

The Decline in Smoking in Wisconsin: 50 Years of Progress and Emerging New Challenges

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INTRODUCTION

Fifty years after the Surgeon General's report that indicated cigarette smoking is a cause of lung and laryngeal cancers in men and the probable cause of lung cancer in women, the landscape has changed dramatically in how the general public views tobacco products.¹

After the first Surgeon General's report was released in 1964, Congress enacted three important laws that helped change the social acceptability of smoking:

- The Federal Cigarette Labeling and Advertising Act of 1965
- The U.S. Fairness Doctrine of 1967
- The Public Health Cigarette Smoking Act of 1969¹

These laws were critical in reducing tobacco use in the United States.

Since 1964, public health and medical efforts have worked to drastically reduce the burden of tobacco in the United States. Smoke-free air laws and increases in tobacco taxes have played key roles in decreasing nationwide tobacco use. These efforts have reduced adult smoking in the U.S. by more than half, from 42% in 1964 to 19% in 2014.¹ Meanwhile, since 1984, Wisconsin smoking rates decreased by nearly 40%, from 29% in 1984 to 18% in 2013.²

Yet, tobacco use remains a persistent problem despite progress made in reducing its prevalence. Today, over 45 million adults nationally, and over a million adults in Wisconsin, currently smoke.^{1,2} Over 8 million adults in the United States are living with a serious illness that was caused by smoking, and each year more than 400,000 individuals die prematurely in the U.S. due to tobacco use.¹ In Wisconsin, approximately 15% of all deaths each year are attributable to smoking.³ The Centers for Disease Control and Prevention

predicts that of the current population of 0-17 year olds in Wisconsin, roughly 332,000 will become smokers. Of those future smokers, 106,000 will die prematurely as an adult because of a smoking related illness.¹

TOBACCO AND CANCER

Since the 1964 Surgeon General's report, smoking and lung cancer have been inextricably linked. Subsequent Surgeon General reports have further summarized research on the connection between cancer and smoking. The Surgeon General's 50th Anniversary Report highlights emerging research on cancer and smoking and the impact smoking can have on cancer patients and survivors.

Lung cancer is the number one cause of cancer death in Wisconsin, and cigarette smoking causes almost 90% of all lung cancer deaths.⁴ In Wisconsin, there is an average of 3,838 new cases of lung cancer diagnosed each year, with only 1 in 6 survivors living five years post diagnosis.

This may be due in part because most lung cancers are found at an advance stage.⁴

Summary

Introduction — Fifty years ago, the first Surgeon General's report on tobacco was released linking cigarette smoking to lung cancer. Since its release, adult smoking has decreased by more than half in the U.S.

Tobacco and Cancer — Lung cancer is the number one cause of cancer death in Wisconsin, and cigarette smoking causes almost 90% of lung cancer deaths. Research continues to find links between tobacco use and many types of cancer.

Policy & Program Implications — During the 30-year history of Wisconsin tobacco prevention and control efforts, the state has made strides with policies and programs to decrease the incidence of tobacco use. However, new issues continue to emerge, such as electronic nicotine delivery system products (ENDS), also known commonly as e-cigarettes. Comprehensive funding of the Wisconsin Tobacco Prevention and Control Program could yield an astounding return on investment that would help current smokers quit, and prevent others from ever starting.

Cigarette smoking restricts blood flow by narrowing blood vessels and introducing 70 known carcinogens into the body.⁵ Today, cigarettes are even more dangerous than fifty years ago. Modern cigarettes may allow smokers to pull dangerous chemicals farther into their lungs by inhaling deeper than previous designs allowed.⁵ Additionally, nicotine levels have increased along with the nicotine yield (i.e., the amount of nicotine inhaled), creating a more addictive product.⁶ And despite decreases in the

FIGURE 1.

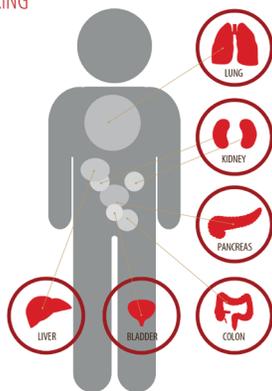
DISEASES AND HEALTH PROBLEMS

LINKED TO SMOKING

1 OUT OF 3
CANCER DEATHS
COULD BE PREVENTED

SMOKING CAUSES CANCER

—IN THE—
LUNGS • TRACHEA
BRONCHUS • ESOPHAGUS
ORAL CAVITY • LIP
NASOPHARYNX
NASAL CAVITY • LARYNX
STOMACH • BLADDER
PANCREAS • KIDNEY
LIVER • UTERINE CERVIX
COLON AND RECTUM
AND CAUSES LEUKEMIA
Smoking can cause cancer
almost anywhere in the body.



