ASHPOfficial - Vaping Epidemic and the Role of the Pharmacist

Transcript

Speaker 1:
Welcome to the *ASHPOfficial Podcast*. Your guide to issues related to medication use, public health and the profession of pharmacy.

Norman:
Thank you for joining us for *Therapeutics Thursday* podcast. This podcast provides an opportunity to listen in as members to sit down and discuss what's new and ongoing in the world of therapeutics.

Norman:
My name is Norman Fenn, Vice Chair [inaudible 00:00:26] of the pediatric section advisory group of the section of clinical specialists and scientists and I will be your host today [inaudible 00:00:31] ASHP Therapeutic Thursdays podcast. With me today are Tom Kraus, vice president of government affairs with ASHP, Kim Novak clinical pharmacy specialist and PGY2 Residency Program Director at Nationwide Children's Hospital and Kyle Mays, pediatric critical care pharmacist and PGY1 pharmacy residency program director at Cardinal Glennon Children's Hospital.

Norman:
Tom, Kim and Kyle, thank you so much for joining us today. Let's get started talking about today's topic, which is the vaping epidemic. Tom, maybe start first. Could you tell us a little bit about the way agencies are currently approaching the vaping epidemic?

Tom Kraus:
Thanks Norman. I think we should think about how agencies regulate vaping in the context of broader tobacco regulation. So you've seen at the state level, several States implement state-free environments like in bars and restaurants. 25 States have already taken action there and over 50% of the US population is covered by those types of regulations.

Tom Kraus:
Several States have expanded cigarette taxes to include e-cigarettes. Several States moved over the past couple of years to expand the smoking age to 21. And then the federal government actually passed legislation at the end of 2019 to extend that across all States. And then FDA for its part has been working for the past decade to implement a program, to regulate tobacco products.

Tom Kraus:
And a couple of years ago, they acted to incorporate e-cigarettes and nicotine delivery devices into that broader context of tobacco regulation. So in that broader effort, they're working on things like graphic warning labels for all tobacco products, they're working on things like potentially a nicotine product standard, which could reduce the amount of nicotine and combustible cigarettes down to a level that is not addictive.

Tom Kraus:
So those things are all really exciting. We'll have to see how they play out. Many of them are in early stages, but I think it's really a positive indication that the agency is actively and publicly working on those things. Now, when it comes to e-cigarettes and vaping, the most recent thing that the agency FDA has done has been to focus on flavored products.

Tom Kraus:
And so the agency tease and president Trump actually sort of indicated that the agency was considering banning all flavored products from e-cigarettes. And then recently what came out was actually a partial ban. So what they did was they banned some of the e-cigarettes that include pre-filled pods with flavored nicotine, but they let other products like open containers in which the user mixes nicotine and a flavoring product, they let those remain on the market, and the logic was that those products are more likely to be used by adults, whereas the smaller cartridge products are more likely to be used by youths who have not previously been users of combustible cigarettes.

Tom Kraus:
So we'll have to see how that plays out. I think there's a lot of concern in the public health community that that approach is too lenient and will allow avenues for young folks who are not using these products as an alternative to combustible tobacco, but are rather initiating tobacco use via e-cigarettes.

Tom Kraus:
Then FDA is also working with DEA. So together those two agencies have taken some action against websites that are selling vaping devices used for specifically for not nicotine, but for THC containing products. So I think we're seeing some regulation across these products. I think we have to acknowledge the FDA has been quite slow to really get its regulatory regime up and running for e-cigarettes.

Tom Kraus:
And even now as it implements some of these stronger requirements in response to the surge in youth vaping, even that is a sort of partial measure where they're banning some products that are perceived to be focused on the youth market row, leaving a lot of products that are oriented to adults on the market.

Norman:
Wow. That's really interesting. Thank you so much for that summary, Tom. I think the other thing that members would like to learn about is how is the ASHP dealing with this very particular issue?

Tom Kraus:
Yeah, that's a great question. So ASHP has long standing policy, discouraging tobacco use and advocating for tobacco free environments, discouraging the use, distribution and sale of tobacco

products. And recently the House of Delegates approved adding nicotine delivery devices or e-cigarettes to that policy. So that is something that we have now incorporated into our general tobacco control related policy.

