

# 5. State Facilitating Conditions and Barriers to Implementation of Tobacco Control Programs

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## 5. State Facilitating Conditions and Barriers to Implementation of Tobacco Control Programs

*Underlying state conditions can have an important impact on the success of tobacco control interventions such as the American Stop Smoking Intervention Study (ASSIST). Factors such as population-level smoking patterns; the economic influence of the tobacco industry; and the overall social, cultural, and policy environment can potentially affect the implementation of tobacco control programs and individual smoking behavior.*

*This chapter describes the measures of state conditions—demographic factors and economic dependence on tobacco—used as covariates in the ASSIST evaluation analysis. The demographic measures were obtained from census and population survey data and included gender, age, race and ethnicity, education, income, state population, metropolitan area representation, and region. The measure of state dependence on tobacco growing and manufacturing is described more fully in chapter 6 of this monograph.*

*Other factors that the extant literature suggests might affect tobacco control interventions and outcomes are discussed, from individual and environmental factors such as family, religion, community organizations, and local government, to state-level factors such as per capita wealth and dominant political affiliation. Although examining these relationships was outside the scope of the ASSIST evaluation, they are promising areas for future study.*

*The state-level demographic covariates described in this chapter were not significantly related to smoking prevalence in the evaluation analysis described in chapter 9 because in this analysis they had already been used as covariates at the individual level to adjust state-level smoking prevalence rates. However, several variables described in this chapter contributed significantly to state-level differences in per capita cigarette consumption, including percentage of the population that was Hispanic, percentage with incomes below poverty level, and percentage of gross state product derived from tobacco growing and manufacturing.*

### Introduction

This chapter explores the individual and state conditions that could have potentially influenced the implementation and outcomes of a state tobacco use prevention and control program. States varied widely on these factors. First, an overview of multiple-level factors that affect tobacco use is provided, followed by review and description of the state factors included as covariates in the ASSIST evaluation and how they were measured. The covariates do not represent an exhaustive list of factors that might have affected the evalu-

ation; therefore, other factors that might be considered for inclusion in future analyses are also reviewed.

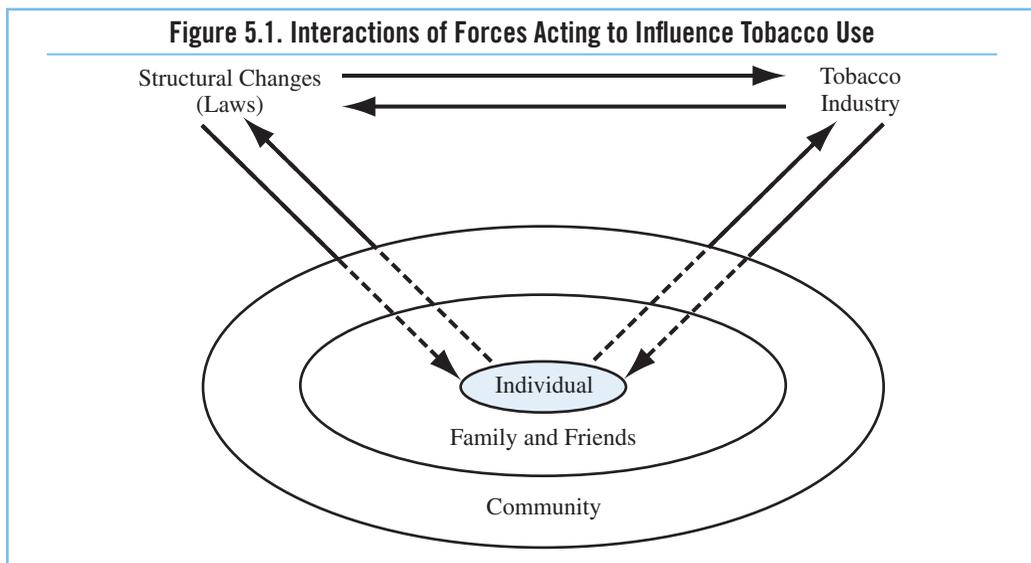
## Overview of Influences

Reducing the number of smokers in the population, a key goal of tobacco control efforts, is accomplished through youth prevention and adult cessation. If fewer youths become smokers and more smokers quit, the impact of smoking-related diseases on the public health is reduced. Thus, it is important to understand those factors that influence individual smoking behavior (affecting initiation or cessation). Figure 5.1 presents a simplified view of these influences and how they might interact.

Family, close friends, and even acquaintances can influence how an individual views tobacco use and whether that individual becomes and remains a smoker. The larger community, schools, the workplace, churches, and other

organizations to which the individual belongs may also influence his or her perceptions and beliefs about tobacco use. Finally, the prevalence of smoking within a community will reflect and, in turn, affect these perceived norms.

Local, state, and federal legislative bodies can influence the community environment through enactment of laws (e.g., smoke-free workplace laws, youth access laws) and antitobacco media campaigns. The community environment, in turn, affects individuals both directly and indirectly. For example, laws that restrict workplace smoking have the potential to change both community norms and individual behavior. When a community passes and enforces laws that restrict workplace smoking, that community creates an environment where smoking is a marginalized, non-normative activity. Workplace smoking restrictions also directly affect the individual. For example, a worker might find that he or she can no longer smoke inside at work.



