E-Cigarette Prevention Among Vermont Youth

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E-CIGARETTE PREVENTION AMONG VERMONT YOUTH

Milton, Vermont
Tyler W. Wark, January 2017

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Rhonda Williams – Chronic Disease Program Chief, Tobacco Control Network
E-Cigarettes and Youth

- E-cigarettes are handheld electronic devices that typically deliver an inhaled dose of nicotine, flavorings, and other additives. These products are increasingly being used by U.S. adolescents. Recent data from 2015 suggest that e-cigarette use by youth of high-school age may be a gateway to conventional tobacco smoking.\(^1\) This is particularly troublesome from a public health perspective because at present the scientific, regulatory, and lay communities all have a dearth of quality information regarding e-cigarette use and their potential adverse effects. In addition to these growing knowledge gaps, the increasing experimentation with and use of e-cigarettes among persons younger than 18 years of age becomes an important trend and public health concern that should be addressed.

- In 2013, an estimated 263,000 middle-school and high-school students who had never smoked a conventional cigarette reported having used e-cigarettes.\(^2\) In this age group, e-cigarette use continues to increase, with 16% of high-school students in 2015 reporting any use within the preceding 30 days, whereas conventional cigarette smoking declined through 2014 and then remained unchanged in 2015.\(^3\) In Vermont, according to the state’s 2015 Youth Risk Behavioral Survey, it was reported that 30% of high school students ever used electronic vapor products.\(^4\)
Public Health Cost

- Tobacco use is the single largest preventable cause of disease and premature death in the U.S. Smoking-related illness in the U.S. costs more than $300 billion each year, including nearly $170 billion for direct medical care for adults, more than $156 billion in lost productivity, and $5.6 billion in lost productivity due to secondhand smoke exposure. Clearly it stands to reason that these costs, both economic and intangible, extend far beyond the smoker.

- According to the Centers for Disease Control (CDC), a number of electronic products have been introduced to the U.S. since 2007. However, while current information on spending for marketing and promotion of these products is not available, sales of e-cigarettes grew considerably during 2012–2013, including about 320% for disposable e-cigarettes, 72% for starter kits, and 82% for cartridges. The U.S. market for e-cigarettes is now estimated to be worth $1.5 billion, a number that is projected to grow by 24.2% per year through 2018.

- Each day, more than 3,200 people younger than 18 years of age smoke their first cigarette, and an estimated 2,100 youth and young adults who have been occasional smokers become daily cigarette smokers. These rates can be magnified if imposed on a relatively small and at-risk population like that of Milton, Vermont in Chittenden County, where over 80% of county residents comprise younger segments of the population at large.
Community Perspective

Rhonda Williams – Chronic Disease Program Chief, Tobacco Control Network

“We only have one year of data describing use of e-cigarettes in Vermont. But what we hear of the climate from teachers and school personnel is a lot of concern about youth use and lack of understanding of potential harm.”

“Last year we worked together to produce a presentation that community members, often through our tobacco coalitions, school-based educators, and youth groups, could use to educate on the types of products, e-liquids, flavorings and harms of nicotine exposure to developing brains.”

Roberta Day, RN – Milton High School

“Youth need more information about the advertising/marketing and dangers of e-cigarettes.”

“Youth also need comprehensive education regarding the use of the product.”

“I think the fact sheet poster is great!”
Community Perspective

Terry Stein, MD – Urgent Care Family Medicine Physician, UVM Medical Center

“This is a hot topic and has many facets to it, many of which we probably haven’t even discovered.”

“We are probably not screening for these products much at all. The pediatricians may be doing a bit of this, but I have not heard of formal workflows in the EHR to capture this.”

“I think the aim of your project is right on and worth looking at.”

Dorey Demers, RN – Milton Middle School

“I looked at our Youth Risk Behavioral Survey data which is conducted every two years. The most current data is from 2015.”

“Middle School (Grades 6-8) N = 288: 12% of students who ever use electronic vapor products such as e-cigarettes. This is statistically higher than the state-wide average of 7%.”

