Estimation of the Economic Burden of Cigarette Smoking on the State of Mississippi and the Return on Investments of the Mississippi State Department of Health – Office of Tobacco Control for the Years 2000-2015

Prepared for the

Mississippi State Department of Health

Office of Tobacco Control

By

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February 2017

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Acknowledgements

Special thanks are given to Lauren Behel and Dr. James Barnes for their review and insightful comments to this document. Their comments were especially helpful and, as always, any mistakes that may exist are the sole responsibility of the author.

Summary

As presented in the U.S. Surgeon General's 2014 report, there is incontrovertible evidence that tobacco smoking is harmful to health. Furthermore, an increasing body of literature demonstrates the significant effectiveness of various types of education and intervention programs designed to promote smoking abstinence and cessation (Warnakulasuriya 2002; Fiore, et al. 2003; Etter and Perneger 2001; Saul, et al. 2007).

The purpose of this study is to provide an estimation of the return on investment of Mississippi State Department of Health – Office of Tobacco Control expenditures for the years 2000-2015 for use by policy makers and stakeholders. The analysis calculates this estimate by comparing the economic burden of cigarette smoking on the adult population aged 18-64 for the years 2000-2015 with projections of this burden assuming increased prevalence rates resulting from an absence of education and intervention expenditures designed to reduce smoking among the youth and adult populations. Publicly available data from federal sources combined with research-based methodologies and incidence factors from the peer reviewed literature are used to provide annual estimates of direct and indirect costs to Mississippians.

A summary of the comparison of the estimated economic burden of smoking and the projected costs given an absence of education and intervention expenditures designed to curb smoking prevalence rates along with the cost savings (losses) which are used to estimate the return on investment of MSDH-OTC investments (in current dollars by year) are shown in Summary Table 1 and Summary Figure 1:

Summary Table 1 – Estimated Direct/Indirect Costs of the Economic Burden of Cigarette Smoking on the Mississippi Adult Population

	Estimated Current Burden Given Cessation/Prevention Expenditures	Estimated Projected Burden Given No Cessation/Prevention Expenditures	Savings (Losses) Resulting from Tobacco Cessation/Prevention Expenditures
2000	$5,816,472,320	$6,042,368,819	$225,896,499
2001	$6,401,404,493	$6,342,926,089	($58,478,404)
2002	$6,850,419,920	$6,633,066,063	($217,353,857)
2003	$7,079,267,229	$7,156,261,581	$76,994,352
2004	$7,122,186,117	$7,592,227,967	$470,041,850
2005	$7,554,950,677	$8,138,275,812	$583,325,135
2006	$8,394,908,728	$8,788,364,111	$393,455,383
2007	$8,369,709,885	$9,115,535,610	$745,825,725
2008	$8,360,554,318	$9,345,054,435	$984,500,117
2009	$8,845,137,399	$9,810,257,570	$965,120,171
2010	$8,770,136,704	$9,926,858,277	$1,156,721,573
2011	$9,220,490,245	$9,841,405,639	$620,915,394
2012	$8,807,344,858	$10,033,992,483	$1,226,647,625
2013	$9,607,089,311	$10,668,939,509	$1,061,850,198
2014	$9,556,223,528	$11,212,799,015	$1,656,575,487
2015	$8,896,515,725	$10,618,314,972	$1,721,799,247
Total	**$129,652,811,457**	**$141,266,647,952**	**$11,613,836,495**

Summary Figure 1 – Estimated Savings (Losses) Resulting from Tobacco Cessation/Prevention Expenditures on the Mississippi Adult Population
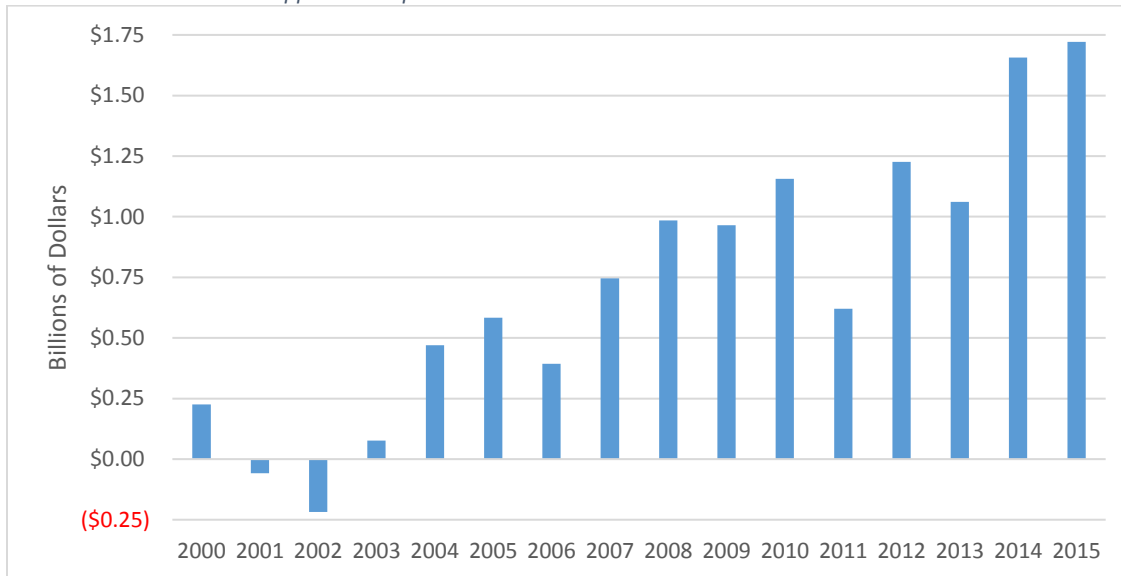
The costs shown above are borne by individuals with smoking related illnesses, taxpayers and employers. These estimates indicate that Mississippi has incurred a burden of over $129 billion over the sixteen year period given the various education and cessation expenditures targeted to curb smoking prevalence rates among adults aged 18-64 over the study period. However, this estimate increases to over $141 billion with the absence of these programs. Conservative estimates that assume ten percent of the reduction in economic burden due to smoking can be attributed to MSDH-OTC programs indicate that three measures of economic return to the dollars invested show that these expenditures have been effective.

- Given the annual levels of investment in MSDH-OTC programs, the payback period to recoup those costs is estimated to be 8.5 years.
- The internalized rate of return on MSDH-OTC investments is estimated to be 34 percent.
- The discounted net present value of these investments (in current dollars) is estimated to be a positive $638 million (the positive value indicates that the investments have been effective in reducing the economic burden).
- Declines in prevalence rates resulting from these programs returned $4.80 of economic burden savings per dollar invested.

In addition, induced effects resulting from MSDH-OTC intervention/education expenditures has resulted in a savings of over 3,800 jobs, over $134 million in labor income and almost $30 million each in local/state and federal tax revenues.

The overall conclusion of this study is that the education and intervention expenditures offered by MSDH-OTC focused on tobacco abstinence and cessation have been very effective in reducing the levels of smoking-related direct medical costs, absenteeism and presenteeism associated with work, disability that prevents work and premature mortality, as well as projected induced effects on the economy at large. It is anticipated that additional investments through this agency will continue to reduce prevalence rates and significantly reduce the economic burden of cigarette smoking by the adult population on the state and its economy.

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Introduction

The adverse health consequences of cigarette smoking, as well as other tobacco use, have been documented in myriad studies and in the research literature. Of increasing importance, however, is the economic costs or burden of cigarette smoking in particular and tobacco use in general. In order to be effective stewards of resources provided by taxpayers and other concerned stakeholders, policy makers must have an understanding of the consequences of public health issues in order to make informed decisions regarding the allocation of the scarce resources provided to them.

