

## *Troubling Trends in Indiana*

# Most Vulnerable Groups Have Highest Smoking Rates

Tobacco use causes more deaths annually than alcohol, AIDS, car accidents, illegal drugs, murders, and suicides combined, making it the most preventable cause of death and disease in the United States (U.S. Department of Health and Human Services, 2004). Unfortunately, Indiana's smoking prevalence is 2nd highest among the states (Indiana State Department of Health, 2005). Among Hoosiers, 27.3 percent of the adult population are current smokers, compared with a national rate of 20.6 percent.

Embedded in the overall rate are statistics for particular groups that are especially troubling. In Indiana, blacks and groups with high poverty and low education rates have the highest smoking rates. The higher rates among blacks are particularly troublesome because blacks appear to have a higher genetic and cultural vulnerability to tobacco-related illnesses and deaths. And while Hoosier women have better rates than men, pregnant women in Indiana have one of the highest smoking rates in the nation, resulting in increased health risks to their infants.

This brief provides an overview of Indiana's tobacco-related health statistics and the sociological reasons why numerous Hoosiers fall into the "healthcare gap" caused by health disparities.

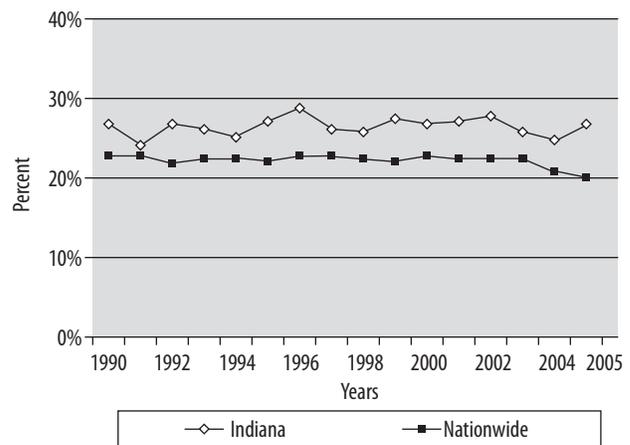
### **The Prevalence and Financial Burden of Tobacco Use**

One of the national health objectives is to reduce the prevalence of cigarette smoking among adults to below 12 percent (U.S. Department of Health and Human Services, 2000a), and public health campaigns to reduce smoking appear to be showing some success. According to the Centers for Disease Control and Prevention (2005b), the number of individuals who had once smoked and subsequently quit exceeded 50 percent for the first time in 2002. However, smoking continues to be the leading

preventable cause of disease, death, and financial burden in the United States, resulting in more than 440,000 deaths and \$157 billion in annual health-related economic losses each year (U.S. Department of Health and Human Services, 2004).

In 2004, an estimated 44.5 million U.S. adults were current smokers, and 1.2 million of these smokers lived in Indiana. Indiana's smoking rate has averaged 3 to 5 percentage points higher than the national average for the past two decades (see Figure 1).

**Figure 1. Percentage of adults who are current smokers in the United States and Indiana, 1990 to 2004**



Sources: Indiana Tobacco Prevention and Cessation (2004, 2005) and National Center for Chronic Disease Prevention & Health Promotion (2003).

*This issue brief was developed by Eric Wright, Ph. D., director of health policy, and other analysts at the Center for Urban Policy and the Environment. Dr. Wright and a team of specialists who study health policy issues are developing a Center for Health Policy that will soon operate as a highly focused research unit.*



In 2000, in the United States, an estimated 12.7 million smoking-attributable diseases were diagnosed. Chronic bronchitis and emphysema were the most prevalent (see Table 1). Tobacco use claims the lives of more than 10,300 Indiana residents each year and contributes to an increased prevalence in various cancers, emphysema, heart disease, lung cancer, and stroke (Indiana Tobacco Prevention and Cessation, 2005). Researchers estimate that 201,500 people in Indiana have a smoking-attributable disease (Hyland, Li, Giovino, Yang, & Cummings, 2003).

