

Take charge of your health today. Be informed. Be involved.

This month, the "Take Charge of Your Health Today" page focuses on electronic-cigarette research and usage. Jennifer Jones, MPH, community engagement senior coordinator at the University of Pittsburgh Clinical and Translational Science Institute, and Esther L. Bush, president and CEO of the Urban League of Greater Pittsburgh, discussed this topic.

EB: Good afternoon, Jennifer. Can you believe August marks six years that we have been publishing these pages in the Courier? It has gone so fast, and I am truly grateful for this partnership. I know that a lot of important health and research information has gone to the thousands of readers, encouraging them to "Take Charge" of their health.

JJ: It truly has gone so fast! I counted, as we have published 57 unique pages on over 50 health topics.

EB: Truly a pleasure to be involved. I've been looking forward to learning and talking more about e-cigarettes. Is it just me or does it seem like more people are using these products?

JJ: I've noticed it, too, Esther. Reports from the Office of the Surgeon General

E-Cigarettes

show that e-cigarette usage has greatly increased over the last five years. More high school students smoke e-cigarettes than regular cigarettes, and usage is higher in that population than in adults (<https://e-cigarettes.surgeongeneral.gov/>). Electronic nicotine products are seen as a "trendy" and "cool" way to smoke, especially because many of these products use flavored liquids that taste and smell better than traditional tobacco smoke.

EB: That's really important to know, especially as the Urban League has many programs geared toward adolescents. I've heard chatter that people switch to these because they are safer.

JJ: The challenging part is that clinicians and researchers do not yet know what long-term effects these products have on our bodies. It takes many years of research to build solid evidence to determine whether something is harmful to our bodies. As the overview points out, it's still very import-



ESTHER BUSH

ant to remember that these products may contain nicotine and other chemicals. We actually don't always know what ingredients are in e-cigarettes. Nicotine is addictive and can cause changes in the brain. There's research showing that e-cigarette usage or "vaping" can lead to traditional cigarette use and addiction. And research has already proven that traditional cigarette use is harmful to people's health.

EB: I'm glad this page is a way to highlight what researchers are working on. This topic

is important at a county level as well. Dr. Karen Hacker and her team at the Allegheny County Health Department worked with city government to pass a regulation that "prohibits the use of e-cigarettes and vaping products in indoor public places where cigarettes are already prohibited" earlier in 2017. The Urban League has also collaborated with Tobacco Free Allegheny ([TFA; www.tobaccofreeallegheny.org/ecigarettes.asp](http://www.tobaccofreeallegheny.org/ecigarettes.asp)), which does great work in our community and has a wealth of resources, including education, prevention and smoking cessation information.

JJ: Yes, TFA is a great resource. The Clean Indoor Air Act that was passed shows the commitment health officials in Allegheny County have to this cause to create a healthier environment for all of us. I encourage everyone reading this commentary to use the resources that are on this page and share them with a friend or family member who may smoke. Next month, we're focusing on addiction. I look forward to talking more then. Any questions or comments about this page can be sent to partners@hs.pitt.edu.

'Vaping' is a public health concern

In March, Allegheny County joined 15 states and 660 other localities across the country in restricting e-cigarette use in public places via two ordinances. One prohibits e-cigarette use in indoor public places where smoking is already prohibited. The other limits e-cigarette use by food service employees during work hours.

E-cigarette use (sometimes referred to as "vaping") is a public health concern for three major reasons. These reasons threaten to slow 50 years of progress in reducing smoking rates.

First, e-cigarette chemicals themselves are harmful to users.

Second, secondhand vapors often contain nicotine, in addition to other harmful



chemicals. These vapors expose bystanders to nicotine, one of the most addictive substances on the planet.

Third, the indoor use of e-cigarettes makes it seem normal again to smoke inside.

While e-cigarette emissions may be less harmful than secondhand smoke, there is no scientific evidence that they are safe. E-cigarette "clouds" are not water vapor. This "vapor" is the aerosolized byproduct of heated propylene glycol, glycerin, any number of flavoring chemicals and, often, nicotine. The nicotine used in vape liquids is derived from tobacco. It contains some of the same carcinogens and toxicants as traditional cigarettes.

Regardless of whether e-cigarettes look like traditional cigarettes, using these products mimics the act of smoking. Seeing e-cigarette use may trigger smoking cravings in others. A growing body of research has shown that teens who vape are more likely to smoke cigarettes in the future.

Please join the Allegheny County Health Department in helping to prevent teens, and people of all ages, from unnecessary exposure to addictive tobacco products and in trying to provide clean indoor air for the more than 75 percent of adults in Allegheny County who do not smoke.

For more information, please visit www.achd.net/chrond/smoking/ecig.html.

What are E-Cigarettes and why is their use being regulated

Earlier this year, Allegheny County Council voted to ban the use of electronic cigarettes (e-cigarettes) in local restaurants, stores, schools, sports stadiums and public buildings (the same places tobacco use is banned). But what are e-cigarettes exactly? And why is their use being regulated?

E-cigarettes use a small heating coil to convert a liquid containing nicotine, flavorings and propylene glycol into an aerosol mist that is inhaled. Together with e-pens, e-pipes, e-hookah and e-cigars, these devices are known collectively as electronic nicotine delivery systems. Because e-cigarettes are not fully regulated by the government, their ingredients are not always known. But according to the Office of the U.S. Surgeon General, aerosol from e-cigarettes is known to contain harmful compounds like nicotine, benzene, lead, tar, formaldehyde, ultrafine particles, and diacetyl, a flavoring chemical linked to serious lung disease. When heated, chemicals like diacetyl can break down and turn into toxic compounds like formaldehyde, which is known to be a carcinogen (something that causes cancer).

