The Price of Inaction:
The Economic Impact of Tobacco Use in Indiana

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Executive Summary

This is a study of the relationship between smoking behavior and the Indiana economy. It was conceived out of a concern that Indiana's comparatively high rates of tobacco use, which have changed little over the last decade, are placing a disproportionate economic burden on its businesses, governments and citizens. This burden arises from the wasteful expenditures made on behalf of those who use tobacco or are affected by its use.

The estimated cost of smoking presented here does not capture all of the ways in which smoking affects economic activity, but it is of sufficient precision to establish one basic fact: tobacco use exacts a terrible penalty on the Indiana economy. We find that the ongoing, excess expenditures incurred due to smoking in Indiana are at least $3.5 billion per year, and are likely to be significantly higher.

These tangible, economic losses due to tobacco use include:

- $2 billion spent annually treating the medical consequences of tobacco use. This estimate is net of the "savings" realized in health care from the shorter life expectancy of those who smoke;

- $1.4 billion in lost economic output to the economy each year, due to the smokers' health-related early retirement from the labor force;

- $86 million in wasteful spending caused by low-birth weight babies delivered to smoking mothers. Studies indicate that 2,500 fetal deaths each year are caused by smoking, and that those who survive often incur developmental problems throughout childhood;

- $11 million per year in lost output due to the higher absenteeism of workers who smoke;

- $11 million per year in property damage in fires caused by careless smoking.

This represents a conservative estimate of smoking's total cost to the state, since we do not include other, less well established, categories of cost. These include the health effects of second-hand smoke, and the impact that smoking has on the productivity of workers during their working lives.

The fundamental conclusion of this report is that the size of these costs, and the fact that they are borne by smokers and non-smokers alike, make the issue of tobacco use a

legitimate area of interest to the state of Indiana. Our state should recognize that our relatively heavy use of tobacco places an extra burden on the businesses and taxpayers who finance those costs, making our state a more expensive and less profitable place to live and do business.

The fact that more than one in four Indiana residents smoke imposes excess costs on the Indiana economy in an amount equivalent to the total economic output of a medium sized Indiana city, such as Muncie, Kokomo, or Terre Haute.

To the extent that these costs are borne by businesses, taxpayers, and individuals other than the smoker him- or herself, they make our state a less desirable place in which to live and to do business. In particular, since Indiana's rates of smoking are higher than many of its competitor states, these costs place our state at a distinct competitive disadvantage. This occurs in at least two ways:

- higher rates of spending on health care by companies on behalf of their workers in Indiana increases the costs and lowers the profitability of facilities located here, and

- shorter expected working lives of workers who smoke reduces the payback from any investments (e.g., training) companies might make to increase workforce productivity.

Even if Indiana's rate of tobacco use were equal to the national average, these would still represent important opportunity costs, since by not carrying out programs to bring smoking rates down we would be passing up the chance to gain a competitive advantage. But the situation is in fact worse than that. By not addressing our state's higher than average prevalence of smoking, we are accepting a situation that erodes our state's competitiveness.

The question of how quickly, and by what amount, these excess costs would go down if programs designed to curb tobacco use is not directly addressed by this report. We know from the example of other states, notably Massachusetts and California, that such programs can have an immediate impact on tobacco use. There is also new research that suggests that some categories of excess costs due to smoking – most notably low birth weight babies and risks of stroke – can be reduced quite quickly with the cessation of smoking. However more research needs to be carried out to determine the timing in cost reductions that would occur as programs are implemented and smoking rates come down.

But the potential for savings is clearly significant. For example, if Indiana's smoking incidence were 23.5 percent – the national average – instead of its actual 26.3 percent, the costs born by the economy resulting from the early retirement of workers who smoke would be about $200 million per year less than its actual level. The experience of Massachusetts and California shows that a drop of three percentage points in smoking incidence is quite a bit less than what could actually be achieved. When one adds the

savings in medical expenditures and other types of wasteful spending, it is easily seen that savings on the order of $500 million per year are well within reach.

The purpose of this report is to raise the awareness of this issue in the state of Indiana. Even though some of the research results presented here are preliminary in nature, they are sufficiently precise to establish the pervasiveness and the significance of the economic burden we all bear due to tobacco use. The potential for averting at least part of these costs should make programs aimed at bringing down smoking rates in our state a high priority.

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I. Introduction

Overview

The decision to smoke tobacco is a purely private one, but it has some very important public consequences. Since Indiana can count a higher proportion of its adult population as smokers than all but a handful of states, those consequences are more severe here than elsewhere. However, while most of us are aware of that smoking is harmful to our health, our knowledge as to how large and how widespread the impacts of tobacco use is incomplete.

The purpose of this report is to help fill that information void. In the pages that follow, we will draw together different pieces of research and information dealing with different aspects of the same general question: what is the cost of our smoking habit in Indiana? Some research, especially on the topic of medical costs, has already been reviewed and published, so we can simply report it. Other areas, such as the impact of smoking on state economic output, can only be roughly determined. Still other categories of costs can only be estimated by scaling down national cost estimates.

But even though the estimated cost of smoking presented here cannot be said to be definitive, it is of sufficient precision to establish one basic fact: tobacco use exacts a terrible penalty on the Indiana economy. The ongoing, excess expenditures incurred due to smoking in our state reported here are $3.5 billion per year, and likely are significantly higher. Recent upward trends in both Indiana's smoking habits and in the cost of medical services make this situation even more alarming. It is no exaggeration to say that — more than thirty years after the first Surgeon General's report on smoking — tobacco remains the single most expensive preventable health risk that we face.

We should be concerned about the damaging effects of smoking even if all of those costs were borne by smokers themselves. Given the addictive nature of the habit, and the immature, impressionable age at which life-long smokers typically decide to take it up, the state can be said to have an interest in protecting its citizens' welfare by taking measures to reduce tobacco's appeal.

But the reality is that much of the costs of smoking are not paid by the smoker. The collective nature of pooled health plans, including the state-financed Medicaid program, causes the excess health expenditures incurred by smokers to be spread to other participants, or to taxpayers. These costs are over and above any savings such plans might realize from the fact that smokers tend to lead shorter lives.

If that were the only mechanism through which smoking costs were transmitted to others, that would be enough to be of concern. But there are many more. Smoking mothers give birth to lower birth weight babies, whose childhood health care costs and mortality substantially exceed those of average weight infants. Careless smoking causes fires that take lives and cause millions of dollars in property damage each year. Second hand smoke contributes to asthma and other serious medical conditions.

