SMOKING ORDINANCES & ELECTRONIC CIGARETTES

2014

A review of e-cigarette facts and the unintended consequences of amended public smoking ordinances to prohibit electronic cigarette use.

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Introduction

ABOUT THIS REVIEW

Since 2006, electronic cigarettes (e-cigarettes) have been increasingly marketed in the United States and are becoming popular with smokers (many of whom are now former smokers thanks to e-cigarettes).

Lawmakers are being inundated with model legislation from lobbyists and representatives of public health organizations to restrict sales, advertising and public use of electronic cigarettes. Unfortunately, most of the information provided to lawmakers is from special interests that have a clear agenda against tobacco harm reduction policies and/or financial ties to industries that sell products that are in direct competition with e-cigarettes. This review answers the most common questions and responds to claims made about harm reduction and e-cigarettes.

WHO IS WSAC?

The Wisconsin Smoke-free Alternatives Coalition (WSAC) is a non-profit, 100% grassroots group of individuals from all walks of life. WSAC is dedicated to ensuring the availability affordability of reduced harm alternatives to smoking and to providing Wisconsin residents and lawmakers with honest information about those alternatives. WSAC seeks to educate the public and increase awareness about the benefits of reduced harm alternatives to smoking. WSAC also encourages responsible legislative policy designed to improve public health by recognizing that smoke-free tobacco- and nicotine-containing products are inherently far less dangerous than smoking.

WSAC represents and is the voice of Wisconsin consumers of these products in the legislative and regulatory process, and does not represent either the e-cigarette or tobacco industries. WSAC is neither an "Astroturf" lobbying group nor working as a "front" for any industry; nor does it receive any industry funding. In addition, WSAC is not simply an "e-cigarette advocacy group"; it is an advocate for Wisconsin tobacco harm reduction (THR) in general, and the primary focus on e-cigarettes comes because they currently represent the dominant topic in discussions of THR in Wisconsin.

An Overview of E-cigarettes and Tobacco Harm Reduction

WHAT ARE E-CIGARETTES?

An e-cigarette is a smoke-free device used almost exclusively as an alternative to smoking. They generally consist of a tube-shaped battery, an "atomizer" (heating coil) that heats the liquid to produce an aerosol (which is called "vapor"), and a cartridge or "tank" to hold the liquid. Basic models that are most commonly sold in convenience stores and gas stations have a similar size, shape and look of a conventional cigarette, while more advanced models sold online and in specialty e-cigarette stores are generally larger and do not resemble a conventional cigarette.

E-cigarettes are very low risk compared to smoking, estimated to pose in the neighborhood of 1/100th the risk. Many of those who use e-cigarettes felt like they would never be able to quit smoking until they discovered that e-cigarettes were a satisfying substitute. The devices provide an alternative source of nicotine, one of the most compelling aspects of smoking, but without the harmful smoke (nicotine absent smoke has risks that are so low as to be undetectable). E-cigarettes further simulate the smoking experience by delivering an aerosol that is similar to inhaling smoke, as well as offering similar hand-and-mouth experience. (Other low-risk smoke-free products also deliver nicotine but do not provide the rest of the experience).

Some opponents of e-cigarettes have made an analogy of the harm reduction potential of e-cigarettes compared to smoking as "jumping out of the 15th story instead of the 100th story of a building." This is a gross misrepresentation of how much lower the risks of any smoke-free products are compared to smoking. Realistically, using the same analogy, it's more like jumping from the 100th story or taking the stairs!

AN OVERVIEW OF E-CIGARETTES AND TOBACCO HARM REDUCTION

WHAT IS TOBACCO HARM REDUCTION?

Harm reduction is the principle that it is often inappropriate to just demand that people forgo an activity because it entails risks, and therefore it is wise to reduce the risks instead. Typically it is used to refer to activities that some people consider "immoral" and thus are inclined to demand that they just cease - such as sexual activity (where condoms serve as harm reduction) or injection drug use (where providing clean needles serves as harm reduction). But this principle applies to activities without such stigma as well. For example, motorized transport is quite dangerous, but society does not tell people to avoid it (not even for "unnecessary" travel); rather, we provide seatbelts and other safety features and try to make the roads safe. For stigmatized behaviors, the justification for harm reduction often includes the observation that even if one wants to end the activity, it is not going to happen, so better to make it less harmful (e.g., teenagers are going to have sex, so better that they use condoms).