Tom Kraus:
And so this is a topic that while it is not necessarily one of the most active areas for ASHP, it is one where, to the extent that there are opportunities to engage with federal policymakers around nicotine delivery devices, we certainly do that. And we at various times when the agency has looked like it's going to take a positive step, we've tried to get out there in public through messaging to the agency and on social media voicing our support for a proactive stance from FDA to regulate these products.

Norman:
Fantastic. Thank you. Let's switch gears a little bit here and talk about the epidemiology of vaping and lung injury. Kyle, can you tell us a little bit about how this has evolved across the United States?

Kyle:
Yes. So roughly about March of 2019, we started seeing the first reports of patients coming into the hospital with lung injury associated with e-cigarette use or vaping. It really kind of slowly started over the couple of months after March kind of inclining until it reached about a peak in mid September.

Kyle:
And now it's been on a slow decline since September, right now, it seems like reports have really drifted off due to a couple of different reasons. And that nobody's really quite sure, it could be that there was a heightened awareness by the public with all of the news going on in the media. And it could also be just a change in way that the persons that were manufacturing the different cartridges, they might've felt there was a link with vitamin E, so they might have removed that from the cartridges, but it's still too early to really state one way or the other what the reason for the decline is.

Kyle:
Kind of going by the numbers as of January 14th, it looks like we have roughly 2,600 patients that have been hospitalized. Kind of looking at the breakdown of those patient groups, it looks like the vast majority were male, about 65%. And the median age was 24 years of age with the most popular age range of 13 to that 35 year category.

Kyle:
Luckily, there has been only a few deaths. By few, I mean about 60. Most of them were older populations. So again, the median age was about 51 years of age with a range of 15 to 75. Again, a lot of those deaths are still currently under investigation. So some of those numbers might change as we continue to

learn more about what the actual link to these injuries were. As far as the type of vaping products that were being used, there's quite a number.

Kyle:
So it kind of is easy to break it down in the generation. So first-generation was the disposable e-cigarettes. Those are just prefilled cartridges that you can utilize a couple of times, and then you dispose of it once you're done.

Kyle:
The second generation is e-cigarettes with a prefilled or refillable cartridge. So you can take those in and out of a vaping device and use it as needed. And again, it's more of a longterm product, so you can keep the actual vaping device and then just plug in the new cartridges as you see fit.

Kyle:
These cartridges are the ones that have been associated most with cartridges with THC and the vitamin E. So these are the ones that have been linked the most to causing the vaping related injury.

Kyle:
The third generation is the tanks or the mods. So this is where you will see a larger device. You can fill it with either nicotine products, you can fill it with THC products. These are the ones that also tend to produce the bigger hits, have the different flavors that tend to be popular with persons that are using it for nicotine.

Kyle:
And then lastly is the newest generation or the fourth generation, which is the pod mods or the pre-filter refillable. This generation tends to be the most popular with adolescents, mainly because of their ease of use as well as the way that they look. So they look like common devices that you would expect that adolescents to carry around.

Kyle:
So USB sticks, it can also look like inhalers of commonly used medications for asthma. They also look like cases for lipsticks, so they're easily concealable, so that's why they tend to be a lot more popular with the adolescent group because they're able to hide them for lack of better words.

Kyle:
So these tend to be the ones that most of the adolescents are using. And as a result, these fourth generation pods, they also are ... they use nicotine salts versus freebased nicotine, which is commonly found in actual cigarettes. Because of this with the nicotine salts it's allows for a higher hit when the persons are taking a hit.

Kyle:
And so it allows for a higher delivery of nicotine, which is more preferable to the adolescent than using the other forms of nicotine supplements.

Kyle:
Lastly, you run into vaporizers. These are mainly used to heat up THC products or actual marijuana plants. So those ones tend not to be so much used in the public, obviously because they're not transportable easily enough, but these are also things that can be used at home, particularly to deliver, usually THC laced products.

