Center for the Study of Social Determinants of Health
Interim Report on Community Outreach

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Executive Summary

Meharry Center for the Study of Social Determinants of Health

Driven by its mission to improve the health of underserved communities, Meharry Medical College, located in Nashville, Tennessee, is one of the nation’s oldest and largest private, independent historically black academic health science centers. Originally founded to advance the well-being of African Americans in rural Tennessee, Meharry is now a cornerstone of Nashville’s health care hub. For 143 years, Meharry has served as a beacon of hope for minority communities, engaging in bold initiatives to improve the health of those who are often overlooked by mainstream society.

Home to schools of Medicine, Dentistry and Graduate Studies and Research, Meharry trains health care providers and scientists with a particular interest in serving the underserved. True to the College’s mission, each of Meharry’s three schools has established multiple initiatives to address issues affecting underserved communities and tackle social determinants that often prevent access to quality health care. Meharry’s approach to improving health in the community is all encompassing, from educating school-age children about careers in health care and science to offering free dental and primary care events for all.

In June 2019, the College launched the Meharry Center for the Study of Social Determinants of Health for the singular purpose of improving public health by examining the multiple factors that influence the health and well-being of people of all ages, including smoking, substance abuse, food insecurity and more. Through its work with minority and underserved populations, Meharry well understands how a person’s overall health and well-being is significantly influenced by factors that are often outside their own control, such as physical environment, access to nutrition, education level, family structure, media exposure, and socioeconomic status. These social determinants of health directly contribute to patients’ health outcomes, including their capacity to identify and avoid risky health behaviors and their ability to respond to treatment and heal.

The Center for the Study of Social Determinants of Health will engage in research and study that examines how these social determinants directly and indirectly impact public health, especially among minority and underserved populations. By more fully understanding the influence of social determinants on individual behavior, Meharry intends to implement programming and support policy that betters the health of entire communities. The Center is seeking government, institutional and corporate partners that have an interest in supporting independent, original research into environmental and social factors that, when altered or improved, can have a significant, positive impact on public health. Topics of potential study include food security, public transportation, housing, family support systems, multi-

1 Appendix A: Meharry Medical College to Launch New Study for Social Determinants of Health press release
generational influences, ethnic discrimination, corporate marketing, access to technology, employment and debt.

**Grant to Study the Impact of Tobacco, Nicotine and Nicotine-related Products**

The first initiative of the Meharry Center for the Social Determinants of Health will focus on tobacco, nicotine and nicotine-related products, and how social determinants of health impact their adoption and use. The initial program will involve three distinct but supporting efforts: conducting independent, peer-reviewed research; convening influencers to drive national conversations; and developing new curricula for health care providers to boost smoking cessation.

This work is made possible by a five-year, $7.5 million independent research grant from Juul Labs, Inc. and marks the first time that Juul Labs is partnering with an academic medical institution to fund independent research. Meharry and Juul have contractually committed to Meharry’s full independence in all aspects of the research, including the publication of findings. Meharry will use internal vetting procedures to ensure all conducted research remains independent. Any attempt to interfere with independent processes will prompt the reevaluation of the research agreement.

Arguably the single greatest scourge on the health of underserved and minority communities in the last century is tobacco. Health care professionals and students at Meharry Medical College witness and treat the ravages of smoking in their patients every day. There is not a health condition they encounter in their clinics that is not exacerbated by smoking, including cancer, diabetes, heart disease, asthma, and mental health. If quitting smoking were simple, patients would do it. However, there are myriad social determinants that contribute to why patients start smoking, why they continue and why they cannot easily quit.

The Center’s first line of inquiry will delve into the community’s complex relationship with tobacco, while also examining new products on the market that could influence and shift that dynamic. Drawing on the expertise of Meharry’s Schools of Medicine, Dentistry, and Graduate Studies and Research, along with its Center for Health Policy, the Lloyd C. Elam Mental Health Center and Data Science Institute, the Center for the Study of Social Determinants of Health will lead the way in studying the emerging e-cigarette industry and its implications on myriad aspects of physical health and how social determinants may negatively or positively impact the equation.

This work could not come at a more important time in the national conversation about vaping, e-cigarettes and other nicotine-related devices. From Main Street to the halls of Congress, people are highly concerned about both the products and industry. Very little is known about how these devices

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2 Appendix B: Tennessean Op Ed by Dr. James E.K. Hildreth, Sr.: Meharry Medical College Accepted Juul’s $7.5 million Grant with Eyes Wide Open
3 Appendix C: National industry coverage
impact public health, yet their adoption is rising among all age groups, including youth. Some maintain that e-cigarettes are effective smoking cessation devices; yet others ask: “At what cost?” With limited independent research available, the public is demanding answers. Meharry is answering the call for information and action with a combination of research and outreach programs to heighten public awareness and shape policy.

In recent weeks, the media has reported on multiple new cases of vaping-related illnesses, lung disease and deaths. These reports underscore the importance of the Center’s mission to help America better understand the implications of this emerging health behavior on public health, especially in underserved communities. The e-cigarette debate is passionate, and opinions differ, but all sides want answers. Only when armed with validated, independent research can the medical community and policymakers assess this multi-layered issue with clarity and determine a way forward with confidence.

Community Listening Tour

The Center for the Study of Social Determinants of Health is shaping its research on tobacco, nicotine and nicotine-related products by first asking the opinion of the community it serves. Meharry exists to serve populations historically overlooked and exploited by mainstream society. As such, it is paramount to include the voices of those communities in the Center’s work.

In July, the College launched a Community Listening Tour to ask important questions and gather essential feedback about tobacco, nicotine and nicotine-related products from key constituents, both within Meharry and in the greater community. The insights gained from the Community Listening Tour will help Meharry establish the Center’s research priorities moving forward. By listening first and acting second, the Center can best align its next steps with community needs.

Meharry executed the following engagement activities as part of its Community Listening Tour:

• An alumni survey distributed by Meharry through direct e-mail and social media to individuals who have graduated from the College’s three schools;
• A community survey distributed to members of the public by Nashville-area community organizations and through Meharry social media;
• Focus groups with Meharry faculty and staff in the schools of Medicine, Dentistry and Graduate Studies and Research; and
• Focus groups with community groups throughout Middle Tennessee.

To date, more than 500 individuals have participated in the events, surveys and/or focus groups hosted by Meharry, responding to questions about a wide range of topics, from concerns about nicotine-related products to potential areas of study for the Center. Their responses have shed considerable light on the priorities of the community and where the Center for the Study of Social Determinants of Health should focus first.
In the coming months, the Center will continue gathering community, alumni and college perspectives with ongoing survey and focus group outreach, as well as community engagement events. Additionally, Meharry has launched a national search, in tandem with its Community Listening Tour, to hire a senior scientist dedicated to leading the Center's efforts. Armed with community feedback, this lead scientist will ensure the Center’s early activities are aligned with community needs and desires.

Initial Community Feedback and Findings

To date, the feedback and insights gathered from survey and focus group participants in the Community Listening Tour can be broken down into the following key themes:

- **A person’s physical and mental health does not occur in a vacuum and must be considered holistically with special attention to the social factors that impact the decisions they make.** Social determinants such as income disparity, education level, family dynamics, food insecurity, and discrimination can all effect a person’s choice to pursue certain health behaviors, including smoking and vaping.

- **E-cigarettes are a significant concern among people of all ages, ethnicities and communities, and more research is needed into their effects on public health.** The number of proposed research topics into e-cigarettes is broad, ranging from the impact they may have on other disease states to their possible use as smoking cessation aids.

- **People are eager for answers about the potential impact of e-cigarettes on the human body and behavior, via use, through secondhand smoke and in combination with other substances.** How nicotine and e-cigarettes interact with alcohol, narcotics, sedatives and other addictive substances is of particular interest for research.

- **The overriding public concern about e-cigarettes is their growing adoption by youth and how they impact their overall health and future.** Members of the general public and health care professionals are extremely worried about the use of e-cigarettes among teens and are calling for greater prevention and education in this population.

- **Minority populations do not appear fully engaged on the topic of e-cigarettes and require greater outreach as the products grow in prevalence.** Though the survey was specifically distributed to minority audiences, they responded in fewer numbers, indicating a need for increased outreach to ensure they are prepared as e-cigarette use rises in their communities.
Next Steps

Based on the feedback and insights, Meharry Medical College proposes the following next steps for the Center for the Study of Social Determinants of Health:

- **Continue the Community Listening Tour and expand its outreach nationally.** Feedback gathered from the community throughout this initial effort has been very informative and indicates a need for the Center to continue its outreach to ensure as many voices are heard as possible. By expanding its regional efforts and engaging a wider base of national audiences, the Center can continue to gather vital insights about its focus and work.

- **Recruit a respected Senior Scientist to determine, focus and drive research and programming.** Meharry has launched a national search to find a scientist who will set the Center’s direction. This key leader will begin to establish the Center’s initial research agenda, informed by feedback gathered from this Community Listening Tour and other ongoing community engagement initiatives, focus its upcoming activities and drive its subsequent research and programming.

- **Initiate programming to further engage minority communities on nicotine and e-cigarette use.** The Center for the Study of Social Determinants of Health must intentionally engage minority communities as it seeks to improve the health and well-being of all people. Though the community survey was heavily marketed to African American communities through strategic social media promotion and partnerships with local community organizations, the majority of the survey’s engagement (63%) came from the Caucasian community. To this end, the Center must continue to focus on engaging with minority communities to ensure they are informed, and their voices are heard as use of e-cigarettes grows.

- **Prioritize the creation of education materials about tobacco, nicotine and e-cigarette use.** Participants clearly shared concerns surrounding the lack of educational programming around e-cigarette use, primarily among youth populations. Additionally, participants are interested the impact of early educational efforts on youth adoption rates. By focusing attention on initiating educational efforts on the impact of e-cigarettes with youth as soon as possible, the Center can begin to lay the groundwork toward youth prevention.
Focus Groups

To date, the Center for the Study of Social Determinants of Health has conducted four (4) focus groups as part of its Community Listening Tour:

- Community group at the Islamic Center of Nashville
- School of Medicine, Meharry Medical College
- School of Dentistry, Meharry Medical College
- School of Graduate Studies and Research, Meharry Medical College.

Collectively, 43 adults participated in the focus groups – 22 women and 21 men. They ranged in age from early 20s to early 60s, and represented diverse ethnicities, occupations and lifestyles. Meharry participants included physicians, dentists and PhDs.

The groups were led by an outside facilitator hired by Meharry Medical College to ensure participants felt comfortable sharing transparent feedback.

Internal Meharry participants discussed issues including:
- Tobacco- and nicotine-related issues facing underserved and minority patients;
- Public health concerns and social determinants related to the use of cigarettes or e-cigarettes;
- Recommendations for research regarding the use of nicotine-related products; and
- Issues participants would like the Center for the Study of Social Determinants of Health to explore beyond the impact of tobacco and nicotine on health and wellness.

Community participants covered topics including:
- Their personal experiences with tobacco;
- Tobacco- and nicotine-related issues facing their community;
- E-cigarettes and their use;
- Smoking cessation;
- Recommendations for research regarding the use of nicotine-related products; and
- Issues participants would like the Center for the Study of Social Determinants of Health to explore beyond the impact of tobacco and nicotine on health and wellness.

Although participants were diverse in age, ethnicity, occupation and lifestyle, the issues they raised surrounding tobacco and nicotine, e-cigarettes and social determinants of health were very similar.
The following are key areas of feedback and findings from the focus groups:

**E-cigarettes are a primary public health concern of today, surpassing concerns related to other tobacco- and nicotine-related products which have been more widely studied.**

When asked about their top tobacco- and nicotine-related concerns, most participants cited e-cigarettes, underscoring that tobacco and other nicotine-related products are better understood and well-studied.