The tobacco industry works as a counterforce to enactment of tobacco control laws (see chapter 8), but it can also be the target of action by governments. For example, the 1998 Master Settlement Agreement between 46 states and the tobacco industry placed restrictions on how that industry can advertise and promote its products, particularly the practices that appeared to be influential in promoting smoking among children and adolescents.<sup>1</sup> Tobacco advertising and promotions seek to portray tobacco use as a normative behavior—acceptable to the community and glamorous, sophisticated, or “cool” for the individual. These images directly contradict the ASSIST goals of creating a social environment in which smoking is non-normative.

To the extent that individuals understand the dangers of tobacco use and appreciate the utility of having laws related to it, they, or the organizations that they form and work through, may lobby governments to take action to pass such laws. Ultimately, by no longer purchasing tobacco products, individuals will have a profound influence on the tobacco industry.

No single factor or group of factors determines whether a youth becomes a smoker or an adult quits smoking. Rather, the individual is influenced by his or her environment and can act to change this environment at many levels: (1) within the family; (2) through organizations within the community; and ultimately (3) through new laws at the local, state, and national levels. Such laws frame the culture in the community with respect to tobacco use. At the same time, the tobacco industry is working diligently to counter any such efforts and to promote smoking within the population.

## State Conditions Selected for the ASSIST Evaluation

Many factors could have been associated with tobacco control outcomes, and many were considered for the ASSIST evaluation. However, only a limited number could be included in the evaluation because there were only 51 units of observation (the 50 states and the District of Columbia). In addition, data needed to be available for every state, and those data had to be collected in a uniform manner. This requirement also limited the factors that could be considered for inclusion. For example, no consistent data were available on the resources the tobacco industry devoted to efforts against tobacco control in each state, so this important factor could not be included.

Data were aggregated into indices to reduce the number of covariates included in the statistical analysis. Chapter 2 describes the Strength of Tobacco Control (SoTC) measure, which included subscales for resources, capacity, and efforts. An index for the strength of clean indoor air legislation was developed (chapter 3), which was a component of the Initial Outcomes Index (IOI; chapter 4), along with cigarette price and the percentage of indoor workers who reported that their workplace was smoke free (chapter 4). It was hypothesized (chapters 2 and 9) that SoTC would reflect a state’s implementation of tobacco control and that initial outcomes (IOI measures) would affect a state’s likelihood of reducing tobacco use behavior, the main outcomes of interest (chapter 9).

**Table 5.1. Variables Included in the ASSIST Evaluation Analysis**

Variable	Data source
Demographic	
Women (%)	Census
Median age	Census
African American (%)	Census
Hispanic (%)	Census
Education above high school level (%)	CPS
Household income below poverty level (%)	Census
State population	Census
Living in a metropolitan area (%)	CPS
Indicator variables for region of country (Midwest, West, South, or Northeast)	CPS
Economic dependence on tobacco	
Gross state product derived from tobacco growing and manufacture (%)	See chapter 6

*Notes:* Demographic variables were for persons aged 18 years and older. CPS indicates Current Population Survey.

The state condition variables included in the ASSIST evaluation analyses were demographic factors and a measure of state economic dependence on tobacco. These measures are presented in table 5.1. The sections that follow review in more detail the association of these measures with tobacco use and the sources of these data.

### **Gender, Age, Race/Ethnicity, Education, Socioeconomic Status, and Geography**

Smoking prevalence differs by gender, age, race/ethnicity, educational attainment, socioeconomic status, and geography.<sup>2</sup> A state's demographic profile could potentially affect the implementation and subsequent outcomes of a tobacco control program. For example, older age groups show lower prevalence than younger groups<sup>3</sup> partly because many smokers quit (or die) as they age. In this case a state with a significant

number of older residents might have a lower smoking prevalence rate than other states. Alternatively, if tobacco control efforts prove consistently effective among adolescents, as some evidence indicates,<sup>4-7</sup> fewer young people will mature to adulthood as smokers, and over time adult smoking prevalence will fall as a result. In this example, states that have younger populations might show more rapid reductions in smoking prevalence.

The California experience provides evidence that state tobacco control programs can affect youth initiation in this way. Nationally, smoking prevalence among youth rose between 1991 and 1997, when it began to decline again.<sup>8</sup> In contrast, although youth prevalence rates rose in parallel with the national average, they remained lower in California. In addition, the downward trend in youth prevalence began two years earlier in California (in 1995) than in the nation as a whole.<sup>9</sup> This

### Demographics and Smoking Cessation

Smokers are increasingly concentrated in lower socioeconomic groups,<sup>a</sup> but it is unknown whether this is a result of poorer access to cessation interventions or increased resistance to quitting. A number of studies summarized in *Women and Smoking: A Report of the Surgeon General*<sup>b</sup> suggest that women may have more difficulty successfully quitting than men, but ASSIST appeared to affect quitting among women more than men (see chapter 9). Historically, African Americans have also had a more difficult time successfully quitting.<sup>c,d,e</sup> Greater difficulty in quitting for this subpopulation may result in slower declines in prevalence for states with large African American populations than would be expected from reduced youth initiation. Finally, some demographic groups (e.g., females) may also not benefit to the extent that others do from pharmaceutical aids for cessation.<sup>f</sup>

<sup>a</sup>Burns, D. M., and K. E. Warner. 2003. Smokers who have not quit: Is cessation more difficult and should we change our strategies? In *Those who continue to smoke* (Smoking and tobacco control monograph no. 15, NIH publication no. 03-5370), 11–31. Bethesda, MD: National Cancer Institute.