Norman:
All right. Thank you for that. Tom, maybe you could chime in here. What kind of distinguishes these products from those that are FDA approved?

Tom Kraus:
Yeah, the FDA does not approve any products intended for use with THC, right? They have their whole regulatory system is built around tobacco products and incorporating those nicotine delivery devices that are associated tobacco-derived delivery of nicotine.

Tom Kraus:
That's really what they're focusing on. As I mentioned, there is some variation in how they're regulating some of those products. So the ones that ... products that include pre-filled pods, they've taken some action to discourage or ban the use of flavorings in those products primarily to get at this concern about youth initiation of tobacco use, while they've left space in the market for use of the devices that are filled by the user with a combination of nicotine and flavorings that tend to be more associated with adult use.

Tom Kraus:
And this is like a long standing struggle that the agency has had. How do you allow some space in the market for adult users, particularly those who might be switching from combustible tobacco use to vaping, which might be associated with some level of harm reduction while still discouraging use among youth who have never previously used any tobacco product.

Tom Kraus:
And so you want to make sure that there's not a product that is appealing to youth such that they're going to initiate tobacco use when they never would have otherwise. So as far as what the FDA is focused on, it is the nicotine delivery products. As I mentioned, there is some variation in how they approach different versions of the devices based on preference of youth for those devices.

Tom Kraus:
And with regard to the THC oriented devices, that's really not a space that the FDA regulates proactively, though they have worked with DEA to take enforcement actions against some companies that are marketing products, specifically marketed as THC delivery devices.

Norman:
Kim, I also understand that both you and Kyle have treated patients that have had injuries secondary to vaping. I was wondering if perhaps you and Kyle could potentially briefly share your experiences with treating these patients and Kim, if you wouldn't mind, just kind of talking with us first about that.

Kim:
Sure. I think one of the things that really sticks out to me about these patients who've had vaping related injuries is that they've had a really variable presentation. We've had patients, particularly those who have a history of asthma, perhaps they were well-controlled when they have their first severe asthma exacerbation that requires admission in perhaps several years.

Kim:
So some have come in that way. These patients typically have taken a lot longer to kind of resolve their acute asthma symptoms, their length of stay tends a little bit longer. Albuterol usage is more frequent and takes a lot more time to wean down to a acceptable home going regimen.

Kim:
And many times they've required a prolonged steroid course to kind of get over their acute symptoms. I'm sure we've probably overlooked many of these types of patients as well, just to lack of disclosure perhaps by the patients or even earlier on in this epidemic, lack of awareness of us to necessarily even ask the questions about the product usage.

Kim:
On other hand, we've also had patients present very severely kind of in the context of a acute onset community acquired pneumonia that readily progresses and may even require admission to the pediatric intensive care unit, perhaps use of noninvasive mechanical ventilation techniques like bypass or even require intubation and be placed on a ventilator.

Kim:
These patients, again, may have some portion of being overlooked as well due to maybe a lack of ability to get history in some of the more critically ill patients. But one of the things that is pretty universal is they tend not to respond to the traditional community acquired pneumonia treatment pathways, your standard, third generation cephalosporin, or high dose ampicillin, according to our treatment guidelines.

Kim:
And that's where oftentimes pulmonology gets consulted more for being able to do a bronchoscopy, do some sampling techniques. Maybe they think history came out and discussion with maybe the patient or their family or caregivers. And that's where they're able to do some of the more advanced sampling techniques, that's where they do a visualization of the airway, people do special cultures and so forth.

Kim:
And these patients, again, even though they've similarly presented severely have had some variable findings as well. Everything from looking more like an allergic type of pneumonia with high eosinophil predominance to presenting more like a lipoid pneumonia with a lot of lipid-laden macrophages and so forth.

Kim:
Oftentimes, these patients do get better with steroids and, maybe targeting early growth of any bacteria that might grow on their cultures and so forth. But some of these patients, even after they've already turned a corner, some of these cultures do result later and we've had a few cases. We've had fungal organisms identified on bronchoscopy culture days to even a few weeks after the initial presentation.