- “We don’t have any longitudinal studies to show the long-term effects of vaping. We know what nicotine does. And we know it’s bad. But we don’t know what else we’re getting. We know that this substance hasn’t been delivered in this way for a very long time, but each product has different ways in which they deliver the substance, so those are all areas that are ripe for research.”
- “The danger of the heat going to your lungs, this is another aspect not before seen with tobacco. With the vape it’s worse, so you’re fighting the nicotine and the heat going into your lungs.”
- “We know nicotine. We know tobacco.”
- “We know the inflammatory effects of smoke and smoking. And we know that is one of the key causes of adverse cardiovascular effects … People think that vaping is somehow safer.”
- “We know what nicotine does. And we know it’s bad. But we don’t know what else we’re getting in an e-cigarette device. We also know that it hasn’t been delivered in this way for a very long period of time.”
- “I find that all the conversation around tobacco control and nicotine addiction to be a particularly compelling topic, because it’s been done for 30 years. It’s a very critical topic. It has huge health impacts. We know that. There are no mysteries to how dangerous tobacco is at this point.” Paraphrased from participants’ feedback.
- “We don’t know the harm that [vaping] could cause, unlike tobacco that’s been around for years. We know that causes cancer; we don’t know how bad [vaping] is going to affect [the population] and it’s not prohibited, so anyone can purchase it.”
- “I think education not only for the teens, or the younger population, but also for the adults. … They see no need to quit. But we need to stop the cycle going on in this generation.”

**E-cigarettes are extremely understudied and not well understood by the medical community or general public.**

The majority of participants expressed concern over how little is known about the potential impacts of e-cigarettes on the health of those who use them or are in close proximity to those who use them. Specific questions raised included:
• Are e-cigarettes addictive?
  o “We know tobacco is addictive, but there's no knowledge of what vaping does. People
don't know about the chemical exposures that are occurring with vaping by
immunocompromised people or people in general.”
• Influence health including oral, lung/respiratory and cardiac health;
  o “Psychologically, people think that vaping is somehow safer. But we certainly don't have
reason to believe that. We don't know about the inhalation of propylene glycol into the
lungs on a regular basis, and whatever else may be in the e-cigarette. We don't know its
effects on the lungs, and how it affects the cardiovascular health over longer periods of
time. Just like in cigarettes, you don't see the effects immediately, but you see the
 genetic structure begin to be affected over time. So, it raises the question: What's
actually happening with vaping?”
  o “I think the studies obviously are not out yet to show what the impact [of vaping] is
going to be yet as far as oral cancer and pharyngeal cancer is concerned, but I do believe
that there are going to be some impacts from it.”
• How do e-cigarettes impact specific medical conditions, including heart disease, diabetes,
obesity and substance abuse;
  o “There is a whole slew of biological questions. We hardly know what these substances
will do when they come into direct contact with the cells of the body.”
  o “It is the additives of flavoring that appeal to youngsters. In addition to nicotine, can you
imagine what else is being inhaled? And the question is - if it metabolizes, passed on
into the lungs … what effects does it have on cardiovascular health?”
• How do e-cigarettes affect the health of those who do not use them, but are exposed to second-
or third-hand vapor?
  o “I have concerns regarding secondhand smoke and the community at large. Someone
could choose to smoke in my environment, when I have not chosen to do so. Even if you
get into a car with someone who has been smoking, when you smell [it], you're still
 taking those toxins. It's called tertiary smoke.”
  o “In my particular family, smoking back in the 60s was not considered a horrible thing.
So, in the case of my father, he was an addict. He was a smoker. He died when I was six
years old. My mother never smoked and died of lung cancer years later, possibly from
secondary smoke. In fact, the autopsy actually showed carbon deposits that might have
been obtained from secondary smoke. So that is my particular concern with secondhand
smoke, not just for cigarettes, but also e-cigarettes and vaping.”
• How do e-cigarettes interact with medications?
  o “There’s an unknown additive that’s being put into these devices and the younger
populations don’t see that. There have been a rash of incidents lately with the younger
population, and they don't know what’s causing it. It leads you to believe that these
companies are putting an additive into the devices. What is the effect of those additives
on patients that are undergoing nitrous oxide sedation after being exposed to chemicals in electronic devices?”

- “When you talk about the costs of doing specific treatment, some of our patient population may not have the funds to do some of the more expensive treatment, and so they may opt to use nitrous oxide, which is more affordable and tends to comfort dentistry. What are the harmful effects of undergoing this treatment and previous exposure to the vapor products?”

- “I would like to study those who smoke or vape while using other drugs. What is the interaction of other drugs with these particles in e-cigarettes? What is the effect on the human health and biology? That is of great interest to me.”

- Can e-cigarettes assist in smoking cessation?
  - “The more we learn about vaping, and the consequences, it seems like it’s getting worse and worse. With every article I read. I was really hoping it would be a good creative cessation alternative for these folks.

E-cigarette use among youth is of paramount concern for community members of all ages, ethnicities and sectors.

The majority of participants cited the proliferation of e-cigarette use among teenagers and young adults as a primary concern. They raised questions about the perceived speed of e-cigarette adoption by teens, as well as the marketing practices of e-cigarette makers. Several participants also noted that there is a dearth of educational resources available for youth, teachers and parents on the consequences of vaping and/or how to quit.

- “The introduction of vaping into the juvenile population has increased. These devices are popular because, unlike cigarettes, they can be easily camouflaged from educators and parents.”
- “For many of the younger individuals, it has such a social aspect, so they’re not able to easily detach from the habit. The inability to make behavioral changes plays into this. There are psychosocial components to the topic.”
- “When your child smokes a real cigarette, you know. You can smell it; I can see it. The e-cigarette on the other hand, no one can smell it, no one can see it. Parents don’t even know it is there. So that is another dimension. It is out of the control of parents and teachers.”
- “It fits into the generation now because they can charge it on their laptops; it looks like a USB.”
- “Cigarettes have been around for a very long time, but this is a transformational look. It’s modern. It’s for the digital generation.”
- “I think vape is a big thing especially with teenagers and students, it’s really bad now and I’m glad they [Meharry] are doing this research, because it is well-needed.”
• “I think education not only for the teens, or the younger population, but also for the adults. They'll tell you what they've been doing is generational, and they see no need to quit, but we need to stop the cycle going on in this generation.”
• “I’m interested to see what the culture is going to be around this kind of thing. There are basically no studies done on vape. I want to see if there is going to be a long-term study on the cultural impact.”

Addiction, food security, health literacy, and continuity of and access to care are other important areas to study in relation to tobacco and nicotine and on their own.

Many participants mentioned the need for the Center for the Study of Social Determinants of Health to examine other factors that impact patients’ overall health, as well as their decisions to use tobacco and nicotine. These factors include substance abuse, access to health care, food security, socioeconomic status and health literacy. Understanding that these complex issues do not exist in a vacuum, participants noted the need to better understand exactly how these pieces of an individual’s identity impact each other.

• “Start with getting at the root cause of nicotine addiction. It is an outcome of a chunk of trauma or anxiety or self-soothing substance abuse. It is a self-medicating solution to problems that lead to bad behavior choices. We have to look at all those underlying things, which we know are economic, structural racism. It's access to food, it's access to transportation. These are all the things that lead to nicotine use.”
• “I would like to study the link to behaviors like being exposed to HIV through sharing. Individuals are sharing things like e-cigarettes. It is nearly as bad as sharing toothbrushes. These behaviors have increased, therefore the spread of diseases have as well.”
• “If you're looking at the whole person, all of these different social determinants of health working against the individual, how is smoking interrelated? And what does that do to that person?”
• “The charge is to identify other findings that are related to social determinants of health, whether it's pediatric population or adults. What about studying diet drinks and their effects on oral health? Or marijuana or HIV? The center is broad, and research can be expanded.”
• “Another thing to study would be effects of certain drinks on oral health. Like wine, people are enjoying alcohol and falling asleep without brushing. Wine is very acidic - what kind of effect do acidic drinks like these have on your oral cavities? And what other problems does that lend? It is the same for diet or carbonated drinks. Some have suggested they're just as devastating on the teeth and sugar because of the acidity.”
• “Individuals who smoke are often led to other addictions. They also often have a higher number of what we call adverse childhood experiences. Individuals who have relatives who have been incarcerated, or who have chronic medical problems, have been subject to physical abuse,
sexual abuse or neglect are at a higher risk for various addictions, including substances like tobacco.”

- “Study things like nicotine addiction, alcohol, food security and how those are all interrelated.”
- “I think vape is a big thing especially with teenagers and students. It’s really bad now and I’m glad they [Meharry] are doing this research, because it is well-needed.”
- “I’m interested to see what the culture is going to be around this kind of thing. There are basically no studies done on vape. I want to see if there is going to be a long-term study on the cultural impact.”
Community Survey

As part of the overall Community Listening Tour, the Center distributed a survey through Meharry social media and targeted outreach to key community groups and stakeholders. To date, 272 responses have been received. Within the data reported below, key findings and insights include:

Minority communities appear less engaged in or aware of the conversation surrounding e-cigarettes.

- Despite heavily marketing the survey to African American communities, the majority of respondents (63%) were Caucasian.
- This could indicate that minority communities are not yet as engaged around the issue of e-cigarettes as Caucasian communities are. To this end, the Center must continue to educate and engage minority communities about the implications of this emerging industry, so they have a full voice and control over its presence in their communities.

Respondents are concerned about the use of e-cigarettes by their children, in their home or in their communities.

- 52% of those surveyed indicated that they are “concerned” or “very concerned” about e-cigarette use by their children or in their home.
- A majority of respondents (59%) indicated their concern about e-cigarette use in their community.

Respondents are concerned about e-cigarettes’ potential to serve as a catalyst for other diseases or to cause cancer.

- Smokers indicated their concerns surrounding e-cigarettes as a catalyst for other disease (56%) or to cause cancer (38%).
- At a higher rate, non-smokers indicate the same concern surrounding e-cigarettes potentially serving as a catalyst for other disease (71%) or to cause cancer (61%).

One-third of smokers surveyed are interested in learning more about e-cigarettes as an effective smoking cessation tool.

- 36% of smokers indicated interest in answering questions surrounding the efficacy of e-cigarettes as a smoking cessation tool, and 23% of non-smokers responded in the same way.
Demographics

Age
Respondents represented a wide range of age groups, with 33% being over 60 and a majority (53%) being 51 or older.

Data does point to age as an indicator of the likelihood to smoke. Only 10% of 21 to 29-year-old respondents reported being smokers or tobacco users, but 34% of those 41-50, 35% of those 51-60 and 29% of those 60 or older reported being smokers or tobacco users.
**Race/Ethnicity**
Despite heavily marketing the survey to African American communities via social media and minority community groups, the majority of respondents (63%) were Caucasian. This could indicate that minority communities are not yet as engaged around the issue of e-cigarettes as Caucasian communities are.

![Race/Ethnicity bar chart]

**Gender**
The majority of respondents – nearly 70% – identified as female. This data does not appear to indicate a correlation between smoking or tobacco use and gender. Twenty-four percent of female respondents reported to be smokers or tobacco users, along with 30% of male respondents.

![Gender bar chart]
Household Income
A wide variety of household incomes are represented by survey respondents -- from under $24,000 to more than $200,000. There were no significant variations in responses between the different income groups.

Children
The majority of respondents (77%) have children which ranged from under 5 to over 18 years old. The largest group of respondents (48%) reported having children over 18 years old.

Based on the data shared, having at least one child does not seem to impact a respondent’s likelihood to also be a smoker. Twenty-nine percent of those with children reported being smokers or tobacco users, compared with 22% of those without children.
Experiences with Tobacco

Does your family have a history of tobacco use?
The majority of respondents (67%) reported having a family history of tobacco use.
Are you currently a smoker or tobacco user?
More than one-quarter (26%) of those surveyed identified themselves as a smoker or tobacco user. Additionally, the overwhelming majority (95%) of current smokers or tobacco users have a family history of tobacco use, indicating a strong family influence on the decision to smoke.

Smokers’ Responses

Which of the following have you used?
The majority of those who identified themselves as smokers or tobacco users (94%) indicated that they have used cigarettes. E-cigarettes were a distant second, with 34% of smokers citing that they have used these devices. Despite their relative newer entrance to the market, e-cigarettes were reported as the second most frequently used product of those listed.

