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## **How Well Are We Protected?**

### **Secondhand Smoke Exposure and Smokefree Policies in Missouri**

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**July 2011**



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**Missouri Foundation for Health**

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## Preface

In 2003, the Missouri Department of Health and Senior Services (MDHSS) conducted a study to collect county-specific data on tobacco use and chronic disease prevalence. It proved a valuable resource for public health professionals by providing more regionally focused data; however, the sample size of 15,000 Missouri adults limited effective analysis at the county level for many counties.

To address the need for updated and more comprehensive county-level data, and to establish baseline measures for the Tobacco Prevention and Cessation Initiative (TPCI), the Missouri Foundation for Health (MFH) partnered with MDHSS in 2007 to expand on the previous data collection activities. Specifically, MFH and MDHSS aimed to determine county-level prevalence of behavioral risk factors, chronic diseases and conditions, and preventive practices among adults age 18 and older in Missouri.

The resulting 2007 County-level Study (CLS) was implemented by the University of Missouri's Health and Behavioral Risk Research Center, which conducted telephone interviews with Missouri adults between February 2007 and April 2008. The 2007 CLS resulted in 49,513 completed interviews.

Summary results of the 2007 CLS, as well as comparisons to the 2003 data, are available at <http://www.dhss.mo.gov/data/CommunityDataProfiles>. Information regarding the design and methodology of the 2007 CLS is available at <http://health.mo.gov/data/cls/designmethodology.php>.

### 2007 Missouri County-level Study Report Series

The Center for Tobacco Policy Research (CTPR) at Washington University in St. Louis conducted further analyses of the 2007 CLS data to explore specific topics in greater depth. This report, "How Well Are We Protected?", is the third in a series that describes the results of CTPR's analyses. These reports will be disseminated to tobacco control stakeholders throughout Missouri to support programmatic efforts and inform strategic planning of tobacco control activities. The reports are available at <http://ctpr.wustl.edu/reports>. "How Well Are We Protected?" highlights differences in secondhand smoke exposure, personal smoking policies, and support for comprehensive smokefree policies.



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## Introduction

### Public Health Importance of Secondhand Smoke

The health risks associated with secondhand smoke are considerable. Secondhand smoke has been identified as a cause of heart disease, lung cancer, low birthweight, as well as numerous respiratory illnesses.<sup>1</sup> Scientific evidence has indicated that there is no safe level of exposure to secondhand smoke and even brief exposure can result in serious health consequences.<sup>1</sup>

Establishing smokefree environments has been recognized as the only way to fully protect individuals from secondhand smoke exposure.<sup>1</sup> Smokefree policies not only improve public health by reducing secondhand smoke exposure, but also by encouraging current smokers to quit and preventing youth from starting to smoke.<sup>2</sup> A recent report by the American Cancer Society estimates that a comprehensive statewide law in Missouri would reduce the number of smoking-related deaths by about 35,600 and, within five years, save approximately \$71 million in lung cancer, heart attack and stroke treatment costs.<sup>2</sup>

### Report Overview

This report will highlight Missouri's demographic and geographic variation in secondhand smoke exposure, personal smoking policies in the home and car, and support for comprehensive smokefree workplace policies. When possible, references to national averages are made. These references include data taken from the 2006-2007 Tobacco Use Supplement to the Current Population Survey (TUS-CPS) and the State Tobacco Activities Tracking and Evaluation System (STATE System), as reported by the CDC.<sup>3</sup>

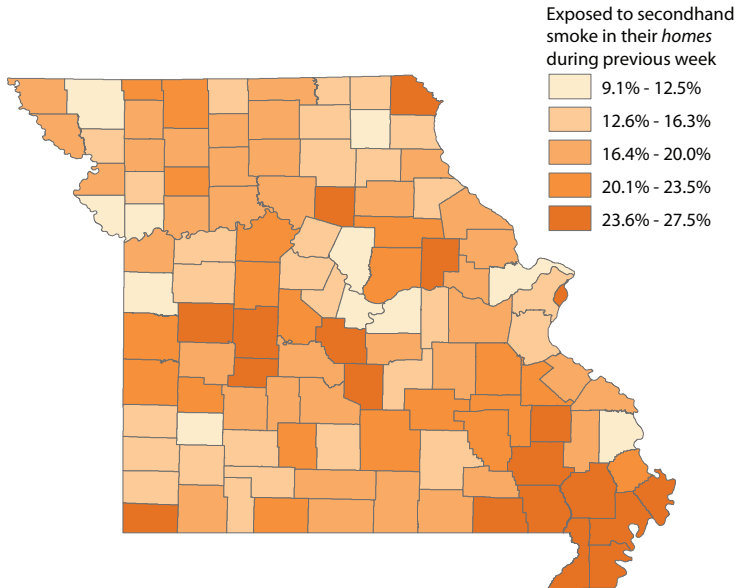
### How Report Can Be Used

Findings from this report provide a clear picture of secondhand smoke exposure and smokefree policies in Missouri. This report identifies populations and geographic areas that would benefit most from future intervention efforts. Encouraging and implementing smokefree policies will reduce secondhand exposure, increase smoking cessation, and help prevent youth from using tobacco.