Kim:
So really a very broad range of presentation. We haven't had any patients present to the point of needing advanced life support, like things like ECMO and so forth, but I know there have been some adolescents out around the country that have presented that way, when there have been phone consultations for consideration for lung transplant and those sorts of things. But I believe luckily those patients did turn a corner, did not require pursuit of those sorts of interventions to help save them.

Norman:
Kyle, do you happen to have similar cases or perhaps any other different experiences associated with these kinds of patients?

Kyle:
Yeah. Similar to Kim, it seems to be a diagnosis of exclusion where we're having a really hard time trying to pinpoint those patients that come into us with vaping related injuries. What we're finding out though, at least from my experience in the ICU is that they tend to come in with what appears to be acute respiratory distress syndrome, and so we start that pathway really because we don't have any other explanation for what's going on.

Kyle:
We don't have a history of previous asthma, we don't have a history of reactive airway disease, no recent sick contacts, virus panel is negative and we start twiddling our thumbs more or less because we're trying

to figure out what's going on. And at that point, when they come to my unit, at least it's already kind of on the downhill portion where we're having to implement mechanical ventilation.

Kyle:
For example, the floors have already tried the noninvasive methods. So I usually see the patients when they are kind of at their worst. Typically, what we do is kind of like Kim said, we tend to get pulmonology involved. We go down that pathway, we do a rigorous history with either the patient, if possible, or the patient's caregivers, just to see if there's anything that we're missing.

Kyle:
And a couple of times that's worked to our benefit, where we did find out that there was a history of vaping. Several times, we've done a urine drug screening and we've identified THC in the urine. And so we've had to pursue that pathway just to make sure it wasn't an edible version of THC versus an inhaled version.

Kyle:
But unfortunately, depending on what patient you're dealing with, there might be no communication between the parents and the patient, so that leads to a harder time for us trying to pinpoint what's exactly going on.

Kyle:
I mean a lot of times the parents tend to be in the dark, so they are not able to really give us a full history, unfortunately, and the only way we find out is after the lung injury has improved and we're on the upswing and at that point, the patient's doing better. But then at that point we're able to ask them, were you having a history of vaping or, what's the deal?

Kyle:
Sometimes we find out that they did vape. Again, we're making a leap that it was vaping and maybe not something else, but that's really the only thing we have to go off of at that point. Somebody can really just kind of guessing at who these patients are right now, because it's really hard to identify them.

Norman:
And it is interesting to note that really the population we hear most about with vaping injuries are adolescents, any idea what the literature says about adolescent physiology that could potentially put them at higher risk for injury? Are there any good data out there?

Kim:
Yeah, so it's really interesting when you're dealing with this unpredictable evolving epidemic is that we're really creating the literature as we're living it. So there really isn't a lot out there specifically with vaping

and why adolescents or young adults may be at higher risk. But going back to kind of lung physiology can really kind of help us understand why some of these patients may be at higher risk.

Kim:
We certainly have heard those testimonials from older smokers who have transitioned away from traditional tobacco products as a way to cut down on their exposure and are very adamant that these products are beneficial to them and certainly have testimonies that they are safe for use.

Kim:
However, an adult smoker or former smoker is different than a young adolescent or a young adult who is taking up these vape products for the first time. When you think of an older smoker, they've had presumably years or even decades of exposure to hydrocarbons. We've all seen those pictures in the media over the years, as the explanted lungs that are full of smoke and dirt and debris, and they almost look black.

Kim:
Basically that is providing a barrier, honestly, between the airway and the actual physiologic tissue of the lung that may be preventing certain topical exposure to the lung from any sort of inhaled agents.

Kim:
But just as [inaudible 00:20:49] some of the older smokers may have already started to develop chronic obstructive lung disease or COPD. And again, they're going to have more airway secretions that may also provide some sort of protective barrier, if there are certain components within these products that could be causing these lung events. And so adolescents with their nice, healthy, clean lungs may be at higher risk for exposure to these vape products.

Kim:
As mentioned earlier, we also have to think about how adolescents are using these products. They tend to seek out the products that deliver that higher hit, that higher exposure. They may even be modifying their delivery devices so that they are achieving higher temperatures than they were actually designed to achieve and, or delivering larger hits than they were designed to achieve.