There is also a final way in which smoking harms the welfare of all Indiana residents. That is through its negative effect on the overall productivity and competitiveness of the Indiana labor force. This works in two different ways.

First, the fact that smokers retire earlier and die sooner than comparably situated non-smokers means that the services, products and ideas that they would have generated if they did not smoke are lost. Not only do smokers lose their potential wage dollars, but the owners of firms that employ them lose profit, suppliers to the firms lose sales, and governments serving the firms lose tax revenues. These effects are made worse by the fact that even over the course of their working lives, smokers tend to have absentee rates that are roughly twice that of non-smokers.

There is a second, harder to measure, effect, however. This is the impact that the competitive disadvantage caused by Indiana's higher smoking rates places on all of the industries in the state. To the extent that facilities in Indiana bear higher health costs due to worker smoking, the cost of doing business will be higher in our state. Moreover, with lowered life expectancy caused by smoking, the incentive to invest in human capital — training and other education — by both workers and their businesses is lowered. It is hard to state precisely how much the expansion in the state's economy has been reduced as a result, but the longer the situation remains where Indiana's work force has poorer health than those of competing states, the longer we will be at a disadvantage.

The conclusion reached by this study is that tobacco use in Indiana is a legitimate focus of government interest. Indeed, if the expenditure of resources by the state can cause the incidence and consumption of tobacco to fall, the payoff will be a reduction of smoking-related costs. How much should be invested in tobacco control programs? Certainly the size and the persistence of the problem suggests that our efforts should be increased. We indicate, at the conclusion of this report, the kinds of costs reductions that might be realized by a more aggressive program to reduce smoking.

Relationship of this Report to the Tobacco Settlement

To say that the recently implemented settlement of the lawsuit filed by Attorneys General of forty-seven states against the domestic tobacco manufacturers has put a new spark into the debate over tobacco control would be an understatement. This report has nothing to say on the question of how, or whether, settlement monies should be spent. Its conclusions would be unchanged if the settlement payments were to vanish, or even to double, overnight. The fact that Indiana's economy is harmed by smoking behavior, and that some expenditure of resources to alter that behavior is merited, remains valid regardless of how much, or how reliably, settlement money arrives in Indiana.

Outline of this Report

The remainder of this report presents and discusses the research that has been carried out to assess the economic costs of smoking. We have made every effort to make this information as relevant to Indiana's population as possible. While for some types of costs, research results at the state level have been published and are available, for others no state level results yet exist. In the latter case, we either scale the results from national studies to Indiana, or we derive our own estimates.

The section that follows presents the conceptual framework that we adopt for the remainder of the study. We also take the opportunity to present some background information on the incidence and rates of tobacco consumption for the state. This is followed by three sections that present results for three categories of costs: medical related costs, productivity related costs, and other costs. The last section presents conclusions, and assesses how costs might change from the adoption of more active tobacco control policies.

II. The Costs of Smoking in Indiana: Background and Framework

This section will present the conceptual foundation of the estimates of smoking-related costs presented in this report. This is largely the same as what was used in the national report published by the U.S. Treasury in 1998. We conclude the section by giving a brief statistical description of the smoking population in the state of Indiana.

In 1998, then-Deputy Treasury Secretary Lawrence Summers released a study of the economic costs of smoking in the United States, and called for more resources to be devoted to slowing and reversing the rate at which people use tobacco products. That study introduced some useful terms and concepts to be used in assessing costs. We present them here as well.

Internal and External Smoking Costs

In principle, the costs of smoking can be divided into two different types: *internal* costs, which are borne by the smoker him- or herself, and *external* costs, which are borne by others. Internal costs consist of the direct cost of tobacco products, plus the added health, insurance, or economic costs resulting from smoking behavior. External costs are the portion of the latter that are shared, in whole or in part, by family members, owners of businesses, members of health plans, or taxpayers.

The Summers report cleared up an important point of confusion over this point, by explicitly stating that it would consider "wasteful" expenditures made due to tobacco use, whether internal and external. This contrasted with the methods used by some previous studies, which considered only external costs. The older studies followed a logic familiar to economics — namely, rationality. People who know of the health risks of smoking and still choose to smoke, it is said, must receive enough satisfaction from smoking to offset its costs. Thus internal costs are only of concern to the individual, not to society.

But smoking is an addictive behavior, with less than five out of every one hundred adult regular smokers who try to quit each year being successful. Moreover, the presumption of an informed, rational choice being carried out by the teenaged or pre-teen youth who dominate the ranks of first-time smokers is hard to support, particularly when the available evidence indicates that these young people seriously underestimate the difficulty they will have trying to quit. Thus the Summer's study goes forward under the presumption that all wasteful expenditures related to smoking should be considered as social costs, and we follow that approach as well.

Explicit and Implicit Smoking Costs

The Summers study also separates costs of smoking along a different dimension: explicit, or dollar, costs, and implicit costs. Included among explicit costs are:

- Excessive medical expenditures

  This is the cost of treating smoking-related illnesses, net of any additional medical costs that might be incurred by longer life expectancy of non-smokers

- Low birth weight children born to mothers who smoke;

  This includes both the extra costs of delivering low birth weight babies (e.g., premature birth) as well as the increased cost of medical care for such children during the first years of their life.

- Lost economic output;

  Workers who smoke retire earlier and die sooner than the general population. Additionally, smokers have higher rates of absenteeism, resulting in lost work days.

- Smoking-related fires;

Implicit costs fall into two categories. The first are costs which are derived from people's behavior, for which no actual expenditures are made. The mortality of the smoker him- or herself is the most important example of this type. Putting an explicit monetary value on the years of life lost due to smoking is not practical, but it is possible to observe one's own risk-taking behavior and derive our self-assessed measure of the benefit of extending life implicitly.

A second category of implicit costs are situations where the available evidence has not yet enabled us to assess outcomes. The prime example of costs in this category are costs due to second-hand smoke. No implicit costs are included in the figures given in this report.

Smoking Behavior in Indiana

Whatever the costs of smoking to the economy may be, it stands to reason that they would be proportionately higher in Indiana than in most other states. This is because rates and intensity of smoking behavior are higher here than in most other states. In particular, a comparison to the neighbor states that represent our fiercest competitors in business development reveals that Indiana trails only Kentucky in its use of tobacco.