## Secondhand Smoke Exposure and Policies in the Home

In 2007, 16.5% of adult Missourians were exposed to secondhand smoke in their homes. Figure 1 shows the geographic variation in exposure, with secondhand smoke exposure in the home more likely in southeast Missouri compared to other regions of the state.\*

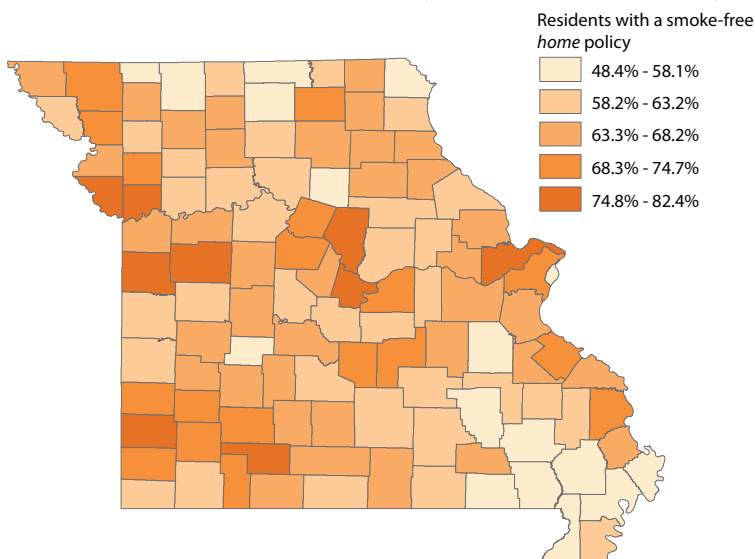
**Figure 1: Secondhand smoke exposure in the home was more likely in southeast Missouri.**



The percentage of Missourians with a smokefree home policy (68.9%) was lower than the national average of 77.6%.<sup>3</sup> Figure 2 illustrates the percentage of residents with a smokefree home policy, with residents in southeast Missouri less likely to have a policy in place compared to residents in other Missouri regions.\*

The presence of children in the home was also related to the presence of a smokefree policy. Individuals with children in the household were more likely to report a smokefree home policy (74.9%) than residents without children in their homes (64.2%).\*

**Figure 2: Presence of a smokefree policy in the home was less likely in southeast Missouri.**



\*Results were statistically significant ( $p < 0.01$ ).



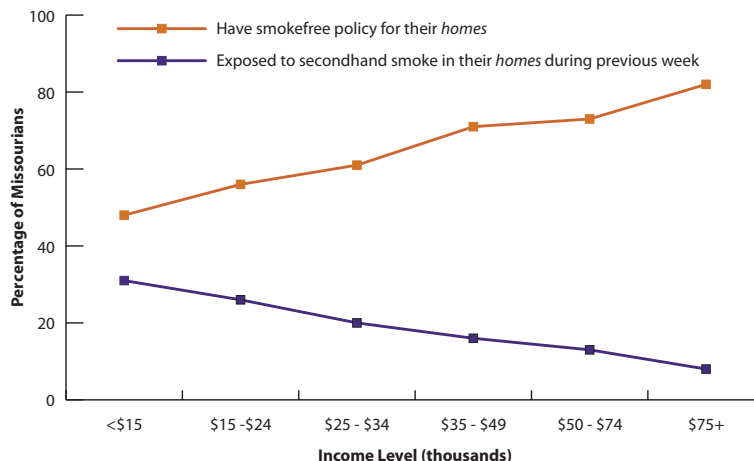
For Missouri residents, there were differences in secondhand smoke exposure and the presence of policies about smoking in the home according to income, race, education, and insurance status.

## Income

Annual household income was related to secondhand smoke exposure in the home (Figure 3).<sup>\*</sup> Missourians with lower incomes were more likely to be exposed to secondhand smoke in their homes compared to residents with higher incomes; while 31.1% of residents making less than \$15,000 were exposed to secondhand smoke, only 8.0% of residents with an income of \$75,000 or more were exposed.

The presence of a smokefree policy in the home also varied with annual household income level (Figure 3).<sup>\*</sup> Individuals with lower incomes were less likely to report the presence of a smokefree policy in their homes compared to residents with higher incomes.

**Figure 3: Individuals with lower income levels were less likely to have a smokefree policy in their homes and were more likely to be exposed to secondhand smoke in their homes.**

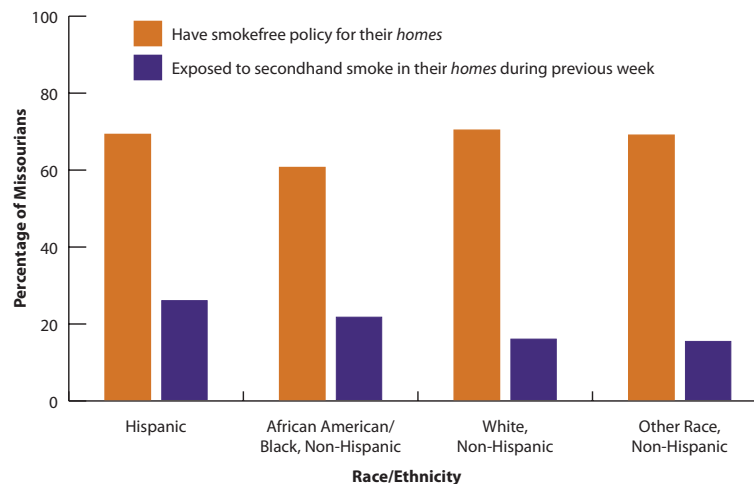


## Race

Secondhand smoke exposure in the home also varied by race/ethnicity (Figure 4).<sup>\*</sup> Hispanics and African Americans were more likely to be exposed to secondhand smoke in their homes (25.7% and 21.4%, respectively), compared with Whites (15.7%) and Other races (15.1%).