Kim:
When we look at our products, that's the extra co-factor that we still don't completely know about, all these vape products since nicotine is not a pleasurable taste, they are combined with a lot of chemicals and organic acids to mask the taste, will make them more enjoyable by the vapor.

Kim:

However, they tend to solubilize at higher temperatures. So again, the heat may be altering these chemical compounds. They may be solubilizing oils that are using additives, particularly for the street obtained products and the THC and CBD type products have had the vitamin E concern and so forth.

Kim:
And then additionally, we have to think about, do these products have some additional contaminants that they might be exposing our patients to? One of my APPE students this year actually did a journal club that looked at some contaminants within some commercially available products that was done out of Harvard, it was published back March of last year, but they had basically procured a variety of commercially available products online and based on previous year sales and everything, as well as they went down to a quarter store near campus and purchased some things there as well.

Kim:
And they did send out lab testing for a couple of components, one endotoxin, which is a component found in gram-negative cell walls and has been linked to a lot of occupational lung diseases, particularly those people who might work in the agricultural industry and cotton textiles and so forth that has been linked with airway disease, asthma-like presentations, emphysema, and chronic inflammation. And they actually found about 25% of the samples did have significant endotoxin contaminants.

Kim:
And they had also looked at beta-1 D-glucan, which is a component oftentimes in fungal cell walls as well as also a certain bacteria in LJ and so forth. And over 80% of their samples had significant beta-1 D-glucan contamination as well.

Kim:
So we're probably dealing with a couple of things. Yes, we have nice clean lungs, but we also have products that may have some contamination that may pose a risk for patients who don't have some extra defense against introduction to those altered chemicals or excipients that have been included in some of these products.

Norman:
Well, as pediatric patients, you've both, no doubt worked with your institutions to provide both education and tips for parents and patients combating the epidemic [inaudible 00:23:53]. Would you mind sharing with us what each of your institutions have done perhaps starting with you, Kyle?

Kyle:
Yeah, so we have the luxury of having the Missouri Poison Center attached to our facility. So we actually do a lot of collaboration with that group. So they reach out to the community a lot through going to the

schools and doing talks with either the pharmacist or the nurses that are at the poison center. We've also had the opportunity of using my own APPE students or my residents that do those teachings as well.

Kyle:
The other thing that we get to do is we promote the information that the CDC has been putting out. They have a lot of good information for healthcare providers, patients as well as patient caregivers or parent that kind of go over the risk and mitigation strategies with vaping. So we have been utilizing that when we do education for patients that tell us that they are actively using nicotine or THC.

Kyle:
So again, we'll give them the handouts, kind of go over them, be a resource for them whenever they are ready to talk to us as not everybody is willing to talk to us right away, they might need some time to think about, if they want to stop, and so we just always make those resources readily available for them, and then whenever they would like to talk to us, they can always put in a consult to us.

Kyle:
And then our hospitals in general, just have always been actively promoting within the community and talking to local media outlets, just raising awareness and concerns about the new vaping epidemic, I guess. That's pretty much everything that we've been doing. Again, a lot of local work with our Missouri Poison Center and they've been great for helping us spread the word.

Kim:
Yeah. I would say very similar experience to Kyle here at Nationwide Children's as well. We also have our Local Central Ohio Poison Control Center who has been a wonderful partner in getting information out into the community. Our hospital also has a pretty active social media and online platforms, there's references and statements and everything they're available for parents and the community to resource links, to a lot of the CDC information and so forth.

Kim:
And definitely, I think some other things we've done within our institution, we have kind of electronic storyboards, which are basically computerized rolling PowerPoint presentations and everything that are located in several key public areas within the hospital, and definitely including some vaping information and some encouragement for parents to talk to their kids about vaping and ask the questions and everything. So that's a way that we've been able to keep that in the mind of parents as they come through.

