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By

Laran H. Despain, Ph.D.,
Associate Research Scientist
Sara K. O'Donnell, B.A.,
Research Assistant
Janelle R. Simpson, M.A.,
Assistant Research Scientist

Under contract to

Wyoming Department of Health,
Public Health Division
6101 N. Yellowstone Rd.
Suite 420
Cheyenne, WY 82002
(307)777-6340

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Wyoming Survey & Analysis Center
University of Wyoming
1000 E. University Ave, Dept. 3925
Laramie, Wyoming 82071
307.766.2189 | wysac@uwyo.edu
www.uwyo.edu/wysac

Social, Health, and Economic Effects of Smokefree Laws

Summary

The Wyoming Tobacco Prevention and Control Program (TPCP) shares a goal with the federal tobacco prevention and control program: decrease exposure to secondhand smoke (Starr, et al., 2005). According to the Surgeon General (U.S. Department of Health and Human Services [USDHHS], 2014) and the Centers for Disease Control and Prevention (CDC, 2014a) smokefree policies improve public health by reducing exposure to secondhand smoke. By enacting and implementing smokefree indoor air laws, Wyoming communities reduce exposure to secondhand smoke and, ultimately, can reduce tobacco-related economic costs, disease, and death (Starr et al., 2005).

Smokefree indoor air laws¹ also contribute to social norms against smoking and reduce cigarette consumption and related health problems (CDC, 2014a; USDHHS, 2014). Independent, high-quality research uniformly shows that smokefree laws do not result in net negative economic impacts (Loomis, Shafer, van Hasselt, 2013; Scollo, Lal, Hyland, & Glantz, 2003; USDHHS, 2006).

¹ For further information regarding smokefree indoor air policies and laws, see WYSAC Issue Brief #2016-04, *Existence of and Public Support for Smokefree Laws and Policies*.

Effects of Smokefree Indoor Air Laws in Wyoming

In 2009, WYSAC compared towns in Wyoming with comprehensive smokefree indoor air laws to similar towns in Wyoming without comprehensive smokefree indoor air laws (Table 1). The analyses examined the effect of the comprehensive smokefree indoor air laws on attitudes toward tobacco use and smoking behaviors among youth and adults.

Social Effects of Wyoming's 2009 Smokefree Indoor Air Laws

In Wyoming, smokefree indoor air laws are associated with greater shifts toward anti-smoking attitudes among youth and greater reductions in youth smoking prevalence when compared to towns without smokefree indoor air laws. Comprehensive smokefree indoor air laws were associated with changes in four indicators of youth attitudes toward smoking (Table 2). In general, the attitudes of youth in both

Table 1: Comparison between Towns with Smokefree Indoor Air Laws and Towns Without

Matched towns

Town with Comprehensive Smokefree Law (County)	Comparison Town (County)
Laramie (Albany)	Jackson (Teton)
Cheyenne (Laramie)	Casper (Natrona)
Evanston (Uinta)	Douglas (Converse)

Note. Casper had not passed a smokefree indoor air law at the time of the analyses.

Source: WYSAC, 2009.

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Table 2: Smokefree Indoor Air Laws Increase Youth's Negative Attitude towards Cigarettes

Youth attitude changes associated with smokefree indoor air laws

Youth Attitude Regarding Smoking	Smokefree Law Status	Percent Change
It is a little bit wrong or not wrong at all for someone their age to use cigarettes	Law	-25%
	No Law	-7%
Adults in the neighborhood would think it is a little bit wrong or not wrong at all for kids to smoke cigarettes	Law	-20%
	No Law	-4%
Have one or more friends who have used cigarettes in the past year	Law	-20%
	No Law	-8%
Reported it is sort of easy or very easy to get cigarettes	Law	-8%
	No Law	+1%

Note: A negative percent change shows that youth attitudes became less favorable regarding smoking. A positive percent change shows that youth attitudes became more favorable regarding smoking.

Source: WYSAC, 2009.

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sets of communities became more anti-smoking over the comparable time periods. However, the changes in smoking-related attitudes of youth in towns with comprehensive smokefree indoor air laws were significantly greater than the changes in the smoking-related attitudes of youth in towns without such laws. WYSAC (2009) found that Wyoming's comprehensive smokefree indoor air laws had no statistically significant effect on measured adult attitudes regarding smoking.

Effects of Wyoming's Smokefree Indoor Air Laws on Smoking

WYSAC's (2009) analysis revealed greater reductions in smoking prevalence for youth in towns with comprehensive smokefree indoor air laws compared to youth in towns without such laws. In general, the youth smoking prevalence rates in both sets of communities decreased over the comparable time periods. However, the reduction in the youth smoking prevalence rate in towns with comprehensive smokefree indoor air laws was significantly greater than the reduction in the youth smoking prevalence rate in towns without such laws (Table 3). WYSAC's

Table 3: Smokefree Air Laws Decrease Youth Smoking Initiation and Prevalence

Youth smoking initiation and prevalence changes associated with smokefree indoor air laws

Used Cigarettes...	Smokefree Law Status	Percent Change
In their lifetime	Law	-25%
	No Law	-11%
During the 30 days prior to being surveyed	Law	-19%
	No Law	-7%

Source: WYSAC, 2009.