SOURCE: U.S. Department of Health and Human Services. (2014). Let's Make the Next Generation Tobacco-Free: Your Guide to the 50th Anniversary Surgeon General's Report on Smoking and Health.

number of cigarettes smoked per day, the likelihood of developing lung cancer has increased ten times for female smokers and has doubled for male smokers in the last five decades possibly in part due to these design and composition changes.⁵

Research has also found that many other cancers are related to tobacco use, including oral cavity, trachea, bronchus, esophagus, lip, nasopharynx, nasal cavity, larynx, stomach, bladder, pancreas, kidney, uterus, cervix, and leukemia (see Figure 1).⁴ This list continues to grow; research has recently linked smoking as a cause of colorectal and liver cancers and a potential cause of breast cancer. Researchers continue to pursue how smoking causes cancer through cellular change, and the Surgeon General's 2010 report outlines an overall framework for causation that continues to be supported by new and ongoing studies.⁶

Smoking has also been found to inhibit cancer treatments from working effectively, as the toxins released into the body allow cancerous cells to grow.⁴ Thus, individuals who smoke are more likely to die from their initial cancer, or a progression of a

secondary cancer, compared to those who do not smoke. The Surgeon General report states that, "Quitting smoking improves the prognosis of cancer patients."⁶

Finally, the Surgeon General's Report contends that one out of three cancer deaths could be prevented if no one smoked.⁴

POLICY & PROGRAM IMPLICATIONS

Past and Current Policies

Wisconsin has made strides with policies and programs to reduce tobacco use. Recent milestones that have helped decrease tobacco use in Wisconsin include:

- 1992: Madison passes first smoke-free restaurant
- 1998: National Master Settlement Agreement between states (including WI) and the Tobacco industry that included a monetary payout.
- 2005: WI state office buildings go smoke-free
- 2008: Cigarette tax increases to \$1.77/pack
- 2008: First time WI allocates funding for tobacco control programs. (See Figure 3)
- 2009: Smoke-free WI Act 12 passed, making all Wisconsin workplaces smoke-free, and cigarette tax increases to \$2.52/pack
- 2010: Smoke-free WI Act 12 law is implemented⁷

Many communities enacted smoke-free workplace laws before Wisconsin passed the statewide smoke-free act in 2009, and local communities continue to make strides in decreasing tobacco use and exposure.⁸

The Wisconsin Tobacco Prevention and Control Program oversees several statewide programs designed to reduce youth tobacco use rates, increase tobacco cessation rates, decrease

exposure to secondhand smoke, and eliminate tobacco related disparities. A few programs of note include:⁹

- The Wisconsin Tobacco Quit Line, which provides free quit tobacco assistance through 1-800-QUIT NOW
- Wisconsin Wins (WI Wins), which focuses on limiting youth access to tobacco products
- The Wisconsin Nicotine Treatment Integration Project (WiNTiP), which addresses tobacco use among individuals with mental health, alcohol and other drug abuse (AODA) disorders
- FACT, a youth tobacco prevention partnership with the American Lung Association that focuses on peer and community engagement
- Not on Tobacco (N-O-T), another American Lung Association partnership which focuses on providing youth with tobacco cessation counseling

These and other programs have helped to decrease the prevalence of smoking in Wisconsin; however, there is still a long way to go in order to lower the prevalence of diseases caused by smoking.

E-Cigarettes

Today, the face of nicotine addiction is changing. Electronic Nicotine Delivery Systems (ENDS), also referred to as e-cigarettes, are growing in popularity. ENDS are electronic tools that deliver nicotine to the user without the use of conventional tobacco products. These include e-cigarettes, e-hookahs, e-cigars, vape pens, and other devices. It is still uncertain exactly what ENDS products contain; content varies depending on the product and manufacturer, and some products are mislabeled with contents and nicotine levels.¹⁰ Currently, 1.9% of the U.S. population

uses e-cigarettes, while 2.2% of Midwest residents use them.¹¹

The aerosol released by ENDS is potentially dangerous. Although there is no comprehensive understanding of ENDS contents, potentially harmful elements within ENDS have been identified.¹⁰ E-cigarettes have been found to contain acetaldehyde, methylbenzadehyde, cadmium, formaldehyde, lead, nickel, nicotine, and toluene among other chemicals.¹⁰ E-cigarettes are also a new source of volatile organic compounds and fine and ultrafine particles. Some of these contents are known carcinogens, where others aggravate respiratory and cardiovascular conditions.¹⁰ These concerns highlight the need for regulation, as these products emit more than the simple “water vapor” that their manufacturers claim.¹⁰

Major tobacco manufacturers such as Philip Morris and R.J. Reynolds are now producing ENDS.¹⁰ Although they are not approved cessation devices by the U.S. Food and Drug Administration (FDA), many in the general public assume that ENDS are potential cessation replacement products.¹⁰ However, there has been minimal scientific research done on the benefits or health risks of ENDS.¹⁰ While there could be potential health benefits if current smokers switch completely to e-cigarettes, research indicates high dual use of both e-cigarettes and regular cigarettes, no proven cessation benefits, and an increase in use by youth is problematic.¹⁰