This can be seen from Figure II.1, which shows the incidence of cigarette smoking among the adult population for Indiana and its neighboring states, by sex. The 26.3 percent of those aged 18 and older in Indiana who smoked in 1997 compared unfavorably with 23.5 percent nationwide who said they smoked for the same year. Indeed, the rates at which Indiana men and women smoke are higher than every neighbor state except Kentucky, which has the highest rates in the nation. As the figure shows, smoking incidence in Michigan and Ohio are nearly as high as ours, with Illinois lowest by a larger margin.

Any similarity in smoking behavior to our northern and eastern neighbor states disappears, however, when we consider the intensity with which Hoosiers smoke. Cigarette consumption per capita in Indiana in 1997 was 77 percent higher than Michigan, and 23 percent higher than Ohio, as shown in Figure II.2. At 135 packs per year per capita, Indiana trails only Kentucky in cigarette consumption and is more than fifty percent higher than the national average.

Figure II.1
Incidence of Cigarette Smoking by Sex
Indiana and Neighboring States
BFRSS Data, 1997

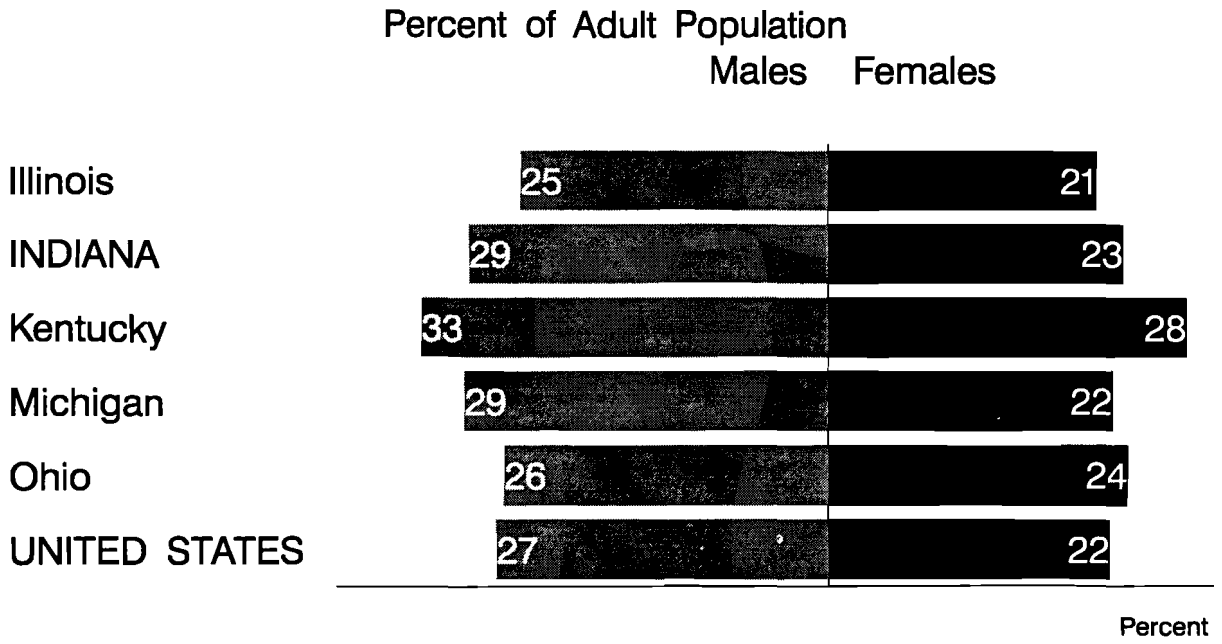
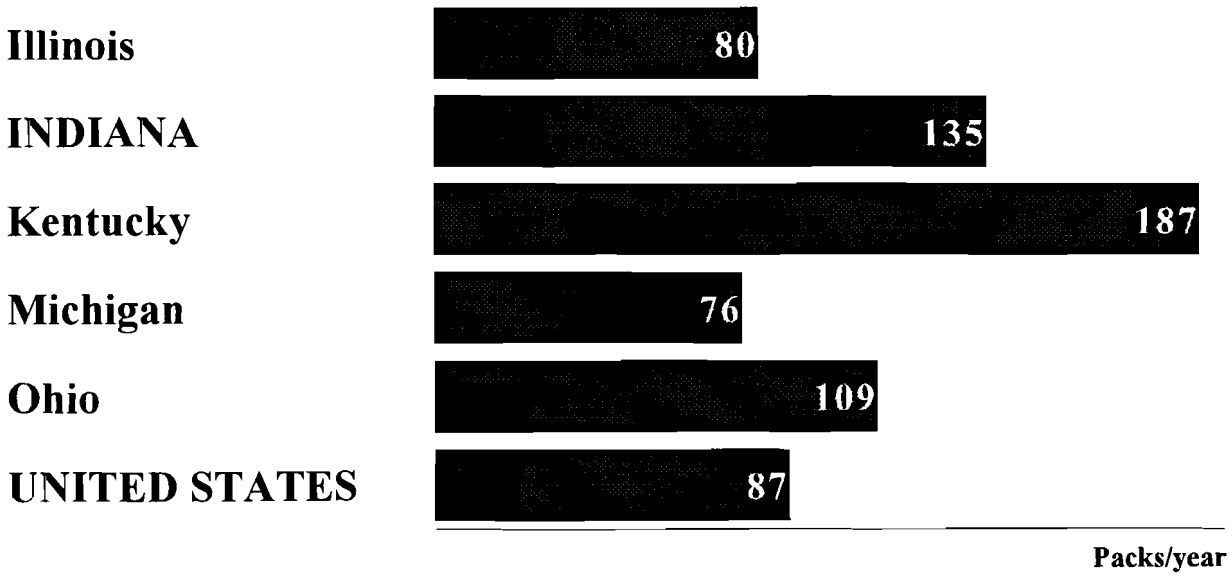


Figure II.2
Cigarette Consumption per Capita
Indiana and Neighboring States
1997



A final note of concern over our smoking habits is sounded when one looks at recent trends in tobacco consumption. Per capita rates in our state have actually drifted upward since 1992, as can be seen from Figure II.3, whereas rates in other states have come down. (The states shown in the Figure are states who participated in the ASSIST program, which did not include all of Indiana's neighbors). In particular, rates in Michigan plunged in the mid-1990's, from a high point in 1992 that was nearly the same as Indiana.