Of e-cigarette users, 76% were female and 24% were male. Additionally, all races and ethnicities were represented in users, as well as all age ranges. The majority of smokers or tobacco users under 40 have used e-cigarettes (67%). Fifty-three percent of e-cigarette users are 41 or older.
What product do you prefer using?
Cigarettes were reported as the preferred product of reported smokers and tobacco users, with other products trailing behind significantly.

Have you tried to stop smoking?
The overwhelming majority (90%) of smokers or tobacco users indicated that they have tried to stop smoking at least once. Additionally, more than 24% of those surveyed indicated that they have tried to stop smoking more than five times, pointing to the need for effective cessation options.
If you have tried to stop smoking, what options have you explored?

Those who identified as smokers or tobacco users who have tried to stop smoking at least once reported exploring a variety of cessation options, most commonly patches and gum. Some users cited quitting “cold turkey” and one cited acupuncture as a cessation technique.

**Choices included Vaping devices; Patches; Chewing gum; Medications; Support groups/Therapy; I’ve never tried to stop smoking; and Other (please specify).**

What health issues have you encountered, if any?

Most survey respondents who identify as smokers or tobacco users (56%) did not feel they had encountered any health issues from smoking. This finding crossed all ages, genders and ethnicities, and could indicate a general lack of understanding or denial of the ramifications of tobacco use.

Respiratory issues were the most commonly cited health concern among those who have experienced issues. One respondent also cited heart problems. Despite the fact that 61% of respondents are interested in learning more about whether e-cigarettes cause cancer, none indicated having encountered cancer as an impact of their smoking.

**Choices included Cancer; Emphysema; COPD; Bronchitis; I have not encountered any issues from smoking; and Other (please specify).**
Smokers and Non-Smokers’ Views

On a scale of 1-5, how concerned are you about secondhand smoke?
Both smokers and non-smokers reported being "very concerned" and "concerned" about secondhand smoke. This was equally echoed throughout the Listening Tour’s focus groups, as described above. Seventy percent of those who indicated this concern were female.

On a scale of 1-5, how concerned are you about e-cigarette use by your children or in your home?
Similarly, both smokers and non-smokers, 36% and 37% respectively, indicated they are very concerned about the use of e-cigarettes by their children or in their homes.
On a scale of 1-5, how concerned are you about e-cigarette use in your community?
Both smokers and non-smokers (59% of both populations) indicated concern surrounding the use of e-cigarettes in their community, with non-smokers reporting minimally higher levels of concern.

What do you think the legal age for buying nicotine or tobacco products should be?
There was little variation among smokers and non-smokers regarding the legal age for buying nicotine or tobacco products. 44% of smokers indicated that the legal age for buying nicotine or tobacco products should be 18-21 years old, while 54% said the age should be increased to 21. Among non-smokers, 36% support the legal age of 18 – 21 to purchase these products, with 62% supporting an increase.
Which of the following are you most concerned about? (Please select 2 options)
Both smokers and non-smokers noted their concerns about whether chemicals in e-cigarettes are catalysts for additional diseases or cause cancer. Additionally, smokers expressed interest in e-cigarettes as a smoking cessation tool, and both populations questioned the addictive nature of e-cigarettes.

Reported Smokers
Reported Non-Smokers

Choices included Do e-cigarettes cause cancer?; Can e-cigarettes be an effective smoking cessation option?; Are chemicals in e-cigarettes catalysts for other disease?; Are e-cigarettes addictive?; and Other (please specify).
Alumni Survey

As part of the Community Listening Tour, Meharry distributed an alumni survey to all College alumni. To date, 137 responses have been received. Within the data reported below, key findings and insights include:

Respondents are concerned about the use of e-cigarettes, primarily among youth and minority populations.

- 85% of respondents indicated their concern about e-cigarette use.
- 57% cited youth as the population they are most concerned with and 23% cited minorities.

Respondents support the creation of the Center for the Study of Social Determinants of Health. Additionally, many respondents believe the Center will use its resources to advance the health and well-being of underserved populations.

- 60% of respondents indicated their support for the Center.
- 40% indicated their belief that Meharry will use these resources to serve its populations.

Respondents are interested in the Center conducting studies into vaping in minority populations, the long-term effects of vaping, the impact of addiction on communities and other social determinants of health.

- In the Center’s first year, 49% of respondents are interested in it studying vaping among minority populations, 49% are interested in the Center studying the long-term effects of vaping and 37% are interested in the Center studying the impact of addiction on communities.
- Individual respondents also suggested that the Center study the following subjects:
  - Nutrition
  - Oral health and oral cancer
  - Pediatric obesity
  - Infant and maternal mortality
  - Smoking and vaping prevention
  - The impact of racial inequities on population health
Demographics

Age
As was the case with the community survey, diverse ages were represented among respondents with the largest age group (38%) being over 60 years old.

Gender

As was the case with the community survey, diverse ages were represented among respondents with the largest age group (38%) being over 60 years old.
Which School did you attend at Meharry?

Differing from community members who responded, only 2% of surveyed alumni are smokers or tobacco users.

Are you a smoker or tobacco user?

Choices included Yes; No; and Not Currently, but I have been a smoker or tobacco user in the past.

Are you concerned about e-cigarette use?

Respondents are overwhelmingly (85%) concerned about e-cigarette use. The details of their concern are further fleshed out in subsequent questions.
If so, about which of the following populations are you most concerned?

After answering ‘yes’ to the above question regarding their concern surrounding e-cigarettes, 57% of respondents noted youth as the population they are most concerned about, and 23% indicated minorities. Additionally, one respondent indicated primary concern with minority youth. Of note, only 3 survey respondents skipped this question, indicating a general consensus surrounding e-cigarette concerns among respondents.

Choices included Minority; Youth; Current smokers; I am not concerned about e-cigarette use; and Other (please specify).

What do you think the legal age for buying nicotine or tobacco products should be?

Differing from the community survey, Meharry alumni indicated a stronger preference for the legal age for buying nicotine or tobacco products to be over 21 years (65%) versus under 21 years (35%).
Do you support Meharry’s creation of the Center for the Study of the Social Determinants of Health, which includes funding from JUUL Labs?

A majority of respondents (60%) indicated support for Meharry’s establishment of the Center for the Study of the Social Determinants of Health. Another 26% reported being indifferent to the Center’s establishment.

What are your opinions regarding the Meharry, JUUL partnership? (Select all that apply.)

Participating alumni indicated that their opinions of the Meharry/JUUL partnership are generally positive, with many respondents (40%) indicating their pleasure with the College’s announcement. Only 10% of those surveyed indicated disagreement with the decision.

Choices included: I’m pleased Meharry has received funds to establish the Center for the Study of the Social Determinants of Health and believe it will use these new resources to advance its mission and the health and well-being of underserved populations; I’m pleased Meharry received funds to establish the Center for the Study of Social Determinants of Health, but concerned about how taking a grant from JUUL could impact the College’s reputation; I’m pleased Meharry received funds to establish the Center for the Study of Social Determinants of Health, but concerned about JUUL potentially compromising the independence and integrity of the research conducted; I do not believe that Meharry should have accepted funding from JUUL; and Other (please specify).
Respondents shared a variety of areas for the Center to study in its first year, including vaping in minority populations, the long-term effects of vaping, nutrition, oral health, pediatric obesity, and vaping prevention.

*Choices included Vaping in minority populations; Long-term effects of vaping; Efficacy of e-cigarettes in smoking cessation; The impact of addiction on communities; Food instability/deserts; and Other (please specify).*
Next Steps

As the future of the Center for the Study of Social Determinants of Health is planned, Meharry will take several short-term steps to ensure that achieves the objectives on which it was founded:

Continue the Community Listening Tour and expand its outreach nationally

Feedback gathered from the community throughout this initial effort has been informative and indicates a need for the Center to continue its outreach to ensure as many voices are heard as possible. By expanding its regional efforts and engaging a wider base of national audiences, the Center can continue to gather vital insights about its focus and work.

Recruit a respected Senior Scientist to determine, focus and drive research and programming

Meharry has launched a national search to find a scientist who will set the Center’s direction. This key leader will begin to establish the Center’s initial research agenda, informed by feedback gathered from this Community Listening Tour and other ongoing community engagement initiatives, focus its upcoming activities and drive its subsequent research and programming.

Initiate programming to further engage minority communities on nicotine and e-cigarette use

The Center for the Study of Social Determinants of Health must intentionally engage minority communities as it seeks to improve the health and well-being of all people. Though the community survey was heavily marketed to African American communities through strategic social media promotion and partnerships with local community organizations, the majority of the survey’s engagement (63%) came from the Caucasian community. To this end, the Center must continue to focus on engaging with minority communities to ensure they are informed, and their voices are heard as use of e-cigarettes grows.

Prioritize the creation of education materials about tobacco, nicotine and e-cigarette use

Participants clearly shared concerns surrounding the lack of educational programming around e-cigarette use, primarily among youth populations. Additionally, participants are interested the impact of early educational efforts on youth adoption rates. By focusing attention on initiating educational efforts on the impact of e-cigarettes with youth as soon as possible, the Center can begin to lay the groundwork toward youth prevention.
Appendix

A. Meharry Press Release: *Meharry Medical College to Launch New Center for the Study of Social Determinants of Health*

B. Tennessean Op-ed by Dr. James E.K. Hildreth, Sr.: *Meharry Medical College Accepted Juul’s $7.5 million Grant with Eyes Wide Open*

C. National industry coverage
Meharry Medical College to Launch New Center for the Study of Social Determinants of Health

Center’s initial $7.5 million in funding from Juul Labs will be used to conduct independent research and spearhead public education campaigns about the impact and dangers of nicotine-related products

NASHVILLE, Tenn. (May 21, 2019) -- Meharry Medical College, the nation’s largest private, independent historically black academic health science center, today announced that it will launch the Meharry Center for the Study of Social Determinants of Health. Dedicated to examining social factors that influence the health and wellbeing of people of all ages, the Center will begin by conducting research and community outreach programs on nicotine and nicotine-related products and issues. This work will be made possible by a five-year, $7.5 million independent research grant from Juul Labs, Inc.

“Meharry is driven by a mission to improve the health of underserved communities,” said Dr. James E. K. Hildreth, president and CEO of Meharry Medical College. “Social determinants such as smoking, alcohol use, food instability, and poverty have disproportionately negative effects on the lives of the people we serve. With the new Center for the Study of Social Determinants of Health, we are excited to advance efforts to analyze and measure the impact of social determinants and craft new programs and policies to help people lead healthier lives.”

The new Center for the Study of Social Determinants of Health will draw on the expertise of Meharry’s schools of medicine, dentistry and graduate studies and research, and its Center for Health Policy, the Lloyd C. Elam Mental Health Center, and Data Science Institute to conduct longitudinal research and advance positive changes in public behavior and policy.

The first initiative of the Center will be funded by a grant from Juul Labs and will involve a three-pronged program that seeks to 1) conduct novel, peer-reviewed research on nicotine and nicotine-related products, 2) convene influencers to drive national conversations on nicotine and nicotine-related products, and 3) develop new curricula for healthcare providers and public health campaigns that take new research findings into account and boost smoking cessation worldwide.

The initiative marks the first time that Juul Labs is partnering with an academic medical institution to fund independent research. Meharry and Juul have contractually committed to Meharry’s full
independence in all aspects of its research, including the publication of findings. Meharry will use internal vetting procedures to ensure all conducted research remains independent, and any attempt to interfere with independent processes will prompt the reevaluation of the research agreement.

“Understanding the impact of our products on public health is critical to fulfilling our mission,” said Kevin Burns, CEO of Juul Labs. “We selected Meharry for this grant because of the college’s deep experience in disparities research and its commitment to serving underserved and vulnerable populations. Our goal is to improve our products so that they will only have a positive impact on the lives of our customers. We fully understand the risks of agreeing to full independence for Meharry as it conducts and publishes its research, and we gladly accept those risks for the betterment of public health.”