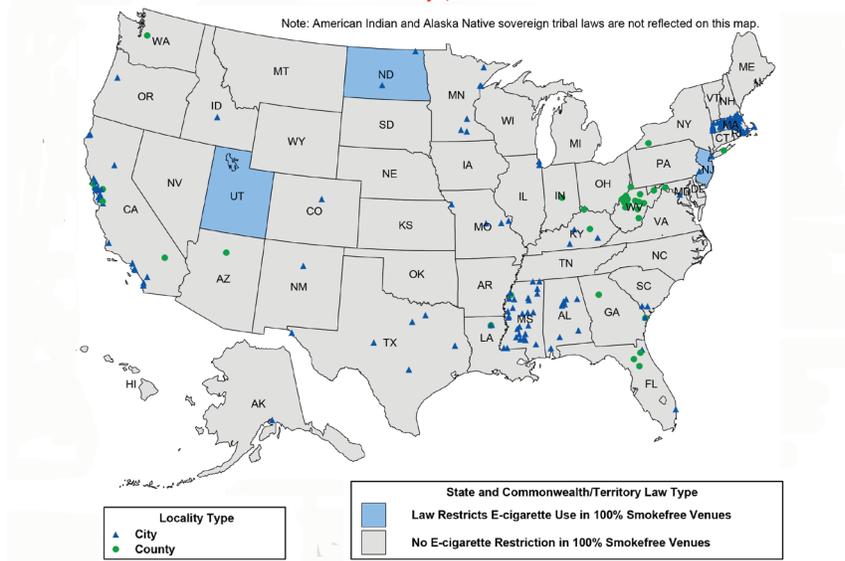
E-cigarette use is not an adult-only problem. National e-cigarette use has increased among middle and high school students between 2011 and 2012.¹² The market of candy flavors such as fruit, mint, or chocolate and unusual flavors such as cola or Belgian waffle may make e-cigarettes more attractive to a younger population, since

FIGURE 2.

U.S. State and Local Laws Regulating Use of Electronic Cigarettes

American Nonsmokers' Rights Foundation

As of July 3, 2014



Source: American's for Non-Smoker's Rights Foundation (2014). U.S. State and Local Laws Regulating Use of Electronic Cigarettes. Available at: <http://www.no-smoke.org/pdf/ecigsmmap.pdf>

research shows that flavored tobacco products are used mostly by youth and initiators.¹⁰ Further, e-cigarette companies have used celebrity spokespeople, modeling, and endorsements to popularize the products.¹⁰

Many states are taking action against ENDS by restricting where they can be used (Figure 2) and banning the sales to minors.^{13,14} WI Statute § 134.66 prohibits the sale of “nicotine products” to minors under 18.¹⁴ However, there are no current standards for labeling and manufacturing of e-cigarettes. Research and programs will need to be developed to address the growing concern over ENDS, without lowering the priority placed on reducing tobacco use. The increased exposure to ENDS may change social norms, creating a society that once again encourages smoking in public places.⁶

FDA Regulation

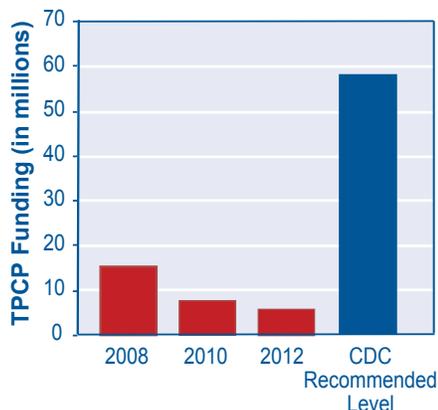
On the national level, the U.S. Food and Drug Administration (FDA) is proposing to extend its

regulatory authority to include additional tobacco products such as ENDS or e-cigarettes, cigars, pipe and waterpipe (or hookah) tobacco, and nicotine gels. Highlights of the FDA proposal include:¹⁵

- All additional tobacco products would be required to be registered with the FDA
- An ingredient list would be required for all products
- Any new product would only be able to be marketed after an FDA review
- Any reduced risk claims would need to be confirmed by the FDA through scientific research
- Free samples would be prohibited
- Minimum age laws would be expanded
- All products would be required to carry health warnings
- Regulation of e-cigarette vending machines

The proposed rule was closed for comment in July 2014. Final action is expected next summer.¹⁶

FIGURE 3. Tobacco Prevention and Control Funding in Wisconsin



FUTURE NEEDS

The past fifty years have seen a drop in the prevalence of smoking; however, tobacco use remains the number one cause of preventable death in the nation.⁵ In order to continue to reduce tobacco use in Wisconsin, state funding for tobacco control should meet the CDC's recommended level of \$57.5 million (Figure 3). Unfortunately, Wisconsin currently budgets \$5.3 million, less than 10% of the recommended level.¹⁷ Comprehensive funding in Wisconsin could yield an astounding return on investment that would help current smokers quit and prevent others from ever starting. Increased funding, along with the passage of the FDA's proposal, will aid the Wisconsin's Tobacco Prevention and Control efforts to lower tobacco-related morbidity and mortality in Wisconsin.

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