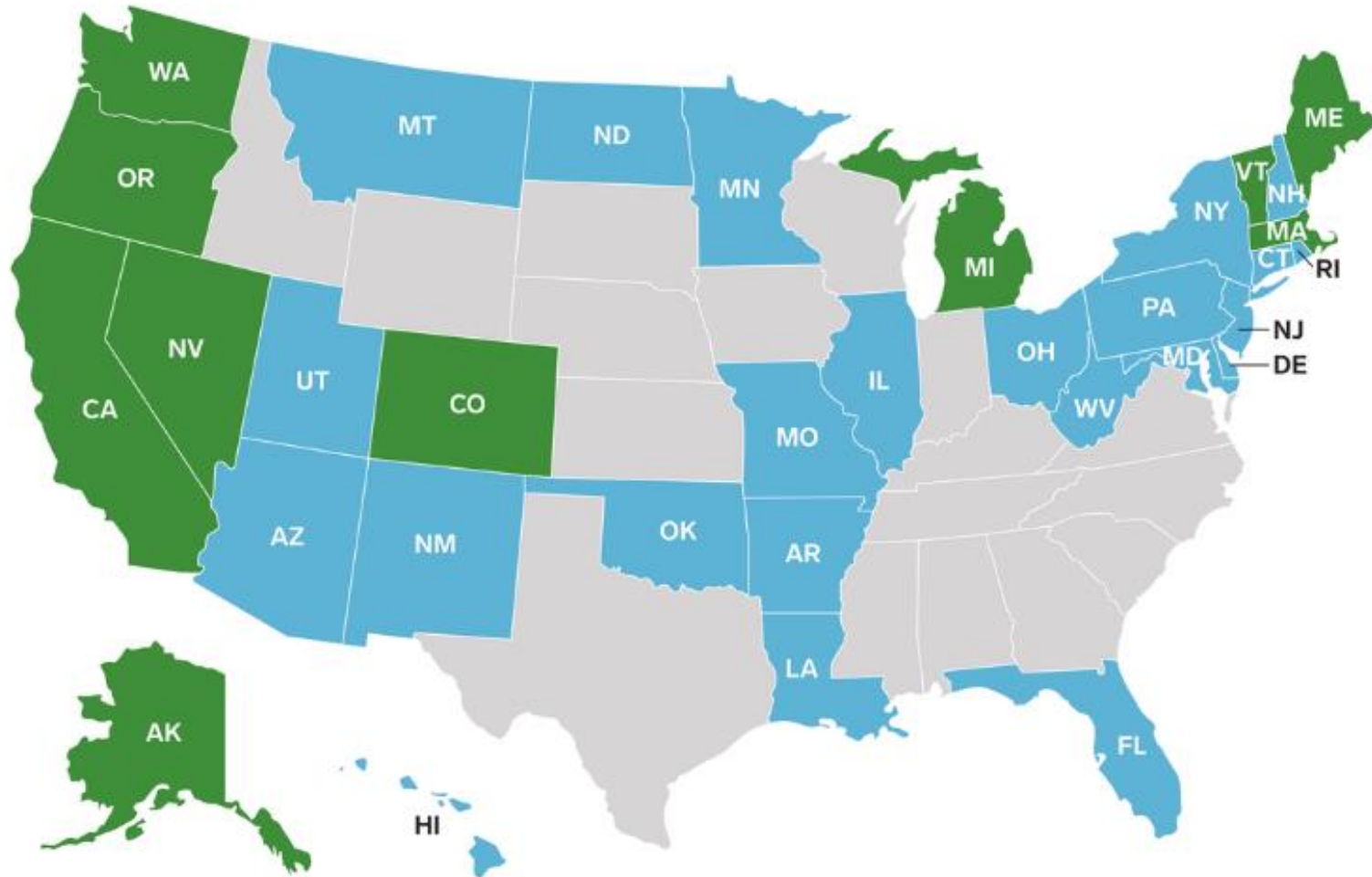


- Marijuana refers to the dried leaves, flowers, stems, and seeds from the hemp plant, *Cannabis sativa*.
- The plant contains the mind-altering chemical *delta-9-tetrahydrocannabinol* (THC) and up to >60 different active cannabinoid compounds.
- The most other commonly used extracted agent is cannabidiol (CBD) which does not have psychoactive properties.
- Marijuana and its extracts can be taken orally, sublingually, or topically; they can be smoked, inhaled, mixed with food, or made into tea.



# States where marijuana is legal

■ Legalized recreational and medical marijuana   ■ Legalized medical marijuana



Insider Inc.