The conclusion one reaches when studying the Indiana data on cigarette consumption is that smoking behavior has not changed appreciably in the last ten years. Indeed, if anything, consumption of tobacco has risen here, from 125 packs per year per capita in 1992, to 135 packs in 1997. Given the drift downward in rates for many other states, these trends exacerbate the excess burden of tobacco-related costs borne by Indiana taxpayers, employers, and other individuals.

We now turn to an examination of one of those cost categories, smoking-related medical costs.

III. Smoking-related Medical Costs

This section presents estimates of the excess medical expenditures to treat the smoking-related medical ailments of Indiana residents. Previously published research put these costs at $1.55 billion per year in 1993. Since the cost and quality of medical care have increased since that time, one would expect that those costs are higher today. We estimate that smoking-related medical costs in Indiana in 2000 will be approximately $2 billion. The remainder of this section outlines the logic and evidence for these estimates.

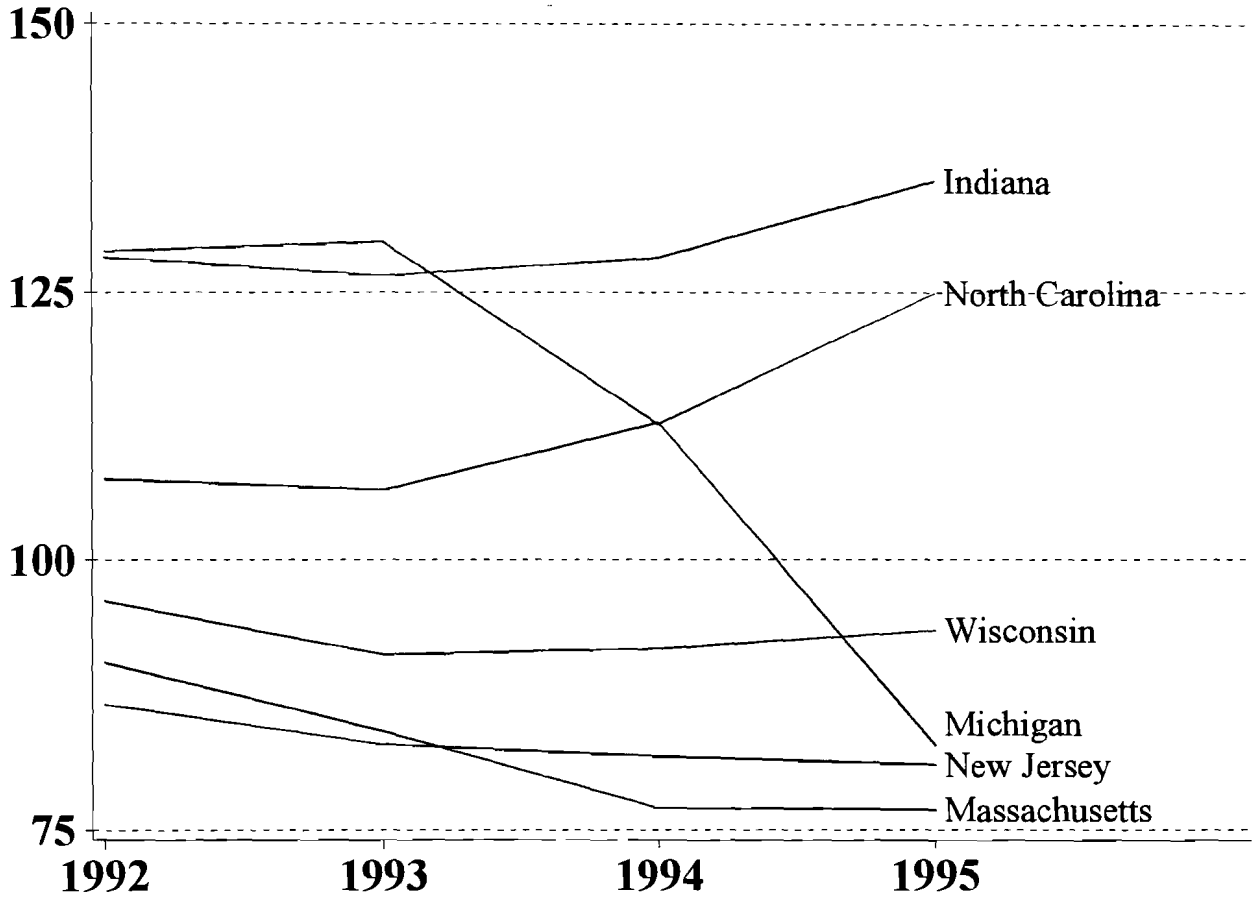
Approaches to Assessing Medical Costs

It has been increasingly well understood that tobacco consumption contributes to a number of serious medical ailments. These include specific sites of cancer, a broad category of heart disease, as well as chronic bronchitis, pulmonary emphysema and chronic obstructive lung disease. With increasingly detailed data sets now becoming available on smoking behavior and medical costs, two different approaches to attempt to assess the excess medical expenditures the occur due to tobacco use have emerged. (Miller, V., et. al., 1997).

The first is what has been termed the *attributable risk* approach. By taking a snapshot of the population, for any given year, it is possible to statistically isolate the fraction of total medical expenditures that occur that are due to smoking. Expenses incurred by smokers on illnesses that have been proven to be linked to smoking, over and above what would be expected by a nonsmoker with an otherwise identical risk profile, is considered to be tobacco-related. This dollar amount is typically smaller than the simple difference in medical expenses paid by smokers and non-smokers, since the two groups differ along other dimensions — e.g., diet,

exercise, and alcohol consumption — that impact medical costs.

Figure II.3
Cigarette Consumption per Capita
Indiana and Selected States
Packs per Year, 1992-1995



But excess medical expenses caused by smoking today are typically the result of smoking behavior decades in the past. The *incidence* approach to assessing medical costs computes the expected lifetime cost of current smokers, discounting expenses that will occur in the future to make them comparable to those incurred in the present. The difference between smoker's lifetime costs, and those incurred by similarly situated non-smokers, is the excess cost caused by smoking. This approach is especially valuable when one considers the impact of measures intended to curb tobacco use.