In addition, the presence of a smokefree policy in the home was related to race/ethnicity (Figure 4).<sup>\*</sup> Specifically, African Americans were less likely to have a smokefree policy for their homes (60.3%) compared with Whites (70.0%), Hispanics (68.9%), and Other races (68.7%).

**Figure 4: African Americans were less likely to have a smokefree policy for their homes and were more likely to be exposed to secondhand smoke in their homes. In addition, Hispanics were also more likely to be exposed to secondhand smoke in their homes.**



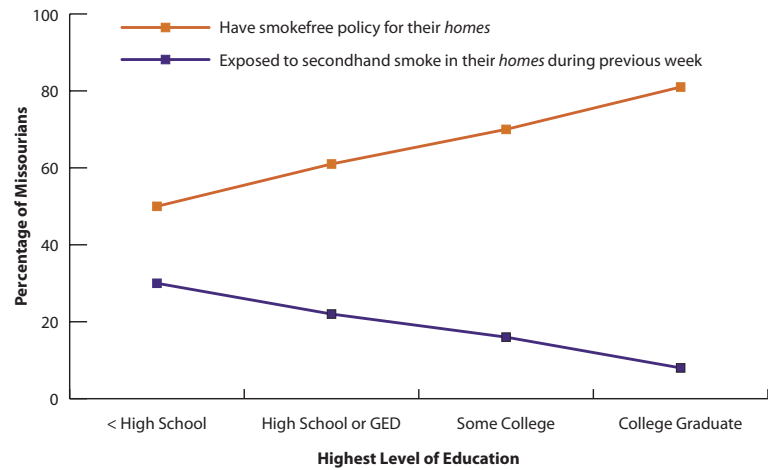
<sup>\*</sup>Results were statistically significant (p<0.01).

## Education

Missourians with a lower level of education were more likely to be exposed to secondhand smoke in their homes compared to individuals with higher levels of education (Figure 5).<sup>\*</sup> Exposure was more than three times as high among those with less than a high school education compared to residents with a college degree (30.0% vs. 7.7%).

Education level was also related to the presence of a smokefree policy in the home (Figure 5).<sup>\*</sup> Only 50.3% of individuals with less than a high school education reported having a smokefree policy in their homes compared to 81.3% of college graduates.

**Figure 5: Individuals with lower education levels were less likely to have a smokefree policy in their homes and were more likely to be exposed to secondhand smoke in their homes.**

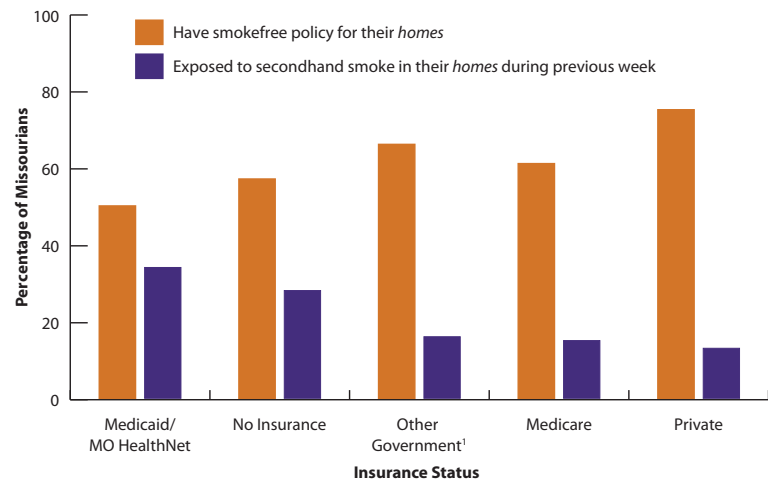


## Insurance Status

Secondhand smoke exposure in the home also varied according to insurance status (Figure 6).<sup>\*</sup> Medicaid recipients and the uninsured were more likely to be exposed to secondhand smoke in their homes (34.0% and 27.9%, respectively), compared to individuals with other types of insurance.

In addition, the presence of a smokefree policy in the home was related to insurance status (Figure 6).<sup>\*</sup> Specifically, individuals with Medicaid coverage were the least likely to have a smokefree policy for their homes (49.5%) and those with Private coverage were the most likely to have a smokefree policy for their homes (75.0%).

**Figure 6: Medicaid recipients were less likely to have a smokefree policy in their homes and were more likely to be exposed to smoke in their homes.**



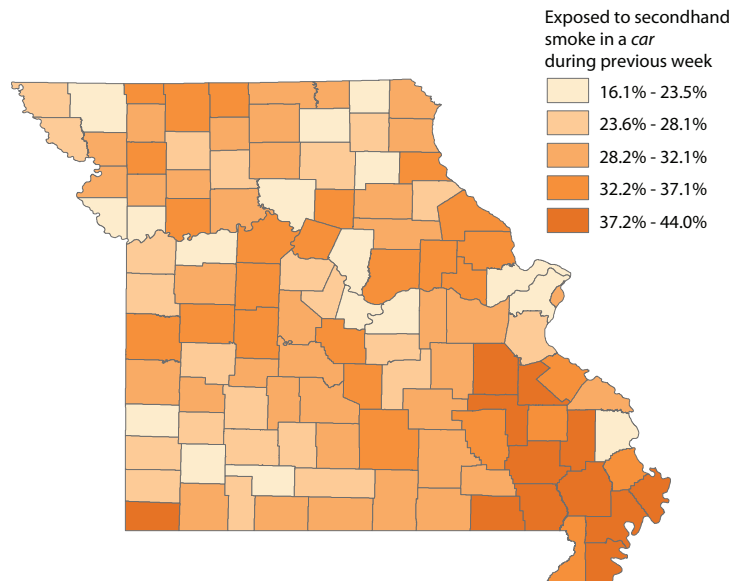
<sup>1</sup> Military, Veterans Affairs, and Indian Health Service

<sup>\*</sup>Results were statistically significant (p<0.05).