<sup>b</sup>U.S. Department of Health and Human Services. 2001. *Women and smoking: A report of the surgeon general*. Washington, DC: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

<sup>c</sup>Royce, J. M., N. Hymowitz, K. Corbett, T. D. Hartwell, and M. A. Orlandi. 1993. Smoking cessation factors among African Americans and whites. COMMIT Research Group. *American Journal of Public Health* 83 (2): 220–26.

<sup>d</sup>Ahluwalia, J. S. 1996. Smoking cessation in African-Americans. *American Journal of Health Behavior* 20 (5): 312–18.

<sup>e</sup>U.S. Department of Health and Human Services. 1998. *Tobacco use among U.S. racial/ethnic minority groups—African Americans, American Indians and Alaska Natives, Asian Americans and Pacific Islanders, and Hispanics: A report of the surgeon general*. Washington, DC: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

<sup>f</sup>Gonzales, D., W. Bjornson, M. J. Durcan, J. D. White, J. A. Johnston, A. S. Buist, D. P. Sachs, et al. 2002. Effects of gender on relapse prevention in smokers treated with bupropion SR. *American Journal of Public Health* 22 (4): 234–39.

difference has been attributed to the California tobacco control program, which began prior to ASSIST but shared many of the same goals and components.

A measure of the state's Hispanic and African American populations was included in the analysis. Hispanic populations show overall lower rates of smoking because the low smoking rates among women in these groups more than offset high rates among men,<sup>10,11</sup> and states with large populations of Hispanics may

have lower prevalence rates. In the past, African Americans exhibited higher prevalence rates than most other minority groups except Native Americans,<sup>11</sup> but the gap between African Americans and non-Hispanic whites has narrowed in recent years: in 2001, adult prevalence for African Americans fell below that for non-Hispanic whites.<sup>12</sup> Additionally, African American youth have shown lower rates of initiation in recent years<sup>10</sup> and perhaps are now maturing to adulthood

as confirmed never smokers. Previous research has suggested that some African Americans delayed smoking initiation into the young adult years.<sup>8</sup> Thus, states with large populations of African Americans may show relatively more rapid declines in prevalence than other states, because fewer African Americans are becoming smokers.

Individuals with higher levels of educational attainment are less likely to ever initiate smoking and are more likely to quit than are individuals who are less well educated.<sup>2,13-15</sup> In general, lower socioeconomic groups have higher rates of smoking than other socioeconomic groups.<sup>16,17</sup> However, some studies have shown that after accounting for educational attainment as an indicator of socioeconomic status, many of the racial/ethnic effects described above are considerably diminished.<sup>14,16,18</sup> Midwestern and southern states, compared with eastern and western states, tend to have higher smoking prevalence.<sup>12</sup> If these rates are attributable to socioeconomic rather than to racial/ethnic indicators, different conclusions about the potential effects on a state's population will be reached.

### **Economic Dependence on Tobacco**

The extent to which tobacco growing and manufacturing contribute to a state's economy may play a role in that state's culture regarding tobacco use and its political will to undertake tobacco control. When tobacco is part of a state's history and identity, residents may be less inclined to recognize its dangers and may be more supportive of smoking. If a significant proportion of the workforce is engaged in tobacco production or

manufacturing, people may not support tobacco control for fear of job loss. Also, the state government would want to protect its revenue stream gained from this industry and protect its workers.

Research suggests that states that have economies that are highly dependent on tobacco are less likely to adopt strong tobacco control measures. For example, in 2002, the average of state cigarette excise tax rates in the seven largest tobacco-growing states (Georgia, Kentucky, North Carolina, South Carolina, Tennessee, West Virginia, and Virginia) was 9.5¢ per pack, whereas the average in the remaining states and the District of Columbia was more than 69¢ per pack, a differential that has grown significantly over the past several decades.<sup>19</sup> Similarly, Chaloupka and Saffer,<sup>20</sup> using data from 1975 through 1985, found that states with greater per capita production of tobacco were less likely to adopt laws restricting cigarette smoking in a variety of public places, including restaurants, as well as in private workplaces, with the latter effect statistically significant. Likewise, Ohsfeldt, Boyle, and Capilouto<sup>21</sup> found that the per capita value of state tobacco production was negatively associated with strength of smoking restrictions and cigarette excise tax rates.

The degree to which tobacco growing and manufacturing affect state economies is controversial. Much of this research has been sponsored by the tobacco industry, and critics of these studies argue that they are overestimates. For example, Warner and Fulton<sup>22</sup> argue that the multiplier effect significantly overstates the economic impact of tobacco, since it implicitly assumes that

the money spent on tobacco would not be spent elsewhere. When allowing for a redistribution of money spent on tobacco to spending on other goods and services in the absence of tobacco, Warner et al.<sup>23</sup> found that most of the states would actually see increased employment in the absence of tobacco. Tobacco-related jobs from growing, wholesaling, and retailing would be replaced by similar or better jobs related to other goods and services in the absence of tobacco. Thus, it appears that the tobacco industry tries to overstate the economy's dependence on tobacco in order to dissuade individuals and governments from taking any action to control tobacco use.

