

Dear Delaware Educator,

I am writing to make you aware of an alarming trend within middle and high schools across Delaware: E-cigarette use (vaping) among Delaware students has reached an epidemic level. According to a recent report, 13.6% of Delaware high school students report vaping at least once a month, and a staggering 37.9% report having tried an e-cigarette.*

*Source: 2017, Delaware Youth Behavior Risk Survey (YRBS)

Even as we succeed in lowering the number of Delaware students who smoke cigarettes and use other tobacco products, we see a corresponding rise in vaping. As an educator, you see vaping firsthand every day. It's been frustrating and difficult for you to combat — until now.

The Delaware Division of Public Health developed the enclosed Vape Packet of materials to promote a new online resource: **www.VapeFreeDE.com**. Materials may also be ordered free or downloaded for printing at **www.VapeFreeDE.com**.

These materials not only make your teachers, nurses, counselors, coaches, and other school personnel aware of our state's vaping epidemic, but also provide vital information and resources to address the epidemic head-on.

Your packet contains the following:

- **Fact Sheet 1:** Brief overview of e-cigarettes/vape devices, what they are, and how they work.
- **Fact Sheet 2:** Breakdown of vaping's harmful health effects, especially among young users.
- **Fact Sheet 3:** Details on vaping-cessation options, available to students as young as age 13.
- **Fact Sheet 4:** Latest Centers for Disease Control and Prevention (CDC) information on vaping-related lung illnesses and deaths.
- **Fact Sheet 5:** Telltale signs a student may be vaping.
- **PowerPoint presentation** adapted from the CDC about vape devices and their dangers, for use by school nurses, coaches, and teachers for in-school presentations or consultation with concerned parents or communities.
- **Mirror clings** for student bathrooms, detailing the health dangers of vaping.
- **Posters** for teacher break rooms, showing how to help students quit vaping.

We thank you and your colleagues for joining us in the fight against vaping in Delaware schools — and in protecting the health and welfare of our students.

Sincerely,

Karyl T. Rattay, MD, MS, FAAP
Director, Division of Public Health



OVERVIEW: VAPING AND E-CIGARETTE USE AMONG DELAWARE STUDENTS.

WHAT ARE E-CIGARETTES?

The Centers for Disease Control and Prevention (CDC) defines e-cigarettes as battery-powered devices that heat and deliver liquid nicotine, flavors, and other ingredients to users. Using an e-cigarette is often called vaping. However, e-cigarettes do not create water vapor. They create aerosols that can contain harmful metals and chemicals — and often, unknown ingredients. E-cigarettes remain unregulated by the U.S. Food and Drug Administration (FDA). In fact, many e-cigarettes deliver homemade concoctions of THC and other drugs, at great risk to users' lungs and overall health.

WHAT DO THEY LOOK LIKE?

E-cigarettes (or vaping devices) come in many shapes and sizes. Some mimic the look of regular tobacco cigarettes, cigars, or pipes. Some take the shape of hookahs, tank systems, or mods. Others are designed to resemble flash drives — these are popular with Delaware youth, as they are easily hidden or misidentified by school authorities.



E-cigarettes delivering nicotine are sold under such brands as Halo, Mig Vapor, V2 Pro, Vapor-Fi, Juul, Blu, NJoy, SMOK, Suorin, and White Cloud, to name just a few. Additionally, the PAX Era e-cigarette, which also looks like a flash drive, is used to deliver marijuana.

THE CROWN JEWEL OF NICOTINE ADDICTION: JUUL®.

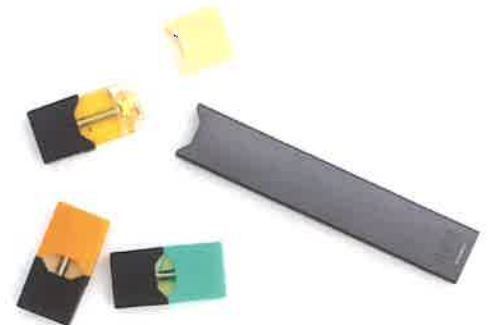
The Juul e-cigarette recently controlled nearly 75% of the market. But that percentage has dropped since Juul has been banned in several U.S. states and cities for allegedly targeting youth with flavored products, such as fruits and menthol.* A single Juul juice pod typically **contains the equivalent addictive nicotine of 20 regular cigarettes**. In January 2020, the FDA also announced its enforcement policy against flavored e-cigarettes.**