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analysis did not show any statistically significant differences between Wyoming towns with comprehensive smokefree indoor air laws and comparison towns for adult smoking prevalence, consumption, or cessation.

Health Effects

Studies show that youth and adults who live in towns with smokefree indoor air laws are more likely to report no exposure to secondhand smoke in restaurants than youth and adults who live in towns without smokefree indoor air laws. They are also less likely to report respiratory health problems associated with smoking (Callinan, van Baarsel, Clarke, Doherty, & Kelleher,

2016; Cance, Talley, & Fromme, 2015; Guide to Community Preventive Services, 2015; Lin, Park, & Seo, 2015).

Meyers, Neuberger, & He (2009) conducted a literature review and meta-analysis of studies published between 2004 and 2009 and found that smokefree indoor air policies protect the public from acute myocardial infarction (colloquially referred to as heart attack). They found that, overall, exposure to secondhand smoke increases the risk of acute myocardial infarction. Data from towns including Helena, Montana, and Pueblo, Colorado, show smokefree indoor air laws decrease this risk by 17%. Young people and nonsmokers are the principal beneficiaries of this effect. Myers and colleagues noted that the laws have short-term effects, but the full effects of smokefree indoor air laws may take years to show their full effects. Vander Weg, Rosenthal, and Vaughn Sarrazin (2012) examined the effects of local and state-level smokefree indoor air laws covering restaurants, bars, and workplaces passed in the United States between 1991 and 2008. They focused on the hospitalizations of Medicare beneficiaries aged 65 and older. In the three years after the laws went into effect, hospital admission rates for acute myocardial infarction fell approximately 20%. Diseases of the heart, such as acute myocardial infarction, are the second-leading cause of death in Wyoming (CDC 2014b).

Hahn, Rayens, Adkins, Simpson, and Frazier (2014) compared data from regions in Kentucky that had municipal smokefree indoor air laws to regions that did not have such laws. They found that people living in towns with comprehensive laws had a 22% reduced risk of hospitalization for chronic obstructive pulmonary disorder (COPD) compared to people living in towns with non-comprehensive laws or no laws at all. Vander Weg and colleagues (2012) found that Medicare-billed hospital admission rates for COPD fell by 15% in the first three years after implementing comprehensive smokefree indoor air laws. Collectively, COPD and other lower respiratory diseases are the third leading cause of death in Wyoming (CDC 2014b).

Economic Effects of Smokefree Indoor Air Laws: Research Quality Standards and National Data

Literature reviews have key advantages over individual studies. First, using data from different sources and collected through different methods mitigates the weaknesses of any individual study. Second, literature reviews set clear criteria for the rigor of studies to be included, eliminating weak studies from analysis. Scollo and colleagues conducted three literature reviews (Scollo & Lal, 2005, 2008; Scollo, et al., 2003) on the economic effect of smokefree indoor air laws. To assess the rigor of this research, they used Siegel's (1992) four criteria for identifying high-quality studies of economic impacts of smokefree indoor air laws:

1. Use of objective data (e.g., tax receipts or employment statistics),

2. Inclusion of all data points after the law was implemented and data for several years before,
3. Use of statistical methods that control for trends and random fluctuation in the data, and
4. Controls for overall economic trends.

Scollo and colleagues (Scollo & Lal, 2005, 2008; Scollo, et al., 2003) found no peer-reviewed, published, independent study that showed a negative economic impact from the implementation of smokefree indoor air laws. Studies asserting a negative economic impact often had the following characteristics (Scollo & Lal, 2005):

- Data were based on subjective impressions or estimates of anticipated change rather than on objective, verified, or audited data.
- Data did not account for an adequate period before and after the law went into effect to establish underlying trends.
- Funding came from the tobacco industry or organizations allied with the tobacco industry.
- The studies were not published in scientific journals.

The 2006 Surgeon General's report (USDHHS, 2006) also examined numerous studies of state and local smokefree laws. USDHHS stated, "Evidence from peer-reviewed studies shows that smokefree policies and regulations do not have an adverse economic impact on the hospitality industry" (p. 16).

Most recently, Loomis, Shafer, and van Hasselt (2013) examined the economic impact of smokefree laws in the U.S. and found that smokefree laws have little or no effect on economic outcomes in restaurants and bars. Furthermore, they found that smokefree laws improve employment and health. After implementation of smokefree laws in West Virginia, restaurant employment increased by a statistically significant 1%.

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