## Data Sources

### Demographics

Individual-level data within each state were from the 1992–93, 1995–96, and 1998–99 Current Population Surveys (CPS),<sup>24</sup> conducted in September, January, and May of each period. The U.S. Bureau of the Census continuously conducts these surveys to monitor the labor force, covering the civilian, non-institutionalized population of persons aged 15 years and older in the United States.<sup>24</sup> These household surveys select a stratified probability sample of clusters of households identified from the Census Bureau and other sources. The survey design calls for surveying about 56,000 households per month, and each household is part of a panel that is interviewed eight times over a 16-month period. However, all respondents in the above months were interviewed only once, in one of the

three months listed above. The surveys from these months included a special Tobacco Use Supplement (TUS-CPS) sponsored by the National Cancer Institute specifically for the ASSIST evaluation.<sup>25</sup> About a quarter of the interviews were conducted in person (first or fifth time in a panel); the remainder were conducted by telephone (second, third, fourth, sixth, seventh, or eighth time in a panel). One household resident provided the demographic information for all household residents. The individual-level demographic data were used in the first stage of the two-stage analysis of adult smoking prevalence (see chapter 9).

The data on smoking prevalence and the percentage of indoor workers with smoke-free workplaces were aggregated by state from the TUS-CPS (see chapters 3 and 4). The main part of the CPS was the source of data for one individual-level variable (percentage with above a high school education) and two state-level demographic variables (percentage living in a metropolitan area and region of the country); again, data were summarized for persons aged 18 years and older within each state. The other demographic variables were from the U.S. Bureau of the Census (the economic dependence on tobacco variable is described briefly below and more fully in chapter 6).

The baseline mean values of the variables listed in table 5.1 as well as others (e.g., smoking prevalence) are compared between the ASSIST and non-ASSIST states in table 9.1 (see chapter 9). The baseline values of each variable in table 5.1 for each state are presented in appendix 5.A. Appendix 9.C (see chapter 9) presents adult (aged 18 years and

older) smoking prevalence obtained from the TUS-CPS for each state. It also presents the per capita cigarette consumption from sales data aggregated over the months of the CPS (September through May) for each TUS-CPS period. This aggregation allowed per capita cigarette consumption to be examined in the same time periods as tobacco use prevalence. The actual bimonthly per capita consumption data are available on the University of California Social Science Data Collection Web site.<sup>26</sup> Prevalence and consumption, in addition to being the outcomes of interest, are indicators of the tobacco use culture in each state prior to the ASSIST intervention.

### **Economic Dependence on Tobacco**

Each state's economic dependence on tobacco was computed using a procedure that is fully described in chapter 6. During the period covered by the evaluation, 16 states grew appreciable amounts of tobacco, with 6 states (North Carolina, Kentucky, Tennessee, South Carolina, Virginia, and Georgia) accounting for most of the total. Appreciable levels of cigarette and other tobacco product manufacturing occurred in 24 states. Seven states (North Carolina, Virginia, Kentucky, Georgia, Florida, New York, and Tennessee) accounted for the majority of employment in tobacco product manufacturing, with 5 others (Alabama, Connecticut, Illinois, Pennsylvania, and West Virginia) accounting for much of the remaining employment. Four of the ASSIST states (North Carolina, South Carolina, Virginia, and West Virginia) had significant economic dependence on tobacco.

The measure used in the ASSIST evaluation was obtained by summing the estimates for employment/compensation and for tobacco manufacturing for each year of interest for each state. Some states had a zero for one or both measures. The final estimates were scaled so that the sum of state estimates equaled published estimates for the entire United States for each year. Finally, the estimates were divided by the total gross state product, and the results were summed to form the tobacco-dependence measures used in the ASSIST evaluation analyses.

As a preview to chapter 9, which presents the analysis of the final outcomes (state smoking prevalence and per capita consumption), none of the state-level conditions were significantly associated with smoking prevalence. This occurred because the data on smoking prevalence had been adjusted at the individual level for the demographic variables before the state-level analysis was conducted. Thus, when adjustment was made for the relationship between demographics and smoking status at the individual level, these factors were not important in explaining variation in prevalence at the state level. The analysis of per capita cigarette consumption from tobacco sales data could be conducted only at the state level. In these analyses, several variables contributed significantly to the observed differences among states: percentage Hispanic, percentage with incomes below poverty, and percentage of gross state product derived from tobacco growing and manufacturing.

## Other Potential Covariates

In this section, other factors that could potentially affect tobacco control efforts and outcomes are discussed. Since it is the individual who uses tobacco, individual characteristics that have been differentially associated with tobacco use are first described. For example, the potential impact of a tobacco control program may be limited if a state's population has a disproportionate number of difficult-to-affect individuals (e.g., a large fraction of smokers who are highly nicotine dependent). Next, factors that influence the individual in the relatively immediate environment are summarized, and a section follows that describes conditions at the state level, other than population composition, that could also modify a state's ability to adopt and carry out tobacco control policy.

### Family

Families share genes and environments, both of which can affect smoking behavior. There is evidence that genetic characteristics may play a role in determining which individuals become dependent smokers.<sup>27,28</sup> Genetic characteristics may also contribute to increased difficulty in quitting for some smokers<sup>29,30</sup> or may modify the potential effectiveness of pharmaceutical aids for smoking cessation.<sup>31</sup> It is currently unknown whether genetic factors co-vary with any particular population subgroups in such a way as to influence tobacco control success.