Kim:
And also we've integrated several questionnaires within our intake surveys and everything for admitted patients and clinic patients who try to seek out information from patients as they come in related to a

vaping history. Many of us if not that, as parents hear these questions, it's definitely more on their mind and their awareness that we do consider this to be a public health issue and something we are very concerned about and customize certain care for their children.

Norman:
So you kind of touched on this point, but really how are you having these conversations with the patients and with their parents? What kind of strategies have you utilized in your encounters with adolescents to determine if they have had the vaping related injuries or really, how can you counsel them on this? What have you done thus far?

Kim:
That's a great question. And I don't know that there's a great single answer that works for every single situation. I think definitely having it on the intake H & Ps and the new encounter kind of collection of data information when patients present anywhere within the healthcare system, at least can start that conversation and start that data collection.

Kim:
But I really do think it requires a whole team of people to perhaps get that information out of a patient or family. Because as we all know, adolescents, they're tricky to work with many times. They don't always want to share information or they have fear of reprisal if they were to share or disclose certain information in front of their parent or caregiver. So really trying to have that conversation, particularly in those cases where you suspect there might be some use or at least you want to rule out there might be some use contributing to their presentation.

Kim:
And so having that one on one conversation without a parent there is often helpful. That could be oftentimes the medical residents, sometimes it's medical students, pharmacists, a pharmacy student, anybody who is having that conversation even during a med rec process, for example, can really perhaps form a relationship with that patient and get them to be comfortable in sharing that information.

Kim:
I definitely think when we are talking to these patients, I think keeping it as nonjudgmental as possible is very important. Many times patients will disclose information to pharmacists, they won't necessarily disclose to their physicians because they feel like we're more on their side particularly, or we don't have the ability to punish them for example, for their life choices.

Kim:
So I think sometimes we have an opportunity to find out information that maybe some other healthcare providers may not. One of my personal techniques is kind of to share my own experiences. We all went

through our adolescent years. We all went through college. We've all probably made some poor life choices along the way.

Kim:
And I think sharing that this is the heart of growing up and we are concerned about their health and sometimes these choices do have repercussions and consequences and we're just trying to do our best to make sure that they're getting the best care, but also giving them some confidence that we've all gone through adolescence and peer pressure and everything along with them. And that we're really on their side and we're growing up together and we're here to support them the best we can. And that they'll honestly will help us do that to the best that we can as well.

Kyle:
Yeah. I mean, what Kim said was a 10 out of 10 answer, not really whole lot I can add to it outside of just reemphasizing building that trust and that relationship with a patient, I think really helps you maybe get some answers that maybe they're unwilling to share with like Kim said, their parents for fear of repercussion of what might come from that discussion.

Kyle:
So it's not just pharmacists, but again, the entire medical team has the responsibility to develop that relationship with their patients and then create kind of a safe environment so that they're able to share that information with us, so that we can provide the education, so that they don't have longterm consequence.

Kyle:
We've all gone through a similar phase and we've had to overcome these types of peer pressure, overcome adversity if you're not joining in with what is the current trend of the adolescent world. So I don't really have a whole lot to add to what Kim said, except just to reemphasize some of those points.

Norman:
Well, since the appearance of these vaping devices seem to be changing and parents are sometimes at a loss on how their kids are actually obtaining them, especially with the changes in the rules and regulations federally, what advice or resources do you recommend for parents who are concerned about this?

Kim:
Yeah, I definitely think parents need to educate themselves particularly about what products look like. As Kyle had mentioned earlier, the CDC has a wonderful platform of lab information for both healthcare providers, as well as patients in particular, they have a document that they routinely update and it's basically e-cigarette and vaping product visual dictionary.

Kim:
So it will actually have pictures of products and what they look like and comparing a vape device it's meant to look like a USB thumb drive compared to what a real USB thumb drive looks I mean just referring parents to those sorts of resources, so they can be on the lookout for those things that they might overlook within their home environment should they encounter them and so forth can be very helpful for them.

Kim:
But definitely, keeping up with social media, talking with other parents within PTA organization and support groups. I'm a member of my local communities little Facebook chat group and things like that. And definitely keeping parents engaged that way with each other, they can learn within their community what sorts of trends are going on within your school districts and so forth. It could be extremely helpful in helping them decide risk factors for their family and how they're going to monitor for those things.