*Source: National Public Radio (NPR)

**Source: U.S. Food and Drug Administration

Prior to Juul's 2015 introduction, the most popular e-cigarette products contained nicotine strengths of roughly 1% to 2.4%. When Juul debuted, its pods contained 5% nicotine strength. Juul's nicotine-salt formulation also increases the rate and amount of nicotine delivered into the blood, compared with other formulations. The manufacturer claims Juul delivers nicotine up to 2.7 times faster than other e-cigarettes.*

*Source: 2019, truthinitiative.org



HOW BAD IS THE EPIDEMIC?

In Delaware, regular use of vaping devices among students has surpassed that of combustible tobacco products, now at nearly double the rate. More troubling, in a recent report, 37.9% of high school students reported having tried an e-cigarette.* Nationwide, youth use of e-cigarettes continues to climb, and there is no end in sight.

Current tobacco use among Delaware high school students*

6.2%

REGULAR CIGARETTES

7.3%

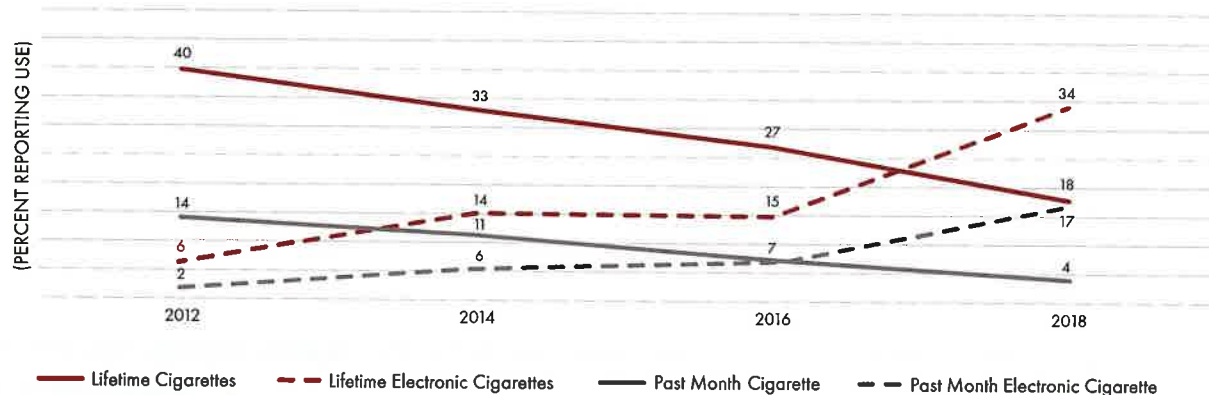
**LITTLE CIGARS,
CIGARILLOS, CIGARS**

13.6%

E-CIGARETTES

*Source: 2017 Delaware Youth Risk Behavior Survey (YRBS)

Electronic Cigarettes Vs. Cigarette Use Among Delaware High School Students, 2012-2018



*Source: Delaware Youth Tobacco Survey (YTS)

WHAT CAN YOUR SCHOOL DO?

As an educator, coach, counselor, or mentor, you have an important role in protecting students from e-cigarettes. It can begin with something as simple as engaging your students in discussions about the dangers of e-cigarette use. You can also develop, implement, and enforce tobacco-free and e-cigarette-free school policies.

In addition, free vaping-specific lesson plans and prevention/intervention programs are available from leading educational and health organizations, including Botvin, Scholastic, Stanford Medical School, and the American Lung Association. To view and/or download them, visit www.VapeFreeDE.com.

VapeFreeDE.com

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DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health
Tobacco Prevention and Control Program



THE HARMFUL EFFECTS OF VAPING ON DELAWARE YOUTH.

E-cigarettes are not approved as smoking cessation devices by the U.S. Food and Drug Administration (FDA).

Here are some reasons why e-cigarettes can be just as harmful, if not more so, than regular cigarettes when used by students and adolescents.