**Table 1: Number of smoking-attributable conditions diagnosed among current and former smokers,<sup>a</sup> United States, as of 2000**

Condition	Diagnoses Among Current and Former Smokers	
	Number	Percentage of Total
Chronic bronchitis	4,505,000	35%
Emphysema	3,016,000	24%
Heart attack	2,474,000	19%
All cancers except lung cancer <sup>b</sup>	1,512,000	12%
Stroke	1,021,000	8%
Lung cancer	184,000	1%
<b>Total diagnoses</b>	<b>12,711,000</b>	<b>100%</b>

Source: Adapted from Centers for Disease Control and Prevention (2002), <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5235a4.htm>

<sup>a</sup> Current and former smokers are defined as people who reported smoking at least 100 cigarettes during their lifetime.

<sup>b</sup> Includes cancers of the lung, bladder, mouth/pharynx, esophagus, cervix, kidney, larynx, and pancreas.

At least \$1.9 billion is spent on tobacco-related medical costs each year in Indiana, and \$380 million of this amount is paid by Medicaid (National Center for Tobacco-Free Kids, 2004). In addition, smoking costs the nation nearly \$92 billion (\$2.37 billion in Indiana) because of reduced productivity from smoking-caused work absences, smoking breaks, on-the-job performance declines, early termination of employment because of smoking-caused illness, and residential and commercial property losses from smoking-caused fires, and cleaning and maintenance costs caused by tobacco smoke and litter (Centers for Disease Control and Prevention, 2005a; National Center for Tobacco-Free Kids, 2004).

## Smoking-Related Morbidity and Mortality Statistics for Indiana

A 2003 report from the Indiana State Department of Health, *The Impact of Tobacco on the Health and Welfare of Indiana Residents*, reported the following statistics:

### Cancer

- Each year, 4,270 new cases of lung cancer are diagnosed in Indiana.
- Indiana has 3,800 lung cancer deaths per year.
- Cigarette smoking accounts for between 40 percent to 70 percent of bladder cancers (4th leading cause of cancer deaths among Indiana men) and about 30 percent of pancreatic cancers.
- As much as 31 percent of deaths from cervical cancer may be due to smoking.

### Chronic obstructive pulmonary disease (COPD)

- Cigarette smoking directly causes almost all cases of COPD, which includes emphysema and chronic bronchitis.
- COPD is the 4th leading cause of death for Indiana residents (more than 3,000 deaths each year)

### Cardiovascular diseases

- Smoking more than doubles the risk of a heart attack and nearly triples the risk of stroke.
- About one in four strokes can be directly attributed to cigarette smoking.
- Cardiovascular diseases are the leading cause of death in Indiana, in the United States, and in most developed countries.
- In 2000, there were 16,140 deaths from heart disease among Indiana residents and 4,212 stroke-related deaths
- In 2000, the Indiana mortality rates for heart disease (271.15/ 100,000 Indiana residents) and stroke (70.92/ 100,000) were higher than rates for those diseases in the United States as a whole (258.2/ 100,000 population and 60.9/100,000 respectively).

Source: Hamilton-Byrd, 2003



### Disparities in Tobacco Use, Morbidity, and Mortality

Current cigarette smoking rates vary across population subgroups. The highest rates nationally are among males, non-Hispanics, those with less formal education, and the poor. Similar patterns exist in Indiana, where subgroups with the highest rates are males, blacks, the poor, and those with little education. Indiana also has a disproportionate number of pregnant women who smoke. Following is a closer look at these disparities by subgroup.

#### Race and Ethnicity

Race and ethnicity are predictors of overall health, morbidity, and mortality. Ethnic minorities in the United States experience at least 60,000 deaths beyond what would be expected if they had the same sex and age-adjusted rates as the white population (Gottlieb & Green, 1987). This disparity is particularly great in Indiana, the 10th worst state in life expectancy, or the number of years of potential life lost (i.e., years before age 75). The potential loss of productive life is twice as great among blacks as among whites in Indiana (Holt, 2003).