The incidence approach explicitly recognizes that the longer life expectancy of non-smokers reduces the medical costs of smoking, since non-smokers will incur medical costs over a longer period of time. However, as long as the age-profile of smoking incidence in the population is stable, the incidence and the attributable risk approach will yield identical estimates of smoking costs. Since this condition is largely met in Indiana, we will use state level results that use the attributable risk approach.

Results for Indiana

The most recent research on tobacco-related medical expenditures was conducted by Zhang, et. al. (1999). They analyzed health care expenditures incurred in 1993 that were financed through the two largest public health care programs, Medicare and Medicaid, as well as the remaining expenditures, referred to as Other Private. Of the $614.5 billion spent nationally on medical care in 1993, the authors estimate that $72.7 billion, or 11.7 percent, can be attributed to smoking tobacco.

This fraction represents a weighted average of the different categories of medical expenditures, as well as an average of the populations of the different health care programs and of the different states. To apply these results to Indiana two things must be done.

The first is to apply the appropriate risk factors that pertain to the socioeconomic, demographic, and smoking characteristics of our state. The authors in fact have already done this, and publish a table of state-specific smoking attributable medical expenditures in their report.

The second thing that must be done is to attempt to bring these estimates forward to the year 2000. This is much harder to do. However, a first approximation to what expenditures would be today can be accomplished by scaling the 1993 results reported in the Zhang study by a factor that represents the rise in medical care costs since that time. Such an approach probably understates the true level of smoking-related costs for two reasons. First, since the average age of the Indiana population has been rising, and medical expenditures rise with age, the average amount of medical care (and hence the fraction due to smoking) has risen slightly since 1993. A second trend that would make costs rise even faster is the continued fast pace of development of new procedures and new drugs that have increased the quality of medical care.

Using the component of the Consumer Price Index for Medical Care, we find that there has been a 24 percent increase in the costs of medical care from 1993 to 1999, with recent annual growth in the 4 percent per year range. Under the conservative assumption that medical costs in 2000 will reflect this recent trend, we have scaled up the Zhang estimates of smoking-related expenditures for the state of Indiana by a factor of 1.28.

The single largest category of smoking-related medical expenditures in the state of Indiana is Hospital Services, as can be seen in Figure III.1. At $983 billion in the year 2000, these expenses constitute almost exactly half the $1.997 billion figure for total smoking-related costs statewide. This reflects more the fact that hospital care is the single most expensive health care category in general, rather than the particular impact of smoking on its cost.

The category of health care most affected by smoking is Nursing Home care, the third largest component of overall smoking-related costs. The $310 million in tobacco-induced nursing home expenditures reported in Figure III.1 represents almost 15 percent of total health care expenditures in this category.

The nearly $2 billion in wasteful spending on medical care due to tobacco projected for Indiana in 2000 is about 12 percent of total health care spending in the state. That fraction varies by state according to sociodemographic characteristics, smoking prevalence, and health status of the population.

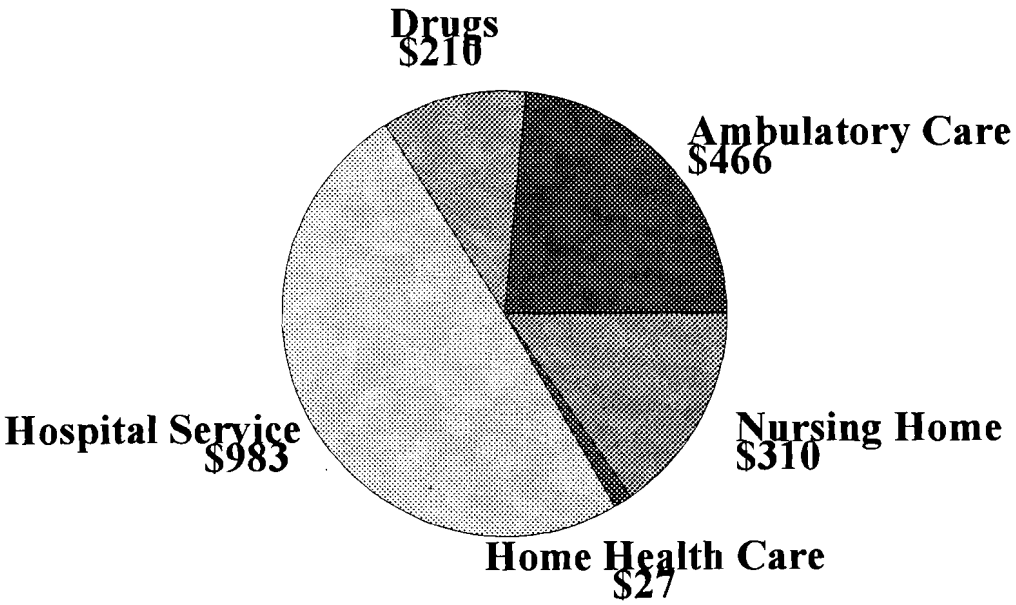
When separated by source of payment, it is easily seen from Figure III.2 that private sources pay for the majority of smoking-related costs. These are projected to total $1.388 billion in 2000 for the state. The Federally financed Medicare program will pay $283 million this year, whereas the Medicaid program is projected to pay $326 million, $131 million of which will come from state coffers. These program estimates were calculated with special consideration for the populations served by each. In particular, the population served by Medicaid tends to be in poorer health and makes heavier use of medical services than the population at large.

Conclusion

The $2 billion per year in wasteful medical expenditures due to smoking in Indiana is a substantial drain on our economy. This amount represents more than one percent of Gross State Product, which represents the total value of everything the state economy produces. Some of these costs are borne by state government directly, through its participation in the Medicaid program, and thus are not available for other worthy public purposes. Other costs are borne by the Federal government, contributing to the future insolvency of the Medicare program. But the majority of costs are borne by individuals and companies, through higher health insurance premiums and other related costs. To the extent that these costs make our state a less competitive place to live and do business, their ultimate impact on the economy may be even larger than the numbers alone indicate.

