Vape Me Out to the Ball Game!

When someone asks you about trends in environmental health, what comes to mind? Sustainability? Genetically modified foods? Herd sharing? Fracking? Nutritional labeling? Gourmet food trucks? Plastic bag bans? Medical marijuana or edible marijuana products? Nanotechnology? In my recent columns, I have highlighted emerging trends and how they are impacting our field of practice. One of the more recent developments I believe requires our attention is the popularity of electronic cigarettes or e-cigarettes. In this column, I would like to share personal experiences that have prompted my interest as well as concern over the potential public health impacts of this technology. I believe that environmental health has a responsibility and potentially a role in safeguarding the public from the potential threats posed by these devices. I plan to convene an e-cigarette work group to study the issue and to invite a panel of experts to our 2014 Annual Educational Conference (AEC) & Exhibition to share information with participants.

E-cigarettes
The e-cigarette is a nicotine delivery device that was patented in 2003 by Chinese pharmacist Hon Lik. First distributed in China, the technology has rapidly made its way around the world. A multitude of designs are available, including those that mimic traditional cigarettes and those that come in other sizes, shapes, and colors. Their basic design includes a battery-operated heating element and a cartridge with an atomizer. The cartridge holds the liquid (sometimes called e-liquid or smoke juice) that contains varying levels of nicotine. While this alternative to the conventional tobacco cigarette is gaining popularity, a few countries have banned e-cigarettes due to health concerns or lack of information.

My husband and I attended a concert at the Georgia Dome, where we were a bit surprised by the clouds of white smoke emanating throughout the dome. It took us a few seconds to realize this was not smoke, but vapor clouds from e-cigarettes. After that we attended a baseball game with friends at Turner Stadium in Atlanta. Our friends, who are distinguished environmental and public health professionals, noticed an unusual odor and vapor coming from the row in front of us. They quickly realized that someone was discreetly using an e-cigarette and exhaling vapor, also known as “vaping.” Our friends found this quite bothersome as the vapor was, at one point, blowing directly onto their faces.

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As environmental health professionals, we all questioned the unknown potential exposure to nicotine or other chemicals resulting from the vaping. The situation resulted in a difficult discussion with the party in front of us. The individual with the device immediately agreed to put it away. He proceeded to inform us, however, that 1) what we were witnessing was simply water vapor, 2) the device contained no chemicals or harmful ingredients as indicated by the label, and 3) the devices were not outlawed. Later that evening, we had an interesting discussion on the need for education about these devices, the level of misinformation, and their associated glamour. Since one is not inhaling tobacco smoke or exposing others to secondhand tobacco smoke, the risks are perceived to have been eliminated. But, is this the case?

E-cigarettes are also being marketed on television, in the movie industry, through the Internet, and in pop culture as a safer alternative to conventional tobacco smoking. For example, e-cigarettes are now advertised in the youth-oriented motor sports, years after tobacco ads were effectively banned. After the success of the antismoking campaigns of recent years, are we now encouraging our younger generations to begin a habit that could lead to nicotine addiction?

Because we became increasingly curious and concerned, my husband and I visited a local tobacco store where the store’s owner was kind enough to provide us with an introductory lesson that included a brief overview of recommended brands, starter kits, price, design, mechanisms, life span of the different
e-cigarettes, e-hookahs, flavors, liquid nicotine and the varied concentrations available, sizes and shapes, e-cigars, activation through inhaling or by an on/off switch, etc. Even as a nonsmoker, I found the myriad of devices and the related choices alluring. I don’t believe we know enough, however, about the short- and long-term health effects to the users and the secondhand effects to declare they are a safe alternative to tobacco smoking.

**Regulation**

Through the authority of the Family Smoking Prevention and Control Act of 2009 (also known as the Tobacco Control Act), the Food and Drug Administration’s (FDA’s) Center for Tobacco Products currently oversees the regulation of cigarettes, cigarette and roll-your-own tobacco, and smokeless tobacco. E-cigarettes or any device with claims for therapeutic purposes are covered under the FDA’s Center for Drug Evaluation and Research. If an e-cigarette manufacturer does not make a claim regarding a therapeutic purpose, such as smoking cessation, the product falls outside of any current federal regulation. We should soon see a proposed rule from the FDA that would extend their authority and definition of tobacco products.

E-cigarettes have been in existence for nearly 10 years. I believe we have a role as environmental health practitioners to ask questions and investigate these devices as they have made their way into mainstream society. The manufacturers and distributors are telling consumers that the vapor is only water vapor. Do we know this for certain? The chemical composition for the e-liquid used in the numerous cartridges and manufacturers is varied. Research is underway to identify the chemicals in exhaled vapor, but some reported ones include nicotine, propylene glycol, diethylene glycol, formaldehyde, and metals.

**Expert Advice**

In the span of just a few weeks, we encountered e-cigarettes in use at two public events, one indoor and the other outdoor. Currently, minimal restrictions exist in the U.S. on the purchase and use of these devices, yet there are unanswered questions about their safety. As environmental health professionals, I would like to see NEHA members at the table during discussions with policy makers. With assistance from NEHA’s Technical Advisors, I will be inviting experts from around the country to hold a panel discussion and educational forum at our 2014 AEC. It is important that we take a proactive role to both understand the health implications of this emerging technology and to shape policy. We have the responsibility to explore the potential adverse impacts to public health from e-cigarettes, especially in light of the effect they may have on our youth.

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