Under the grant, the new Center will advance research around mechanisms that lead to addiction, the clinical treatment of addiction and the study of addictive combustible substances such as tobacco. It especially will focus on the ways that tobacco and nicotine impact underserved and minority populations, seeking to influence policy to improve health outcomes. This will include:

- Contributing to the body of knowledge relating to nicotine- and tobacco-related health outcomes through research and educational programming;
- Studying the use of tobacco products and related factors;
- Exploring gamification as a tool to educate about nicotine use; and
- Supporting the development of policy recommendations for nicotine and nicotine-related products.

Addressing growing trends in e-cigarette and vaping devices usage among youth and its broad negative impact on the population, research findings from the Center will inform the development of a curriculum and outreach program focused on educating and creating awareness regarding e-cigarettes and other nicotine-related products. The curriculum will focus on preventing underage usage of tobacco and nicotine-related products and provide digital information and applications for healthcare professionals, public health officials and others about the dangers of tobacco and nicotine habits in those under 21.

Center leaders also plan to host two annual meetings to ignite a national conversation addressing the continued smoking epidemic in low income and minority communities and the growing epidemic of the misuse and underage use of nicotine devices. The meetings will be held in Washington, D.C., and Nashville, Tenn., to engage conversations in both the national hub for public policy and one of the nation’s largest hubs for healthcare innovation.

“This grant from Juul is a significant milestone in the history of Meharry, providing us a unique opportunity to take the lead on a new line of independent research into nicotine-related products and smoking cessation,” said Hildreth. “Meharry has been on the front lines of treating the effects of
smoking on African-American and other minority communities for 143 years. With this grant, we are being given an opportunity to engage in significant, original study of this public health scourge to help reverse the damage that has been done and to set a new course for education, prevention and policy surrounding tobacco and nicotine-related substances and devices.”

About Meharry Medical College
Meharry Medical College founded in 1876, is the nation’s largest private, independent historically black academic health science center dedicated solely to educating minority and other health professionals. True to its heritage, it is a United Methodist Church related institution. The College is particularly well known for its uniquely nurturing, highly effective educational programs; emerging preeminence in health disparities research; culturally sensitive, evidence-based health services and significant contribution to the diversity of the nation's health professions workforce. Diverse Issues in Higher Education’s ranking of institutions annually lists Meharry as a leading national educator of African Americans with M.D. and D.D.S. degrees and Ph.D. degrees in the biomedical sciences. Visit www.mmc.edu to learn more.
Meharry Medical College accepted Juul’s $7.5M grant with eyes wide open
Dr. James E.K. Hildreth Sr., Guest Columnist
June 11, 2019

The bodies of black Americans have historically been the subject of scientific experimentation with no control on our part. If it takes an unorthodox partnership to change that dynamic, then let the research begin.

Meharry Medical College, one of the nation’s oldest historically black medical schools, has accepted a $7.5 million grant from e-cigarette maker JUUL Labs. With these funds, we will open a Center for the Study of Social Determinants of Health, and begin conducting fully-independent research into the health conditions and issues related to tobacco and nicotine-delivery products.

We know exactly who we are. We know exactly who we are dealing with. We know exactly what we are getting into. And we know exactly who we aim to serve: the 6 million African Americans who are smokers, even as we expect to impact a much larger swath of the population.

Meharry is well aware that many researchers have turned down funding from JUUL Labs. We are an independent academic health sciences center that has served the underserved for more than 140 years. We understand these scientists’ concerns. But we have chosen to balance our concerns against the devastating consequences that have been visited upon us over many years by greedy corporations that have never sought our input, opinion, or expertise, and have never cared about the consequences of tobacco sales to our communities.

As a biomedical researcher for 36 years, I understand the power of scientific investigation, as well as the value of being on the forefront of public health issues rather than an afterthought.

As a black American, I know the devastation that rains down on a community when human beings are treated as nothing more than experiments. As the president of Meharry, I am determined that, this time, we will be engaged on the forefront as our nation grapples with the emerging e-cigarette industry and its implications, including its allure for youth.

In too many black families, smoking is an inherited practice, passed down from generation to generation. Infants go to sleep in their cribs and awake in the morning inhaling second-hand smoke. Our
patients know they should stop. They know smoking impacts every aspect of their health and the health of their families.

They beg us for help. But the pull of demon tobacco often is too strong. In fact, the diseases that kill or cripple the lives of our patients at far higher rates than other populations – hypertension, diabetes, cardio-vascular and lung disease, and cancer – all are exacerbated by smoking.

This scourge on black America is not of black America’s making. Consider: the tobacco industry has intentionally and maliciously marketed cigarettes to minority communities over the past century. It has sponsored our cultural events and our elected officials. It has offered attractive price cuts and promotions. It has lured people in – especially our young people – with menthol cigarettes, which are considered even more addictive and damaging to health. It has taken our money and delivered sickness and death in return.

We at Meharry intend to advance the fight for better health and longer life by turning that insidious relationship on its head. We are taking matters into our own hands with eyes wide open. We welcome the opportunity to use significant grant monies from JUUL to go where the science takes us and to publish those results no matter what we find.

The long-term impact of e-cigarettes is not known and requires more research. Do they cause developmental health issues? Are they effective as smoking cessation devices? Will laws increasing the age of tobacco use from 18 to 21 improve health outcomes? The purpose of the JUUL grant, and the initial investigative track of our new Center for the Study of Social Determinants of Health, is to help answer these questions.

We have taken great pains to structure our relationship to guarantee complete autonomy in every aspect of the work. Meharry alone will choose the research subjects, set the direction and parameters, seek peer review, and publish the findings. In addition, under the JUUL grant, we will develop public outreach programs in the area where the company has been most criticized – the use of its products among young people.

Meharry will convene national forums and launch public outreach campaigns to decrease use of e-cigarettes among youth. We embrace the chance to break the cycle of addiction to tobacco and nicotine among our young people. The ramifications of our efforts on the sale of e-cigarettes do not matter to us. What does matter – in fact, what matters most to Meharry because of our role in the health of black Americans – is research integrity, autonomy and authority. JUUL knows this. Our faculty and students know this. Our patients know this. We are, and always have been, champions for the health and welfare of people whose advocates have been few and far between. No matter where our research takes us or who our supporters are, this will never change.
APPENDIX C

Industry Coverage

**Trump Administration Combating Epidemic of Youth E-Cigarette Use with Plan to Clear Market of Unauthorized, Non-Tobacco-Flavored E-Cigarette Products**

FDA News Release | September 11, 2019

Today, the Trump Administration announced that as part of its ongoing work to tackle the epidemic of youth e-cigarette use, the FDA intends to finalize a compliance policy in the coming weeks that would prioritize the agency’s enforcement of the premarket authorization requirements for non-tobacco-flavored e-cigarettes, including mint and menthol, clearing the market of unauthorized, non-tobacco-flavored e-cigarette products. The FDA plans to share more on the specific details of the plan and its implementation soon.

“The Trump Administration is making it clear that we intend to clear the market of flavored e-cigarettes to reverse the deeply concerning epidemic of youth e-cigarette use that is impacting children, families, schools and communities,” said Health and Human Services Secretary Alex Azar. “We will not stand idly by as these products become an on-ramp to combustible cigarettes or nicotine addiction for a generation of youth.”

Today’s announcement comes as preliminary numbers from the National Youth Tobacco Survey show a continued rise in the disturbing rates of youth e-cigarette use, especially through the use of non-tobacco flavors that appeal to kids. In particular, the preliminary data show that more than a quarter of high school students were current (past 30 day) e-cigarette users in 2019 and the overwhelming majority of youth e-cigarette users cited the use of popular fruit and menthol or mint flavors.

“We appreciate President Trump and Secretary Azar’s continued support of the agency’s efforts to prevent youth use of e-cigarettes, including the bold approach we’re announcing today. Once finalized, this compliance policy will serve as a powerful tool that the FDA can use to combat the troubling trend of youth e-cigarette use. We must act swiftly against flavored e-cigarette products that are especially attractive to children. Moreover, if we see a migration to tobacco-flavored products by kids, we will take additional steps to address youth use of these products,” said Acting FDA Commissioner Ned Sharpless, M.D. “The tremendous progress we’ve made in reducing youth tobacco use in the U.S. is jeopardized by this onslaught of e-cigarette use. Nobody wants to see children becoming addicted to nicotine, and we will continue to use the full scope of our regulatory authority thoughtfully and thoroughly to tackle this mounting public health crisis.”
Following a rule which became effective August 8, 2016, all electronic nicotine delivery system (ENDS) products were expected to file premarket tobacco product applications with the FDA within two years. ENDS products currently on the market are not being legally marketed and are subject to government action. The compliance policy the FDA anticipates announcing in the coming weeks will outline enforcement policy addressing non-tobacco-flavored e-cigarette products that lack premarket authorization moving forward.

The Trump Administration has demonstrated a deep commitment to preventing youth from using all tobacco products, including e-cigarettes, and the finalization of the compliance policy will be an important step in ongoing work to ensure e-cigarettes are not marketed to, sold to, or used by kids.

The FDA has been holding retailers and manufacturers accountable for marketing and sales practices that have led to increased youth accessibility and appeal of e-cigarettes. For example, the FDA has issued more than 8,600 warning letters and more than 1,000 civil money penalties (fines) to retailers — both online and in brick-and-mortar retail stores — for sales of ENDS and their components to minors. The agency has also issued warning letters — many in collaboration with the Federal Trade Commission (FTC) — that resulted in the market removal of dozens of e-liquid products resembling kid-friendly juice boxes, cereal, and candy. Additionally, the FDA and FTC cited firms that make and sell flavored e-liquids for violations related to online posts by social media influencers on their behalf.

Most recently, on September 9, the FDA issued a warning letter to JUUL Labs Inc. for marketing unauthorized modified risk tobacco products by engaging in labeling, advertising, and/or other activities directed to consumers, including a presentation given to youth at a school. Concurrently, the agency issued a second letter expressing its concern — and requesting additional information — about several issues raised in a recent Congressional hearing regarding JUUL’s outreach and marking practices, including those targeted at students, tribes, health insurers and employers.

The Administration has also continued to invest in campaigns to educate youth about the dangers of e-cigarette use. Last year, the FDA launched “The Real Cost” Youth E-Cigarette Prevention Campaign – a comprehensive effort targeting nearly 10.7 million youth, aged 12-17, who have used e-cigarettes or are open to trying them. The campaign features hard-hitting advertising on TV, digital and social media sites popular among teens, as well as posters with e-cigarette prevention messages in high schools across the nation.

The FDA in partnership with the Surgeon General joined forces with Scholastic to distribute youth e-cigarette prevention posters and lesson plans to every public and private high school in the U.S. – with additional resources planned for middle school educators throughout the 2019-2020 school year. The agency also released resources for doctors, youth groups, churches, state and local public health agencies, and others on the dangers of youth e-cigarette use and has undertaken efforts to further the discussion and understanding around how to help aid those kids who are already addicted to e-cigarettes quit.
In December 2018, the Surgeon General issued an advisory on e-cigarette use among youth, emphasizing the importance of protecting youth from a lifetime of nicotine addiction and associated health risks in light of the epidemic of youth e-cigarette use.

The FDA, an agency within the U.S. Department of Health and Human Services, protects the public health by assuring the safety, effectiveness, and security of human and veterinary drugs, vaccines and other biological products for human use, and medical devices. The agency also is responsible for the safety and security of our nation’s food supply, cosmetics, dietary supplements, products that give off electronic radiation, and for regulating tobacco products.
Trump Administration Weighs Ban on Flavored E-Cigarettes

Sheila Kaplan | September 11, 2019

Trump administration officials said on Wednesday they would move toward a ban on the sale of most flavored e-cigarettes, at a time when hundreds of people have been sickened by mysterious vaping-related illnesses.

Sitting in the Oval Office with Alex M. Azar II, the secretary of Health and Human Services, and Dr. Ned Sharpless, the acting Food and Drug Administration commissioner, President Trump acknowledged that there was a vaping problem, and said, “We’re going to have to do something about it.”