A common perception of e-cigarettes is that they are less harmful than traditional cigarettes. More research needs to be done to determine whether this is true. Regardless, some tobacco users use them as a way to wean themselves off of traditional cigarettes. But like traditional cigarettes, research shows that the nicotine in e-cigarettes is also addictive. It can cause changes in the smokers' brains, especially in young



Tyler Benjamin blows smoke from his advanced personal vaporizer e-cigarette at Aqueous Vapor in Columbia, Mo. (Nick Schnelle/The Columbia Daily Tribune via Associated Press)

people, that make them more likely to become addicted. Long-term nicotine exposure also increases the risk of type 2 diabetes, heart rate and blood pressure. Studies show that even e-cigarettes labeled as nicotine-free leave traces of nicotine in users' blood samples.

People who choose not to use e-cigarettes can still be exposed to the dangers of secondhand aerosol. Secondhand exposure to e-cigarettes has many of the same effects as secondhand smoke. In 2016, a U.S. Surgeon General's report concluded that e-cigarette aerosol is not harmless and contains chemicals known to be carcinogens.

The liquid in e-cigarettes

has become a household hazard. E-liquid can be candy- or fruit-flavored and packaged in a way that is appealing to young children. Cases of nicotine poisoning in young children have skyrocketed. The American Academy of Pediatrics reports that the accidental ingestion of e-liquid rose by 1,500 percent from 2013 to 2016. Even small doses can be deadly, according to the American Association of Poison Control Centers. For a child, a deadly dose is 10 mg, which is about two teaspoons of e-liquid.

Another concern about e-cigarettes is how their use has increased among young people. The U.S. Surgeon General reports that between 2011 and

2015, e-cigarette use among high school students increased by 900 percent, with more teens now using e-cigarettes than cigarettes. This is a problem because nicotine is known to impair brain development in young people. E-cigarettes can be easier for adolescents to purchase and are often advertised to young people in more attractive ways than traditional cigarettes.

"E-cigarettes are not subject to many laws that regulate traditional cigarettes, such as age limits on sales, taxation and labeling requirements," said Brian A. Primack, MD, PhD, dean, University Honors College; Bernice L. and Morton S. Lerner Professor; professor of medicine and of pediat-

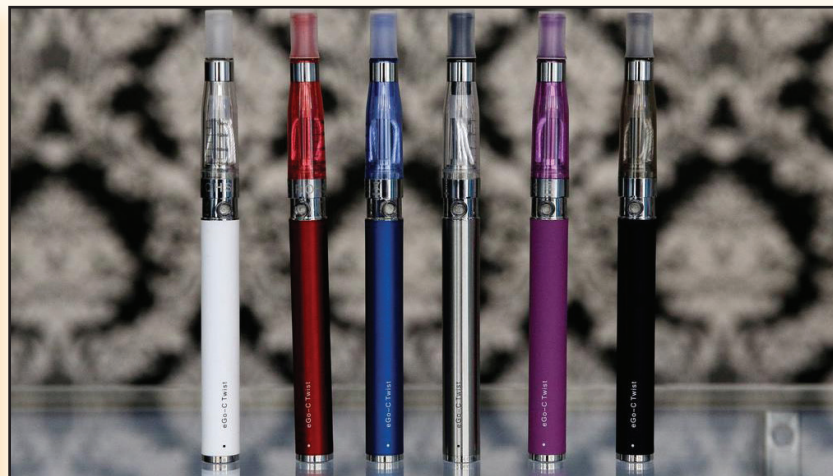
rics, School of Medicine; and director, Center for Research on Media, Technology, and Health. "They also come in youth-oriented flavorings that laws have limited in traditional cigarettes, such as apple, bubble gum and chocolate candy cane."

Dr. Primack's research has shown that e-cigarettes may lead to smoking traditional cigarettes among young people. For example, he found that nonsmokers who started using e-cigarettes were nearly four times as likely to start smoking traditional cigarettes within one year.

Researchers plan further study into the long-term health effects of e-cigarette use.



E-cigarettes are touted as a safe alternative to tobacco, but research has been inconclusive. (Christophe Ena/AP Photo/File)



E-cigarettes are seen on display at a Vape store in Chicago. (AP Photo/File)

Pitt researchers examine link between 'vaping' and social media

by Kar-Hai Chu, PhD

Researchers don't yet know the extent of harm that e-cigarettes can cause. They do know that e-cigarettes contain nicotine, a very addictive drug. So why do so many teenagers and young adults have positive views about them? At the University of Pittsburgh's Center for Research on Media, Technology, and Health, we are interested in how e-cigarettes are seen on social media sites like Facebook and Twitter. Our team's research shows that

people who post online messages or pictures of e-cigarettes usually are discussing them in a positive way. For example, someone on Twitter might post about how delicious certain e-cigarette flavors are. That message then gets shared with all of his or her friends. Facebook and Instagram users post pictures or videos of people doing cool tricks with e-cigarettes—like blowing smoke rings—or showing off new custom devices. When friends and followers see these positive images, it makes them

believe that e-cigarettes are cool, harmless and fun to try.

Major tobacco companies that own many of these e-cigarette brands are also using these social media sites to advertise their products. New Food and Drug Administration regulations are starting to limit how e-cigarettes can be advertised. Social media is still unregulated. Even if manufacturers were limited as to how and where they advertise, nothing stops people from sharing messages and pictures of "cool" vapor tricks

or talking about how great some flavors taste.

People should be cautious of social media portraying e-cigarettes to be fun and normal. No matter how "cool" it looks, consumers should learn about the health risks and dangers of e-cigarette use that are not discussed on Facebook or Twitter.

Kar-Hai Chu, PhD, is assistant professor of medicine, University of Pittsburgh School of Medicine and Center for Research on Media, Technology, and Health