## Secondhand Smoke Exposure and Policies in the Car

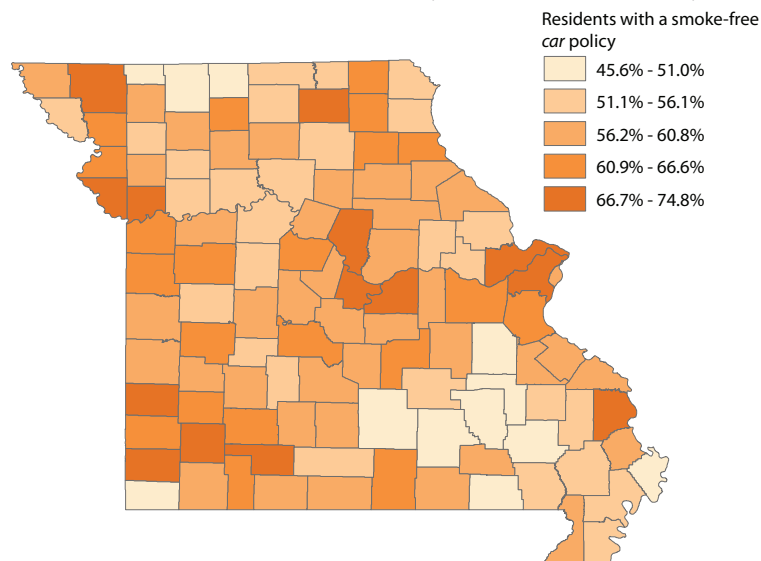
In 2007, 26.2% of Missouri residents experienced exposure to secondhand smoke in a car. Secondhand smoke exposure in a car was more likely in southeast Missouri compared with other regions of the state (Figure 7).\*

**Figure 7: Secondhand smoke exposure in a car was more likely in southeast Missouri.**



Variations in the presence of smokefree car policies mirror the geographical trend of secondhand smoke exposure in a car. The overall percentage of Missouri residents who reported a smokefree car policy was 63.8%. However, as shown in Figure 8, presence of a smokefree car policy was less likely in southeast Missouri, with county rates as low as 45.6%.\*

**Figure 8: Presence of a smokefree policy in the car was less likely in southeast Missouri.**



\*Results were statistically significant ( $p < 0.01$ ).

There were also differences in secondhand smoke exposure and the presence of policies about smoking in the car according to income, race, education, and insurance status.

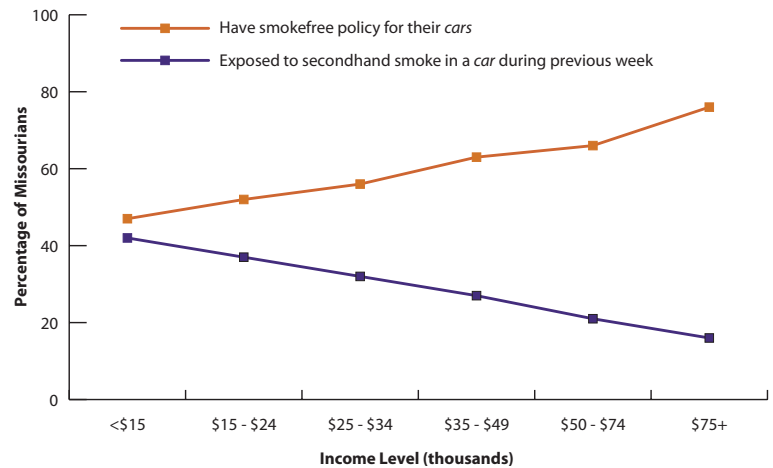
## Income

The likelihood of exposure to secondhand smoke in a car increased as income decreased (Figure 9).\*

While 16.0% of those with an annual household income of \$75,000 or more reported exposure to secondhand smoke in a car during the previous week, 42.4% of residents making \$15,000 or less reported exposure.

Income was also associated with the presence of a smokefree car policy (Figure 9).\* Seventy-six percent of individuals with the highest level of income (\$75,000+) reported a smokefree policy in their cars, while 47.1% of residents from the lowest income level reported a smokefree policy.