Tobacco harm reduction applies these principles to tobacco use. In particular, it encourages people who are going to use tobacco to not smoke (which is extremely hazardous) but to use low-risk alternatives instead. Most smoke-free tobacco/nicotine products, including smokeless tobacco, e-cigarettes, and NRT (pharmaceutical nicotine) are roughly 99% less harmful than smoking, and many would-be smokers find one or more of them to be a good alternative to smoking. It must be stressed just how great the harm reduction is with THR. Other attempts to reduce harm by offering lower-risk forms of the behavior (ie. seat belts, bike helmets) reduce the risk by 10% or 50%, whereas THR comes very close to eliminating the risks entirely.

The Science Behind E-cigarettes

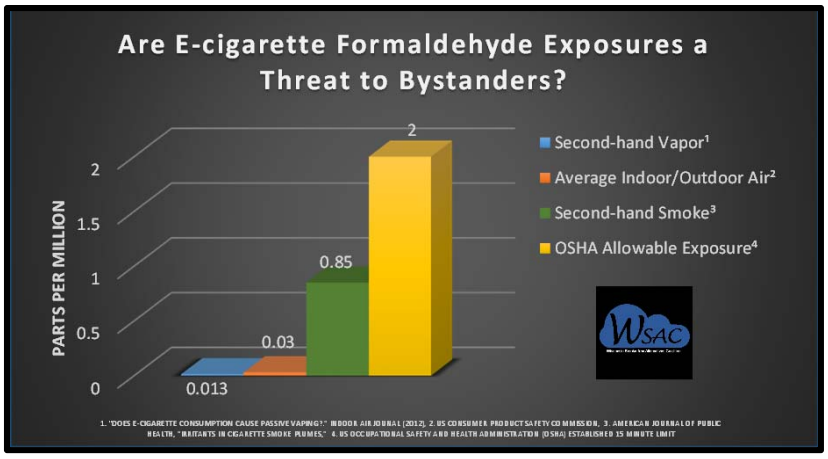
NICOTINE

- Nicotine is not a carcinogen.
- It is the carcinogens and toxins in smoke that increase the risk of smoking-related diseases, not the nicotine.
- The FDA reported in 2014 that long-term nicotine use, outside of smoking, is not a significant health risk.
- Nicotine levels in e-cigarette vapor are too low to be toxic.
- Recent studies of ulcerative colitis patients treated with 15 mg nicotine patches show that nicotine alone is not particularly addictive, even after 6 months of treatment.

VAPOR VS. SMOKE

- Vapor is actually a liquid converted into a fine mist. Smoke is the result of burning solid matter.
- Vapor does not create harmful carbon monoxide as smoke does.
- Unlike smoke, vapor does not leave a lingering odor in the air.
- Vapor does not travel as far from the consumer as smoke and it dissipates quickly.
- The smell of vapor doesn't settle on people and objects. Unlike smoke, it is nearly impossible to tell if someone has been exhaling vapor in a room without being there to see it happen.

CARCINOGENS & TOXINS



- The levels of carcinogens found in one sample of e-liquid by the FDA in 2009 was identical to the level that can also be found in FDA-approved nicotine patches. It is clearly not a health concern.
- A Marlboro cigarette has over 11,000 ng/g of tobacco-specific carcinogens. E-cigarettes and pharmaceutical nicotine patches both have around 8 ng/g.
- Reports of finding formaldehyde and other chemicals in e-cigarette vapor fail to disclose that the levels found (0.013 ppm), on average, are lower than can be detected in average city indoor/outdoor air (0.03 ppm).