Figure III.1
Annual Smoking Related Medical Expenses
Indiana, 2000
By Type of Service

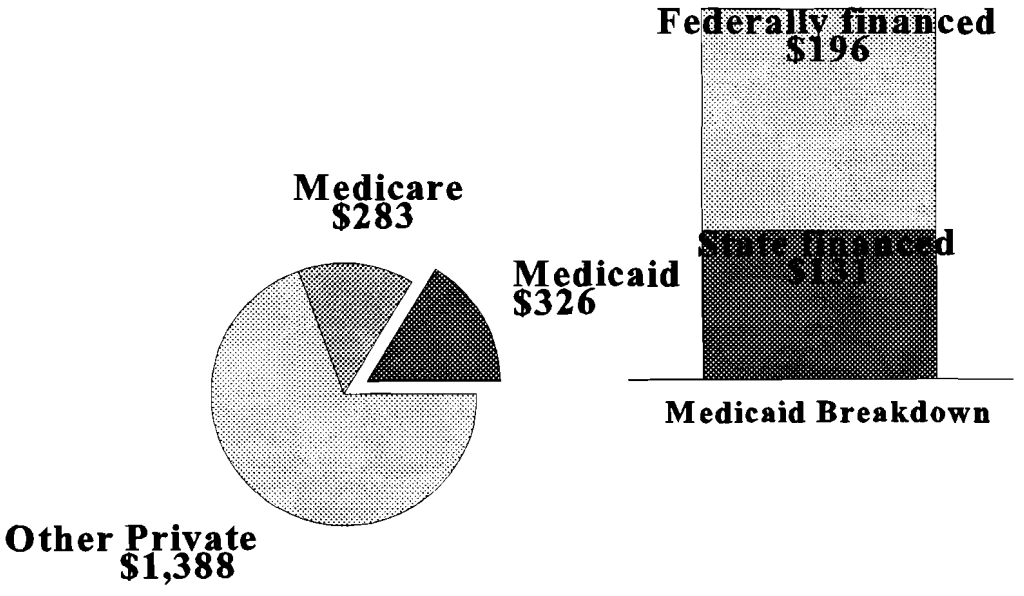
Millions of Dollars



Total: $1.997 billion

Figure III.2
Annual Smoking Related Medical Expenses
Indiana, 2000
By Source of Payment

Millions of Dollars



Total: $1.997 billion

IV. The Costs of Smoking on Economic Output

Working people who smoke tend to retire sooner and die earlier than others who do not smoke. The result is that products, services, and information that would otherwise have been produced in the workplace is lost. Since the excess mortality caused by smoking is most pronounced later in life, near the point where labor force participation and earnings are at their high point for each individual's career, the potential loss causes by smokers' early exit from the labor force can be quite high.

Since no published research on state-level costs are available, we have used our own methods to produce a preliminary estimate of this category of smoking costs for Indiana. In the year 2000, we estimate that almost $1.4 billion is lost in the output of the state economy each year due to the early retirement of smokers from the work force. As we explain below, we think this is a conservative estimate.

In the remainder of this section we will present the calculations that were performed to arrive at this result in greater detail. Before we do, however, we should mention that early retirement is not the only mechanism through which smoking behavior impacts the output of the economy. Research shows that smokers have higher absentee rates which result in lower output and higher labor costs, which we address in the next section.

Other evidence, cited in the 1998 Treasury Report, suggests that those who smoke have lower productivity even while they are working, on the order of 4 to 8 percent less. To the extent that smoker are less "future-oriented," and invest less in their own education and training that will pay dividends later in life, this effect can arguably be said to be influenced by a policy that reduces smoking. However, a consensus on the correct interpretation of this productivity discrepancy has yet to emerge, and we do not include costs from this effect in this study.

Economic Losses from Early Retirement

In considering the costs to the economy of smoking-related retirement and morbidity, we take a similar approach to that used in estimating medical costs. That is, we consider the Indiana economy at a single point in time, the year 2000. We divide the work force into five-year age groups, and tabulate information on how many fewer workers, in each age category, are lost to the work force as a result of smoking-related health problems.

While there are abundant data on the survival rates, by age, of smokers in general, we were unable to obtain any data on the employment persistence — "survival" in the work force — for smoking and non-smoking populations separately. Thus we consider, for purposes of this section, that a worker's participation in the work force ends on the day that he or she dies. This is

certainly in error, but it results in a more conservative estimate of costs, since the actual years of productive work lost to the economy are higher than what is used here.

Using survival tables for smokers and "nonsmoking smokers" — e.g., nonsmokers who otherwise share the same health risks as smokers — published in Manning, et. al. (1991), as well as information on the age distribution of the Indiana population, and the incidence of adult smoking by sex, we constructed a simple demographic model of the smoking and nonsmoking population, by age and sex. The model does not exactly match the actual data on Indiana's demographic structure, but since the actual morbidity of smokers is less than what we used, this is not a surprising outcome. The fact that Indiana has experienced essentially zero net migration in recent years gives the model a bit better basis in actual fact.

The model was used to estimate the population losses caused by smoking for five-year age groups, by sex. These were computed as the deaths in the smoking group that were in excess of what would have been expected if they were nonsmokers. As one would expect, the losses are most pronounced for the higher age groups, as is shown in Figure IV.1.

The interpretation of the bars in the Figure is as follows. In year 2000, the population of males aged 40 to 45 is 423 people smaller than it would have been if there were no smokers. The deaths of the smokers could have occurred at any year prior to 2000. Their absence this year causes output to be lower than it otherwise would have been.

To translate these losses into economic output, we obtained from the 1990 Census average earnings, by age and sex, for Indiana residents in the year 1989. To reflect the considerable earnings growth that has occurred since that time, we inflated the earnings profiles by a factor of 1.7, reflecting the 70 percent rise in earnings statewide in the eleven year period that followed. The result is an age-earnings profile that peaks between ages 40-45 for women, and between ages 45-50 for men, as is shown in Figure IV.2.

Note that the pattern of earnings over the age groups reflects both productivity, occupation and labor force participation. This is particularly true when comparing male and female earnings. The fact that the latter are less than half of male earnings for most age groups is largely due to labor force participation. Thought the differences have shrunk, women in Indiana still work proportionately less than men, and those who do work are more likely to work part time.

The final step in assessing costs is to multiply the population losses of Figure IV.1 for each age/sex group times the average earnings of Figure IV.2. This yields a total for lost wages due to smoking. However, this falls short of lost economic output, as it does not reflect the lost orders borne by suppliers, the lost rent borne by landowners, or the lost profit borne by owners of capital in the state economy. Thus we translated lost earnings into lost economic output by using the ratio of total wage income to Gross State Product. Since wages represent about 60 percent of total economic output in the Indiana economy, this translated a $832 million loss in wages statewide to a $1.4 billion loss in economic output.