**Figure 9: Individuals with lower incomes were less likely to have a smokefree policy for their cars and were more likely to be exposed to secondhand smoke in a car.**

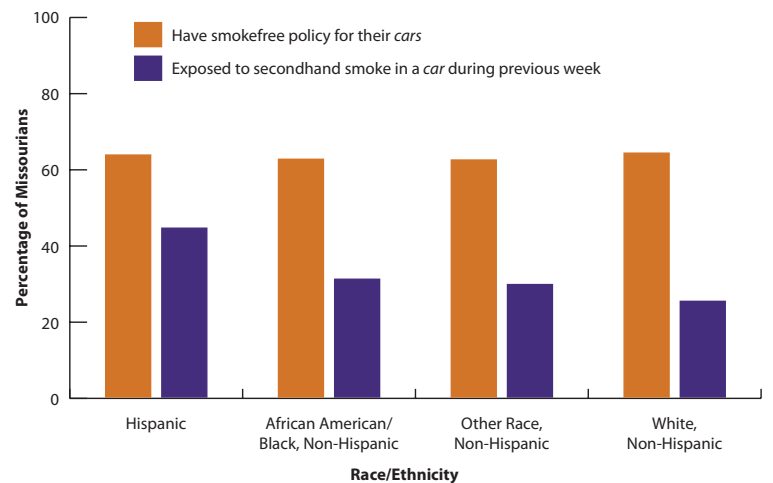


## Race

Secondhand smoke exposure in the car varied according to race/ethnicity (Figure 10).\* Hispanics were more likely to be exposed to secondhand smoke in a car (44.3%) compared with Whites (25.1%), African Americans (30.9%), and Other races (29.5%).

Race/ethnicity was not significantly related to the presence of a smokefree car policy (Figure 10).

**Figure 10: There were no significant differences in the presence of a smokefree car policy by race/ethnicity. Hispanics were more likely to be exposed to secondhand smoke in a car.**



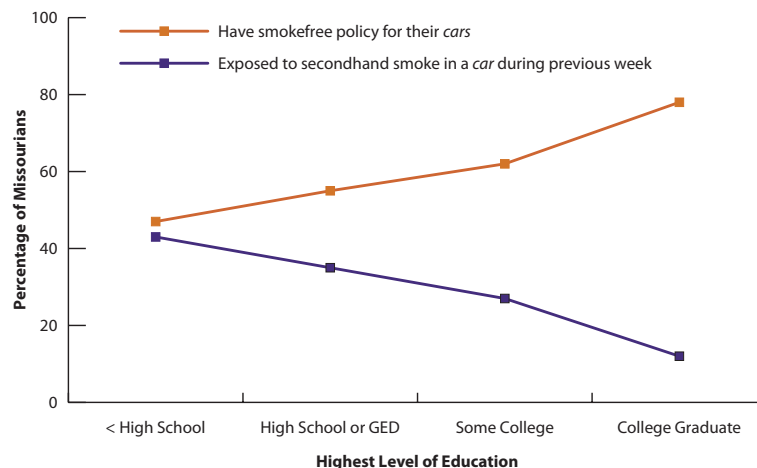
\*Results were statistically significant (p<0.01).

## Education

Missouri residents with a higher level of education were less likely to be exposed to secondhand smoke while in a car than those with lower levels of education (Figure 11).<sup>\*</sup> Twelve percent of those with a college degree reported exposure to secondhand smoke in a car during the past week, while 43.2% of those with less than a high school degree reported exposure.

Level of education was also associated with the presence of a smokefree car policy (Figure 11).<sup>\*</sup> Seventy-eight percent of individuals with a college degree reported having a smokefree policy in their cars, while only 46.9% of individuals with less than a high school education had a smokefree policy in their cars.

**Figure 11: Individuals with lower education levels were less likely to have a smokefree policy for their cars and were more likely to be exposed to secondhand smoke in a car.**

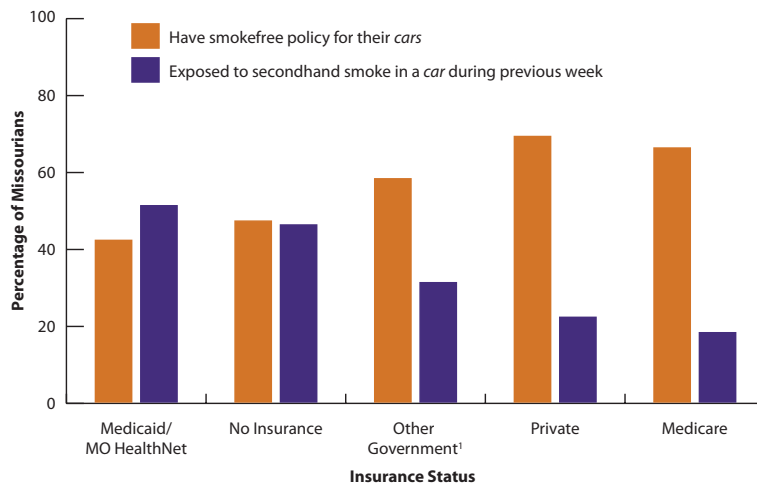


## Insurance Status

Secondhand smoke exposure in a car varied according to insurance status (Figure 12).<sup>\*</sup> Medicaid recipients and the uninsured were more likely to be exposed to secondhand smoke in a car (50.9% and 45.5%, respectively) compared to individuals with Other Government (31.2%), Private (21.8%), or Medicare (17.5%) insurance.

Variations in the presence of a smokefree policy in the car were also observed according to insurance status (Figure 12).<sup>\*</sup> Specifically, Medicaid recipients were the least likely to have a smokefree car policy (42.0%) while individuals with Private coverage were the most likely (68.5%).