Kyle:
Yeah, the CDC's website has that great visual dictionary, which should at least give the parents as well as the healthcare providers a visual aid to see like what they should be looking for, how they can educate the parents when they come in, what devices they should be on the lookout for. And then to, again, re-emphasize some of the points of building communication within our own parent population.

Kyle:
Recently, I have a pharmacist that I work with that has three teenage boys. So she's kind of my go-to for the current and trendy devices as they are rapidly changing. So I just learned about new ones today. And so I put that away in my own little library of the new terms for vaping, just because they won't always say that they're vaping, they might say that they're juuling or that they're enjoying is the current lingo that I've been hearing.

Kyle:
So trying to stay hip for a lack of better words, will at least keep the parents up to date on what they should be watching for. And then again, even having an honest conversation with your child might lead you to understand what actually is going on out there.

Kyle:
Again, not all children are going to be using this, but maybe one of the children within the family is using it. So having another child might be able to key you in on some of the lingo, just to kind of be aware of what's going on in your child's life.

Norman:

Fantastic. Just coming towards the end. What are some key takeaways that you would want listeners to remember from this particular podcast?

Kim:
I guess I'll go first. I think the key takeaways are that, this is an evolving situation and we continue to learn new information. We're in a situation where we have a drug, i.e the vape product that has not been as regulated as it probably should have been over the years. And added onto that, we have a relatively new device, if you want to think about it as a nicotine nebulizer, that somehow escaped the rigorous scrutiny that other drug devices have undergone for our FDA approved drugs and so forth.

Kim:
And so as pharmacists it's really important for us to realize that, that's really what we're dealing with. We're having a drug being delivered through a variety of devices that may or may not be manipulated by the end user. And so we have questionable content in that device and questionable appropriateness of drug delivery from that device.

Kim:
And just going back to the things we should always be thinking about, if we're going to nebulize a product, it should be sterile, it should be in appropriate pH, it should be in appropriate osmolarity, it should be in appropriate particle size. And right now we don't know if what's being vaped actually meets what we would consider to be safe inhalation administration.

Kim:
And so as more and more of these cases come out and get investigated, hopefully we're able to be able to delineate some of those issues we've had with products exactly what they are and combine that with all these different pieces across the country, to be able to make some changes in either regulation or product control or product design, and certainly in patient education, that makes sure that they really understand the risks with using these products that haven't been fully evaluated, studied, like inhalational products should be over the years.

Kyle:
And from my standpoint, the biggest takeaways is knowing your resources. So again, the CDC is a great resource that you can look at on your own, or you can take a peek at your local poison center. All of them usually have great resources that you can reference or use whenever you're doing patient counseling.

Kyle:
And then from a clinical standpoint, realize it's a diagnosis of exclusion. So as we're entering the virus season, flu season, and it's really hard to differentiate. Is it a viral process? Is it a viral process plus a vaping related injury or is it just a vaping related injury? So there's a lot of unknowns that we have right

now and just always keeping it in the back of your head, that it's a possibility that this might be the sole cause or a contributing component to the disease process. Just keep that in the back of your mind, I think.

Tom Kraus:
And from my perspective from the regulatory side, I think we'll be watching to see how the FDA asserts itself in regard to regulating these nicotine delivery products. And with regard to some of the actions that it's already taken like this partial ban on flavored products, will that actually be effective in curbing youth initiation of vaping products?

Tom Kraus:
Or as some of the public health community has been concerned, are there too many opportunities to access these products despite that partial ban, that youth are going to continue initiating use of these vaping products?

Tom Kraus:
So this scenario well we'll continue to see changes in how the federal government approaches vaping and tobacco product regulation generally, and we'll continue to be engaged from ASHPs perspective.

Norman:
That's all the time we have today. I do want to thank Tom Kraus, Kim Novak and Kyle Mays for joining us today to discuss the vaping epidemic. Join us here every Thursday, where we will be talking with ASHP member content matter experts on a variety of clinical topics.

Speaker 1:
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