This study strives to provide an estimate of these costs in two distinct categories – direct medical costs and indirect costs associated with absenteeism, presenteeism, inability to work due to illness (disability) and premature mortality – utilizing research-based methodologies and factors for the years 2000-2015 in order to estimate a return on investment of funds invested by the Mississippi State Department of Health – Office of Tobacco Control.

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Prevalence

The driving force behind any study of this type is the prevalence among the target population of the adverse health condition. Using data gleaned from annual Behavioral Risk Factor Surveillance System (BRFSS) datasets, prevalence for current smokers (both daily and nondaily smokers) and former smokers for the years 1995 through 2014 are presented in Figure 1 and Table 1.

Figure 1 – Prevalence by Smoking Status in the Mississippi Adult Population
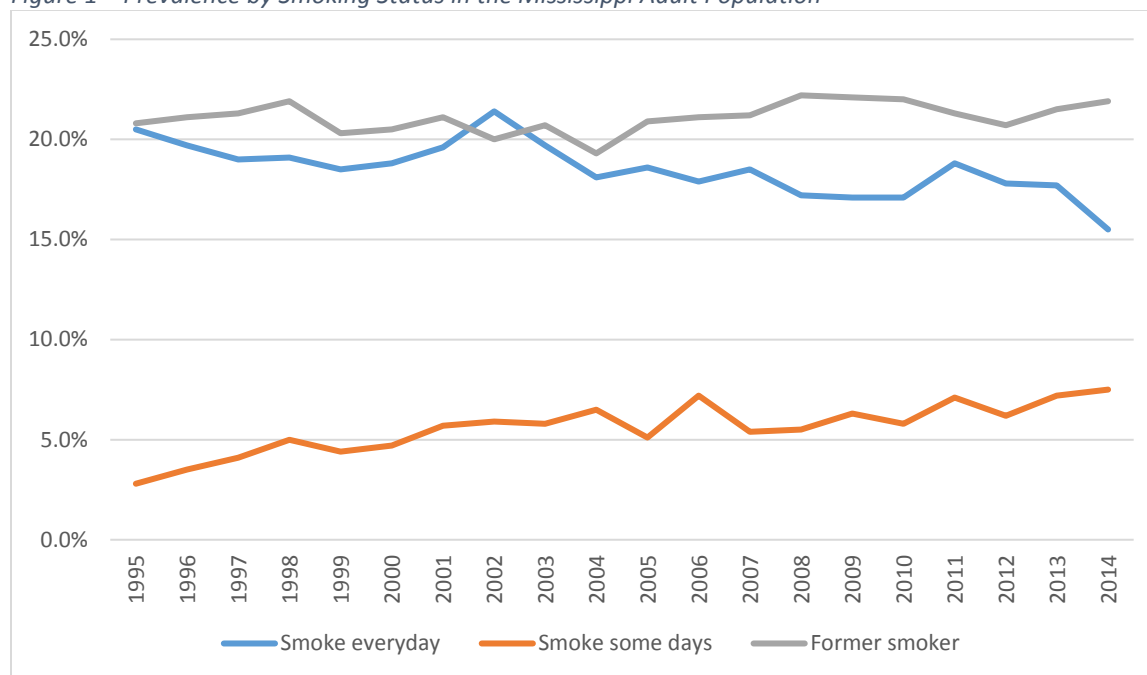
Source: U.S. Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System Prevalence and Trends Tool. Accessed at https://www.cdc.gov.brfss/brfssprevalence/index.html.

Table 1 – Four Stage Smoking Status in the Mississippi Adult Population (Prevalence Rates)

	Current Smoker (Smoke Everyday)	Current Smoker (Smoke Some Days)	Former Smoker	Never Smoked
1995	20.5%	2.8%	20.8%	55.8%
1996	19.7%	3.5%	21.1%	55.7%
1997	19.0%	4.1%	21.3%	55.6%
1998	19.1%	5.0%	21.9%	54.0%
1999	18.5%	4.4%	20.3%	56.8%
2000	18.8%	4.7%	20.5%	56.0%
2001	19.6%	5.7%	21.1%	53.6%
2002	21.4%	5.9%	20.0%	52.7%
2003	19.7%	5.8%	20.7%	53.8%
2004	18.1%	6.5%	19.3%	56.2%
2005	18.6%	5.1%	20.9%	55.5%
2006	17.9%	7.2%	21.1%	53.8%
2007	18.5%	5.4%	21.2%	54.8%
2008	17.2%	5.5%	22.2%	55.1%

	Current Smoker (Smoke Everyday)	Current Smoker (Smoke Some Days)	Former Smoker	Never Smoked
2009	17.1%	6.3%	22.1%	54.6%
2010	17.1%	5.8%	22.0%	55.0%
2011	18.8%	7.1%	21.3%	52.8%
2012	17.8%	6.2%	20.7%	55.3%
2013	17.7%	7.2%	21.5%	53.7%
2014	15.5%	7.5%	21.9%	55.2%

Source: U.S. Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System Prevalence and Trends Tool. Accessed at https://www.cdc.gov.brfss/brfssprevalence/index.html.

Prevalence translates to a specific number of persons who are either current smokers (every day or some days) or are former smokers. Table 2 provides estimates of current and former smokers by year that are used in the analyses of the actual economic burden of smoking for 2000-2015.

Table 2 – Four Stage Smoking Status in the Mississippi Adult Population

	18-64 Year Old Mississippi Population	Current Smokers (Smoke Everyday)	Current Smokers (Smoke Some Days)	Total Current Smokers	Former Smoker	Never Smoked
2000	1,729,982	325,237	81,309	406,546	354,646	968,790
2001	1,740,014	341,043	99,181	440,224	367,143	932,648
2002	1,750,133	374,528	103,258	477,786	350,027	922,320
2003	1,760,938	346,905	102,134	449,039	364,514	947,385
2004	1,777,280	321,688	115,523	437,211	343,015	998,831
2005	1,788,874	332,731	91,233	423,964	373,875	992,825
2006	1,789,791	320,373	128,865	449,238	377,646	962,908
2007	1,804,223	333,781	97,428	431,209	382,495	988,714
2008	1,816,918	312,510	99,930	412,440	403,356	1,001,122
2009	1,824,267	311,950	114,929	426,879	403,163	996,050
2010	1,834,954	313,777	106,427	420,204	403,690	1,009,225
2011	1,842,044	346,304	130,785	477,089	392,355	972,599
2012	1,839,814	327,487	114,068	441,555	380,841	1,017,417
2013	1,839,860	325,655	132,470	458,125	395,570	988,005
2014	1,834,605	284,364	137,595	421,959	401,778	1,012,702
2015	1,825,784	282,997	136,934	419,931	399,847	1,007,833

Source: U.S. Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System Prevalence and Trends Tool. Accessed at https://www.cdc.gov.brfss/brfssprevalence/index.html; U.S. Census Bureau American Community Survey. Accessed at factfinder.census.gov.

Cost Estimation

The focus of this study is to estimate a return on dollars invested in tobacco cessation programs by the Mississippi State Department of Health Office of Tobacco Control for the years 2000-2015. Since prevalence data has not yet been reported for 2015, the four stage prevalence estimates for 2014 will be used as a proxy for 2015 to estimate the economic burden of cigarette smoking for the study period.

The costs associated with smoking have classically been divided into two components – direct and indirect costs attributable to smoking with indirect costs being divided into four categories: absenteeism, presenteeism, inability to work (disability) and premature death.

Direct Costs

In this study (as in most chronic disease and adverse health-related studies), direct costs are defined as those medical costs which can be directly attributed to the condition (in this case, smoking). While our original goal was to develop state specific cost estimates for Mississippi, the lack of publicly available databases that contain both an adequate smoking history and medical costs for the respondents did not allow this type of analysis.[1] Therefore, reputable national estimates regarding cost apportionment will be utilized.