**Figure 12: Medicaid recipients were less likely to have a smokefree policy for their cars and were more likely to be exposed to secondhand smoke in a car.**

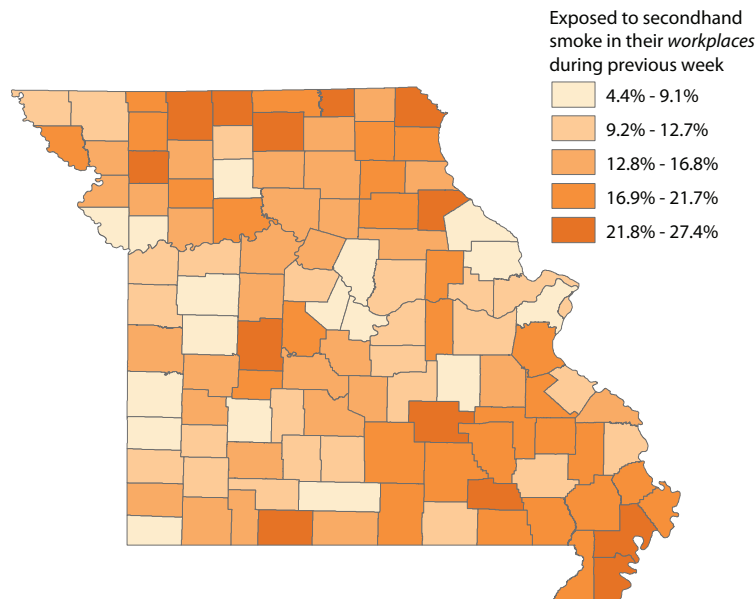


<sup>\*</sup>Results were statistically significant (p<0.01).

## Secondhand Smoke Exposure and Policies in the *Workplace*

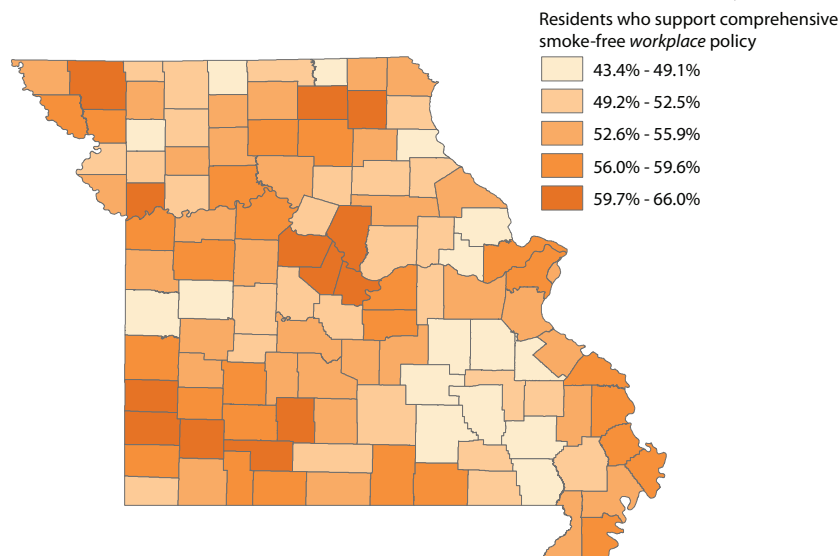
In 2007, 11.5% of adult Missourians were exposed to secondhand smoke in the workplace, which is higher than the national average of 7.3%.<sup>3</sup> As with home and car exposure, secondhand smoke exposure in the workplace was more likely in southeast Missouri compared with other regions of the state (Figure 13).<sup>\*</sup> Exposure was also high in several north-central counties, with as many as 27.4% of residents reporting exposure to secondhand smoke in their workplaces during the previous week.

**Figure 13: Secondhand smoke exposure in the workplace was more likely in southeast Missouri.**



Currently, 47.9% of the U.S. population live under comprehensive smokefree workplace policies that include all workplaces, restaurants, and bars.<sup>4</sup> In contrast, only 14.2% of Missourians are protected by a comprehensive smokefree workplace law.<sup>4</sup> In 2007, 56.3% of Missouri residents indicated support for a comprehensive law, with support varying by geographic location, as shown in Figure 14.

**Figure 14: Support for a comprehensive smokefree workplace policy varies across Missouri.**



<sup>\*</sup>Results were statistically significant (p<0.01).

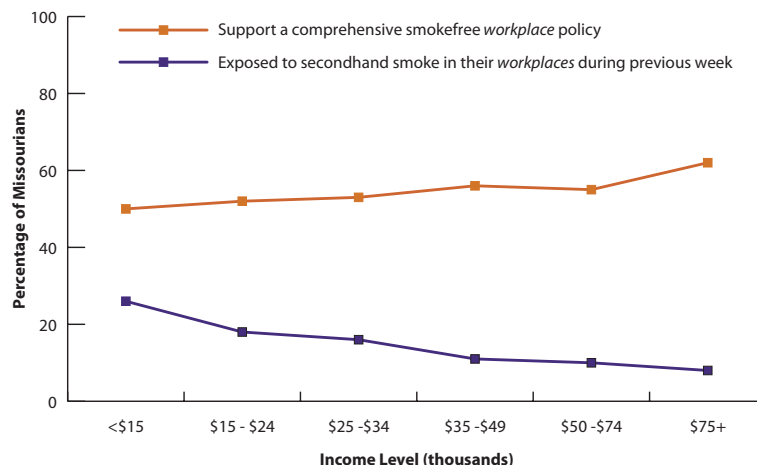
Differences in secondhand smoke exposure and support for comprehensive policies in the workplace according to income, race, education, and insurance status were also noted.