ADVERSE EFFECTS ON THE BRAIN.

According to the Centers for Disease Control and Prevention (CDC), nicotine is highly addictive and harmful to adolescent brain development, which continues from birth until about age 25. Nicotine impacts mood as well as learning, attention, decision-making, and impulse control. E-cigarette use also makes adolescents more likely to use regular cigarettes later in life and increases their risk for future addiction to other drugs. Worse, nicotine is concentrated in e-cigarettes — just one pod of vape juice can contain the nicotine equivalent of 20 regular cigarettes.

DANGER TO THE LUNGS.

E-cigarette aerosol is not as harmless as manufacturers would like Delaware youth to believe. In fact, those who use e-cigarettes, breathe in such dangerous ingredients as:

2,3-pentanedione	Formaldehyde
Acetoin	Glycerin
Arsenic	Nitric oxide
Benzaldehyde	Propylene glycol
Cadmium	Toxic solvents
Diacetyl	Unknown elements
Ethylbenzene	Volatile Organic Compounds (VOCs)



HEAVY METALS GET INTO LUNGS TOO.

Aside from dangerous chemicals and compounds, e-cigarette aerosol frequently contains such toxic metals as:

Aluminum	Nickel
Cadmium	Silicon
Chromium	Tin
Copper	Titanium
Iron	Tungsten
Lead	Uranium
Manganese	Zinc



E-CIGARETTES VS. REGULAR CIGARETTES: WHICH IS MORE DANGEROUS?

There are no winners here. Combustible tobacco cigarettes are known to cause cancer and contain smoke, tar, nicotine, burn agents, and some 7,000 chemicals. But e-cigarettes come with their own cancer-causing and often questionable contents, including volatile organic compounds (VOCs), ultrafine particles, and heavy metals.

In fact, the CDC's Office on Smoking and Health (OSH) developed a "Know the Risks" presentation to educate youth about the perils of e-cigarette use. An adaptation of this presentation, which includes Delaware-specific statistics and information, can be viewed and downloaded for free at www.VapeFreeDE.com.

E-LIQUIDS ARE A POISON RISK TO SMALL CHILDREN.

Since 2011, more than 4,000 incidents involving the ingestion of liquid nicotine (vape juice) have been reported in the U.S.* As little as **a teaspoon of highly diluted nicotine can kill a small child**. Even skin contact is a safety concern. Vape juices should never be left within reach of infants or children.

*Source: 2014, American Association of Poison Control Centers



CESSATION SOLUTIONS TO HELP STUDENTS QUIT VAPING.

Nicotine exposure during adolescence, a critical period for brain development, can cause addiction and harm the developing brain. Many vape pods can deliver the nicotine equivalent of 20 regular cigarettes. Fortunately, Delaware has a dedicated 24/7 resource that e-cigarette users, **now as young as age 13**, can use to find the support they need to quit successfully.

**DELAWARE
QUITLINE
1-866-409-1858**

It's free. It's confidential. No one has to know. It's the right call to make for any student or educator who vapes or smokes. The Delaware Quitline offers invaluable support, resources, and personal encouragement to anyone wanting to quit vaping, smoking, or other tobacco products. In addition, individuals can find online help at www.QuitSupport.com.

Delaware Quitline help is available to students under 18 in two ways, whichever is most comfortable for you:



Our compassionate support specialists will assess the caller's needs and explore their options, right over the phone. Calls to us are completely confidential.



Our Quit Coaches help individuals conquer their vaping or smoking urges at their own pace — with chat and other online support, tracking tools to help them quit, and much more.

To learn more about the Delaware Quitline and cessation programs, visit www.HealthyDelaware.org/Quit.

THERE'S A SOCIAL ASPECT TO SUPPORT.

Teens in Delaware have access to lots of prevention and cessation resources to learn the truth and make a change, including:

- **KBG** — *Kick Butts Generation*. A youth-led anti-tobacco movement with a mission to keep the tobacco products out of schools and communities, at www.kbgde.org.
- **Teens Health**, from Nemours. This nonprofit health website for kids and teens offers doctor-reviewed advice, articles, free lesson plans, and more, at www.kidshealth.org.
- **DANTE** — *Delawareans Against Nicotine and Tobacco Exposure*. A nonprofit group of Delaware collegians who've chosen not to smoke, and want to make Delaware a cleaner, safer, and healthier place for everyone.