Although the influence of genetic characteristics on smoking dependence requires further investigation, current

data clearly indicate that the culture within the family plays a role in smoking behavior. Parental smoking is an important determinant of adolescent smoking uptake.<sup>32,33</sup> Furthermore, in families in which the parents had quit smoking before children were born or when the children were very young, those children are less likely to smoke as adolescents.<sup>34</sup> Parents are important role models for smoking, and when they smoke their behavior conveys to children that smoking is acceptable and has certain benefits (e.g., relaxation, relief from stress).

In addition to influencing smoking uptake, having other smokers in the family may make it more difficult for someone to quit<sup>35,36</sup> by providing both a cue to smoke and a ready source of cigarettes.<sup>37</sup>

### Religious Community

Religious beliefs and practices affect tobacco use. Abstinence from tobacco is one of the fundamental beliefs of the Seventh-Day Adventist Church<sup>38</sup> and the Church of Jesus Christ of the Latter-Day Saints (Mormons).<sup>39</sup> At the individual, family, and community levels, these religious communities directly affect smoking behavior. Research indicates that strict religious and moral prohibitions on risky activities such as smoking are congruent with the philosophy of "the body is a temple," which leads to fewer people engaging in such behaviors.<sup>40</sup> There is also evidence that young adults who attend religious services relatively frequently have lower smoking rates than those who do not attend such services.<sup>41</sup>

Where particular religious communities dominate, they can influence state

smoking prevalence rates. For example, although there are more Seventh-Day Adventists on the West Coast and in the southern United States than in any other region of the United States, they do not predominate in any one state,<sup>42</sup> and their numbers are relatively small. In contrast, over 70% of Utah residents were Mormon during ASSIST<sup>43</sup> and, not surprisingly, Utah was the state with the lowest smoking prevalence in the late 1990s.<sup>12</sup>

### Local Government

As mentioned earlier, the more supportive a population is of tobacco control measures, the more likely it is that local tobacco control policy will be enacted. In California, momentum to enact smoke-free policies was created and propagated at the local level. The key players in this movement were the voluntary organizations, together with other coalitions of health-conscious citizens. This resulted in a state law being enacted in 1995 that prohibited smoking in nearly all indoor workplaces, which was extended in 1998 to include bars and gaming rooms.

Such activity at the local level is feared by the tobacco industry because it cannot effectively lobby local governments in every community, both small and large, throughout the nation.<sup>44</sup> The tobacco industry response has been to lobby for legislation and to support candidates at the state level in an effort to see that laws are passed that preempt stronger laws from being passed at the local level.<sup>44–46</sup> However, voluntary health organizations such as the American Heart Association, the American Lung Association, and the American

Cancer Society continue to be active at both the local and state levels working for laws that can further tobacco control and improve public health.

The various individual and immediate environmental characteristics summarized above could affect tobacco control success at the state level, depending on whether the state's populations consist of relatively larger or smaller proportions of these demographic groups. States with high smoking prevalence rates may have higher percentages of families with multiple smokers, which make smoking more culturally accepted and raise barriers to quitting. Alternatively, in states with relatively low prevalence, the social pressure on the remaining smokers to quit might be considerable. Despite considerable research, there is little evidence that the remaining smokers are those who are more addicted and therefore less able to quit.<sup>3,47</sup>

### Dominant State Political Philosophy

Ideology, party politics, and political participation are closely tied in the various states.<sup>48,49</sup> Political ideology is often focused on whether the responsibility for health belongs with the individual or with society.<sup>50–52</sup> Other political ideologies characterize governments within the context of conservative or liberal tendencies or positions that historically have been affiliated with political parties.<sup>48</sup>

The political party dominating a state may affect whether tobacco control legislation is implemented. For example, Ohsfeldt, Boyle, and Capilouto<sup>21</sup> found a significant relationship between political liberalism, the strength of a state's

### Politically Active Citizens and Tobacco Control

One study suggests that a politically active citizenry may be associated with support for tobacco control, irrespective of political affiliation. Chaloupka and Saffer<sup>a</sup> used a measure of the political participation of state residents in their analysis of the determinants of state restrictions on smoking. They found that the probability of adopting relatively stringent restrictions on smoking was significantly higher in states where a greater percentage of the state population was politically active, as measured by the percentage of the state population voting in elections for the U.S. House of Representatives.

<sup>a</sup>Chaloupka, F. J., and H. Saffer. 1992. Clean indoor air laws and the demand for cigarettes. *Contemporary Policy Issues* 10:72–83.

restrictions on cigarette smoking, and the level of cigarette excise taxes. Chriqui<sup>53</sup> found that Republican-controlled state legislatures were significantly less likely to enact laws designed to restrict minors' access to tobacco products than were states whose legislatures were controlled by the Democratic Party or were divided between the parties.

It is possible that when efforts to enact tobacco control legislation are successful in a few states, other states will be encouraged to work toward similar measures. For example, Weller<sup>54</sup> notes that the success of tobacco tax initiatives in Massachusetts, California, and Arizona encouraged tobacco control advocates and legislators to pursue a similar strategy in Oregon. This spillover effect may also explain why increasing numbers of states have recently been able to enact comprehensive smoke-free workplace

legislation (including bars and clubs). California was the first and, for several years, the only state with such a law, but by early 2006, ten additional states (Connecticut, Delaware, Maine, Massachusetts, Montana, New Jersey, New York, Rhode Island, Vermont, and Washington) had put such laws in place, and a number of other states are in the process of enacting such legislation.