## Income

Annual household income was related to secondhand smoke exposure in the workplace (Figure 15).<sup>\*</sup> Individuals with lower incomes were more likely to be exposed to secondhand smoke at work: 26.1% of residents making less than \$15,000 reported exposure, while only 7.7% of residents with an income of \$75,000 or more reported exposure.

Income was also related to support for a comprehensive smokefree workplace policy (Figure 15).<sup>\*</sup> Lower-income individuals were less likely than individuals with higher incomes to support a comprehensive policy, with 50.1% of individuals making less than \$15,000 reporting support and 62.0% of those making \$75,000 or more reporting support.

**Figure 15: Individuals with lower incomes were less likely to support a comprehensive smokefree workplace policy and were more likely to be exposed to secondhand smoke in the workplace.**

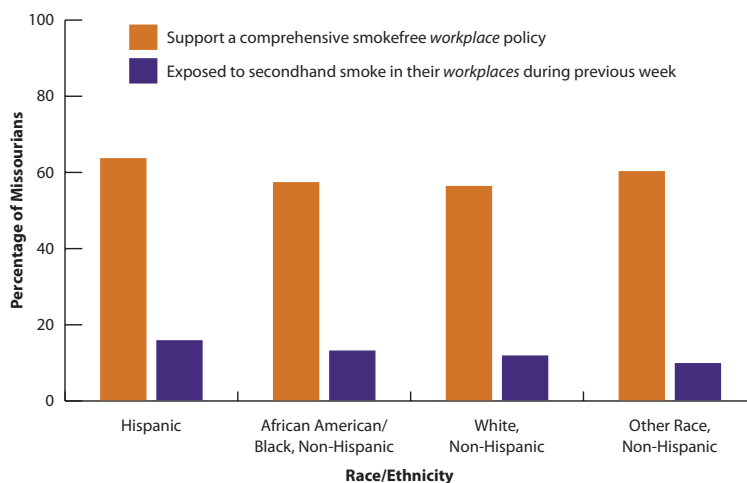


## Race

Exposure to secondhand smoke in the workplace varied by race/ethnicity (Figure 16).<sup>\*</sup> Hispanics were more likely to be exposed to secondhand smoke at work (15.4%) compared with all other racial/ethnic groups (12.7% of African Americans, 11.4% of Whites, and 9.4% of Other race respondents).

Race/ethnicity was also related to support for a smokefree workplace policy (Figure 16).<sup>\*</sup> Hispanics were more likely to support a comprehensive smokefree policy (63.2%) than other racial/ethnic groups (56.9% of African Americans, 55.9% of Whites, and 59.8% of Other race respondents).

**Figure 16: Hispanics were more likely to support a comprehensive smokefree workplace policy and were more likely to be exposed to secondhand smoke in their workplaces.**



<sup>\*</sup>Results were statistically significant (p<0.01).



## Education

Missourians with a higher level of education were less likely to report exposure to secondhand smoke in the workplace than those with lower levels of education (Figure 17).<sup>\*</sup> Six percent of individuals with a college degree reported exposure to secondhand smoke in the workplace, while 24.7% of individuals with less than a high school education reported exposure.

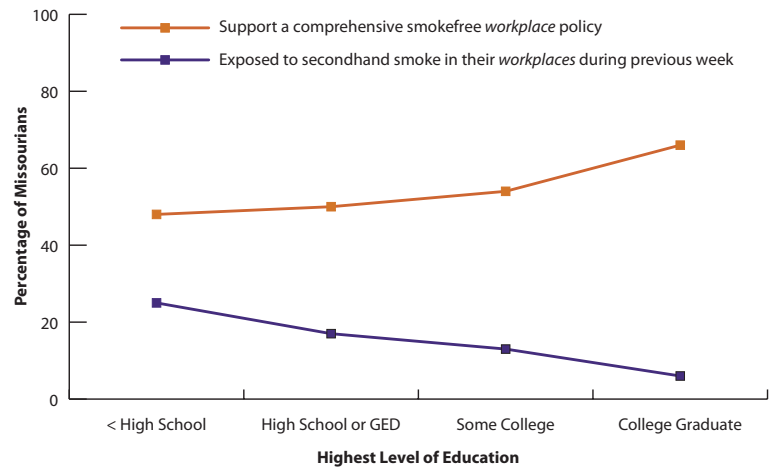
Level of education was also related to support for a comprehensive smokefree workplace policy (Figure 17).<sup>\*</sup> Sixty-six percent of individuals with a college degree reported support, while 47.6% of individuals with less than a high school education reported support.

## Insurance Status

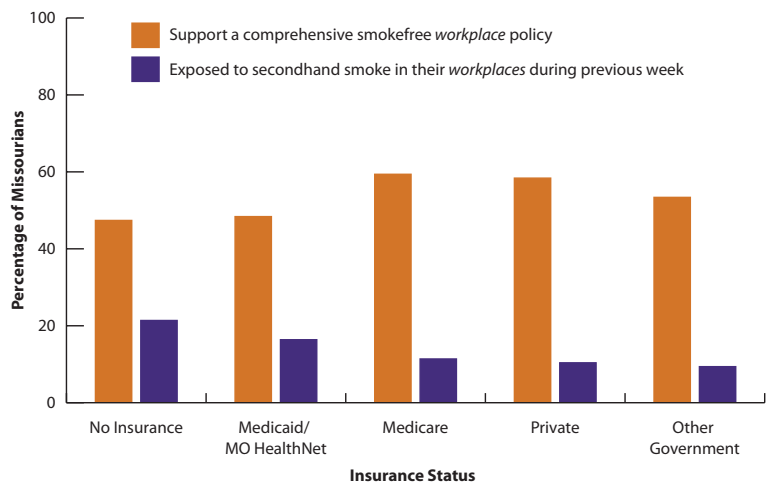
Insurance status was also related to secondhand smoke exposure in the workplace (Figure 18).<sup>\*</sup> Missourians with no insurance coverage were more likely to be exposed to secondhand smoke at work (20.6%) and individuals with Other Government coverage (8.8%) or Private coverage (9.9%) were less likely to be exposed compared to individuals with other types of insurance.