The most widely accepted method of estimating these direct costs involve the estimation of a Smoking Attributable Fraction of Expenditures (SAFE). This SAFE is then applied to total health care expenditures to obtain the costs of healthcare that can be viewed as a direct result of smoking. In a 2014 report on the health consequences of smoking (U.S. Department of Health and Human Services, 2014), the Surgeon General's office performed a literature review of the economic modeling of healthcare costs related to smoking and provided an overview of the three most common methods used to calculate the SAFE (U.S. Department of Health and Human Services, 2014, pages 670-676).

We feel that the most reliable of these methods in determining the SAFE is a two-part regression model that first estimates the probability of having any medical expenditures and then estimates positive expenditures greater than zero given a variety of socio-economic, risk, and smoking related controls (Finkelstein, et al; Congressional Budget Office; Wax, et al). As cited by the Surgeon General's report, this method estimated an overall national SAFE of 8.7.

Utilizing data from the 2000-2015 Medical Expenditure Panel Survey (MEPS) and given estimates from the Centers for Medicare and Medicaid Services' National Health Expenditure Survey that the cost of health care should rise by an average of 5.8 percent, we applied a SAFE of 8.7 percent to estimate the total Smoking Attributable Expenditures (SAE) for the Mississippi population and the SAE per smoker as shown in Table 3. The calculation of direct costs by year is fully explained in Appendix A.

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[1] The Medical Expenditure Panel Survey only asks if a respondent is a current smoker, but does not gather any information on the individual's smoking history. This is problematic in that the majority of the costs of smoking seem to accrue to older individuals who have a history of smoking, but who may have quit smoking due to chronic disease or adverse health conditions. In the past, analysts were given the means to combine the MEPS and National Health Interview Survey datasets (the MEPS respondents are a subset of the previous year's NHIS respondents), but this has, for the most part, been discontinued due to disclosure concerns.

Table 3 – Direct Costs Attributable to Cigarette Smoking for the Mississippi Adult Population

Year	Number of Current Smokers	Smoking Attributable Expenditures (SAE)	Total Healthcare Cost per Person	SAE per Smoker
2000	406,546	$748,871,881	$3,022	$1,842
2001	440,224	$845,404,888	$3,406	$1,920
2002	477,786	$961,245,780	$3,865	$2,012
2003	450,800	$1,057,813,387	$4,239	$2,347
2004	435,434	$1,119,988,285	$4,456	$2,572
2005	422,174	$1,204,420,383	$4,764	$2,853
2006	449,238	$1,274,027,487	$5,041	$2,836
2007	431,209	$1,336,759,563	$5,247	$3,100
2008	412,440	$1,223,310,012	$4,770	$2,966
2009	425,054	$1,389,517,199	$5,398	$3,269
2010	420,204	$1,341,962,036	$5,193	$3,194
2011	478,931	$1,384,814,205	$5,345	$2,891
2012	441,555	$1,341,101,744	$5,163	$3,037
2013	456,285	$1,416,089,551	$5,442	$3,104
2014	421,959	$1,534,450,856	$5,892	$3,636
2015	419,930	$1,622,915,741	$6,234	$3,865

Figure 2 - Healthcare Costs per Person and SAE per Smoker (Self, Private and Other Pay)

However, this is only part of the story. The preceding estimates deal with total expenditures for healthcare, but these costs are paid by four components: self-pay, private payers (typically insurance companies), public payers (i.e., Medicare, Medicaid, Social Security, etc.) and other types of payers. For the majority of the years 2000-2014, inclusive, the largest payer of expenditures are private payers for nonsmokers, but are public payers for smokers. Furthermore, when the percentage of costs paid by self-payers, private payers and other payers combined are compared to the percentage paid by public payers, the percentage paid by the combined group is higher than the percentage of expenditures paid by public payers for nonsmokers, but the reverse is true for smokers (see Figures 2 and 3). Figure 3 should be of particular interest to policy makers; casual observance shows that the gap between the percentage of direct medical expenditures paid by public sources for smokers versus nonsmokers is widening over recent years.

Figure 3 – Healthcare Costs per Person and SAE per Smoker (Public Pay)
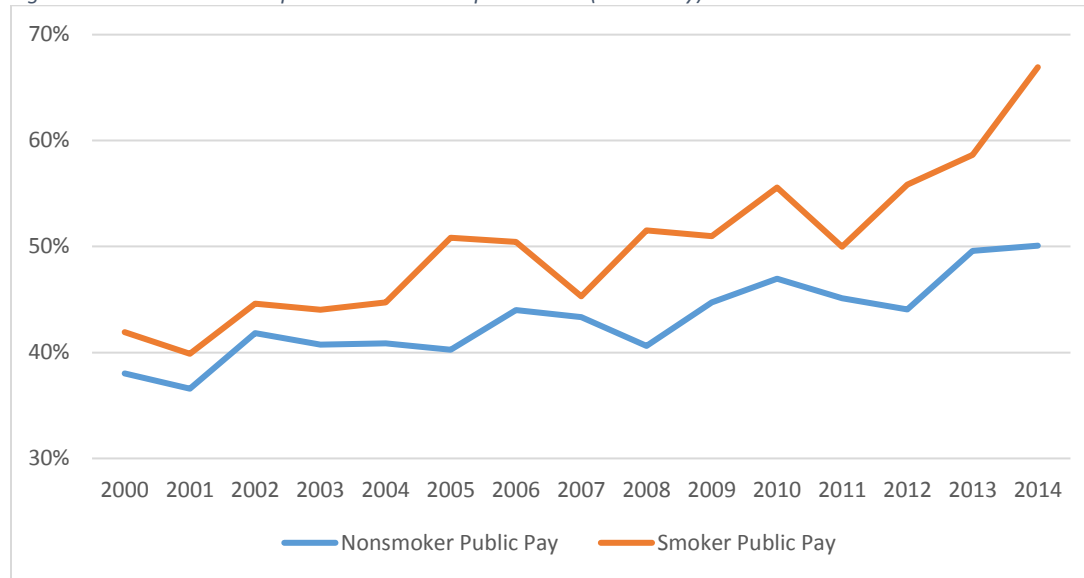
Figures 2 and 3 contain a host of implications for policy makers. While the public pay portion of healthcare expenditures for both current smokers and those who have never smoked has been increasing over time, the gap between the expenditures paid by the public sector has been widening. If we allocate the payer rates shown in Figure 3 on a per person basis and the number of current smokers found in Table 3, we see the difference between the portion of direct medical expenses paid by the public sector for current smokers versus those who have never smoked and can then determine the total additional dollars that have been placed on the public sector as a result of current smokers. These results can be seen in Table 4. Over the 2000-2014 period (data for this calculation was not available for 2015 at the time of this writing), the total increased outlay for direct medical expenditures from public pay sources is estimated to be $2,269,702,085.

Table 4 – Additional Public Pay Costs Attributable to Cigarette Smoking for the Mississippi Adult Population

Year	Public Pay Expenditures per Person			Add'l Public Pay Expenditures resulting from Smoking
	Smokers	Nonsmokers	Difference	
2000	$1,267	$1,149	$118	$47,784,009
2001	$1,358	$1,246	$112	$49,387,295
2002	$1,724	$1,617	$107	$50,993,908
2003	$1,867	$1,727	$140	$62,998,003
2004	$1,993	$1,821	$172	$74,790,580
2005	$2,421	$1,918	$503	$212,253,428
2006	$2,542	$2,218	$324	$145,506,898
2007	$2,377	$2,274	$102	$43,991,137
2008	$2,457	$1,937	$520	$214,633,918
2009	$2,752	$2,415	$337	$143,318,648
2010	$2,885	$2,438	$447	$187,906,549
2011	$2,671	$2,412	$259	$124,050,781
2012	$2,883	$2,274	$609	$268,770,457
2013	$3,191	$2,699	$492	$224,605,989
2014	$3,943	$2,951	$992	$418,710,485

Indirect Costs

In this context, indirect costs are defined as those costs which would be incurred as a result of smoking, but are not directly related to medical care expenses. These costs can be separated into four distinct types: absenteeism, presenteeism, inability to work and premature mortality. Each of these are discussed in turn.