Mr. Azar said that the F.D.A. would outline a plan within the coming weeks for removing most flavored e-cigarettes that are not tobacco products from the market.

The move follows increasing pressure by lawmakers, parents and educators, who have been overwhelmed by the popularity of vaping among youths, and felt powerless to keep e-cigarettes out of their schools.

The first lady, Melania Trump, also attended the White House meeting. “She’s got a son,” the president said of their teenage child, Barron. “She feels very strongly about it,” he said of Mrs. Trump’s interest in the vaping issue.

Just this week, Michigan became the first state to prohibit the sale of flavored e-cigarettes. New York Gov. Andrew Cuomo also called for a ban, and Massachusetts and California are considering similar measures. San Francisco approved an e-cigarette ban earlier this year, which Juul Labs, the dominant seller in the United States, is lobbying to reverse through a ballot initiative this November.

Last week, Senator Dick Durbin, Democrat of Illinois and a longtime opponent of tobacco and e-cigarettes, warned Dr. Ned Sharpless, the acting commissioner of the Food and Drug Administration, that if the agency failed to remove e-cigarette flavors from the market, he would call for the commissioner’s resignation. After Kansas reported a sixth vaping-related death on Tuesday, Senator Durbin again slammed the F.D.A. for failing to take decisive action to protect the public from e-cigarettes.

Pressure also began to mount as Michael R. Bloomberg, the former mayor of New York, decided to step in by announcing a $160 million push to ban flavored e-cigarettes. Long an opponent of traditional smoking, the former mayor said his organization, Bloomberg Philanthropies, would seek prohibitions of flavored e-cigarettes in at least 20 cities and states.

In New York, Governor Cuomo also directed state health officials to subpoena companies that market or sell so-called thickening agents, which are sometimes added to illicit vaping products. A state laboratory,
which detected the agents in vaping products collected from New York’s patients, found that they were nearly pure vitamin E acetate oil, which officials have said is a potential cause of some of the illnesses.

Hospitals and health officials in nearly three dozen states have reported nearly 500 cases of vaping-related illnesses since the beginning of the summer. Doctors have said that many patients appear to have vaped some THC or cannabis-related products, although others have reported using e-cigarettes as well. No one has singled out a particular company, device or product as the possible culprit.

Deaths have been reported in Illinois, Kansas, California, Indiana, Minnesota and Oregon. The patients’ ages ranged from the 30s to middle-aged or older, and some had underlying lung or other chronic conditions, health officials said.

Months ago, public and agency pressure forced Juul to yank its flavored pods — which were considered to appeal particularly to youths — from store shelves. The F.D.A. said at the time that it would seek to have retailers curb access to products to keep them away from minors.

Since Dr. Scott Gottlieb resigned as F.D.A. commissioner in April, the agency has appeared to be more sluggish in its efforts to control the epidemic of youth vaping. Although Dr. Sharpless had said he planned to continue the agency’s work to reduce both cigarette and e-cigarette use, not much moved forward. Dr. Gottlieb’s proposal to ban menthol in cigarettes, for example, has languished, as has his call for reducing nicotine in cigarettes to non-addictive amounts.

That appears to have changed this week. On Monday, the F.D.A. took action against Juul, sending a warning letter accusing the company of violating federal regulations by promoting its vaping products as a healthier option than cigarettes.

There is little conclusive research on the long-term safety of using Juul or other e-cigarettes. The company’s flavor pods have a higher level of nicotine than cigarettes do, which is of concern because of the impact nicotine can have on the still-developing teenage brain.
A 6th person has died from a vaping-related lung illness, this time in Kansas
Doug Stanglin | September 11, 2019

A 50-year-old Kansan is the sixth person nationally to die of vaping-related lung illness, according to state health authorities.

Five previous vaping-related deaths have been confirmed in California, Illinois, Indiana, Minnesota and Oregon.

Kansas State Epidemiologist Dr. Farah Ahmed said in a statement that the unidentified patient had a history of underlying health issues and had been hospitalized with symptoms that progressed rapidly.

The fatality was the first in Kansas associated with an outbreak of serious lung disease related to vaping or using e-cigarettes, according to the U.S. Centers for Disease Control and Prevention.

Kansas health officials also noted six more cases associated with the outbreak — three patients classified as confirmed or probable cases and three cases still under investigation.

“It is time to stop vaping,” said Lee Norman, Kansas state health officer and secretary for the Kansas Department of Health and Environment.

With the Kansas fatality, the CDC is reporting six deaths and more than 450 possible cases of severe lung injury in 33 states and one jurisdiction.

The CDC has confirmed that investigators have narrowed their focus and that the additive vitamin E acetate is a chemical involved in many of the cases, but emphasized it is not in all of the cases being reviewed.

Vitamin E acetate is a "sticky greasy oil" that some marijuana includes, said Devin Alvarez, CEO and founder of Straight Hemp CBD products. "Not all oils are the same. Thick and greasy seem to be the culprits."

While investigations into these cases continue, the CDC is recommending people avoid vaping or using e-cigarettes.

Also, people with a history of vaping who are experiencing lung injury symptoms should seek medical care, according to Kansas health officials.
Nationally, symptoms among cases included shortness of breath, fever, cough and vomiting and diarrhea.

Other symptoms reported by some patients included headache, dizziness and chest pain, the Kansas health authorities said.
What's behind a vaping illness outbreak in the US?
BBC News Staff | September 11, 2019

There's no denying that vapes and e-cigarettes are huge right now, with nearly three million UK users.

Vaping - which involves inhaling a mix typically made of nicotine, water, solvents and flavours - is seen as an alternative to smoking which can help you quit, but its safety is still not entirely known.

But over in the US, the potential health risks are in the spotlight, where this year there have been 450 reported cases of lung illness tied to vaping.

There have also been at least six deaths across 33 states.

One of the most shocking stories was of 18-year-old Simah Herman, who posted a picture of herself online after waking up from a medically induced coma.

After receiving treatment for pneumonia and lung failure, she wants to warn others against using vapes and e-cigarettes.

Simah's story, and that of other vape users, have raised questions about how safe vaping is and how well regulated the industry is.

Health officials at the Food and Drug Administration (FDA), who are responsible for protecting public health in the US, have been trying to identify what's been causing these problems.

According to a 2016 survey, there are about 10 million vapers in the US and nearly half of those are under 35, with 18-24-year-olds the most regular users.

It comes then as little surprise that many of the 450 people affected are young people, with an average age of 19.

The symptoms people have reported experiencing include severe pneumonia, shortness of breath, coughing, fever, fatigue and respiratory failure - where your body either can't break down oxygen,
produce carbon dioxide, or both. The result is that your lungs stop working and breathing becomes difficult.

Those affected used a number of different devices from vaporisers to smaller e-cigarettes and a variety of different brands of liquids and cartridges.

The FDA has now collected over 120 samples to test for different chemicals, including nicotine, cannabinoids, additives and pesticides.

Health investigators in the US are trying to establish whether a particular toxin or substance is behind the outbreak, or whether it's the result of heavy usage.

One of the theories is that a bad ingredient could have been added to vaping liquids including marijuana products - which are legally available in some US states - namely Vitamin E.

Last week, the New York State health department started investigating Vitamin E, calling it a "key focus" of their studies after 34 people became ill in the state.

However, the FDA have not settled on Vitamin E as the cause and won't rule out other vaping liquid chemicals.

There is also suspicion about "thickeners" that have been added to vaping liquids used in e-cigarettes and vaporisers.

In the UK, health experts say they are not aware of any similar incidents with UK-regulated products.

Martin Dockrell, Head of Tobacco Control at Public Health England says: "A full investigation is not yet available but we've heard reports that most of these cases were linked to people using illicit vaping fluid bought on the streets or homemade, some containing cannabis products, like THC, or synthetic cannabinoids, like Spice.

"Unlike the US, all e-cigarette products in the UK are tightly regulated for quality and safety by the Medicines and Healthcare products Regulatory Agency and they operate the Yellow Card Scheme, encouraging vapers to report any bad experiences."

This is not the first time vaping has given cause for concern. The British Medical Journal published a report last year of a woman who was hospitalised with a cough, fever, night sweats and respiratory failure.

They found the cause of her problem was a vegetable glycerine found in her e-cigarette, but reported she refused to give it up at the time.
As well as being linked to lung problems, there have also been reports of vape pens exploding - in rare cases with fatal consequences.

Earlier this year, a 24-year-old man from Texas died when his vape pen's battery blew up sending shards of metal into his face and neck and severing an artery.

However, as Public Health England point out, in the UK there are stricter regulations on vaping devices, with their safety and quality checked, meaning this would be a lot less likely to happen.

Another problem is that e-cigarettes and vapes are fairly new products so doctors don't know what advice to offer says the chair of the American Academy of Paediatrics tobacco control section, Susan Walley.

The advice in the meantime from American health professionals has been to avoid vaping altogether while investigations take place.

In the UK, Public Health England's advice remains that e-cigarettes are "a fraction of the risk of smoking".

The government agency reminds vapers "to use UK-regulated e-liquids and never risk vaping home-made or illicit e-liquids or adding substances, any of which could be harmful."
Even when he was vaping every day, Andrew preferred premium cigars.

The 30-year-old, who like some other current and former smokers in this story requested anonymity to speak candidly about nicotine addiction, said he simply likes the taste of tobacco. Naturally, he smoked cigarettes more often, as it's difficult to take a break at work to inhale an entire Cuban. He also tried to quit smoking for health reasons, only to eventually pick the habit back up again. On average, Andrew said, he smoked about 10 to 15 cigarettes a day before transitioning to vaping.

That change made sense to him in an era when vaping has become ubiquitous, as he had read online that e-cigarettes were safer. (This is a matter that's up for debate.) He still had a regular cigarette every once in a while—it was easier to justify when he was on vacation, for example. But even if his cravings for regular tobacco cigarettes persisted, he didn't truly relapse.

That is, until this summer.

In the past few weeks, reports of lung illness related to vaping have soared. So far, at least 450 potential cases have been tallied, and there have been at least six connected deaths, the most recent of which was confirmed on Tuesday. Most of those afflicted have apparently been young, otherwise healthy, and (at least in Wisconsin and Indiana) predominantly male. Some—but not all—of these cases have also been linked to user experimentation, whether with homemade or black-market products or THC oil.

Of course, any short-term surge in vaping-related illnesses doesn't alter the fact that traditional cigarettes are the "leading cause of preventable death" in the world, according to the Centers for Disease Control (CDC). The long-term effects of cigarette smoking have been established: It's a slow burn, and can cause, among other diseases, cancer, heart disease, stroke, and emphysema. Advocates for e-cigarettes and companies that make the products, like JUUL Labs, have long benefited from the perception of vaping as a healthier alternative to traditional cigarettes, and as a potential means to help smokers quit.

Now, as more and more reports come out about vaping-related illness, health experts canvassed by VICE expressed fear that former smokers might reach quick conclusions about the danger of these relatively novel devices and return to cigarettes, even as officials have not yet clearly articulated nor completely figured out a definitive cause for the growing spate of cases—and even though cigarettes remain proven killers.
Some, like Andrew, are already lighting up. He said a co-worker of his had done the same thing.

"With regards to vaping, frankly, it was a compromise," he explained, adding that he now smokes two to four cigarettes daily. "You have something that's maybe 60 percent as 'nice' as smoking cigarettes, but it's cheap and not as bad for your health. If it turns out it is actually quite bad for your health, then why even compromise in the first place?"

While it's too early to label this kind of reversal a bona fide trend, the dozen vapers VICE spoke to for this story were going through their own version of that thought process.

Torren Longenecker of West Palm Beach, Florida, said he was "currently switching back [to cigarettes], mainly because it's not worth the risk." Jake, a 24-year-old from Michigan who initially vaped only after he got out of rehab, was much more assured in his decision. Like Andrew, he offered a sort of existential shrug of the shoulders.

"After enough articles, it started fucking with my newfound love for vaping," he said. "I realized that if I'm going to die from nicotine, I'd rather have it be at age 60 from cancer than 24 from my lungs exploding or whatever. Whether or not it's been blown out of proportion is yet to be seen. So I picked up a pack of American Spirits and went on my merry way."