Figure IV.1
Indiana Population Losses From Smoking By Age and Sex, Year 2000

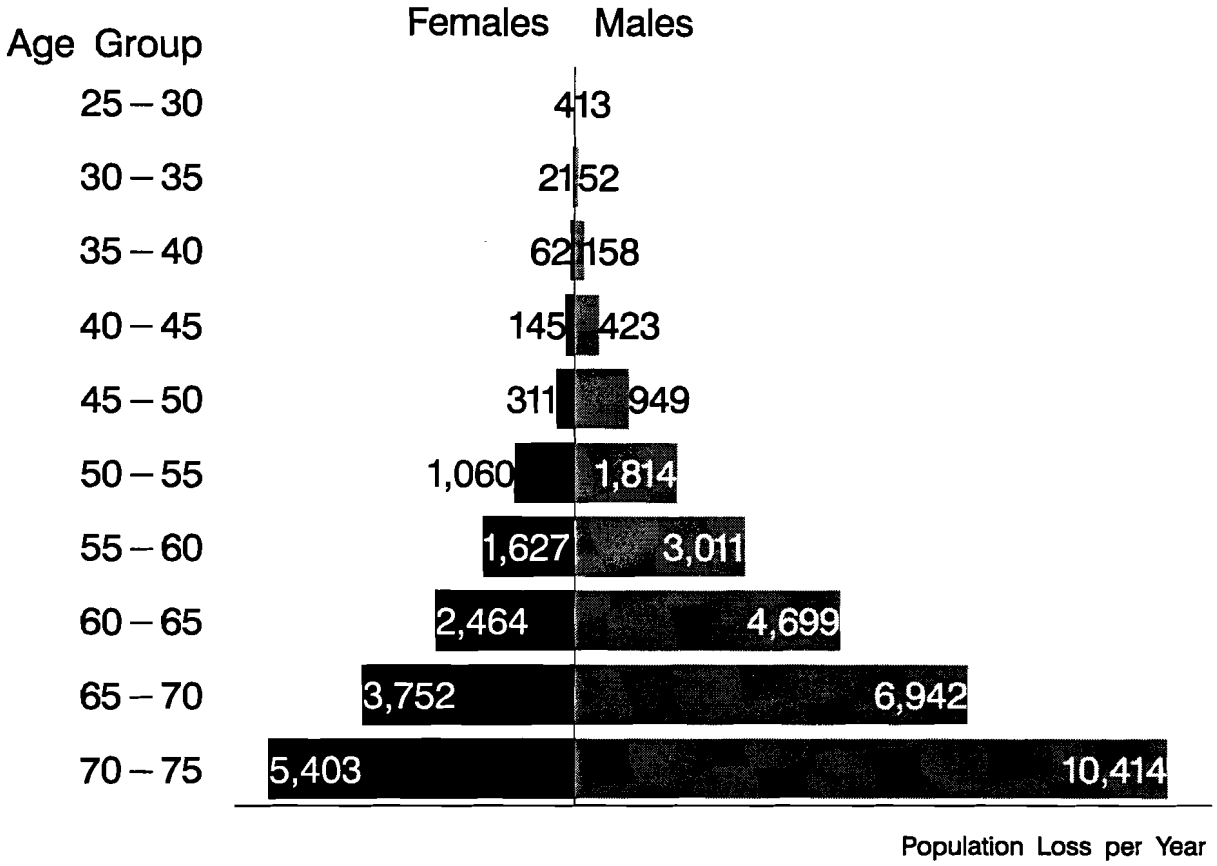
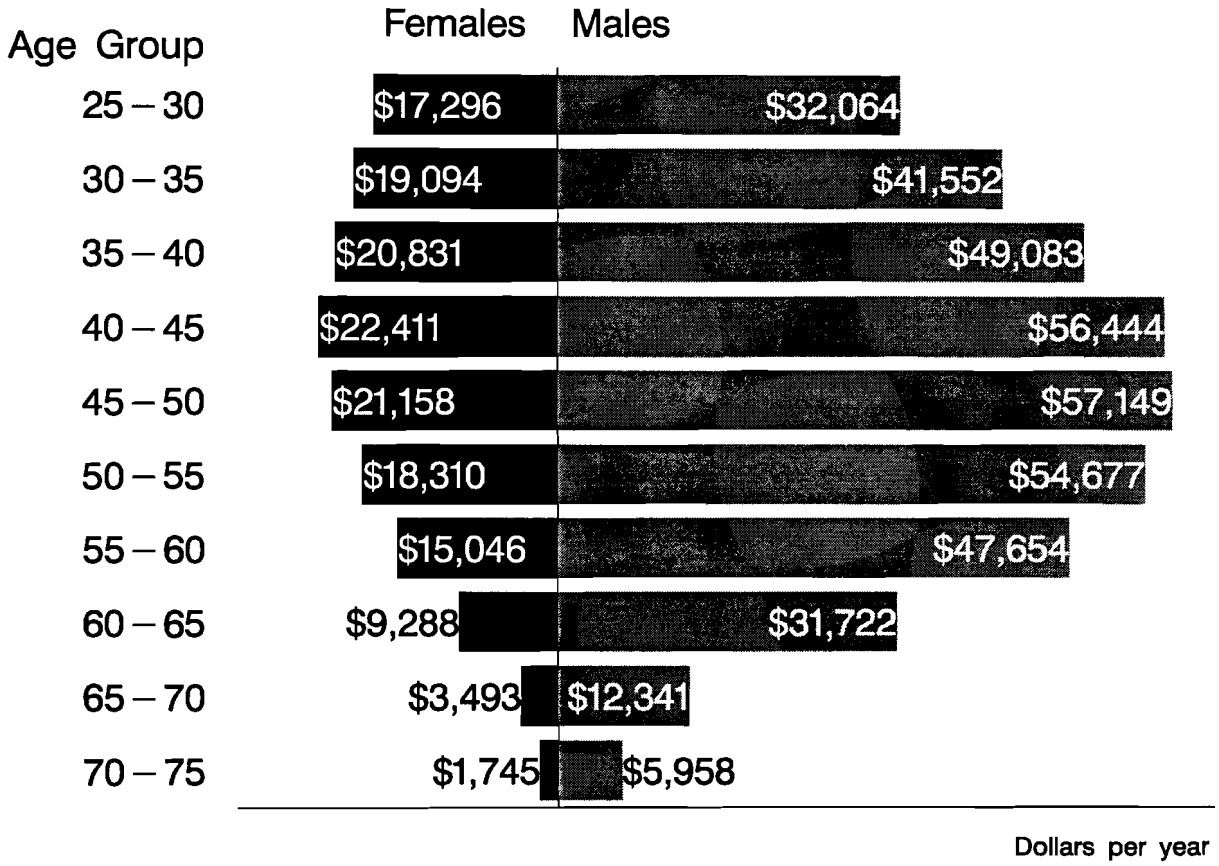