Indirect Cost due to Absenteeism

Absenteeism is defined as the number of work days missed due to poor health. A regression model with National Health Information Survey (NHIS) data (see Appendix B for details) was used to estimate the workdays missed for current and former smokers between the ages of 18 and 64, inclusive, while controlling for socio-demographic and risk factors. Monetary productivity costs (see Table 5 and Figure 4) were estimated using the average wage for the state's employees as reported by the Economic Modeling Systems Incorporated (EMSI) proprietary database.

Table 5 – Absenteeism Costs Attributable to Cigarette Smoking for the Mississippi Adult Population

Year	Current Smoker Absenteeism Years	Former Smoker Absenteeism Years	Average Annual Wage	Total Absenteeism Cost Attributable to Smoking	Absenteeism Cost per Current Smoker	Absenteeism Cost per Former Smoker
2000	6,832	4,774	$31,087	$360,806,777	$522	$418
2001	5,487	6,493	$31,960	$382,889,414	$398	$471
2002	7,747	6,194	$32,977	$459,740,746	$535	$428
2003	7,615	6,424	$34,171	$479,737,417	$577	$487
2004	5,443	3,934	$35,796	$335,675,586	$447	$323
2005	5,669	4,252	$37,347	$370,526,632	$502	$376
2006	8,038	7,717	$38,791	$611,173,372	$694	$666
2007	6,114	7,238	$40,120	$535,680,214	$569	$673
2008	4,286	6,614	$41,538	$452,722,410	$432	$666
2009	5,526	5,571	$42,127	$467,486,590	$548	$552
2010	4,937	2,941	$42,688	$336,327,857	$502	$299
2011	3,797	4,687	$43,416	$368,340,121	$344	$425
2012	4,179	3,122	$44,984	$328,446,186	$426	$318
2013	4,204	3,830	$45,047	$361,899,430	$415	$378
2014	5,184	2,698	$45,877	$361,583,395	$564	$293
2015	4,952	3,601	$46,543	$398,095,843	$549	$399

Figure 4 - Loss in Productivity due to Smoking Attributable Absenteeism
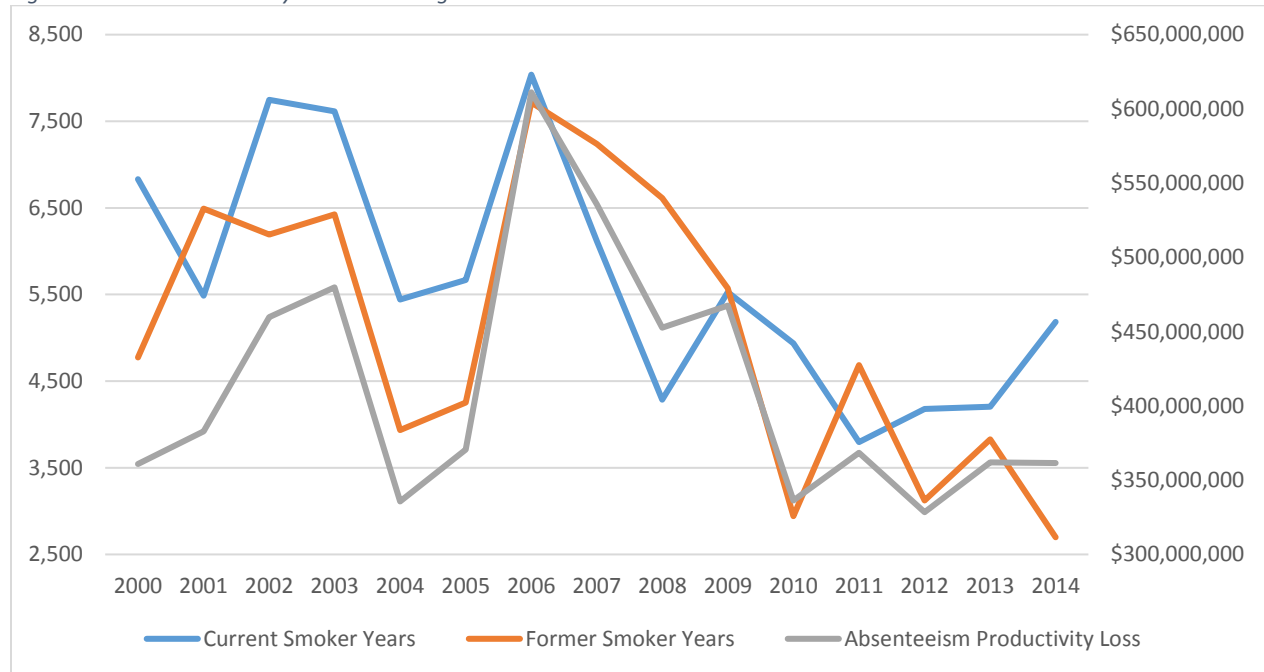
These costs are illustrated in Table 5 while Figure 4 demonstrates the loss of productivity in years for smokers and former smokers as well as the total loss in productivity (measured in dollars) due to smoking attributable absenteeism. The estimation process used for these costs is fully explained in Appendix B.

Indirect Cost due to Presenteeism

Presenteeism is defined as reduced productivity while at work; in this case, this lost productivity is due to smoking. This is a difficult concept to measure in that it relies on worker perceptions of their health while at work. As such, developing reliable estimates of presenteeism is beyond the capability of the publicly available datasets.

Therefore, estimates developed by Bunn, et al, from a proprietary national dataset and a recognized workforce productivity survey instrument[2] were used to monetarize the concept of presenteeism due to smoking. This research found that current smokers had an average productivity loss of 76.5 hours per year and former smokers lost 56.0 hours per year due to reduced productivity attributable to smoking. As explained in the footnote, workers were asked to estimate the number of hours in a typical workday that they felt unproductive due to a specific medical condition; the responses to this question was analyzed for smokers versus nonsmokers to estimate productivity losses.

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[2] This analysis utilized the Work Productivity Short Inventory (WPSI) Instrument as described in Goetzel, et al. (2003). The WPSI is a short instrument that was designed to gather information regarding absenteeism and productivity lapses (presenteeism) at work and measures decrements in productivity for workers affected by various types of health problems. The survey measures fifteen conditions such as allergic rhinitis/hayfever, depression, diabetes, respiratory infections, etc., and different versions measure different recall periods (two weeks, three months and one year). The instrument consists of four questions for each condition: (1) During the recall period, did you experience the condition?; (2) During the recall period, estimate the total number of days you experienced the condition; (3) During a typical 8 hour workday, estimate the total number of hours you were unproductive due to the condition; and (4) During the recall period, estimate the total number of days you missed work due to the condition.

Presenteeism is a cost that is solely borne by Mississippi employers since the employee is at work and getting paid. This estimation was expanded from that provided in Barefield (2015) to include costs incurred to employers by both current and former smokers (age 18-64 years, inclusive). Mississippi employers of current smokers lost $718,837,574 in productivity from a loss of 15,519 years in 2015 while employers of former smokers lost 10,765 years of productivity at a cost of $501,041,433 for the same year. Tabular and graphical depictions of the cost of presenteeism on Mississippi employers can be seen in Table 6 and Figure 5 while the detailed estimating process can be found in Appendix C.