Programs available from the American Lung Association include the following, at www.lung.org/stop-smoking/helping-teens-quit.

- **N.O.T.** — *Not On Tobacco*, a totally holistic program that helps youths quit smoking and vaping while identifying alternative, positive behaviors.
- **InDepth** — *Intervention for Nicotine Dependence: Education, Prevention, Tobacco and Health*. Alternative educational sessions offered to students who have been suspended from school for vape or tobacco use.

A teen quit-vaping program is also available from Truth Initiative, a youth-based organization that motivates and inspires vape-free living.

- **This is Quitting**. The first-ever text-to-quit vaping service, activated by texting DITCH JUUL to 88709. See details at www.truthinitiative.org/thisisquitting.

STUDENTS WANT TO QUIT. YOU WANT TO HELP.

As a school educator, nurse, coach, or mentor, you're in a unique position to talk with teens about e-cigarettes — from frequency of use to the inherent health risks to the dangers of nicotine addiction. We urge you to tell all students about the Delaware Quitline. You could potentially save a life.

For those 18 or older, Delaware Quitline cessation options are available at 1-866-409-1858.

- Our compassionate support specialists will assess the caller's needs and explore their options, right **over the phone**. Calls to us are completely confidential.
- Is online too informal? Is a phone call too uncomfortable? If so, call our Quitline and arrange for an **in-person talk** with a trained local coach.
- Our Quit Coaches help individuals conquer their vaping or smoking urges at their own pace — with **online support**, tracking tools to help them quit, and much more.
- Participants may be eligible for free tobacco cessation medication.



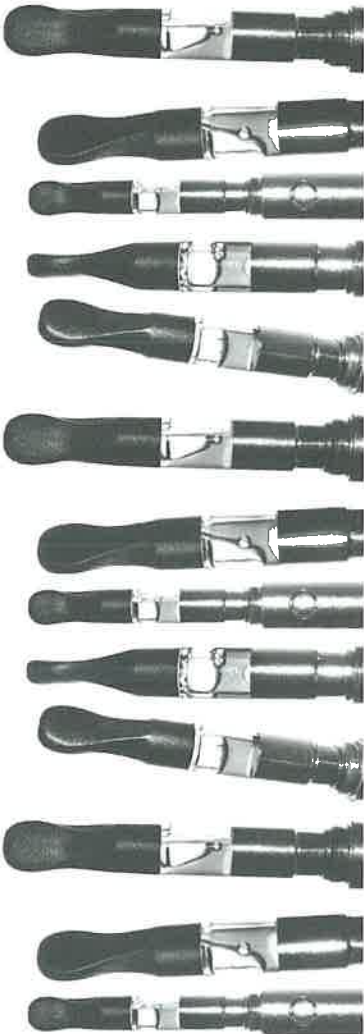
ILLICIT THC IS THE LEADING CAUSE OF VAPING-RELATED LUNG INJURIES AND DEATH.



THE VITAMIN E—THC CONNECTION

The CDC has identified vitamin E acetate as a chemical of concern among people with EVALI, an abbreviation for E-cigarette, or Vaping, product-use Associated Lung Injury. Recent CDC testing of fluid samples collected from the lungs of 29 patients with EVALI in 10 states found vitamin E acetate in all of the samples. Vitamin E acetate is used as an additive, most notably as a thickening agent in e-cigarettes or vaping products containing THC (tetrahydrocannabinol).

The latest national and state findings suggest THC-containing e-cigarette or vaping products particularly from informal sources like friends or family, or in-person or online dealers, are linked to most of the cases and have played a major role in the outbreak.



WHAT IS NEW

The CDC has analyzed national data on use of THC-containing product brands by EVALI patients.

- Overall, EVALI patients reported 152 different THC-containing product brands.
- Dank Vapes, a class of largely counterfeit THC-containing products of unknown origin, was the most commonly reported product brand used by patients nationwide.
- The data further supports that EVALI is associated with THC-containing products and that it is not likely associated with a single THC-containing product brand.