“This is clearly a growing concern in our student body as we fall above in all the state-wide averages but one category.”
Intervention

- Educating health care providers about the surging use of and experimentation with e-cigarettes by Vermont youth certainly has its merit, which is something that has been explored in depth by others. This community health project was designed instead to address the problem by connecting directly with kids at school.

- First, I conducted a literature review and compiled some of the most salient points regarding e-cigarettes and youth. Then I created an educational fact sheet for distribution to both Milton Middle School and Milton High School after having traveled to the schools and meeting with nurses and other support staff to gain firsthand insight. This information was then integrated into each schools’ health newsletter and bulletin boards. Both of these schools were targeted given their location within Chittenden County and proximity to Milton Family Practice, the site of my family medicine rotation. Copies of the fact sheet were also made available to Milton Family Practice providers and posted throughout the site in exam rooms and in public spaces like the waiting room and bathrooms.

- Secondly, I wrote a blog post entitled “E-Cigarettes and You,” which was uploaded to the Milton Town School District’s health blog for public viewing by students, parents, caregivers, and other visitors to the website indefinitely.

- The third arm of my project involved contacting a family medicine physician knowledgeable about UVM Medical Center’s EHR and discussing the possibility of changing the current substance use workflow to include e-cigarette use. Currently e-product use is not formalized in the EHR or officially tracked. I wanted to lay some groundwork now to help foster future studies on e-cigarette use in Vermont.
Results

- Two schools in Chittenden County with high-risk youth for both e-cigarette experimentation and use now have available an eye-catching, educational fact sheet and health blog post commenting on the impacts of e-cigarettes and youth. Hopefully this will encourage further conversation between students, parents, and educators alike.

- Milton Family Practice, one of the largest primary care office settings in the state of Vermont, also has the fact sheet displayed in exam rooms and public spaces for patient perusal. Providers have this information available to them in handout form if they happen to identify youth at risk and wish to intervene. All of the providers have been receptive to this idea and remain poised to bolster awareness.

- The community response has likewise been very supportive of this project’s intent. Many audiences are being targeted by community efforts both locally and nationally, which range from kids and parents to physicians. The intersection between e-cigarettes and the health effects on youth is a certainly a new area in health care that will continue to garner attention. This project represents one of the ways to confront the e-cigarette industry’s message locally and to help protect a small state’s at-risk youth.
**Results**

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### E-Cigarettes and You!

**Did you know...?**

- **E-cigarettes** are not a safe alternative to tobacco smoking.
- Smoking e-cigarettes now may put you at future risk of smoking tobacco cigarettes.
- There are more than 400 brands and over 7,700 unique flavors of e-cigarette products, many of which may look good, but the health effects are unknown and could be dangerous.
- **Nicotine** is highly addictive and may have effects on the adolescent brain that increase susceptibility to dependence on cocaine and other illicit drugs.
- Adverse behavioral and cognitive effects can be seen with smoking during adolescence, a period of developmental vulnerability.

**Please think again before trying e-cigarettes**

Questions? Contact Tyler Wark at twark@med.uvm.edu

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### Milton Town School District

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### E-Cigarette Awareness

18 JANUARY 2017 BY DORIE DARVER

Milton School Nurses from across the district have teamed up with 3rd year medical student, Tyler Wark at the University of Vermont College of Medicine to discuss the new growing trend of electronic cigarettes. Tyler is passionate about bringing awareness to our community. You can read his blog post to students below.

“Hey Milton student! I’m writing today to help educate you about the growing use of electronic smoking products by kids your age. Have you seen these around? These products have a lot of different names: e-cigarettes, e-cig, e-cigstick, e-nicotine, snuff, vape, and hookah systems. But do you actually know how these may impact your health?

E-cigarettes are handheld, battery powered devices that can deliver nicotine (a highly addictive substance) and other additives contained in flavored liquids through a vaporizing process. These products are increasingly being used on a regular basis or experimented with by many Vermont youth. Overall, it’s estimated that in three of your peers has ever used electronic vapor products. That’s a large number of kids.