Even before the media firestorm over vape-related deaths, some cities and states were already issuing or hinting at sales moratoriums and bans until—at the very least—JUUL and other popular vape companies receive approval from the Food and Drug Administration (FDA), which they don't yet have. (In July, a federal judge ordered the agency to institute a 10-month deadline to submit such applications.) In San Francisco, a JUUL-backed coalition is now battling a lawmaker-passed prohibition on e-cigs, and more and more states—such as Michigan, New York, and Massachusetts—are flirting with measures that would prevent the sale of flavored pods and e-juice. JUUL has also been under fire for marketing practices critics said explicitly targeted teenagers, including with flavors (now only available online) like mango. (JUUL Labs has denied targeting young people.)

Mark, a Massachusetts man who has worked at a vape shop for two years and requested anonymity for fear of losing business, said he had heard from many customers in recent days that they were making the transition—getting rid of nicotine-based e-cigarettes because of what they've been seeing in the media.

Although any shift was in the earliest of stages, it was still a remarkable concern for tobacco-control experts like Michael Siegel, a professor of community health sciences at Boston University, who views getting smokers off traditional cigarettes to be the primary public-health matter. Even now.

"There are two big fears here," Siegel said. "That former smokers are going to return to smoking cigarettes, because they'll think, Why not just have the real thing? And also that smokers who might have otherwise wanted to try e-cigarettes won't any longer."
Another problem Siegel and other experts mentioned is that health officials themselves cannot even seem to agree on what's happening—and that confused message, he emphasized, could be the most dangerous thing of all.

"There is clearly a split between the CDC and the FDA," he said, adding that the message now is so "general" that it's not "actionable," and that, by not issuing specific warnings and leaving it so vague, it "actually fails to alert people to the real risk."

This contradiction was apparent last Friday, when the CDC and the FDA put out two separate statements. The former urged people to avoid using electronic cigarettes altogether (as did the American Medical Association and other leading doctors, until a concrete cause could be identified), while the latter warned chiefly against vaping THC specifically.

Meanwhile, even as some former smokers appeared to be returning to traditional cigarettes, JUUL's problems were compounded: On Monday, the FDA sent a letter to the company, saying it had violated certain federal regulations by claiming that its product was a safer substitute to smoking traditional cigarettes. It was a not-unexpected admonition that could further tarnish the behemoth's brand, and one that arrives, for many advocates focused on the youth vaping epidemic, much too late.

Leo Beletsky, a professor of law and health sciences at Northeastern University, said this government reaction was counterproductive, and could lead to catastrophic consequences down the line. Namely, that a failure of regulation has potentially gotten a new generation addicted to nicotine, and now products that could help save the lives of older generations will be stigmatized and perhaps more difficult to obtain.

"This is the typical knee-jerk panic that then produces major downsides," he continued. "People will say, 'Oh, this was unintended.' Maybe it will be unintended—but it will also be totally foreseeable and foreseen."

At the same time, experts VICE consulted about what current vapers should do were clear: Quitting vaping is currently the only surefire way to protect yourself.

In a statement, Ted Kwong, a spokesperson for JUUL Labs, which according to the Times controls more than 70 percent of the vape market and has said it is "monitoring the situation closely," insisted the company was "fully committed to the [FDA approval] process" and "confident in the content and quality of the materials we will submit with our application." He added, "We are confident that our growing body of evidence as well as our industry-leading actions to combat underage access and use will ensure adult smokers continue to have a true alternative to cigarettes."

But for his part, Andrew did not yet have any intention of quitting cigarettes again.
"For all the hand-wringing about how vape companies are targeting minors," he said, "they should have to answer for how they've been targeting adult smokers, too—if it turns out it's as harmful as it now seems."
Juul Labs, the dominant e-cigarette company, illegally marketed its vaping products as a less harmful alternative to traditional cigarettes, the Food and Drug Administration said on Monday, casting a deepening shadow over the safety of e-cigarette devices.

The agency issued a warning letter to Juul, saying that the company violated federal regulations because it had not received federal approval to promote and sell its vaping products as a healthier option.

The F.D.A.’s action dealt a setback to the company’s efforts to rebrand itself after public outrage erupted over a surge in teenage vaping.

And it served as a reminder that the health effects of e-cigarettes are not established at a time when more than 400 people have been sickened by vaping-related illnesses. Five deaths have been linked to vaping, and hundreds of people have been hospitalized. Public health investigators have yet to determine a specific cause, but they have cited the use of cannabis and nicotine vaping products as possibilities. No one product or company has been implicated.

The investigation into Juul’s practices preceded this summer’s spate of lung illnesses, and was prompted by concerns that the company’s marketing and sales practices targeted youths. It included a review of congressional testimony from Juul executives, consumers — students and parents — and antismoking activists.

“Regardless of where products like e-cigarettes fall on the continuum of tobacco product risk, the law is clear that, before marketing tobacco products for reduced risk, companies must demonstrate with scientific evidence that their specific product does in fact pose less risk or is less harmful,” said Dr. Ned Sharpless, the acting F.D.A. commissioner. “Juul has ignored the law and, very concerningly, has made some of these statements in school to our nation’s youth.”

The agency on Monday pointed to specific instances that it said violated restrictions on those health claims. It referred to a statement by Kevin Burns, the company’s chief executive, that had once been posted on the Juul website in which he said that the company’s vaping system was designed to “heat nicotine liquid and deliver smokers the satisfaction that they want without the combustion and harm associated with it.”
The letter also cited congressional testimony about a talk at a school: A Juul representative spoke at a presentation and told students that Juul “was much safer than cigarettes” and that Juul was “totally safe.”

The agency said its concerns were amplified by the increased use of vaping products, including Juul’s, by teenagers, and by evidence that teenagers were particularly vulnerable to nicotine addiction.

Juul, which now commands more than 70 percent of the e-cigarette market in the United States, has long said that it did not deliberately target teenagers. In a statement, Matt David, a company spokesman, said, “We are reviewing the letters and will fully cooperate.”

The high levels of nicotine in Juul products are of particular concern for their effects on the still-developing brains of a generation of teenagers and as a potential gateway drug that could reverse decades of a steep decline in smoking rates.

Research into the long-term effects of e-cigarettes is at an early stage, which is one of the reasons the F.D.A. is trying to restrict marketing assertions by Juul and other companies in the industry. The agency ordered the company to submit its plan to correct the issues outlined in the warning within 15 days.

In a second letter to Juul on Monday, the F.D.A. sought further documents about the company’s practices, details about some of its products, including nicotine-salt e-liquids, and any scientific evidence it has amassed to prove its claims.

The agency singled out Juul’s ad campaign, “Make the Switch,” saying it may convey that its devices are less harmful than tobacco cigarettes and may also violate limits on health claims. The company’s switching campaign has also drawn fire from lawmakers and public health experts, who contend that the message implies that Juul’s products are a smoking cessation option.

“I have a hard time seeing the difference between quit and switch,” said Representative Raja Krishnamoorthi, Democrat of Illinois. “Essentially what they are saying is quit smoking and do something different.”

Joshua Raffel, another spokesman for Juul, disagreed.

“Switching is not another word for cessation or safer,” he said. “They mean very different things. For example, switching involves continuing to consume nicotine but from a different device, while cessation is about getting users to eliminate their nicotine consumption altogether.”

For more than a year now, Juul has been the central target of public health experts and the F.D.A. over its products’ appeal to youths. With a sleek vaping device that has become ubiquitous as an accessory for many young people, Juul has had a meteoric rise, culturally and financially. Its product line was released in 2015, and the company’s sales took off. By 2018 it had a valuation of $16 billion. That is less
than half of its current estimated valuation of $38 billion, making the company one of the most recent successful growth stories in Silicon Valley.

Juul has engendered further criticism by selling 35 percent of the company to Altria, one of the leading cigarette companies. The union fueled criticism that Juul ultimately cared about profits at the expense of public health, an assertion Juul denied. Altria and Philip Morris International are now in merger talks, which would give Juul extraordinary pipelines to overseas markets.

Whether the F.D.A.’s action will dent Juul’s domestic sales remains unclear, although the company has already said that sales were hurt by its decision to stop shipping flavored pods to stores. The F.D.A. warned that if Juul did not comply with laws governing vaping devices, it could impose civil penalties or an injunction, or seize the company’s products.

The growing popularity of e-cigarettes has been paralleled by an evolving and unfinished regulatory framework. The core question facing regulators and public health experts has been whether the potential benefits of the new technology, such as the possibility that it can reduce smoking-related deaths, will outweigh risks, like those posed to youths.

Several deadlines have been set for e-cigarette companies to submit evidence that their products would serve the public health and come under full regulatory authority, and Juul has yet to submit an application for approval to market its products as a healthier choice. In July, a federal judge ruled that the F.D.A. must move up its deadline, calling for the companies to comply within 10 months, or by May 2020.

Juul’s defenders and advocates for e-cigarettes as a smoking cessation device, argue that the regulatory policy in the United States has been unfair to both the company and to a larger public health message. David Sweanor, a tobacco-law expert at the University of Ottawa and advocate for e-cigarettes as an alternative to smoking, said that “communicating that their products are certainly massively less hazardous than cigarettes is accurate and nonmisleading.”

And he noted that the severe lung illnesses linked to vaping have not yet been shown to be linked to mass-market nicotine e-cigarettes. Policymakers should not lose sight of the toll of smoking, which kills 1,300 people a day in the United States, he said.

Still, the hospitalizations across the country — in nearly three dozen states now — have prompted states and health agencies to issue warnings against e-cigarettes altogether. A week after public health officials publicly released a report of the first possible vaping-related death, the Centers for Disease Control and Prevention issued an extensive warning against vaping: “E-cigarette products should not be used by youth, young adults, pregnant women, as well as adults who do not currently use tobacco products. If you use e-cigarette products, monitor yourself for symptoms (e.g., cough, shortness of breath, chest pain) and promptly seek medical attention if you have concerns about your health.”
At the same time, authorities have singled out for concern vaping devices and liquids that are “off the street,” or have been modified or used in a way that the manufacturer did not intend.

Others are calling for stricter measures to be put in place before e-cigarettes can be dispensed. Dr. Nora Volkow, director of the National Institute on Drug Abuse, which is part of the National Institutes of Health, said e-cigarettes should be evaluated in randomized clinical trials for treating people who are unable to stop smoking with other means. And if they are shown to be effective, Dr. Volkow said, they should be available only by prescription.

“That’s the way we do it with stimulant drugs,” she said.

Lawmakers also are demanding additional action.

Late last week, Senator Richard J. Durbin, Democrat of Illinois, wrote a letter to President Trump urging him to replace Dr. Sharpless, the acting F.D.A. commissioner, with someone who would be tougher on the e-cigarette issue. A deadline is approaching for the president to name a permanent replacement for Dr. Scott Gottlieb, who left earlier this year.
Cases of Vaping-Related Lung Illness Surge, Health Officials Say
Denise Grady & Matt Richtel | September 6, 2019

Federal health officials reported on Friday that the number of people sickened with a severe lung illness linked to vaping has more than doubled to 450 possible cases in 33 states, including three deaths and a possible fourth.

The Indiana Department of Health announced the third death on Friday, saying only that the victim was older than 18.


The editorial called on doctors to discourage their patients from using e-cigarettes and for a broader effort to increase public awareness about “the harmful effects of vaping.”

Officials from the Centers for Disease Control and Prevention echoed that call in a briefing.

“While this investigation is ongoing, people should consider not using e-cigarette products,” said Dr. Dana Meaney-Delman, who is leading the C.D.C.’s investigation into the illness.

C.D.C. officials said they believe that some “chemical” is involved as the cause but they have not identified a single responsible “device, product or substance,” Dr. Meaney-Delman said.

Dr. Christiani, author of the New England Journal article, wrote that it was not yet clear which substances in vaping were causing the damage. E-cigarette fluids alone contain “at least six groups of potentially toxic compounds,” the editorial said, and suggested that the mixed-up stew of chemicals might create new toxins. The journal also published today a study of two large clusters of 53 cases in Wisconsin and Illinois.