### State Wealth

A few studies have investigated state resources and finances as determinants of state tobacco control efforts, although the measures used have not been consistent. Using state per capita total government expenditures as a global measure of the state's ability to support tobacco control efforts, Ohsfeldt, Boyle, and Capilouto<sup>21</sup> found that states that spent more per capita were more likely to adopt stronger restrictions on smoking as well as have higher cigarette excise taxes. Other studies focused specifically on resources available for tobacco control activities. Wakefield and Chaloupka<sup>55</sup> showed that program success in reducing youth smoking was dependent on the extent of implementation and the degree to which such efforts were undermined by the tobacco industry and by other state funding priorities.

Funding for tobacco control was one component of the SoTC measure described in chapter 2. Table 5.2 shows the amount of money spent per capita on tobacco control in each state from 1991 through 1998, which spans the ASSIST intervention period. In 1991, only California showed appreciable spending for tobacco control. By 1993, the ASSIST

## 5. State Facilitating Conditions and Barriers

**Table 5.2. Per Capita Funding (\$/Person) for Tobacco Control in Each State, by Year**

(Shading indicates ASSIST states.)

State	1991	1992	1993	1994	1995	1996	1997	1998	Change 1991–98
AK	0.00	0.00	0.00	0.88	1.06	1.02	1.00	1.09	1.09
AL	0.01	0.00	0.01	0.06	0.06	0.06	0.04	0.11	0.10
AR	0.01	0.00	0.00	0.05	0.05	0.05	0.05	0.14	0.13
AZ	0.02	0.03	0.01	0.07	0.16	3.05	5.12	7.49	7.47
CA	6.43	2.81	3.90	2.85	2.17	2.12	4.94	5.91	-0.52
CO	0.19	0.18	0.39	0.54	0.53	0.48	0.47	0.43	0.24
CT	0.00	0.01	0.01	0.05	0.03	0.03	0.10	0.18	0.18
DC	0.02	0.04	0.02	0.53	0.44	0.00	0.34	0.84	0.82
DE	0.01	0.02	0.01	0.12	0.15	0.14	0.37	0.76	0.75
FL	0.00	0.00	0.00	0.04	0.04	0.04	0.04	0.04	0.04
GA	0.00	0.01	0.00	0.02	0.03	0.02	0.04	0.09	0.09
HI	0.06	0.09	0.12	0.40	0.22	0.21	0.41	0.64	0.58
IA	0.01	0.01	0.00	0.08	0.08	0.08	0.14	0.19	0.18
ID	0.24	0.21	0.18	0.33	0.16	0.16	0.15	0.30	0.06
IL	0.00	0.00	0.00	0.04	0.05	0.05	0.09	0.16	0.16
IN	0.11	0.11	0.13	0.18	0.25	0.21	0.24	0.25	0.14
KS	0.00	0.00	0.00	0.18	0.26	0.25	0.25	0.21	0.21
KY	0.00	0.00	0.00	0.04	0.05	0.07	0.11	0.20	0.20
LA	0.00	0.00	0.00	0.06	0.05	0.05	0.05	0.07	0.07
MA	0.12	0.15	0.15	17.42	14.77	14.16	12.70	7.25	7.13
MD	0.00	0.00	0.00	0.06	0.07	0.08	0.09	0.13	0.13
ME	0.30	0.29	0.70	0.83	0.81	0.80	0.80	0.80	0.50
MI	0.16	0.21	0.30	0.35	0.20	0.20	0.20	0.20	0.04
MN	0.46	0.44	0.63	0.60	0.85	0.69	0.67	0.99	0.53
MO	0.10	0.09	0.21	0.29	0.28	0.25	0.28	0.29	0.19
MS	0.00	0.00	0.00	0.04	0.04	0.04	0.03	0.15	0.15
MT	0.00	0.00	0.00	0.37	0.31	0.30	0.29	0.50	0.50
NC	0.12	0.12	0.27	0.34	0.25	0.25	0.29	0.29	0.17
ND	0.02	0.02	0.00	0.52	0.41	0.40	0.39	0.66	0.64
NE	0.00	0.00	0.00	0.25	0.28	0.31	0.34	0.41	0.41
NH	0.00	0.00	0.00	0.27	0.27	0.26	0.25	0.35	0.35
NJ	0.09	0.08	0.16	0.22	0.20	0.23	0.25	0.12	0.03
NM	0.36	0.33	0.62	0.75	0.68	0.67	0.66	0.66	0.30
NV	0.00	0.00	0.00	0.11	0.15	0.11	0.06	0.20	0.20
NY	0.07	0.06	0.13	0.15	0.13	0.12	0.14	0.14	0.07
OH	0.00	0.00	0.00	0.04	0.03	0.03	0.05	0.09	0.09
OK	0.00	0.00	0.00	0.06	0.05	0.05	0.05	0.15	0.15
OR	0.01	0.02	0.03	0.09	0.08	0.13	0.16	0.26	0.25
PA	0.05	0.00	0.00	0.03	0.01	0.03	0.03	0.05	0.00
RI	0.48	0.45	0.83	1.07	0.93	1.06	1.11	1.33	0.85
SC	0.32	0.37	0.39	0.35	0.26	0.32	0.32	0.31	-0.01
SD	0.02	0.04	0.03	0.15	0.13	0.12	0.12	0.48	0.46
TN	0.00	0.00	0.00	0.02	0.02	0.01	0.01	0.06	0.06
TX	0.02	0.03	0.03	0.05	0.02	0.02	0.02	0.04	0.02
UT	0.27	0.34	0.32	0.42	0.14	0.13	0.21	0.30	0.03
VA	0.07	0.07	0.16	0.21	0.21	0.22	0.23	0.19	0.12
VT	0.02	0.00	0.00	0.30	0.38	0.37	0.35	0.77	0.75
WA	0.14	0.13	0.28	0.33	0.34	0.31	0.32	0.31	0.17
WI	0.12	0.12	0.30	0.39	0.30	0.28	0.31	0.32	0.20
WV	0.23	0.22	0.46	0.64	0.73	0.58	0.64	0.58	0.35
WY	0.00	0.00	0.00	0.28	0.17	0.16	0.16	0.62	0.62