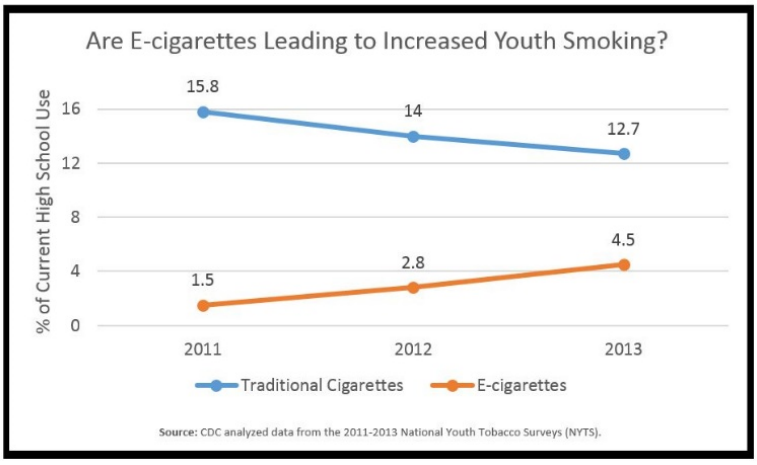
THE SCIENCE BEHIND E-CIGARETTES

CARCINOGENS & TOXINS (CON'T)

- A 2009 FDA press statement claimed to find "toxins" after testing e-cigarettes, including diethylene glycol (DEG), a chemical found in antifreeze. Reviews of the FDA testing found that only the DEG was found (no other "toxins" were reported) in just one sample, at non-toxic levels. The company that made the sample no longer sells e-cigarettes and in the 5 years since the report, no e-cigarette consumer has reported DEG poisoning.
- While nicotine can be highly toxic, the levels found in the vapor are too low to be toxic. A recent spate of news reports about calls to poison control centers regarding e-cigarettes do not specify whether the call was an actual poisoning situation or simply informational inquiries. There have been no reports from emergency rooms or pediatricians of actual child poisonings causing injury or death due to e-cigarettes. A typical bottle of e-liquid contains only 2.4% or less nicotine and while it may smell appealing, the actual taste in un-vaporized form is extremely bitter.
- There have been nearly 100 separate studies done on e-cigarettes, many testing for carcinogens and toxins. While some have found trace evidence of chemicals and metals, the levels found were extremely low, unless researchers "misused" the devices in a way a consumer never would. A comprehensive study done in 2003 by Dr. Igor Burstyn (Drexel University School of Public Health) reviewed all available e-cigarette chemical tests and found that chemicals in e-cigarettes pose no health concern for users or bystanders based on generally accepted exposure limits.
- Reports of "ultra-fine particulates" found in vapor are misleading. Particulates in cigarette smoke are "solid" particulates, while particulates in vapor are water particulates (otherwise known as "droplets.") The effect on the lungs is not comparable in any way. For example, fine solid particulates inhaled while in a sandstorm are not comparable to the fine liquid particulates inhaled while standing in a rain storm.

YOUTH USE, FLAVORS & THE "GATEWAY EFFECT"

- The CDC started tracking youth use in 2011, however, e-cigarettes have been available since 2007.
- While youth use is on the rise, youth smoking continues to decline significantly year after year.
- The vast majority of youth who said they tried e-cigarettes stated they smoke conventional cigarettes.
- There is no evidence youth smokers who said they use e-cigarettes were non-smokers before using e-cigarettes. The CDC youth survey did not ask the



YOUTH USE, FLAVORS & THE "GATEWAY EFFECT" (CON'T)

students which product they used first. Therefore, there is no evidence that non-smoking youth are trying e-cigarettes and "graduating" to smoking.

- Because the smoking rate is far higher than the reported e-cigarette use but has been declining since e-cigarettes became available, it is logical to conclude e-cigarettes are not leading non-smoking youth to smoke.
- Non-smoking youth who try e-cigarettes may have otherwise been trying smoking if e-cigarettes had not been available.
- Children of smokers benefit when their parents switch to low risk alternatives. It not only reduces their exposure to second-hand smoke at home and in cars, but significantly reduces the high risk that they will become smokers themselves.
- The claim that adult smokers do not want "candy" flavors is patently false and based on conjecture and personal bias. Numerous surveys of adult e-cigarette users shows that non-tobacco flavors are an important part of moving away from smoking.
- Once smokers quit smoking, their sense of taste returns. Many report that tobacco no longer appeals to them and even tastes especially foul after using pleasant-flavored e-cigarettes.
- FDA-approved pharmaceutical nicotine products, clearly intended to appeal adult smokers, come in flavors such as Cherry, Mint, Orange, Cinnamon Surge and Fruit Chill. Liquor companies market vodka flavors such as Cotton Candy, Bubble Gum and Peanut Butter & Jelly to appeal to the nostalgia of adult consumers. The idea that flavors can only exist to target youth and not adult smokers is clearly disingenuous.