The first case of the mysterious lung illness, in Illinois, came in April, indicating that the syndrome emerged earlier than the mid-June date that has been often cited by federal officials as the time the afflictions began.

A keener look at the patient base and syndrome came from details of 53 patients from Illinois and Wisconsin described in the article in the New England Journal of Medicine. The patients were typically
“healthy, young, with a median age of 19 years and a majority have been men,” said Dr. Jennifer Layden, chief medical officer and state epidemiologist for the Illinois Department of Public Health.

She said that 98 percent were hospitalized, half required admission to the intensive care unit, and a third required ventilation. The majority, Dr. Layden said, vaped a product including T.H.C., the high-inducing chemical in marijuana, but a majority also used a “nicotine-based product,” noting that there were “a range of products and devices.”

“The focus of our investigation is narrowing but is still faced with complex questions,” said Ileana Arias, the C.D.C.’s acting deputy director for noninfectious diseases. She added: “We are working tirelessly and relentlessly.”

Dr. Mitch Zeller said particular concern is developing around products that are jury-rigged by vaping retailers, or tampered with or mixed by consumers themselves. “Think twice,” he said, urging consumers to avoid vaping products purchased off the street or purchasing informally mixed or made devices.

Public health officials have underscored one fundamental point: that the surge in illnesses is a new phenomenon and not merely a recognition of a syndrome that may have been developing for years.

Before health officials in Indiana confirmed the third death from a severe lung illness linked to vaping, two other people — one in Illinois, the other in Oregon, both of whom were adults — have died from what appears to be the same type of illness, health officials in those states have said. State and federal health officials are scrambling to find a cause, possibly a particular chemical or adulterant contained in some vaping products.

What looked like a few scattered cases in mid-June has become a full-fledged and widespread public health scare, leaving some otherwise healthy teenagers and young adults so severely ill that they have been placed on ventilators.

Those afflicted typically show up in emergency rooms with shortness of breath after several days of flulike symptoms, including high fever.

The state of New York, where 34 people have become ill, said on Thursday that vaping samples from eight of its cases showed high levels of a compound called vitamin E acetate. Investigators there are focusing on the possibility that the oily substance might be playing a key role in the illness.

However, some of the more than 100 vaping samples being tested by the federal government did not prove positive for vitamin E acetate, so that compound remains only one of many possible causes of the heavy lung inflammation.

As with a food poisoning outbreak, the search for a cause of the vaping syndrome involves a multiparty investigation that can feel slow to the public and industry. The challenge with this particular investigation is amplified by the many possible chemicals involved in vaping liquids and by the
haphazard nature of industry regulation, leaving a vast black and gray market of e-cigarettes and marijuana products.

Vaping, a wholesale change in how nicotine and marijuana is inhaled, involves the use of high heat to create aerosolized versions of nicotine and marijuana. In the case of e-cigarettes, which deliver nicotine, the industry and a vast range of supporters have positioned the devices as a much safer alternative to the lethal habit of traditional smoking; that’s because smoking involves the combustion and inhalation of countless carcinogens that pepper the delicate lung tissue, whereas e-cigarettes deliver many fewer chemicals and none through fiery combustion.
Vaping’s Plausible Deniability Is Going Up in Smoke
Amanda Mull | September 6, 2019

To market a product as less harmful than cigarettes is to damn it with faint praise.

America has known about the catastrophic harm smoking does to the human body for decades, so when e-cigarettes became widely available in the early 2010s, they were greeted with some optimism. The devices deliver nicotine or cannabinoids via vapor instead of smoke, which avoids some of the nasty by-products of combustion. There’s no way they could be as bad as cigarettes, right?

That rationale has helped nicotine-vaping rates explode since 2015, especially among teens. The same technology has become popular among cannabis users both legal and non-. But the question of vaping’s relative danger has recently taken on a much more desperate tone. While vaping is still so new that broad, long-term data on inhaling the often mysterious chemicals found in both nicotine and cannabis “vape juice” won’t be available for years, Americans are beginning to see the effects that heavy or extended use of the vaping market’s vast array of products might have.

The early evidence is alarming: A recent report from the Centers for Disease Control and Prevention found that as of August 27, 215 hospitalizations in 25 states have been linked to a mysterious “vaping illness” that affects the lungs of otherwise healthy people, most of them under the age of 30. So far, two people have died. As stories pile up of sicknesses, side effects, and the potential for long-term consequences, it’s clear that “safe” and “safer than smoking cigarettes” are vastly different things.

When the regulation of most tobacco products came under the U.S. Food and Drug Administration’s control in 2009, the agency was involved in a lawsuit with an e-cigarette manufacturer over efforts to classify vapes as drug-delivery devices, which would have put placed them under a much higher level of regulatory scrutiny than other tobacco products. That bid failed in 2010, and the consumer tobacco market quickly filled with clever marketing tactics for equally clever—and in many cases addictive—vaping products. E-cigarettes devices themselves didn’t officially come under FDA tobacco oversight until 2016.

Now government agencies such as the FDA and the CDC have to play catch-up. The most immediate concern is the illness that has landed hundreds of people in the hospital this summer. Its laundry list of potential symptoms includes fatigue, nausea, dizziness, and extreme shortness of breath. Vape juice can contain dozens of different chemicals, so reverse-engineering what hundreds of sick people across the country have in common is tricky. Some of the problematic substances might be long gone by now, or
they could be part of black-market cannabis products that patients are reticent to turn over to federal authorities.

The FDA has emphasized that it is too early to know for sure what’s causing the worst health problems, but testing so far points to cannabis products as the likeliest source of the most dire symptoms—specifically vitamin E acetate, which is sometimes found in the oil base for vape juice and can be harmful when inhaled in high concentrations. In much of the country, cannabis’s cultural acceptance far outpaces its legal availability, which means that its users rely on products with unknown origins and ingredients, manufactured with no regulatory oversight. Marijuana is still illegal at the federal level, so even states that have legalized it are left on their own when regulating its manufacture and sale. One of the deaths has been linked to a cannabis vape purchased from an Oregon dispensary.

Advocates for the nicotine-vaping industry have been quick to point to black-market cannabis products as the real source of health problems, which they claim are being used misleadingly by anti-tobacco advocates to fuel their own crusades. But that argument belies the fundamental lack of information available when evaluating nicotine vaping’s impacts on health and its potential interactions with other drugs. Many of the people who are known to have fallen sick this summer use nicotine vapes in addition to cannabis, and it’s possible that lung irritation caused by frequent use of nicotine e-cigarettes could hasten or worsen the impacts of chemicals found in black-market cannabis products.

That argument also ignores the small but growing body of evidence that nicotine vaping could harm long-term users by itself, and especially those who start young. The FDA is investigating more than 120 reports of seizures and other neurological symptoms linked to vapes between 2010 and 2019. At least some of those cases have been linked to devices from Juul, the brand that commands more than 70 percent of the nicotine-vaping market in the United States and that has found particularly wide favor among teens and young adults. (In response to mounting health concerns, Juul CEO Kevin Burns has publicly urged people who aren’t already cigarette smokers to avoid vaping, including with products made by his company.)

Beyond official investigations of health problems that are already occurring, some experts fear what can’t yet be known. Popular e-cigarette formats require vapers to inhale the same kinds of fine particulates present in outdoor air pollution. No research is yet available on the consequences of ingesting those particles from vaping specifically, but studies on smoking and pollution have found that the particles become embedded in the lungs and are linked to increased rates of heart attack and cardiovascular disease.

Research suggests that switching to e-cigarettes might be an effective harm-reduction tactic for people who already smoke cigarettes. But the real problem of vaping isn’t all that different from the one presented by cigarettes: Nicotine is a highly addictive chemical, and feeding that addiction requires repeated long-term contact with all kinds of solvents, emulsifiers, and by-products that have either harmful or unknown consequences for those who inhale them. Legal e-cigarettes have reversed a decades-long downward trend in teen tobacco use, and no one knows with any certainty what picking up that habit might do to those kids. By the time researchers do, it might be too late.
Vitamin E Suspected In Serious Lung Problems Among People Who Vaped Cannabis
Joe Neel & Allison Aubrey | September 5, 2019

It's still a mystery — what's causing the cluster of severe respiratory illnesses among people who've used e-cigarettes? The FDA says there have been at least 215 reported cases in 25 states.

Nearly three dozen of those cases are in New York state, and investigators there say they are now zeroing in on vitamin E as a possible culprit. Health officials say state lab tests detected high levels of vitamin E in cartridges of cannabis vaping products used by people who vaped and suffered serious lung damage.

"At least one vitamin E acetate containing vape product has been linked to each patient who submitted a product for testing," according to a statement from the New York State Department of Health.

Vitamin E is usually safe as a dietary supplement or cream, but vaping it could be harmful, according to state health Commissioner Howard Zucker.

When it is "inhaled deep in the lung, [it] can cause problems," Zucker tells NPR. He says the lab has found very high amounts of vitamin E in 13 of the patient-submitted cartridges they've analyzed. "As high as even 50 percent of the liquid that is in the vaping [cartridge]."

It was not found in cartridges from patients that contained only nicotine. It's not clear whether some patients vaped both cannabis and nicotine products.

Zucker also notes that they haven't ruled out other substances, and the Food and Drug Administration says it isn't convinced that vitamin E is to blame.

"More information is needed to better understand whether there's a relationship between any specific products or substances and the reported illnesses," FDA senior adviser Michael Felberbaum says in an emailed statement Thursday.

"The number of samples we have received continues to increase and we now have over 100 samples for testing," Felberbaum says. "The FDA is analyzing samples submitted by the states for the presence of a broad range of chemicals, including nicotine, THC and other cannabinoids along with cutting agents/diluents and other additives, pesticides, opioids, poisons and toxins. No one substance, including Vitamin E acetate, has been identified in all of the samples."
Vitamin E is not an approved additive for vape products approved by New York's medical marijuana program, and Zucker says the cartridges they tested appear to be "black-market" products purchased off the street — not in medical dispensaries.

"This is a situation of people buying products that have been laced with markedly elevated amounts of vitamin E," Zucker says.

"We urge the public to be vigilant about any vaping products that they or any family members may be using and to immediately contact their health care provider if they develop any unusual symptoms" he says in the health department statement. "In general, vaping of unknown substances is dangerous, and we continue to explore all options to combat this public health issue."

Zucker says the number of cases of vaping-associated pulmonary illnesses has been rising, and that people who vape should be warned not to buy unregulated products purchased off the street. "These unregulated products are not tested and may contain harmful substances," the department warns.

On Wednesday, Oregon officials reported that a middle-aged adult who died of a severe pulmonary illness in late July had used a cannabis product purchased from one of Oregon's state-regulated marijuana stores. That case is under investigation. The death of a second person was reported in Illinois in late August.
Health officials have identified one potential cause of the mysterious vaping-related illness that has sickened more than 200 people and claimed at least two lives: vitamin E acetate, an oil found in some marijuana-based vaping products. But there’s still a lot they don’t know. Are other adulterants also involved? Does a combination of vaping ingredients, or the use of a certain vaping device, increase the likelihood of falling ill?

Parents have been anxious, as many patients so far have been teenagers and young adults. Health officials are scrambling — the Centers for Disease Control and Prevention have advised those who are concerned to not use e-cigarette devices. And, as uncertainty persists, states and cities are taking matters into their own hands. On Wednesday, Michigan became the first state to ban flavored e-cigarettes. San Francisco has issued an even more comprehensive ban — of all e-cigarettes — and other communities have similar measures in the works.

Outright product bans are risky. If they give rise to a more dangerous black market, or drive vapers back to traditional cigarettes, the effects could be disastrously counterproductive. But the confusion and worry behind such actions are understandable, given how popular e-cigarettes have become and how little is known about their risks.