Figure IV.2
Indiana Average Annual Earnings by Age and Sex
Year 2000, Dollars



Conclusion

This section of the report has detailed the steps used to estimate the value of the output lost to the Indiana economy due to the early, health-induced retirement of workers who smoke. The $1.4 billion per year lost to our economy each year is felt by the families of the wage earners, as well as stockholders, landowners, supplier firms, and governments who receive tax revenue. To state it another way, to the extent that an investment in smoking retardation programs reduce this cost, they will have a direct economic stimulus, much like any other economic development initiative, with broad benefits across the economy.

V. Other Indiana Tobacco-Related Costs

There are several other important categories of economic costs that are attributable to smoking behavior. These include (i) the extra costs incurred when smokers give birth, (ii) the loss in output due to higher absenteeism rates of workers who smoke, and (iii) the human and material damages from fires resulting from careless smoking. Since research at the state-level was not available to help quantify these costs, and there was no readily available source of data to allow us to attempt this in this report, the estimates presented in this section are simply scaled estimates of published national estimates of costs.

Since these types of estimates cannot fully reflect the characteristics of our state's population, these can only be considered as giving us the likely order of magnitude of the actual costs. They nonetheless serve to bring to our collective attention on some of the other mechanisms through which smoking behavior causes an economic burden.

As was noted in the Summer's (1998) study, smoking during pregnancy is estimated to cause 2,500 fetal deaths each year, nationally. It is also a cause of low birth weight infants, which incur higher costs of delivery, higher risk of childhood disease, and a higher risk of developmental problems throughout childhood. The Treasury study's estimate of the excess costs that result was $4 billion, nationally, in 1993. Indiana's share of costs incurred in year 2000 is estimated to be $86 million.

Research conducted at the national level (Ault, et. al., 1991) estimates that smokers are absent from their jobs at a rate that is roughly double that of the non-smoking population. The Summers (1998) study estimates that in 1993 this cost the economy approximately $500 million in lost output. Our projection is that this loss would be $11 million for Indiana in 2000.

Finally, the Summers study quotes research on the linkage between smoking and fires. Their national estimate is that 2,000 lost lives and $500 million in property damage are caused each year due to careless smoking. Scaling this to Indiana results in a $11 million estimate for

property damage to the state. No attempt to add additional losses due to lost lives, either for fires, or for fetal death due to smoking, has been made in this report.

Conclusion

On the basis of national estimates of smoking-related costs for a number of different categories, we estimate that the behavior of Indiana's smokers incurs an addition cost of $108 million per year, over and above the costs cited in the previous sections. Since this estimate does not reflect the different sociodemographic, health, and smoking behavior characteristics of the Indiana population, actual costs may be higher or lower than this figure. As an order-of-magnitude estimate, however, it serves as a useful first approximation to the real resource costs incurred to the Indiana economy as a result of smoking behavior.

VI. Conclusion

This study reports on an empirical investigation into the question: how much does smoking cost the Indiana economy? We conservatively estimate that in the year 2000, the wasteful expenditures in our state made necessary because of smoking will be about $3.5 billion dollars. It is important to note that this is an annual, recurring cost, representing more than three percent of the output of the entire state economy, as measured by Gross State Product.

To state it another way, the fact that more than one in four Indiana residents smoke imposes excess costs on the Indiana economy in an amount equivalent to the total economic output of a medium sized Indiana city, such as Muncie, Kokomo, or Terre Haute.

To the extent that these costs are borne by businesses, taxpayers, and individuals other than the smoker him- or herself, they make our state a less desirable place in which to live and to do business. In particular, since Indiana's rates of smoking are higher than many of its competitor states, these costs place our state at a distinct competitive disadvantage. This occurs in at least two ways:

- higher rates of spending on health care by companies on behalf of their workers in Indiana increases the costs and lowers the profitability of facilities located here, and

- shorter expected working lives of workers who smoke reduces the payback from any investments (e.g., training) companies might make to increase workforce productivity.

Even if Indiana's rate of tobacco use were equal to the national average, these would still represent important opportunity costs, since by not carrying out programs to bring smoking rates down we would be passing up the chance to gain a competitive advantage. But the situation is in fact worse than that. By not addressing our state's higher than average prevalence of smoking,

we are accepting a situation that erodes our state's competitiveness.

The question of how quickly, and by what amount, these excess costs would go down if programs designed to curb tobacco use is not directly addressed by this report. We know from the example of other states, notably Massachusetts and California, that such programs can have an immediate impact on tobacco use. There is also new research that suggests that some categories of excess costs due to smoking – most notably low birth weight babies and risks of stroke – can be reduced quite quickly with the cessation of smoking. However more research needs to be carried out to determine the timing in cost reductions that would occur as programs are implemented and smoking rates come down.

But the potential for savings is clearly significant. For example, if Indiana's smoking incidence were 23.5 percent – the national average – instead of its actual 26.3 percent, the costs born by the economy resulting from the early retirement of workers who smoke would be about $200 million per year less than its actual level. The experience of Massachusetts and California shows that a drop of three percentage points in smoking incidence is quite a bit less than what could actually be achieved. When one adds the savings in medical expenditures and other types of wasteful spending, it is easily seen that savings on the order of $500 million per year are well within reach.

The purpose of this report is to raise the awareness of this issue in the state of Indiana. Even though some of the research results presented here are preliminary in nature, they are sufficiently precise to establish the pervasiveness and the significance of the economic burden we all bear due to tobacco use. The potential for averting at least part of these costs should make programs aimed at bringing down smoking rates in our state a high priority.

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