Table 6 – Presenteeism Costs Attributable to Cigarette Smoking for the Mississippi Adult Population

Year	Current Smoker Presenteeism Years	Former Smoker Presenteeism Years	Average Annual Wage	Total Presenteeism Cost Attributable to Smoking	Presenteeism Cost per Current Smoker	Presenteeism Cost per Former Smoker
2000	14,952	9,548	$31,087	$761,651,283	$1,143	$837
2001	16,191	9,885	$31,960	$833,367,062	$1,175	$860
2002	17,572	9,424	$32,977	$890,262,878	$1,213	$888
2003	16,515	9,814	$34,171	$899,694,873	$1,257	$920
2004	16,080	9,235	$35,796	$906,188,890	$1,317	$964
2005	15,593	10,066	$37,347	$958,285,666	$1,374	$1,006
2006	16,522	10,167	$38,791	$1,035,334,539	$1,427	$1,044
2007	15,859	10,298	$40,120	$1,049,421,208	$1,476	$1,080
2008	15,169	10,860	$41,538	$1,081,177,259	$1,528	$1,118
2009	15,700	10,854	$42,127	$1,118,673,619	$1,549	$1,134
2010	15,455	10,869	$42,688	$1,123,672,464	$1,570	$1,149
2011	17,547	10,563	$43,416	$1,220,439,189	$1,597	$1,169
2012	16,240	10,253	$44,984	$1,191,770,180	$1,654	$1,211
2013	16,849	10,650	$45,047	$1,238,750,275	$1,657	$1,213
2014	15,519	10,817	$45,877	$1,208,228,036	$1,687	$1,235
2015	15,445	10,765	$46,543	$1,219,879,007	$1,712	$1,253

Figure 5 – Presenteeism Costs Attributable to Cigarette Smoking for the Mississippi Adult Population
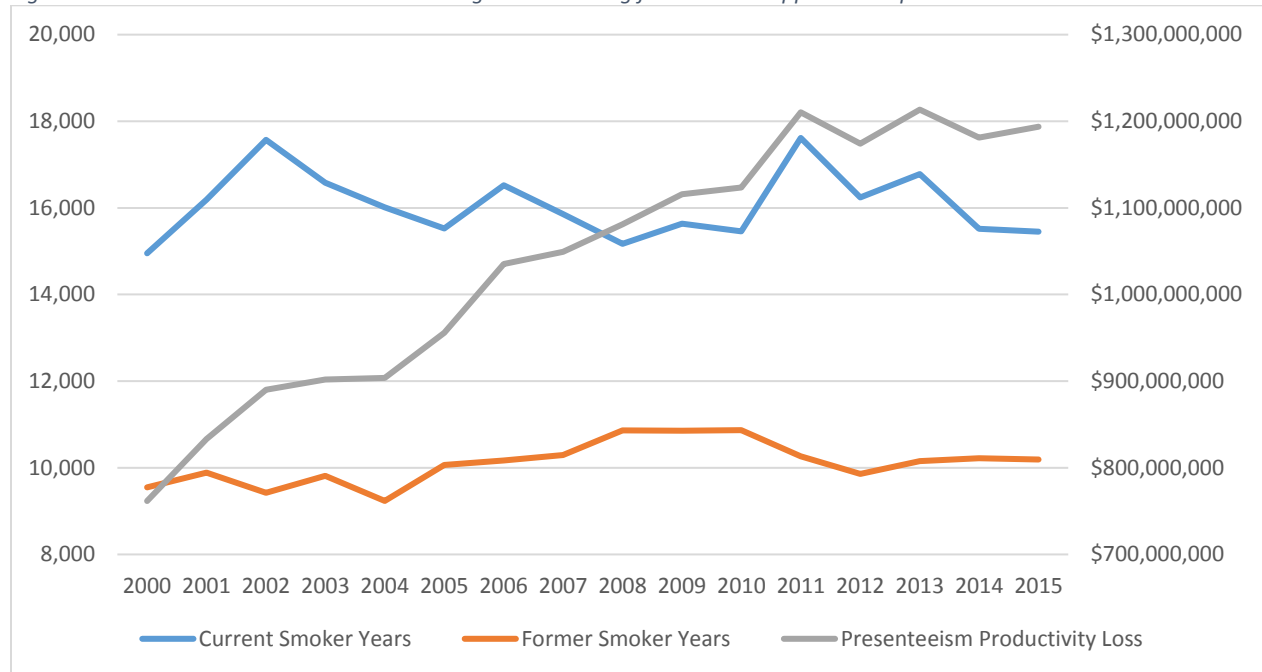
Indirect Cost due to Inability to Work due to Illness (Disability)

This measure focuses on unemployment related to long term disability that can be correlated with smoking. Modifying a methodology employed by Yang, et al, people between ages of 18 and 64, inclusive, are identified who receive either Social Security or railroad disability benefits as a result of being disabled. These observations were obtained from the 2014 National Health Interview Survey where the sample adult and person datasets were merged.

Utilizing logistic regression, we find that the odds of smokers to receive Social Security or railroad disability benefits received because the respondent was disabled are almost twice as likely non-smokers to receive these benefits. As explained more fully in Appendix D, the estimated probability to receive these benefits is significantly greater for current and former smokers than for non-smokers. Given American Community Survey estimates of the proportion of the U.S. population between the ages of 18 and 64, inclusive, that suffers from a non-hearing disability, then the cost of disability attributable to smoking can be estimated for the current and former smoker populations. Tabular and graphical representations of the estimates can be found in Table 7 and Figure 6.

Table 7 – Disability Costs Attributable to Cigarette Smoking for the Mississippi Adult Population

Year	Current Smoker Disabilty Years	Former Smoker Disability Years	Average Annual Wage	Total Disability Cost Attributable to Smoking	Current Smoker Disability Cost	Former Smoker Disability Cost
2000	58,803	47,832	$31,087	$3,314,962,245	$1,828,008,861	$1,486,953,384
2001	64,588	49,753	$31,960	$3,654,338,360	$2,064,232,480	$1,590,105,880
2002	68,349	46,228	$32,977	$3,778,405,729	$2,253,944,973	$1,524,460,759
2003	65,537	48,445	$34,171	$3,894,878,922	$2,239,464,827	$1,655,414,095
2004	62,959	46,489	$35,796	$3,917,800,608	$2,253,680,364	$1,664,120,244
2005	61,029	49,971	$37,347	$4,145,517,000	$2,279,250,063	$1,866,266,937

Year	Current Smoker Disabilty Years	Former Smoker Disability Years	Average Annual Wage	Total Disability Cost Attributable to Smoking	Current Smoker Disability Cost	Former Smoker Disability Cost
2006	65,305	50,010	$38,791	$4,473,184,165	$2,533,246,255	$1,939,937,910
2007	62,206	49,876	$40,120	$4,496,729,840	$2,495,704,720	$2,001,025,120
2008	60,687	52,201	$41,538	$4,689,141,744	$2,520,816,606	$2,168,325,138
2009	62,664	54,841	$42,127	$4,950,133,135	$2,639,846,328	$2,310,286,807
2010	61,919	54,441	$42,688	$4,967,175,680	$2,643,198,272	$2,323,977,408
2011	67,602	50,975	$43,416	$5,148,139,032	$2,935,008,432	$2,213,130,600
2012	61,034	49,424	$44,984	$4,968,842,672	$2,745,553,456	$2,223,289,216
2013	67,032	53,739	$45,047	$5,440,371,237	$3,019,590,504	$2,420,780,733
2014	63,153	54,713	$45,877	$5,407,338,482	$2,897,270,181	$2,510,068,301
2015	58,201	50,745	$46,543	$5,070,673,678	$2,708,849,143	$2,361,824,535