# 21 serious medical conditions under the law

- Amyotrophic lateral sclerosis;
- Autism;
- Cancer, including remission therapy;
- Crohn's disease;
- Damage to the nervous tissue of the central nervous system (brain-spinal cord) with objective neurological indication of intractable spasticity, and other associated neuropathies;
- Dyskinetic and spastic movement disorders;
- Epilepsy;
- Glaucoma;
- HIV / AIDS;
- Huntington's disease;
- Inflammatory bowel disease;
- Intractable seizures;
- Multiple sclerosis;
- Neurodegenerative diseases;
- Neuropathies;
- Opioid use disorder for which conventional therapeutic interventions are contraindicated or ineffective, or for which adjunctive therapy is indicated in combination with primary therapeutic interventions;
- Parkinson's disease;
- Post-traumatic stress disorder;
- Severe chronic or intractable pain of neuropathic origin or severe chronic or intractable pain;
- Sickle cell anemia; and/or
- Terminal illness.



# The forms of medical marijuana that may be prescribed as of now

- Pill
- Oil
- Topical Forms, including gel, creams, ointments
- A form medically appropriate for administration by vaporization or nebulization, including dry leaf or plant form until DOH regulations allow
- Tincture
  - (Extracted Cannabinoids mixed into an alcohol and glycerin solution)
- Liquid



# It is Unlawful to

- Smoke Medical Marijuana
- Incorporate into an edible form except if done so by a patient or caregiver in order to aid in ingestion of the medical marijuana
- Grow medical marijuana without a permit
- Dispense medical marijuana without a permit



# Guidance for schools and school districts

- The Pennsylvania Departments of Health and Education support the administration of medical marijuana under a Safe Harbor Letter to students with serious medical conditions and the maintenance of a safe environment for other students while on school property. The below guidance provides information to school administrators to assist them in developing policies for the administration of medical marijuana on school property.
- **Recommended Guidance:** A parent, legal guardian or caregiver may administer medical marijuana to their child/student on school premises provided that the parent, legal guardian or caregiver:
  - (1) provides the school principal with a copy of the Safe Harbor Letter; and
  - (2) notifies the school principal, in advance, of each instance in which the parent or caregiver will administer the medical marijuana to the child/student. The school principal shall provide notification to the school nurse in each instance a parent or caregiver will be administering medical marijuana to the child/student as well. The parent/caregiver shall follow all school protocols applicable to visitors to the school during the school day. A parent, legal guardian or caregiver shall bring to the school and administer the medical marijuana to their child/student without creating a distraction, and shall promptly remove any excess medical marijuana and related materials from the school premises after the administration of medical marijuana is complete. The school shall provide a secure and private location for the parent/legal guardian/caregiver to administer the medical marijuana to the student. Students themselves shall not be permitted to possess any form of medical marijuana at any time on school property or during any school activities on school property.
- **Expiration:** The recommended guidance will remain in effect until the Pennsylvania Department of Education promulgates regulations regarding the possession and use of medical marijuana in the commonwealth's schools.



# DOES THE MEDICAL MARIJUANA PROGRAM PROTECT AGAINST **FEDERAL** PROSECUTION

- No. The U.S. Department of Justice (DOJ) has the authority to enforce civil and criminal federal laws relating to marijuana possession and use, regardless of state law.
- Growing, distributing, and/or possessing marijuana in any capacity, except through a federally-approved research program, is a violation of federal law, and no state or local law provides a legal defense to a violation of federal law



# Other Uses of Vaping Products:

- **Butane Hash Oil (aka: Budder, Marijuana Wax, Ear wax hash)**
  - A secondary product composed largely of THC and other chemicals from the leaves and stems of marijuana plants
- **Synthetic Cannabinoids (K2/Spice)**
  - A mixture of herbs and spices that is typically sprayed with a synthetic compound chemically similar to THC.
- **Bath Salts/Flakka**
  - The latest in bath salts, or crystal meth, tested in the lab as alpha-PVP
- **All products listed can cause severe hallucinations, psychosis, anxiety, Overdose and death.**



# Vaping Marijuana

- There are two types of products that can be vaporized:
  - marijuana oils (also called extracts or concentrates)
  - marijuana plant (usually flowers/buds)
- Cannabis oils
  - There is a wide diversity of names and products under this broad category.
- THC content is much higher than in the plant (typically 50-80% THC)
- Extraction Process



# Vaping Marijuana

- How much of the solvents remain in the cannabis extract and whether or not this poses a risk.
- Whether cannabis extracts carry dangerous amounts of pesticides and other contaminants
- In California where testing is not mandated, 57 samples of cannabis concentrates were brought to a laboratory by medicinal patients. Laboratory analysis found that 72% of the samples presented solvent residuals (mostly isopentane, but also butane, hexane and propane, among others). A third (33.3%) of the concentrates were contaminated with pesticides.