Nationally, blacks have a 16 percent higher incidence of lung cancer mortality than whites, a rate that could decline by as much as two-thirds if they did not smoke (U.S. Department of Health and Human Services, 2004). In Indiana, smoking is significantly more prevalent among blacks (27.4 percent) than whites (24.4 percent; Indiana Tobacco Prevention and Cessation, 2004). In addition, blacks are less likely to maintain their cessation efforts, despite the fact that they tend to start smoking later in life, smoke fewer cigarettes, and try to quit more often than other ethnic groups (Bassett, 2003; Sutton, 2003).

Some researchers believe that biological and social factors exacerbate racial disparities in tobacco use. For example, exploratory research has suggested that cotinine—a major

byproduct in the metabolism of nicotine—is broken down more slowly in the blood of black smokers, increasing the amount of nicotine absorbed in the body and the likelihood of tobacco dependence (Benowitz et al., 1999). Also, the 2004 Surgeon General's Report indicates that a preference for mentholated cigarettes—which contain more nicotine and are more addictive—is related to increased rates of tobacco addiction and tobacco-related illnesses among blacks.

Experiences of poverty and racism may limit access to smoking cessation resources and other forms of stress relief, and contribute to the use of tobacco as a coping strategy for blacks (Sutton, 2003). Additionally, tobacco companies have supported a number of African-American institutions as a means to promote a relationship with this group, increasing their exposure to tobacco products and advertising (Indiana Tobacco Prevention and Cessation, 2004).

#### Age

More than 19,000 Indiana children become regular smokers annually, most between the ages of 14 and 18 (Indiana State Department of Health Epidemiology Resource Center, 2003; Substance Abuse and Mental Health Services Administration, 2004). By the time a 6th grade class graduates from high school, the percentage who smoke has increased from 5 percent to 28 percent (Indiana Tobacco Prevention and Cessation Agency, 2004). The cumulative effects of exposure to peer pressure, smoking in the home, and representations of smoking in the media explain much of this age effect.

While age-related patterns of smoking differ slightly by racial group and gender, the strongest influence appears to be a teenager's exposure to other youths and adults who smoke (Waldron & Lye, 1989). Compared with their non-smoking counterparts, students who smoke are 12 percent more likely to live with adults who smoke and 15 percent more likely to associate with other kids who smoke.

**T***he tobacco companies' spending for marketing in a single day in the United States is more than three times Indiana's annual budget for tobacco prevention.*



Young people are also particularly vulnerable to tobacco advertising. One study concluded that youth are twice as sensitive to tobacco advertising as adults and more likely to be influenced to smoke by cigarette marketing than by peer pressure. These researchers also estimated that one-third of underage experimentation with smoking is attributable to tobacco advertising (Pierce, Choi, Gilpin, Farkas, & Berry, 1998).

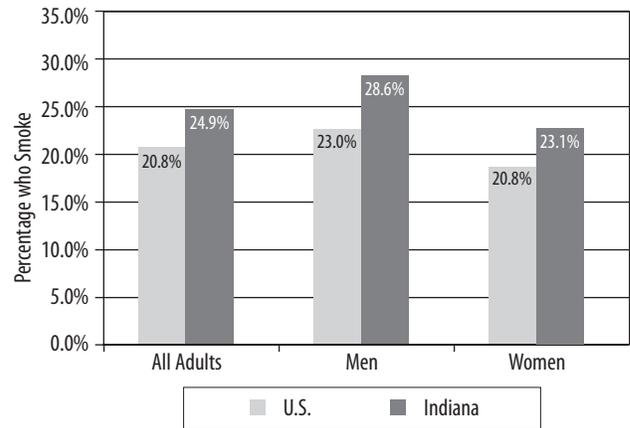
Tobacco companies increased their marketing budgets by 123 percent between 1998 and 2003. In 2003, these companies spent \$15.4 billion on tobacco marketing nationwide, \$475.4 million in Indiana—the 13th highest of all the states in the nation (Campaign for Tobacco-Free Kids, 2005). In fact, the tobacco companies' spending for marketing in a single day in the United States is more than three times Indiana's annual budget for tobacco prevention (Indiana Tobacco Prevention and Cessation, 2004).