Figure 6 – Disability Costs Attributable to Cigarette Smoking for the Mississippi Adult Population
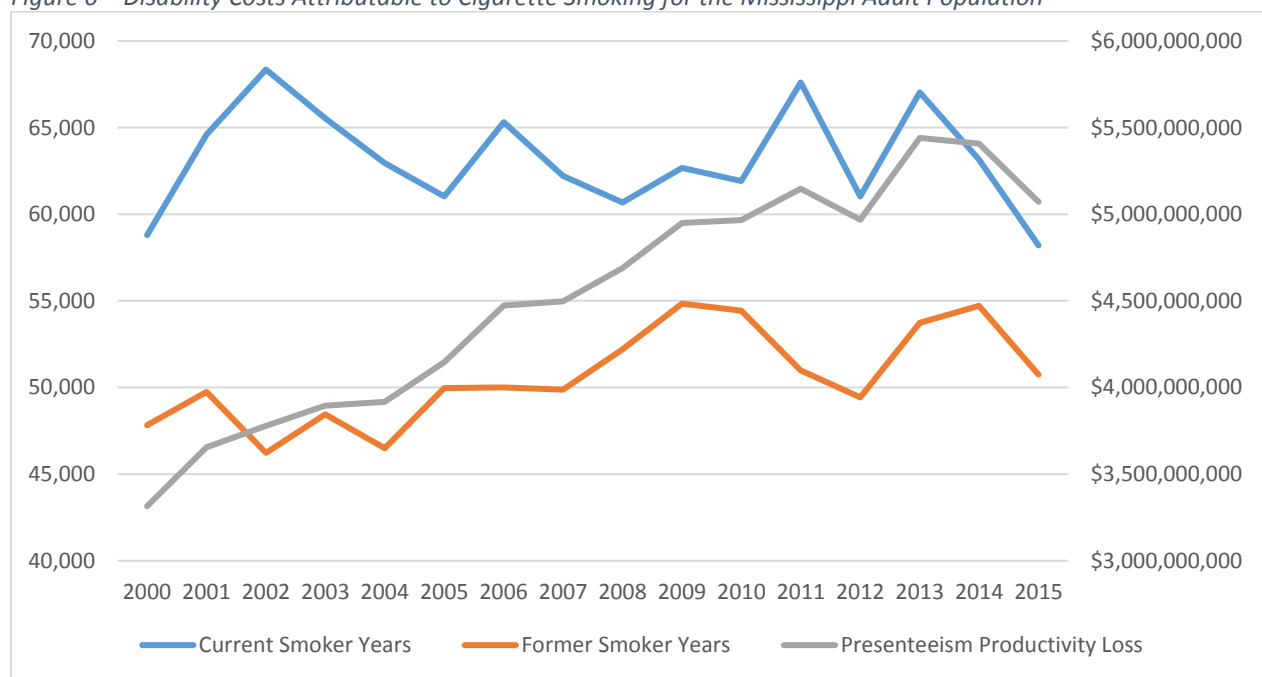
Indirect Cost due to Premature Mortality

The 2014 Surgeon General's report identified a set of ICD-10 codes that have been classified as smoking related diseases. Analyzing the CDC Wonder database by year for deaths in Mississippi related to these codes provides deaths for persons aged 35-64 (common years of employment) in Mississippi from these causes. We utilized the Smoking Attributable Fraction formula identified by Wax, et al, and employed the previously defined prevalence rates along with relative risk factors provided by the Surgeon General's report to determine the number of these deaths attributable to smoking.

Our approach will also use a net present value approach employing median wages by age categories as published by EMSI. This methodology provides an estimate of a loss of productivity due to premature death attributable to smoking. Complete details regarding these calculations can be found in Appendix E.

It should be noted that the cost of premature mortality attributable to smoking declined substantially from 2014 to 2015. It is believed that the CDC Wonder database has significantly underreported overall mortality numbers for 2015. However, since consistent estimation methods are used across all years, the effect of the estimation of premature mortality attributable to smoking for 2015 is assumed to be underreported as well and should not significantly affect the general trend of estimating a return on investment by MSDH–OTC. A tabular representation of these estimates can be found in Table 8.

Table 8 – Premature Mortality Costs Attributable to Cigarette Smoking for the Mississippi Adult Population

Year	Male Mortality/Smoking Attrib Mortality 35-44 Years	45-54 Years	55-64 Years	Female Mortality/Smoking Attrib Mortality 35-44 Years	45-54 Years	55-64 Years	Cost of Smoking Attributable Premature Mortality
2000	228/110	666/352	855/481	81/41	280/130	541/298	$630,180,134
2001	184/91	639/358	908/554	135/72	361/179	511/276	$685,404,769
2002	183/91	673/385	1061/644	106/63	374/184	621/331	$760,764,787
2003	131/67	741/395	1021/615	98/45	350/177	603/343	$747,142,630
2004	139/69	749/417	1143/674	116/56	400/209	571/335	$842,532,748
2005	119/64	787/420	1195/699	68/37	395/214	643/350	$876,200,996
2006	157/76	822/461	1211/734	92/38	491/252	673/385	$1,001,189,165
2007	158/84	789/401	1232/714	52/15	455/226	683/373	$951,119,060
2008	104/49	760/413	1181/665	28/10	451/222	650/333	$914,152,893
2009	87/45	773/406	1194/682	23/8	378/214	676/354	$919,326,856
2010	106/38	808/438	1278/745	50/14	525/263	620/319	$1,000,998,667
2011	90/34	791/430	1512/904	46/17	501/282	756/418	$1,098,757,698
2012	101/46	666/353	1402/755	63/18	410/227	746/383	$977,184,076
2013	139/59	778/404	1511/856	53/29	490/254	956/535	$1,149,978,818
2014	47/17	695/350	1654/886	68/33	444/225	956/534	$1,044,622,759
2015	64/23	463/190	1190/537	20/7	226/91	548/241	$584,951,456

Induced Consequences Related to Lost Wages

The preceding analysis has been an estimate of the monetary level of direct and indirect factors that contribute to the economic burden of smoking in Mississippi. There are, however, other consequences that are interesting to examine. The lost wages from the indirect effects have consequences beyond the effects presented here. These include a concept referred to as induced consequences or induced effects. These consequences are defined as the additional economic activity that result from employees spending wages in the economy and include purchases of groceries, vehicles, personal services, etc. While these consequences cannot, for the most part, be counted as contributions in the strictest sense because of labor substitution of employees within the state (although there could very well be some income redistribution effects among businesses), their magnitude is worthy of examination to allow policy makers a different view of the consequences of smoking.

Utilizing a household income change scenario in the IMPLAN input-output model, we estimate the labor income effects on other persons as a result of the employee-related economic burden indirect cost

calculations from absenteeism (this assumes that sick leave are not a portion of employees' benefit packages), disability and premature mortality as well as the local/state and federal fiscal impacts resulting from the lost wages. Table 9 presents these losses by year; but it is noteworthy that the state's economy has suffered an additional loss of over 661,000 jobs and over $22 billion in lost wages; this has resulted in state tax revenues falling by over $5 billion and federal tax revenues falling by almost $5 billion over the 2000-2015 study period.

Table 9 – Induced Consequences Related to Lost Wages

Year	Number of Lost Jobs (Induced)	Level of Lost Wages (Induced)	Loss in Local/State Tax Dollars (Induced)	Loss in Federal Tax Dollars (Induced)
2000	32,171.9	$1,094,000,341	$242,942,582	$223,957,188
2001	35,285.2	$1,199,865,912	$266,451,951	$245,629,347
2002	37,349.4	$1,270,059,267	$282,039,644	$259,998,919
2003	38,267.3	$1,301,270,836	$288,970,747	$266,388,359
2004	38,400.6	$1,301,040,162	$288,661,159	$266,451,629
2005	39,229.2	$1,334,450,722	$296,444,741	$273,183,893
2006	43,547.2	$1,482,588,179	$329,332,444	$303,483,188
2007	42,082.7	$1,433,534,387	$318,638,162	$293,452,876
2008	42,148.1	$1,436,181,493	$319,410,832	$294,021,816
2009	44,705.3	$1,522,832,750	$338,542,846	$311,746,441
2010	44,346.8	$1,511,492,855	$335,951,455	$309,385,387
2011	46,247.1	$1,575,579,082	$350,315,351	$322,532,840
2012	44,911.0	$1,554,711,188	$327,812,016	$335,577,437
2013	47,236.4	$1,679,794,785	$370,872,207	$388,980,519
2014	46,317.0	$1,608,400,438	$353,233,538	$383,873,470
2015	39,300.6	$1,360,638,087	$312,324,191	$335,065,545
Total	661,545.8	$22,666,440,484	$5,021,943,866	$4,813,728,854

Calculating the Return on MSDH-OTC Investments

As previously mentioned, the prime driver behind the costs of cigarette smoking are the prevalence rates for current and former smokers. As such, it is necessary to estimate the prevalence of cigarette smoking without intervention programs for the study period. To accomplish this, a trend line was estimated from 1995 to 2002, inclusive, (1995 is the first year that weighted prevalence was reported from the Behavioral Risk Factor Surveillance System; an ending year of 2002 was used to provide an implementation phase for the MSDH-OTC prevention program). Projected prevalence estimates by year are shown in Table 10 below.