WHAT WE DON'T KNOW

While it appears that vitamin E acetate is associated with EVALI, evidence is not yet sufficient to rule out contribution of other chemicals of concern to EVALI. Many different substances and product sources are still under investigation, and there may be more than one cause of this outbreak.

WHAT WE DO KNOW

According to the CDC, as of December 27, 2019, there have been 2,561 cases of EVALI reported to the CDC from all 50 states, the District of Columbia, and two U.S. territories (Puerto Rico and U.S. Virgin Islands). This includes **20 Delawareans with lung injuries**. Fifty-five deaths have also been confirmed in 27 states and the District of Columbia (as of December 27, 2019), including **1 death in Delaware**. The median age of deceased patients was 53 years; ages ranged from 17 to 75 years (as of November 20, 2019).

*Among 11th grade Delaware students who reported using a vaping device in the past year, **53% reported vaping marijuana.***

A BREAKDOWN OF THE VAPING-RELATED OUTBREAK

Respiratory symptoms reported included cough, shortness of breath, and chest pain.

Gastrointestinal symptoms included nausea, vomiting, and diarrhea.

Nonspecific symptoms included fatigue, fever, and weight loss.

Approximately 95% of patients were hospitalized; 5% were not.

Nearly 70% of patients were male.

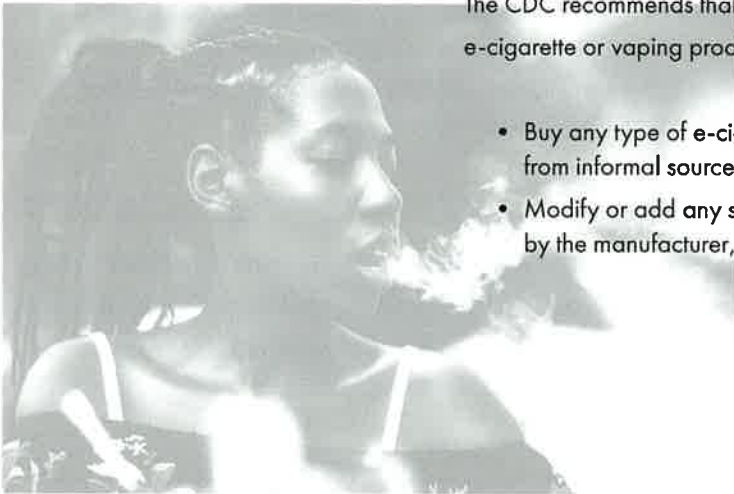
Approximately 15% of patients were under 18 years old.

More than 75% were 18 to 24 years old.

WHAT YOUR STUDENTS SHOULD DO

The CDC recommends that people, especially young people, do not use THC-containing e-cigarette or vaping products. The CDC also recommends that people should **not**:

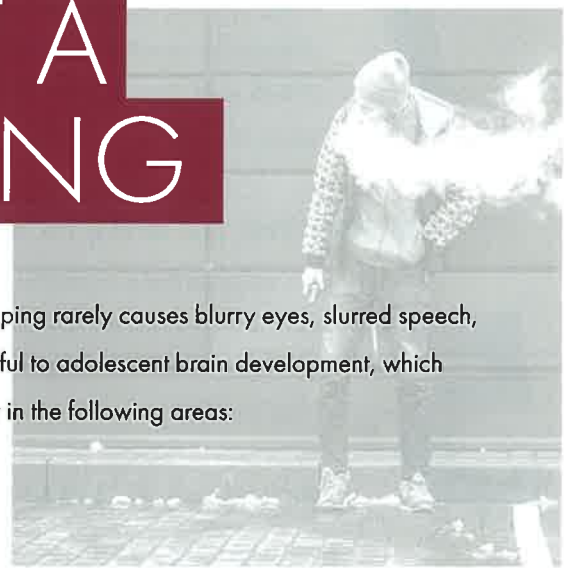
- Buy any type of e-cigarette or vaping products, particularly those containing THC, from informal sources like friends, family, or in-person or online dealers.
- Modify or add any substances to e-cigarette or vaping products that are not intended by the manufacturer, including products purchased through retail establishments.