On a positive note, there is evidence that smoking is declining among young people. Indiana Tobacco Prevention and Cessation Agency (2005) reported a 32 percent decline in smoking among Indiana high school students and a 20 percent decline among Indiana middle school students between 2000 and 2004. In addition, an awareness survey showed that 90 percent of students are aware of health promotion efforts. Kids who smoke say that their primary reasons for smoking are “looking cool,” “help(s) dealing with stress,” “friends do it,” and “people in my family smoke (Zollinger, Sayell, & Hillman, 2005).”

### Gender

Historically, smoking is more prevalent among men than women (U.S. Department of Health and Human Services, 2001), a trend that is even more pronounced in Indiana than in the nation (see Figure 2). A number of factors may influence this disparity. One of the most frequently cited is the increased social pressure on females to avoid smoking, particularly since smoking affects reproductive health and infant development (U.S. Department of Health and Human Services, 2001). In addition, more frequent physician visits may increase women's awareness of the importance of a healthful lifestyle and the availability of smoking cessation programs. And finally, women may be less vulnerable to tobacco use because they often use a more diverse array of coping strategies to reduce stress than do men, such as increasing social support and obtaining medical assistance (Gaudagnoli, 1982).

Figure 2: **Percentage of adult population who are smokers by gender, United States and Indiana, 2003**



Source: Indiana Tobacco Prevention and Cessation Agency (2004)

Smoking is also a serious health issue among pregnant women as it increases the risk for preterm delivery, stillbirth, low birth weight, and sudden infant death syndrome (U.S. Department of Health and Human Services, 2001). Smoking rates among pregnant women in Indiana (18.5 percent in 2003), have been higher than the national average (18 percent in 2004) for many years (Indiana Youth Institute, 2001; Rahmanifar, 2002; Substance Abuse and Mental Health Services Administration, 2005). In fact, Indiana had the sixth highest rate in the nation in 2004 (Centers for Disease Control and Prevention, 2004). Compared to non-smoking pregnant women in Indiana, mothers who smoke during pregnancy were 2.4 times likely to have a child that is small for their gestational age (SGA), more than twice as likely to have an infant with low birth weight, and 1.3 times more likely to have a baby born pre-term (Rahmanifar, 2002).

Although social marketing campaigns and perinatal physician consultations appear to have helped reduce the smoking rate among pregnant women in Indiana by 30 percent between 1990 and 2003, this continues to be a major problem in the state.

### Socio-Economic Status and Education

Individuals with low socio-economic status (SES) are more likely to smoke and less likely to quit smoking (Indiana State Department of Health Epidemiology Resource Center, 2003; Ross & Wu, 1995). These individuals—primarily from racial and



ethnic minorities—are more likely to suffer high levels of chronic stress and may be more likely to use smoking as a coping strategy. By comparison, individuals with more formal education tend to use more constructive health behaviors to cope with stress (Ross & Wu, 1995). In fact, college graduates and people from households with higher incomes are significantly less likely to be current smokers than their less educated and less affluent counterparts (Indiana State Department of Health Epidemiology Resource Center, 2003).

The primary reason for this disparity is that the poor and less educated have limited access to top-quality healthcare and health insurance. Most of these individuals rely on Medicaid for health care (including smoking cessation services and health maintenance), are less likely to seek or receive preventive care from routine doctor’s visits, and may disproportionately use the emergency room for treatment.