Table 10 – Projected Smoking Status in the Mississippi Adult Population

	Current Smoker (Smoke Everyday and Some Days)	Former Smoker	Never Smoked
2000	24.8%	20.7%	54.5%
2001	25.2%	20.6%	54.2%
2002	25.7%	20.5%	53.8%
2003	26.2%	20.4%	53.5%
2004	26.6%	20.2%	53.1%
2005	27.1%	20.1%	52.8%
2006	27.5%	20.0%	52.5%
2007	28.0%	19.9%	52.1%
2008	28.4%	19.8%	51.8%
2009	28.9%	19.7%	51.4%
2010	29.4%	19.6%	51.1%
2011	29.8%	19.4%	50.7%
2012	30.3%	19.3%	50.4%
2013	30.7%	19.2%	50.0%
2014	31.2%	19.1%	49.7%
2015	31.7%	19.0%	49.4%

Given prevalence for various smoking statuses in Table 8 and estimates for the various types of direct/ indirect costs described in Appendices A-E, projected costs without any type of cessation/ intervention program (effects of programs that were in existence in Mississippi before 2002 are included in this trend) are shown in Table 11. The processes of calculating these projected estimates can be found in Appendices F-J.

Table 11 – Projected Direct/Indirect Costs without Intervention Programs for the Mississippi Adult Population

	Direct Medical Costs	Indirect Costs Absenteeism	Indirect Costs Presenteeism	Indirect Costs Disability	Indirect Costs Premature Mortality
2000	$789,486,726	$373,804,389	$789,818,095	$3,428,927,187	$660,332,422
2001	$843,002,880	$381,880,482	$824,357,110	$3,610,393,360	$683,293,154
2002	$904,671,656	$432,655,897	$863,503,936	$3,681,816,096	$750,418,478
2003	$1,080,758,295	$490,044,276	$908,583,480	$3,924,812,718	$752,062,812
2004	$1,216,311,660	$364,561,955	$969,392,254	$4,183,406,928	$858,555,170
2005	$1,381,391,217	$424,954,272	$1,027,199,236	$4,400,746,398	$903,984,689
2006	$1,397,127,040	$670,220,998	$1,077,029,139	$4,618,495,251	$1,025,491,683
2007	$1,565,134,200	$627,201,589	$1,132,863,688	$4,800,759,200	$989,576,933

	Direct Medical Costs	Indirect Costs Absenteeism	Indirect Costs Presenteeism	Indirect Costs Disability	Indirect Costs Premature Mortality
2008	$1,532,716,092	$567,295,240	$1,191,567,281	$5,091,312,660	$962,163,162
2009	$1,723,459,297	$579,843,882	$1,223,956,853	$5,317,101,432	$965,896,106
2010	$1,720,646,128	$431,180,146	$1,258,287,397	$5,454,971,456	$1,061,773,150
2011	$1,587,841,276	$422,410,562	$1,295,732,575	$5,399,387,424	$1,136,033,802
2012	$1,691,621,148	$414,321,179	$1,352,295,280	$5,539,779,600	$1,035,975,276
2013	$1,755,156,800	$448,482,896	$1,365,639,647	$5,890,841,237	$1,208,818,929
2014	$2,080,679,184	$490,364,728	$1,398,436,245	$6,118,753,121	$1,124,565,737
2015	$2,222,966,547	$547,514,181	$1,423,631,362	$5,775,567,413	$648,635,469

Table 12 shows the difference between the estimated projected costs without intervention programs and the estimated actual costs that can be construed as cost savings from the advent of intervention programs.

Table 12 – Estimated Cost Savings from Intervention Programs for the Mississippi Adult Population

	Direct Medical Costs	Indirect Costs Absenteeism	Indirect Costs Presenteeism	Indirect Costs Disability	Indirect Costs Premature Mortality	Total
2000	$40,614,845	$12,997,612	$28,166,812	$113,964,942	$30,152,288	$225,896,499
2001	($2,402,008)	($1,008,932)	($9,009,952)	($43,945,000)	($2,111,615)	($58,477,507)
2002	($56,574,124)	($27,084,849)	($26,758,942)	($96,589,633)	($10,346,309)	($217,353,857)
2003	$22,944,908	$10,306,859	$8,888,607	$29,933,796	$4,920,182	$76,994,352
2004	$96,323,375	$28,886,369	$63,203,364	$265,606,320	$16,022,422	$470,041,850
2005	$176,970,834	$54,427,640	$68,913,570	$255,229,398	$27,783,693	$583,325,135
2006	$123,099,553	$59,047,626	$41,694,600	$145,311,086	$24,302,518	$393,455,383
2007	$228,374,637	$91,521,375	$83,442,480	$304,029,360	$38,457,873	$745,825,725
2008	$309,406,080	$114,522,830	$110,390,022	$402,170,916	$48,010,269	$984,500,117
2009	$333,942,098	$112,357,292	$105,283,234	$366,968,297	$46,569,250	$965,120,171
2010	$378,684,092	$94,852,289	$134,614,933	$487,795,776	$60,774,483	$1,156,721,573
2011	$203,027,071	$54,070,441	$75,293,386	$251,248,392	$37,276,104	$620,915,394
2012	$350,519,404	$85,874,993	$160,525,100	$570,936,928	$58,791,200	$1,226,647,625
2013	$339,067,249	$86,583,466	$126,889,372	$450,470,000	$58,840,111	$1,061,850,198
2014	$546,228,328	$128,781,333	$190,208,209	$711,414,639	$79,942,978	$1,656,575,487
2015	$600,050,806	$149,418,338	$203,752,355	$704,893,735	$63,684,013	$1,721,799,247
Total	$3,690,277,148	$1,055,554,682	$1,365,497,150	$4,919,438,952	$583,069,460	$11,613,837,392

Figure 7 shows the expenditures by year for the Mississippi State Department of Health – Office of Tobacco Control for 2000-2015 (there were no allocations for 2007). These expenditures total $242.5 million; this is less than the total amount of estimated cost savings from intervention programs for the adult Mississippi population shown in Table 11. However, it would be naïve to assume that the total cost savings shown above were solely due to MSDH-OTC programs. A simple break-even analysis suggests that if just over two percent of the cost savings is attributable to MSDH–OTC programs over the study period, then the state would recoup its investment over the program's life. Furthermore, if five percent of these savings were

attributable to MSDH-OTC programs, then the investment break-even period would be approximately 10.5 years and would fall to 8.5 years if 10 percent of the cost savings were attributed to MSDH-OTC programs.[3]