Is it true that sweet-flavored nicotine products are targeting youth?

Myths About E-cigarette Use In Public

E-CIGARETTES WILL COMPLICATE SMOKING BAN ENFORCEMENT

Electronic cigarette use is easy to distinguish from actual smoking. Although some e-cigarettes resemble real cigarettes, many do not. It is easy to tell when someone lights a cigarette from the smell of smoke. E-cigarette vapor is practically odorless, and generally any detectable odor is not unpleasant and smells nothing like smoke. Additionally, e-cigarette users can decide whether to release any vapor ("discreet vaping"). With so little evidence of use, enforcing use bans on electronic cigarettes would be nearly impossible. Cities with smoking bans have had little to no issue with e-cigarette use in public space. E-cigarette consumers are overwhelmingly considerate to the feelings of bystanders. Businesses that do not wish to allow e-cigarettes in their establishments simply ask patrons not to use them.

PUBLIC E-CIGARETTE USE WILL RE-NORMALIZE SMOKING BEHAVIOR

E-cigarette use does not promote the smoking of traditional cigarettes, nor does it threaten the gains of tobacco control over the past few decades. In fact, by normalizing e-cigarette use over traditional smoking, the efforts of tobacco control are being supported. If anything, e-cigarette use de-normalizes conventional smoking by setting the example of smokers choosing a far less harmful alternative to traditional smoking. The CDC surveys clearly show that there has been no "gateway effect" causing non-smokers to start smoking. As e-cigarettes have become more popular, all available evidence is showing that more and more smokers are quitting traditional cigarettes, including youth smokers.

Studies show that the children of smokers have a significantly higher risk of smoking initiation and the longer their parents smoke, the higher that risk. On the other hand, children of parents who had quit smoking were no more likely to smoke than children of parents who had never smoked. Children of non-smokers are more than 3X less likely to smoke, regardless of their exposure to smoking behaviors seen in public, on television or in advertising. Therefore, indoor e-cigarette use bans that purport to protect the low-risk children of non-smoking parents from seeing smoking behaviors completely overlook the unintended consequences of the extremely high risks from continued exposure to smoking behaviors by the children of smokers (who may have otherwise quit if e-cigarettes had not been prohibited in public spaces.)

LAWMAKERS MUST “ERR ON THE SIDE OF CAUTION” FOR PUBLIC HEALTH

To err on the side of caution, one must also look for unintended consequences. Are you being cautious of the right thing? Do the benefits of a law outweigh the risks?

MYTHS ABOUT E-CIGARETTE USE IN PUBLIC

Smoking bans protect bystanders from second-hand smoke, which has been established as being a health risk, but one far lower than actually smoking. E-cigarettes reduce the risk of smoking to far lower than even second-hand smoke, so the health risks of second-hand vapor would logically be hundreds of times lower than even second-hand smoke. The only benefit of including e-cigarettes in smoking bans is protecting bystanders from infinitesimal levels of just a tiny fraction of the chemicals found in second-hand smoke.

On the other hand, there is a unique phenomenon observed and documented with e-cigarette consumers called "accidental quitting." Smokers purchase an e-cigarette to use where they cannot smoke or because they are less expensive and find, over time, that they prefer the e-cigarette to their conventional cigarettes. They move from dual use (using both the e-cigarette and conventional cigarettes) to using just the e-cigarette alone. This can happen over several months or in just a few days.

Put simply, laws that result in just one smoker still smoking because an important incentive has been compromised causes far greater harm than hundreds of bystanders exposed to vapor in public spaces.

E-CIGARETTE ADVOCATES MISUNDERSTAND THE INTENT OF LAWMAKERS

Often, when confronted with opposition by e-cigarette advocates, lawmakers assert that the intent is not to ban e-cigarettes altogether. They try to assure their constituents that they are not banning the sale of e-cigarettes to adult smokers and the devices can still be used in where smoking is allowed.