Sources: National Cancer Institute, ASSIST Program Office. Farrelly, M. C., T. F. Pechacek, and F. J. Chaloupka. 2003. The impact of tobacco control program expenditures on aggregate cigarette sales: 1981–2000. *Journal of Health Economics* 22 (5): 843–59.

states began to show increases in funding. However, by the end of the period, all states were spending something, and a number of non-ASSIST states had increased their spending, some to approximately the same level as that of some ASSIST states. Arizona in particular showed a huge increase. In 1998, the mean per capita expenditure for tobacco control in ASSIST states was \$0.85 ( $SE = 0.47$ ), compared with \$0.70 ( $SE = 0.30$ ) in non-ASSIST states, which represents a change from 1991 of \$0.65 ( $SE = 0.47$ ) and \$0.48 ( $SE = 0.21$ ), respectively.

The information outlined in this section indicates that a state's political environment and wealth can influence its ability to enact tobacco control policy. Some states tend to support tobacco control, probably because they recognize a role for government in this area. Alternatively, other states may be more likely to view smoking as an individual choice and may be more influenced by tobacco industry efforts working against tobacco control. States with a high prevalence of persons of low socioeconomic status may take in less revenue and therefore have fewer resources to devote to tobacco control. Unfortunately, low socioeconomic status is associated with high smoking rates. Finally, states with greater economic dependence on tobacco may perceive that their interests lie in protecting tobacco rather than instituting tobacco control policies, and the tobacco industry endeavors to reinforce this view.

## Summary

**T**his chapter describes how characteristics of individuals, population

composition, and conditions at the state level can mediate the ultimate effectiveness of tobacco control efforts. States with relatively greater representation in their populations of certain demographic groups more resistant to smoking cessation or susceptible to smoking uptake may not reduce prevalence to the same extent as other states, even with the same level of resources available for tobacco control.

However, resources for tobacco control differ by state and are part of the underlying state conditions that dictate how fast progress can be made. A state's political climate, general wealth, economic dependence on tobacco, and normative outlook regarding the acceptability of smoking all potentially influence that state's ability to reduce tobacco use. Another factor affecting tobacco control progress is the extent of counteractivity from the tobacco industry. An adequate interpretation of the findings from evaluations of tobacco control programs requires an appreciation of the implications related to all of these factors with respect to tobacco control success.

While appropriate measures of many important state conditions are lacking, the ASSIST analysis (chapter 9) was able to adjust for differing state demographic profiles (gender, age, race/ethnicity, education, poverty level, etc.) and included a composite variable for each state's economic dependence on tobacco (see chapter 6).

Program evaluators need to be aware of the issues raised in this chapter and look for success or lack of success in subgroups within the population before

concluding that a program had little or no effect. This evaluation process can reveal new areas where improved or tailored interventions are necessary and thus inform the design of future tobacco control strategies.

### Conclusions

1. Economic and demographic factors are important state conditions that may affect tobacco control interventions. Demographic factors and state economic dependence on tobacco were measured and were used as covariates for the ASSIST evaluation analysis.
2. State demographic factors, developed from census and population survey data, included gender, age, race and ethnicity, education, income, state population, metropolitan area representation, and region. Because such factors have been historically related to differences in smoking prevalence and consumption levels, they can affect long-term changes in the outcomes of tobacco control interventions.
3. State economic dependence on tobacco represented a gross state product derived from tobacco growing and manufacturing. During the time-frame of ASSIST, the influence of this dependence could be observed in areas such as the lower level of tobacco control policy outcomes—for example, increases in cigarette taxes and enactment of clean indoor air laws—in major tobacco-growing states.
4. Several of the state conditions used in the ASSIST evaluation analysis did show a significant relationship with levels of per capita cigarette consumption. Because demographic factors were used to adjust state-level prevalence rates, these factors were already accounted for in the evaluation analysis.
5. Other state-level conditions, such as family, religion, wealth, and political affiliation, represent promising future areas for exploring the relationship between population demographics and health outcomes relating to the use of tobacco.