# The Impact of Smoking Marijuana

- Marijuana smoke is harmful and clearly damages the human lung.
- Marijuana smoke contains harmful chemicals which include airway irritants, tumor promoters, and carcinogens.
- Can cause visible and microscopic injury to the large airways increasing likelihood of developing chronic bronchitis.
- The inhalation patterns when smoking marijuana are different than when smoking cigarettes.
- Marijuana smokers tend to take larger puffs, inhale more deeply and hold their breath longer compared to those who smoke cigarettes. Contributing to chronic cough, phlegm production, wheeze and acute bronchitis



# The Impact of Vaping Marijuana

- Vaporizers can release harmful chemicals into your system during the heating process. Certain chemicals like ammonia can negatively interact with your central nervous system.
- Potential cancer causing substances that are released
- Aggravation of pre-existing conditions such as asthma
- Bronchial spasms when vaping marijuana
- Cannabis oil is most often thinned with propylene glycol or polyethylene glycol. Neither of these are safe to heat or inhale.
- Overlapping problems Ex. Patient is diagnosed with Cancer but has COPD
- Benefit vs. Risk



# Devices

The Desktop vaporizer utilizes a vacuum system to pump in fresh, filtered air which is then heated. Hot air passes over your dry mix or essential oils to create vapor filling the volcano balloon.

\$479.99



# Conduction Vaporizer

- Use Loose Leaf
- 30 seconds to a minute to heat up
- Can adjust temperature
- Uses a metal chamber to heat ground flower



PAX2- a flower  
vaporizer \$149.99



PAX 3- Flower and Wax \$249.99

- 8 - 10 Sessions per Charge
- 60+ Temperature Settings
- 22 Second Best-In-Class Heat-Up
- Vibration Notifications
- Bluetooth Enabled



PAX Era-Cannabis Oils  
\$29.99- Pods not  
included



# Convective Vaporizers

- The Firefly is an example of a convection vaporizer that heats the flower with hot air. “Designed for people who love the plant” (\$329.95)



# Other Products

- The Snoop Dogg G Pen Elite (169.95)
- No Cartridges or hash oil, just leaves



# Other Products

- JUJU Joints – Inventor Rick “Ranger” Stevens
- A vaporizer starting at \$25.00 and loaded with up to 500 mg of cannabis oil, charged And ready to vape.
- Product states it has no smell



# Mong

personal and portable essential oil diffuser. Just pick a blend, breathe, and go-  
\$20 for 1 \$69 for 4



# Dragons Breath



Liquid nitrogen puffs are a novelty dessert made of fruity cereal puffs or other light and airy snacks (e.g. popcorn, marshmallows, wafers, whipped cream, cheese puffs, etc.) soaked in liquid nitrogen.

The flavor of these hyper-frozen snacks can be very mild since the liquid nitrogen itself has no flavor, but the fruity cereal version tastes like Froot Loops, Trix, or Captain Crunch. It may be accompanied by flavored dipping sauces to add more taste to the cereal.

When eaten and exhaled, this seemingly smoking dessert releases as a thick fog mimicking a dragon's breath releasing smoke from the mouth and nostrils.



# PUFFIT VAPORIZER \$119.00

- The PUFFiT Portable Vaporizer is a new portable Vaporizer manufactured by Discreet Vape that was released into the market in the summer of 2012.
- Featuring a discreet and lightweight design, the PUFFiT Portable Vaporizer measures only 3.5 Inches in Height. The PUFFiT Portable Vaporizer weighs 2.6 ounces, allowing this truly personal Vaporizer to easily fit inside your pocket or purse.
- Combining an internal microprocessor with a high grade gold plated heating chamber, the PUFFiT Portable Vaporizer produces a quality Vapor at multiple temperature levels in less than one minute



# Medicinal mods- \$12.00

- Vitamin Enhanced E-cigs
- In early 2014 a company called Vitacig emerged in the market, looking to be the first in a completely new wave of e-cigs.
- Vitacig hoped to fill a niche that few would have realized existed in vaping –the health-food and fitness crowd
- Vitacigs come in a variety of flavors, and each one is nicotine free and fortified with vitamins A, B, C, D and CoQ10



# Conclusion

- No tobacco or e-liquid should ever be considered “safe” and we encourage consumers to do their own research regarding vapor products.
- You are never just inhaling vapor – its vapor plus irritants, toxins, nicotine and flavoring agents.
- Please review the FDA Center for Tobacco Regulatory Science and Lung Health E-liquid database for quality of different products
- <http://eliquidinfo.aftran.com/>
- Questions