However, this misses the point completely. E-cigarette advocates aren't there to ensure they can still use their products in a store, office building, restaurant or bar. Experienced e-cigarette consumers know that enforcement of the ban is nearly impossible. As explained earlier, the vapor leaves no tell-tale signs. Additionally, if the vapor is held in the lungs for just a short time, it's completely invisible when exhaled.

The reason advocates are standing before you and telling their stories about how e-cigarettes have changed their lives is not because they are fighting for themselves. They are fighting for all of the smokers who haven't yet quit. They want you to know how banning e-cigarette use will deny other smokers of their success story. They are fighting to keep every incentive possible available to encourage smokers to switch. They want you to understand how treating e-cigarettes like conventional cigarettes will just keep smokers smoking and even possibly push those dual users completely back to smoking by removing their only incentive to quit.

MYTHS ABOUT E-CIGARETTE USE IN PUBLIC

LAWS ARE NEEDS TO PROVIDE COMFORT FOR THE PUBLIC

Smoking bans were not intended for public "comfort." Smoking bans were intended to protect the public from second-hand smoke, the dangers of which were ostensibly science-based. The science on e-cigarettes overwhelmingly shows e-cigarettes have miniscule risks, if any. The comfort of patrons and employees of privately-owned businesses is the responsibility of the owners of that business. If an employer or owner finds that the vapor from e-cigarette consumers is a distraction or discomfort, the decision to prohibit use on their property should be theirs alone. Contrarily, if the owner of a bar, tobacco store or e-cigarette store decides he wishes to cater to e-cigarette consumers that should be his prerogative.

It should be noted that adult e-cigarette consumers expect to be able to try flavors before purchasing. Prohibiting indoor use would force customers outside to sample vapor products.

An additional consideration should be made for businesses that cater to adult smokers. One unintended consequence of smoking bans has been the increase in litter and late-night noise outside of such establishments. Smokers who have switched to e-cigarettes currently remain inside, reducing the noise.

E-CIGARETTE BANS DON'T AFFECT PRIVATE USE

One final unintended consequence to consider. Many smoking bans may now or in the future include residences, such as nursing homes, assisted living apartments, multi-unit dwellings and government housing. Such bans are based on complaints that smoke residue not only ruins the units, but that smoke travels through walls and vents into other units, which may pose a health risk. Vapor would be included in such bans although it does not behave in the same manner. Again, this creates a disincentive for elderly and handicapped smokers to switch. Instead, they will continue to go out into the cold, often at night and in high-risk neighborhoods. Some may be forced to walk far from the building, because they are required to leave the property. Additionally, some municipalities are starting to prohibit smoking in outdoor spaces, such as beaches and parks, where e-cigarette vapor wouldn't be noticeable in any way. It makes no sense to apply these same rules to low-risk vapor products.

SUMMARY

Summary

- The vapor in e-cigarettes has orders of magnitudes less chemicals than even second-hand smoke, which makes the health risks from second-hand vapor at or very close to zero.
- Nicotine outside of smoke is not particularly addictive and doesn't cause smoking-related diseases.
- The rise in popularity of e-cigarettes has not led to an increase in smoking, either in adults or youth. Smoking rates are actually declining to record levels.
- E-cigarettes do not "re-normalize" smoking behaviors, they set a positive example of adult smokers choosing a safer alternative.
- Prohibiting e-cigarette use in public spaces keeps the children of smoking parents who don't switch at high risk of becoming smokers, while the children of non-smoking parents will receive little to no risk reduction.
- Indoor use where smoking is prohibited is a huge incentive for smokers who may otherwise not even be trying to quit, resulting in "accidental quitters."
- Including e-cigarettes in smoking bans would definitely result in less smokers quitting, without really protecting the general public from any significant exposures, so it is a net loss for public health efforts.
- Lawmakers must consider that when "erring on the side of caution" they may be creating unintended consequences for those who are truly at risk and that their caution may be dangerously misplaced.

MORE INFORMATION

Special thanks to The Consumer Advocates for Smoke-free Alternatives Association for its contributions to this review.

For more information about tobacco harm reduction, electronic cigarettes and research links supporting this review, please visit www.casaa.org.