## Appendix 5.A. Baseline Values for Variables Considered in the ASSIST Evaluation Analyses

(Shading indicates ASSIST states.)

State	Female (%)	Median age	African American		Hispanic		Education at or above		State population	Metropolitan (%)	Index of Economic Dependence on Tobacco
			(%)	(%)	(%)	(%)	high school	Below poverty			
AK	46.7	38	3.8	3.0	55.2	9.1	409,021	48.0	0		
AL	53.2	42	22.9	0.6	36.7	17.4	3,124,244	63.8	0.342722		
AR	52.9	43	13.8	0.8	34.2	20.0	1,788,260	40.0	0		
AZ	51.3	41	2.7	16.6	51.9	15.4	2,895,613	79.3	0		
CA	50.4	39	6.7	23.6	49.8	18.2	22,610,825	96.0	0.002424		
CO	51.1	40	3.7	11.4	56.7	9.9	2,615,886	83.3	0		
CT	52.4	42	7.3	5.7	49.0	8.5	2,492,818	93.5	1.107191		
DC	54.1	40	61.8	5.5	50.5	26.4	461,735	100.0	0		
DE	52.3	41	15.6	2.2	45.2	10.2	525,876	65.4	0		
FL	52.4	44	11.3	12.3	45.5	17.8	10,507,267	91.1	0.298797		
GA	52.4	40	24.9	1.8	42.8	13.5	5,045,636	66.9	11.13065		
HI	49.5	41	2.5	6.3	50.5	8.0	863,260	72.3	0		
IA	52.4	43	1.5	1.1	43.2	10.3	2,095,129	47.7	0		
ID	50.9	41	0.3	4.8	48.2	13.1	769,924	23.5	0		
IL	52.3	41	13.4	7.2	46.1	13.6	8,674,831	83.1	0.197492		
IN	52.4	41	7.1	1.6	34.6	12.2	4,240,393	65.4	0.32914		
KS	51.7	42	5.2	3.4	48.9	13.1	1,865,017	61.1	0		
KY	52.6	41	6.6	0.6	35.4	20.4	2,829,299	43.5	34.32137		
LA	53.0	41	28.0	2.4	40.0	26.4	3,059,288	77.4	0		
MA	52.9	41	4.2	4.1	51.6	10.7	4,609,469	91.0	0.060287		
MD	52.3	40	23.9	2.7	46.1	9.7	3,699,137	98.1	0.175933		
ME	52.2	42	0.4	0.5	42.0	15.4	931,807	34.9	0		
MI	52.4	41	12.9	1.9	44.7	15.4	7,021,665	80.1	0		
MN	51.7	41	1.9	1.1	48.2	11.6	3,298,907	69.3	0		
MO	52.8	42	9.8	1.1	41.9	16.1	3,878,349	69.6	0.071814		
MS	53.5	41	32.0	0.6	39.7	24.7	1,886,630	28.9	0		
MT	51.1	43	0.3	1.3	48.7	14.9	606,971	23.6	0		
NC	52.3	41	20.1	1.1	41.8	14.4	5,229,560	54.1	65.14254		
ND	50.7	42	0.5	0.6	49.9	11.2	466,205	43.6	0		
NE	52.1	42	3.2	2.3	46.2	10.3	1,175,012	46.3	0		
NH	51.8	40	0.5	0.9	51.0	9.9	835,095	59.6	0		
NJ	52.6	42	12.1	9.4	46.1	10.9	5,963,048	100.0	0.030058		
NM	51.5	41	1.8	35.8	46.5	17.4	1,132,096	54.2	0		
NV	49.3	41	5.8	9.8	46.4	9.8	1,024,116	88.1	0		
NY	53.0	41	13.4	11.6	45.9	16.4	13,674,145	91.3	1.104069		
OH	52.8	42	9.9	1.2	40.5	13.0	8,234,828	79.3	0.17161		
OK	52.2	42	6.7	2.4	44.4	19.9	2,363,718	59.3	0		
OR	51.5	42	1.4	3.6	53.7	11.8	2,260,603	73.0	0		
PA	53.1	43	8.4	1.7	37.0	13.2	9,145,540	83.2	0.215757		
RI	53.0	42	3.1	4.2	44.5	11.2	762,522	92.2	0		
SC	52.5	41	27.1	0.9	38.7	18.7	2,696,448	65.6	2.839496		
SD	51.5	42	0.5	0.7	44.8	14.2	510,020	17.9	0		
TN	52.9	42	14.4	0.7	35.8	19.6	3,813,635	65.2	4.249443		
TX	51.5	39	11.0	23.5	45.1	17.4	12,812,537	84.4	0.016489		
UT	51.2	38	0.7	4.8	54.6	10.7	1,214,648	87.0	0		
VA	51.7	40	17.8	2.6	47.2	9.7	4,881,939	72.3	29.20964		
VT	51.8	41	0.3	0.7	46.0	10.0	428,251	24.0	0		
WA	51.0	41	2.8	3.9	56.4	12.1	3,866,788	77.3	0		
WI	51.9	41	4.2	1.6	43.8	12.6	3,721,995	57.6	0.200908		
WV	53.0	44	2.9	0.5	28.0	22.2	1,384,643	40.8	0.899024		
WY	50.3	41	0.7	5.0	49.8	13.3	332,679	19.6	0		

Note: Demographic factors are for those aged 18 years and older.

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