Insurance status was also related to support for a smokefree workplace policy (Figure 18).<sup>\*</sup> Uninsured Missourians were less likely to support a comprehensive smokefree workplace policy (47.4%) than individuals with Medicare or Private coverage (59.0% and 58.4%, respectively).

**Figure 17: Individuals with lower levels of education were less likely to support a comprehensive smokefree workplace policy and were more likely to be exposed to secondhand smoke in the workplace.**



**Figure 18: Individuals with no insurance were less likely to support a comprehensive smokefree workplace policy and were more likely to be exposed to secondhand smoke in the workplace.**



<sup>1</sup> Military, Veterans Affairs, and Indian Health Service

<sup>\*</sup>Results were statistically significant ( $p < 0.01$ ).



## What Does All of This Mean?

Missouri residents experienced significant exposure to secondhand smoke in the home, car, and workplace in 2007. Exposure in the workplace was higher in Missouri than the national average.<sup>3</sup> In addition, the highest rates of exposure for home, car, and workplace were consistently concentrated in the southeast region of Missouri, indicating a need for more comprehensive intervention efforts in this geographic area.

Based on the findings in this report, the following are recommendations for the Missouri tobacco control community:

### Implement strategies targeting specific groups and geographical areas in Missouri.

Exposure to secondhand smoke in Missouri, in both the home and car, was highest for those with lower education and income levels, and those in the southeast region of Missouri. Efforts to decrease secondhand smoke exposure and the associated risks should be initiated to address these disparities. Health education messages should be tailored to reach individuals with low income and education levels. Additionally, social norms greatly impact health-related behavior and beliefs.<sup>1</sup> Local-level efforts to reshape regional norms regarding smoking and secondhand smoke exposure and policy could be beneficial in the southeast region of the state.

### Encourage the adoption of personal home and car smokefree policies.

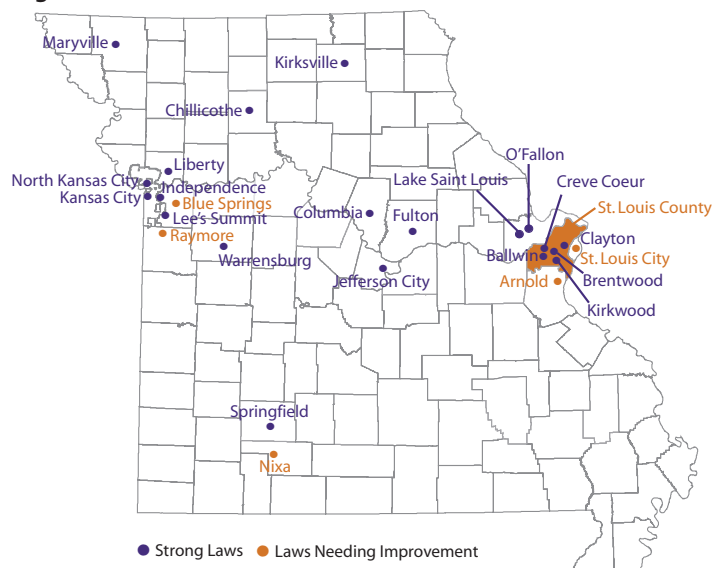
Private settings such as homes and cars are becoming larger sources of overall secondhand smoke exposure as public places are increasingly made smokefree.<sup>1,4</sup> In 2007, 26.2% of Missouri residents reported being exposed to secondhand smoke in a car and 16.5% reported exposure in their homes. As part of a comprehensive tobacco control effort, the adoption of personal smokefree policies for the home and car would decrease the rate of exposure for Missouri residents. Private settings are also major sources of secondhand smoke exposure for children.<sup>4</sup> Partnering with members of the healthcare community to reach parents who smoke can be an effective way to increase knowledge about the effects of secondhand smoke and decrease exposure.<sup>4</sup> The American Academy of Pediatrics recommends that clinicians counsel all families to make their homes and cars 100% smokefree.<sup>4,5</sup>

### Implement comprehensive smokefree workplace policies.

Implementation of comprehensive smokefree workplace policies is the most effective way to prevent exposure to secondhand smoke.<sup>1</sup> In 2007, 56.3% of Missouri residents indicated support for a comprehensive smokefree workplace law. However, only 14.2% of Missourians are currently protected by comprehensive smokefree policies that cover workplaces, restaurants, and bars.<sup>5</sup>

As of June 2011, Missouri has passed twenty strong local smokefree laws (Figure 19).<sup>6</sup> Other states have found that passing smokefree policies at the local level builds momentum for a statewide effort.<sup>3,7,8</sup> Continued efforts of local advocates will contribute to the ultimate goal of a statewide comprehensive smokefree policy.

Figure 19: Smokefree Laws in Missouri, 2011<sup>6</sup>



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