### Models of Tobacco Use Prevention and Cessation

The Centers for Disease Control and Prevention (CDCP) suggests nine essential components of evidence-based programs to prevent and reduce tobacco usage for states to use as a guide in planning their initiatives:

1. community programs,
2. chronic disease programs (for example, heart disease prevention, cancer registries),
3. school programs,
4. enforcement of existing policies,
5. statewide programs,
6. counter marketing,
7. cessation programs,
8. surveillance and evaluation, and
9. administration and management.

In addition, the CDCP suggests that states focus efforts on three key areas: preventing tobacco use initiation, increasing cessation, and reducing exposure to environmental tobacco smoke. Table 2 shows the relative effectiveness of common interventions in each of these areas.

**Table 2. Evidence for the three key types of public health interventions for tobacco use, as suggested by the Centers for Disease Control and Prevention**

Area of prevention and control	Strong Evidence	Sufficient Evidence	Insufficient Evidence
Preventing tobacco use initiation	<ul style="list-style-type: none"> <li>• Increasing tobacco cost</li> <li>• Media campaigns</li> </ul>		
Increasing tobacco cessation	<ul style="list-style-type: none"> <li>• Increasing tobacco cost</li> <li>• Media campaigns</li> <li>• Provider reminder systems with education</li> </ul>	<ul style="list-style-type: none"> <li>• Provider reminder systems alone</li> <li>• Reducing patient treatment cost</li> </ul>	<ul style="list-style-type: none"> <li>• Cessation series</li> <li>• Cessation contests</li> <li>• Provider education alone</li> <li>• Provider feedback system</li> </ul>
Reducing exposure to environmental tobacco smoke	<ul style="list-style-type: none"> <li>• Smoking bans and restrictions</li> </ul>		<ul style="list-style-type: none"> <li>• Community education</li> </ul>

Source: Centers for Disease Control and Prevention (1999)

The CDCP estimates that any one state’s annual cost of implementing all of the recommended programs would range from \$31 million to \$83 million, depending on its population, and that the cost for the entire nation would be \$1.6 billion to \$4.2 billion. For Indiana, the CDCP recommended expenditures of \$34.8 million annually, an amount just above the funding level from 2000–2003 (\$32.5 million). However, funding has sharply declined in recent years, with only \$10.8 million budgeted for tobacco prevention cessation initiatives in 2003 (Campaign for Tobacco-Free Kids, 2005; Indiana Tobacco Prevention and Cessation, 2004).

A number of states—including Indiana—have implemented comprehensive tobacco control programs. State programs that have shown significant evidence-based results have included changes in public policy (such as smoking bans and increases in tobacco sales tax) and investment in adult and youth education programs and media campaigns. For example, increases in tobacco taxes were used to fund statewide mass-media antismoking campaigns in Massachusetts, California, and Oregon, resulting in substantial reductions (11 to 20 percent) in cigarette



consumption over four years. According to one CDCP report (1999), an anti-tobacco campaign in Florida that combined a counter-marketing media campaign, community-based activities, education and training, and an enforcement program reduced teen tobacco use by about 3 percent in a one-year period. California's efforts to change social norms about smoking through large-scale social interventions have been temporally linked to a reduction in tobacco use (U.S. Department of Health and Human Services, 2000b).

## Indiana Tobacco Prevention and Cessation Agency Showed Success

In 2000, the Indiana Tobacco Prevention and Cessation Agency launched a massive media and social marketing campaign, including TV ads and two websites ([www.WhiteLies.tv](http://www.WhiteLies.tv) and [www.voice.tv](http://www.voice.tv)) that have had more than 5 million hits combined. Although the organization reported successes from the campaign, the ITPC's budget was cut from \$32.5 million in 2001-2002 to \$10.8 million since 2003 — a decrease that may be reflected in Indiana's recent increase in smoking prevalence. The ITPC's successes include:

- Four out of five Indiana youth and adults have seen an advertisement from the ITPC media.
- Youth who saw at least one ITPC ad were 59 percent more likely to understand that tobacco is addictive and dangerous compared to those unaware of any ITPC ads.
- Adults who saw an ITPC ad were 56 percent more likely to agree that secondhand smoke is a serious problem, that indoor worksites should be smoke-free, and twice as likely to try to quit smoking in the previous year.
- Since May 2002, Indiana news media generated nearly 4,800 articles related to tobacco control, specifically about the local coalition activities and issues surrounding smoke-free air policies.