FOR REGULAR CDC UPDATES

The Centers for Disease Control and Prevention (CDC) updates its statistics on the outbreak of vaping-related hospitalizations and deaths every Thursday. For the most accurate and up-to-date information, visit www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html.

10 SIGNS THAT A STUDENT IS VAPING



The indications of e-cigarette use are different than those of alcohol or drug use. Vaping rarely causes blurry eyes, slurred speech, or physical impairment. However, the nicotine in e-cigarettes is addictive and harmful to adolescent brain development, which occurs from birth until about age 25. Vaping can negatively affect student behavior in the following areas:

- Mood
- Ability to reason
- Impulse control
- Learning
- Attention span
- Decision-making

E-cigarette use by children and teens also makes them more likely to use regular cigarettes later in life and increases their risk for future addiction to other drugs. The nicotine content of some e-cigarette pods packs the punch of 20 regular cigarettes.

Here are warning signs you should look for:

The following behaviors or symptoms of e-cigarette use have been cited by the Centers for Disease Control and Prevention (CDC), the American Lung Association, *USA Today*, and *U.S. News & World Report*.

1 DRY MOUTH OR DEHYDRATION

Propylene glycol, an ingredient in vape e-liquids, frequently causes dry mouth (aka cottonmouth) as a side effect of e-cigarette use. If you notice increased thirst or students drinking water more than usual, you might consider asking additional questions or observing their in-class behavior more closely.

Source: American Lung Association and *U.S. News & World Report*



NOSEBLEEDS

Vapers tend to exhale through their nose more than their mouth. Again, propylene glycol may be the culprit, as it dehydrates the inside of nostrils. The corresponding dryness leads to frequent nosebleeds. **Be on the lookout.**

Source: American Lung Association



3 UNEXPLAINED SWEET SCENT

Flavored e-cigarettes such as citrus, berry, watermelon, bubblegum, and others are popular with youths. If you notice a sweet scent on a student's breath and they can't explain it, you might want to consider asking them if they are vaping.

Source: American Lung Association



1 UNUSUAL USB DRIVES AND PENS

Rather than use large vape devices like hookahs and pipes, many students prefer more discreet ones designed to resemble a USB flash drive or a writing instrument like a pen. The devices often have holes at both ends. Don't be fooled. If it doesn't look legitimate, it probably isn't.

Source: American Lung Association

4

COUGHING OR MOUTH SORES

Some research indicates that e-cigarettes interrupt the body's immune system, which may cause mouth sores or wounds that won't heal.* E-cigarette users also exhibit a cough similar to that of a smoker. If the cough or sores can't be explained, it's likely a sign that a student is vaping.**

Source: USA Today* and CDC**

5

EXCESSIVE THROAT CLEARING

The human body produces mucus and phlegm naturally, and clears it regularly. However, e-cigarette use can cause mucociliary dysfunction (similar to COPD, asthma, and cystic fibrosis), which impairs the body's ability to move and expel these substances. Quite simply, vaping irritates the throat, causing vapers to frequently clear their throat.

Source: USA Today

6

UNFAMILIAR BATTERIES OR CHARGERS

Vape batteries and chargers seldom look like their cellphone counterparts. And while a cellphone charge might last a day, a vape charge may last only a few hours, depending on frequency of device use. If a student possesses one of these, they are likely vaping.

Source: U.S. News & World Report

7



METALLIC WIRES, COILS AND ATOMIZERS

Thin metallic wires, coils and atomizers are used to heat up and vaporize e-cigarette liquids. They need to be replaced from time to time. If a student is found with these, it's time to ask some questions.

Source: U.S. News & World Report and USA Today

8

EMPTY E-LIQUID PODS

Pods are designed to deliver up to 200 hits, or puffs, of e-vapor to the user. If you see a student discarding a pod, retrieve it and start a conversation about it.

Source: U.S. News & World Report and USA Today

9



ABDOMINAL PAIN

Nausea, vomiting, abdominal pain, and diarrhea are common side effects of e-cigarette use, and typically precede the onset of lung injuries or illnesses.

Source: CDC

10