E-cigarettes first appeared in the U.S. in 2007. Since then they have been marketed like crazy. There are now over 400 brands and over 7,000 unique flavors of e-cigarette products. These products are not only expected to get bigger with time. It is important to realize that e-cigarette companies are marketing these products directly to you. They like to showcase celebrities, popular activities, sexy images, and appealing flavors in order to convince you that the products are cool, fun, and safe. You should be skeptical of these messages you’re getting. You should really think twice about trying e-cigarettes, or continuing to use them if you’ve already used them.

Contrary to popular belief, e-cigarettes are not a safe alternative to tobacco smoking. In fact, they may place you at a higher future risk of smoking traditional cigarettes. The harmful effects of e-cigarettes are unknown and probably dangerous. Although they don’t produce tobacco smoke, e-cigarettes still contain nicotine and other potentially harmful chemicals that could lead to cancer, heart disease, and death.

Nicotine is highly addictive and may have adverse effects on the rapidly developing adolescent brain.

Go have a smoke free day. Think about using or continuing to use e-cigarettes, because a lifetime of nicotine addiction and tobacco use is very important to your long-term health. You’re doing yourself and your peers a huge favor in the long run by getting now or never starting to use them in the first place.”

FILED UNDER: HEALTH OFFICE
Evaluation and Limitations

■ Given the rapidly growing and evolving e-cigarette industry, the number of evidence-based studies consequently emerging within the coming years to monitor this activity, and the continued local and national reports on youth use of e-cigarettes and other electronic products, this educational fact sheet will likely become obsolete in the setting of having much more accurate and effective information available in the near future. Therefore the fact sheet could be updated with more convincing and evidence-based information.

■ There are inherent limitations to this project’s educational “modalities.” This project’s importance may be diminished if Milton students simply disregard reading the fact sheet and/or blog post. This may be affected by a multitude of uncontrollable factors, some of which include: the position of fact sheet placement on bulletin boards, the color of distracting adjacent advertisements/school postings, the student trafficking patterns in the halls or health office, and student or parent willingness to actually take the time to comprehend and appreciate the gravity of the topic. Though potentially “wordy” to the average middle- or high-school student, I believe these resources were created with enough appeal and brevity to convey important and valid messages.

■ Evaluation of this project’s effectiveness should involve future dialogue with the Milton School District’s nurses and other educators to gauge their personal interpretation of whether youth use of e-cigarettes has continued to trend upward or not. This intervention is probably best reflected by hard data in comparing the 2015 Milton School District’s data of rates of youth use/experimentation to that expected to be published in late 2017. It would be hard to comment on how much the fact sheet and/or blog post was causal if user rates are found to be lower.
Future Recommendations

- There are several directions that future community projects on e-cigarette use and prevention among Vermont youth could go. One idea would be to build off this project by administering a follow-up survey to Milton Middle School and Milton High School students to sample e-cigarette use, general knowledge, and potential dangers. These data could be then be interpreted in light of this project’s results. Alternatively, one could create an educational poster/handout/PowerPoint and/or run a workshop with a group of students at one of the schools. The Milton School District nurses expressed that students would be highly receptive to a workshop on e-cigarettes led by a medical student.

- Another project could entail formalizing the screening workflow in the EHR to help better capture e-product usage among patients at a small Vermont family practice. This would likely require early and extensive collaboration with technical professionals and others with expert faculty in working with PRISM, UVM Medical Center’s EHR. Alternatively, one could start a paper form in the office setting in an effort to gather preliminary data and trial the screening. Future scholars could also investigate the EHR’s “user web space” to see how other institutions or practices are addressing this issue. There could also be dialogue with Vermont pediatricians.

- One could also campaign locally in the Milton community with efforts of targeting and educating parents about the ways flavors are used to attract Vermont youth to use e-cigarettes and other e-products. Parental education is just as important.
References