The first e-cigarettes entered the market more than a decade ago, with the promise that they would be less harmful than traditional cigarettes and could even help people quit smoking. But the Food and Drug Administration has yet to review any of these products to determine whether they offer a net benefit for public health. While e-cigarettes don’t contain the combustible tobacco that makes regular cigarettes so carcinogenic, they do contain several other chemicals whose long-term health effects are largely unknown.

Based on existing evidence, most doctors and scientists think that e-cigarettes are probably safer than regular cigarettes. But exactly how much safer is still anybody’s guess. The only way to know for certain is with a thorough and impartial vetting of these products.

Companies are supposed to submit their data to the Food and Drug Administration for review by next May, but the Vapor Technology Association, an e-cigarette industry group, has sued the federal government in an effort to delay that reckoning. The association says that the 2020 deadline does not give companies nearly enough time to produce the data that regulators are requesting. Smaller companies will be wiped out by the expense of securing regulatory approval, and adult smokers who use e-cigarettes to quit smoking will suffer as a result, the association argues.
There is some truth to these arguments. But it’s been three years since the F.D.A. gained jurisdiction over e-cigarettes. It’s past time for consumers to know whether these products will truly help them quit tobacco and whether such benefits outweigh the potential risks.

In the meantime, youth vaping rates have surged, and e-cigarette makers are at least partly to blame: A congressional investigation has found that Juul, the nation’s leading e-cigarette maker, used social media and “educational” and “antismoking” campaigns to plug its products to minors. In at least one instance, the company targeted children as young as 8. In another, it told students that e-cigarettes were “totally safe.” The company’s lobbyists have fought to block or weaken state bills that would curb access to its products. And according to The San Francisco Chronicle, the company has spent millions of dollars on a ballot initiative that would overturn the city’s e-cigarette ban.

In response to growing criticism, Juul has ended its youth education programs, closed social media accounts and has begun to introduce stringent age-verification measures to prevent minors from buying its products. A Juul spokesman says the company does not support the Vapor Technology Association’s lawsuit against the F.D.A. and plans to comply with the regulatory deadline.

Those are welcome course corrections. But the relationship between e-cigarette makers and the tobacco industry is concerning. Juul sold a 35 percent stake of its company to the tobacco giant Altria, and the broader e-cigarette industry appears to have borrowed from the Big Tobacco playbook. Cigarette makers used cartoons and cowboys to market their products, directly and deliberately, to young children. They knew for decades that those products were highly addictive and potentially deadly, and they lied to the public and to Congress about those risks. They also lobbied aggressively to stave off regulatory oversight and tobacco control legislation.

Those deceptions took decades to uncover. They also led to widespread nicotine addiction and millions of smoking-related deaths — a public health disaster that the nation is still grappling with today. The best way to avoid repeating those mistakes with e-cigarettes is through strong, transparent regulation, put into place as quickly as possible.
Michigan on Wednesday became the first state in the nation to ban flavored e-cigarettes, a step the governor said was needed to protect young people from the potentially harmful effects of vaping.

Gov. Gretchen Whitmer (D) said in an interview Tuesday that she ordered the ban after the state health department found youth vaping constituted a public health emergency. The action was officially announced Wednesday.

“My number one priority is keeping our kids safe and protecting the health of the people of Michigan,” Whitmer said.

Whitmer complained that e-cigarette companies are using sweet flavors, such as bubble gum and “fruit loops,” to hook young people on nicotine, with potentially adverse consequences. Besides sweet flavors, the prohibition will also apply to vaping products that use mint and menthol flavors. It does not cover tobacco-flavored e-cigarettes, the governor’s aides said.

The ban, which covers both retail and online sales, will go into effect as soon as the health department issues rules, sometime in the next 30 days. It will last for six months, and can be renewed for another six months, according to the governor’s aides. In the meantime, they said, the health department will develop permanent regulations banning flavored e-cigarettes. The legislature could try to block those rules, but would face a veto, they added.

Whitmer also barred what she called misleading descriptions of vapor products as “clear,” “safe” and “healthy” and ordered the enforcement of an existing ban on billboard advertising for e-cigarettes.

While Michigan is the first state to prohibit sales of flavored e-cigarettes, several cities and communities have moved to restrict or ban sales of e-cigarettes. In late June, San Francisco became the first major city in the United States to ban the sale and distribution of all e-cigarettes; the ban goes into effect early next year.

On Wednesday, vaping advocates denounced the Michigan ban as misguided and predicted it would lead to a massive black market for the banned products.

“This shameless attempt at backdoor prohibition will close down several hundred Michigan small businesses and could send tens of thousands of ex-smokers back to deadly combustible cigarettes,” Greg Conley, president of the American Vaping Association, a consumer group, said in a statement.
“These businesses and their customers will not go down without a fight,” he added. “We look forward to supporting the lawsuits that now appear necessary to protect the right of adults to access these harm reduction products.”

While many vaping advocates concede the long-term effects of e-cigarettes are not known, they say vaping is almost certainly safer than traditional smoking, which causes the deaths of more than 480,000 people a year in the United States.

The state Department of Health and Human Services, in declaring youth vaping a public health emergency, cited studies showing vaping products contain a variety of chemicals and metal particles whose long-term health impact is unknown. It also noted that nicotine can affect the developing brain and pointed to studies indicating that young people who vape are more likely to start smoking regular cigarettes.

Health advocates welcomed Whitmer’s move. Nancy Brown, chief executive of the American Heart Association, called the action “bold and appropriate.” She added that “in the absence of robust regulation by the Food and Drug Administration, we know shockingly little about the health impact of e-cigarettes being widely marketed to youth and adults.”

Whitmer’s order comes amid a recent spate of serious lung illnesses, including one death, that have been linked to vaping. State and federal officials have said they are focusing closely on possible contaminants or counterfeit substances in black-market marijuana products. But they also have stressed they have not ruled out any vaping products, including nicotine e-cigarettes.

Last year, federal officials reported a surge in vaping among middle and high school students, prompting the Food and Drug Administration to propose sales restrictions on many flavored e-cigarettes. The proposal, which has not been finalized, would bar sales of sweet and fruity kid-friendly vaping products in stores that allow minors or that don’t have separate adults-only sections. In addition, it does not cover menthol or mint-flavored products.

A spokesman for Juul Labs, which dominates the e-cigarette market in the United States, said the company strongly agrees with Michigan officials that actions are needed to reduce youth use of vaping products. The company has voluntarily stopped selling most flavored e-cigarette pods in traditional retail stores and is implementing strict age-verification standards.

But Juul is still selling mint- and menthol-flavored pods in stores, a point of contention with anti-vaping groups that say young people are fond of the mint-flavored products. The Juul spokesman said that the company believes menthol e-cigarettes should be available to encourage smokers to switch from conventional menthol cigarettes.
Juul Introduces Checkout System to Combat Underage Purchases
Jennifer Maloney | August 28, 2019

E-cigarette startup Juul Labs Inc., facing blame for a surge in teenage vaping, is offering more than $100 million in incentives to retailers to install a new electronic age-verification system intended to curb illegal sales to minors.

The modification to point-of-sale software blocks each Juul purchase until the shopper’s driver’s license or other government identification has been scanned. It also limits each purchase to a maximum of one vaporizer and four refill packs. So far, Juul said, Cumberland Farms Inc., QuikTrip Corp. and other chains representing 40,000 outlets have agreed to adopt the system.

Juul’s market-leading vaporizers and the stores that carry them have faced increased regulatory scrutiny amid a jump in vaping among teens. The company’s hometown of San Francisco recently passed a ban on e-cigarette sales.

The Food and Drug Administration earlier this year called out retailers including Walgreens Boots Alliance Inc., Rite Aid Corp. and Walmart Inc. for illegally selling tobacco products to minors. In response, all three raised to 21 the minimum age to purchase tobacco in their stores. Walmart also stopped selling sweet and fruity e-cigarette flavors, and Rite Aid stopped selling e-cigarettes altogether.

Juul dominates the U.S. market for e-cigarettes. In the first half of this year, the company sold more than 12 million devices and 390 million refill pods in the U.S., contributing to $1.27 billion in global revenue, according to a person familiar with the matter. The e-cigarette maker distributes to about 125,000 retail outlets in the U.S. and is considering opening its own Juul-branded shops in Houston and Dallas.

By May 2021, Juul will stop selling through any retailer that hasn’t adopted the age-verification system, Chief Executive Kevin Burns said in an interview. The new system “basically takes the burden off the clerk,” Mr. Burns said.

“It’s likely that this will cut down on illegal sales directly to minors,” said Matthew Myers, president of the Campaign for Tobacco-Free Kids. “But that’s always only been a small part of the overall problem. If you make a product that is highly attractive to kids...then they will get it.”

Juul’s thumb-drive-shaped vaporizers, which heat nicotine-laced liquid in flavors such as mint, mango and cucumber, have contributed to a surge in vaping among children and teens, prompting threats from regulators and lawmakers that the devices could be banned entirely. The FDA has proposed restrictions that would essentially prohibit gasoline stations and convenience stores from selling e-cigarettes in the sweet and fruity flavors that health officials say are appealing to young people. Those restrictions
haven’t been implemented. Last November, Juul voluntarily halted bricks-and-mortar sales of flavors except for tobacco, mint and menthol. The company continues to sell fruity flavors on its website, which has age controls.

Juul also supports proposed federal legislation to raise the minimum age to purchase tobacco products, including e-cigarettes, to 21 years old. Eighteen states have adopted similar legislation.

The new age-checking protocol requires all Juul buyers to provide ID, no matter how old they are. Scanned personal data will then be deleted immediately, Juul said. It is a departure from the We Card program used by many retailers, by which clerks ask shoppers who appear to be under 27 to show ID and must determine whether the document is valid.

Juul is offering incentives to retailers in part to compensate them for lost sales if older consumers balk at the new requirement.

New federal data scheduled for release this fall will show whether underage vaping has continued to increase over the past year. Noting that the FDA’s proposed restrictions haven’t yet taken effect and that many of the minimum-age changes have only recently been adopted, Mr. Burns said he expects to see another rise in teen use. But the planned changes and new efforts like the checkout system should turn around the teen vaping trend, he said.
E-cigarettes affect a person's blood vessels after just one use, study finds
Caitlin O’Kane | August 22, 2019

Vaping, even temporarily, can affect the blood vessels in healthy people — even if the vape pod does not contain nicotine, according to a new study published in the journal Radiology this week.

Researchers from the University of Pennsylvania School of Medicine studied 31 volunteers, all of whom were healthy, non-smoking adults with an average age of about 24 years old.

The participants were monitored as they each took 16 three-second inhalations from a disposable e-cigarette. The researchers used an ePuffer with flavored e-cigarette liquid but no nicotine in it. A research coordinator made sure the participants did not cough or swallow the vapor.

The researchers then conducted MRI scans on the participants and found a reduction in blood flow in the femoral artery in their legs. This change occurred after just one vaping experience.

The findings suggest vaping impaired function of the endothelium, or inner lining of blood vessels, a press release on the study explained.

"These products are advertised as not harmful, and many e-cigarette users are convinced that they are just inhaling water vapor," Alessandra Caporale, Ph.D., a post-doctoral researcher and lead author of the study, said in a statement. "But the solvents, flavorings and additives in the liquid base, after vaporization, expose users to multiple insults to the respiratory tract and blood vessels."

The authors say more research is needed on the long-term effects of e-cigarettes. But the short-term harm can be hard to ignore: a growing number of people have been hospitalized for lung damage after vaping. The CDC says 153 possible cases have been reported in 16 states since the end of June.

In one of those cases, a previously healthy 17-year-old spent 10 days on a ventilator. An 18-year-old suffered a lung collapse.

"Lung damage is what we're most focused on right now, but there's so much more going on," Dr. Diana Zuckerman, president of the National Center for Health Research, recently told CBS News. "There are chemicals in Juul and e-cigs and we're not exactly sure what the impact is going to be because we haven't seen it before."
A study published in the journal Pediatrics last year found a number of different toxic chemicals in e-cigarettes, including one linked to several types of cancer. Some of the chemicals turned up even when teens used non-nicotine products like fruit-flavored vapes.