Since 2000, more than 1,600 organizations representing Indiana's 92 counties received grants to conduct tobacco prevention programs in their communities, including setting up resources to help smokers quit, prevention and education programs in schools, developing cessation networks, efforts to protect Hoosiers from secondhand smoke, engaging local businesses, raising awareness of tobacco prevention efforts, and highlighting cultural awareness. Indiana also created the Indiana Tobacco Prevention and Cessation (ITPC) board to identify tobacco-related health disparities and address the state's tobacco problems. In addition, city ordinances limiting smoking in public places have been enacted in many of Indiana's larger cities, including Bloomington, Columbus, Fort Wayne, and Indianapolis. More than 25 hospitals and healthcare facilities have enacted policies to make their grounds smoke-free.

### Thoughts for Policymakers

Although Indiana and the nation appear to be seeing improvements in the number of citizens who smoke and who start smoking, a quarter of Indiana's population remains at risk for health problems, disease, and death because of tobacco use. The healthcare costs associated with tobacco use are staggering, and far outweigh the cost of interventions aimed at preventing and reducing tobacco use. In addition, disparities in tobacco use and access to cessation resources exist among some ethnic groups (particularly blacks), the poor, and those with less formal education.

States that implement strategies fostering stronger social and cultural norms against tobacco use have seen reductions in smoking prevalence. The results of programs such as these could be significant for Indiana—a 25 percent decrease in the number of Hoosier smokers would save taxpayers over \$20 million per year in smoking-related Medicaid costs. Programs that rely on empirical evidence and that address the psychosocial and cultural factors contributing to smoking among minorities, the poor, and the young are the most likely to be successful.



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## Indiana's Future: Identifying Choices and Supporting Action to Improve Communities

This project, funded by an award of general support from Lilly Endowment, Inc., builds on the Center's research to increase understanding of Indiana. The Center's faculty and staff work to identify choices that can be made by households governments, businesses, and nonprofit organizations to improve our quality of life. Our goal is to understand the people, economics, problems, and opportunities in Indiana, and to help decision-makers understand the impact of policy decisions. The Center also works to mobilize energy to accomplish these goals.

During 2005, Professor Eric Wright and a team of researchers focused on health policy issues joined the Center for Urban Policy and the Environment. This issue brief is one result of their ongoing efforts to investigate the health policy issues that are a vital component of the quality of life in Indiana communities.

The Center for Urban Policy and the Environment is part of the School of Public and Environmental Affairs at Indiana University-Purdue University Indianapolis. An electronic copy of this document and other information about health policy and other community issues can be accessed via the Center Web site ([www.urbancenter.iupui.edu](http://www.urbancenter.iupui.edu)). For more information, visit the Web site or contact the Center at 317-261-3000.



*State of Indiana*

**Authors:** **Tysha Hardy-Sellers, M.A.**, graduate assistant. **Stephen Jay, M.D.**, chairman, Dept. of Public Health, and professor of medicine and public health, IU School of Medicine; Chairman, Indiana State Medical Association Tobacco Control Task Force. **Eric R. Wright, Ph.D.**, director of health policy, Center for Urban Policy and the Environment; associate professor, School of Public and Environmental Affairs; and associate director, Indiana Consortium for Mental Health Services Research. **Dustin E. Wright, M.S.**, senior research associate. **Editor:** **Marilyn Michael Yurk.**



CENTER FOR URBAN POLICY  
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[www.urbancenter.iupui.edu](http://www.urbancenter.iupui.edu)

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