Figure 7 - MSDH-OTC Intervention Program Expenditures
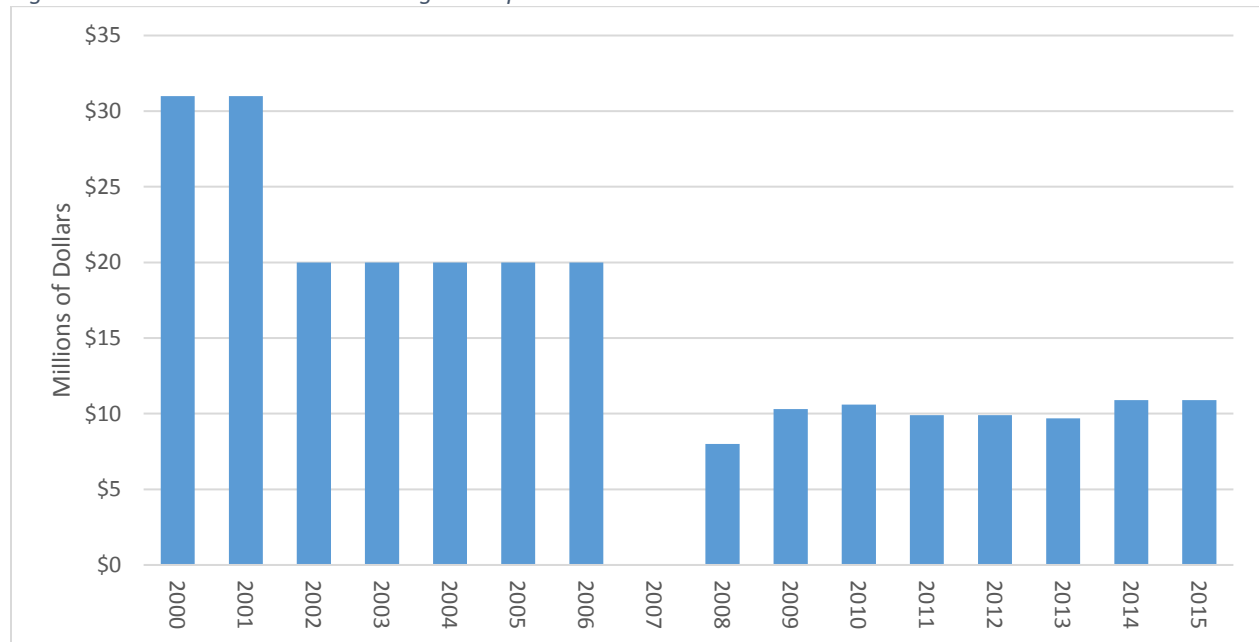
While a break-even analysis is useful in determining whether a set of investments yield a positive return, it is often easier for readers to understand an internalized rate of return (IRR) for a series of investments. This calculation provides a percentage rate of return that is often easier to understand than the break-even time frame analysis. Utilizing the two extremely conservative impact estimates of five and ten percent discussed in the previous paragraph with standard IRR calculation procedures found in Excel, the IRR for a five percent impact of MSDH-OTC programs on prevalence rates is 17 percent and the IRR for a ten percent impact of MSDH-OTC programs on prevalence rates is 34 percent. The reader should be cautioned that the projection of IRRs is not geometric; for example, the estimated IRR for a 25 percent impact factor is 150 percent.

A third measure of the efficacy of MSDH-OTC investments in tobacco programs is the calculation of the net present value of the net savings/cost streams to determine if the resulting net present value is positive or negative (a positive value indicates that the investment outperformed the chosen discount rate while a negative value indicates that the costs outweighed the savings with the chosen discount rate). Utilizing a ten percent discount rate, the net present values of the savings/cost streams were positive for both the five and ten percent impact factors and for either discounting the savings/cost streams back to 2000 or utilizing 2015 as the base year. This suggests that the MSDH-OTC investments have been effective. The results of these calculations are shown in Table 13.

Table 13 – Net Present Value of MSDH–OTC Savings/Cost Streams

	Five percent Impact Factor	Ten percent Impact Factor
Discounting back to 2000	$59,723,267	$260,542,897
Discounting up to 2015	$268,834,269	$638,104,543

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[3] It is likely that the impact factor for MSDH-OTC programs will be much higher than either five or ten percent. Increasing the impact factor to a level above ten percent would simply increase the efficacy of the investment.

A final measure of return on investment involves dividing the number of dollars saved through the intervention and education programs attributed to the MSDH–OTC by the number of dollars spent on these programs. If five percent of the projected savings in economic burden is attributed to the MSDH–OTC ($580,691,825), then the total investment of $242,200,000 reveals a $2.40 of economic burden savings for every dollar that MSDH–OTC has invested. If the projected savings attributable to MSDH–OTC investments is doubled to ten percent, then the savings per dollar of investment would also double ($4.80 of economic burden savings per dollar invested). A tabular summary of these findings are presented in Table 14.

Table 14 – Savings in Economic Burden per MSDH–OTC Dollar of Investment

	Savings of Economic Burden	MSDH–OTC Investment	Savings Return per Dollar Invested
Five percent Impact Factor	$580,691,825	$242,200,000	$2.40
Ten percent Impact Factor	$1,161,383,650	$242,200,000	$4.80

In addition, there is a savings of induced effects from the influence of intervention/educational programs on prevalence rates. Table 15 shows these savings by category and year, but it is worthy to note that the induced savings to the economy over the 2000-2015 study period is almost 39,000 jobs, $1.3 billion in labor income, $298 million in local/state taxes and $300 million in federal taxes. These savings can be apportioned to the conservative intervention/education program attributions by the MSDH–OTC (Table 16).

Table 15 – Induced Savings as a Result of Intervention/Education Programs

Year	Savings in the Number of Lost Jobs (Induced)	Savings in the Level of Lost Wages (Induced)	Savings in Local/State Tax Dollars (Induced)	Savings in Federal Tax Dollars (Induced)
2000	616.6	$20,967,045	$4,656,116	$4,292,247
2001	-935.5	-$31,810,802	-$7,064,162	-$6,512,113
2002	-1,608.8	-$54,707,186	-$12,148,710	-$11,199,331
2003	-307.8	-$10,465,445	-$2,324,040	-$2,142,419
2004	1,319.2	$49,623,417	$11,278,146	$10,048,123
2005	1,758.3	$59,810,722	$13,286,797	$12,244,233
2006	881.1	$29,998,608	$6,663,710	$6,140,665
2007	2,298.1	$78,284,011	$17,400,530	$16,025,194
2008	3,160.1	$107,677,784	$23,947,832	$22,044,300
2009	2,900.9	$98,815,341	$21,967,754	$20,228,968
2010	3,709.1	$126,420,385	$28,098,789	$25,876,816
2011	1,582.1	$53,901,625	$11,984,533	$11,034,071
2012	4,263.0	$147,573,920	$31,116,060	$31,853,171
2013	4,812.9	$171,153,879	$37,788,069	$39,633,128
2014	6,254.9	$217,207,337	$47,702,621	$51,840,422
2015	8,017.5	$277,578,217	$63,715,981	$68,355,353
Total	38,721.7	$1,342,028,858	$298,070,026	$299,762,828

Table 16 – Induced Savings Attributable to MSDH–OTC Intervention/Education Programs

Year	Savings in the Number of Lost Jobs (Induced)	Savings in the Level of Lost Wages (Induced)	Local/State Tax Dollar Savings (Induced)	Federal Tax Dollars Savings (Induced)
Five percent Impact Factor	1,936.1	$67,101,443	$14,903,501	$14,988,141
Ten percent Impact Factor	3,872.2	$134,202,886	$29,807,003	$29,976,283

Conclusions

This study has accomplished two distinct goals. First, it has provided estimates (by year) of the economic burden of cigarette smoking on the adult Mississippi population for generally accepted direct and indirect cost measures. A summary of these estimates can be found in Figure 7 and Table 17.

Figure 7 – Direct and Indirect Cost Burden due to Cigarette Smoking for the Mississippi Adult Population
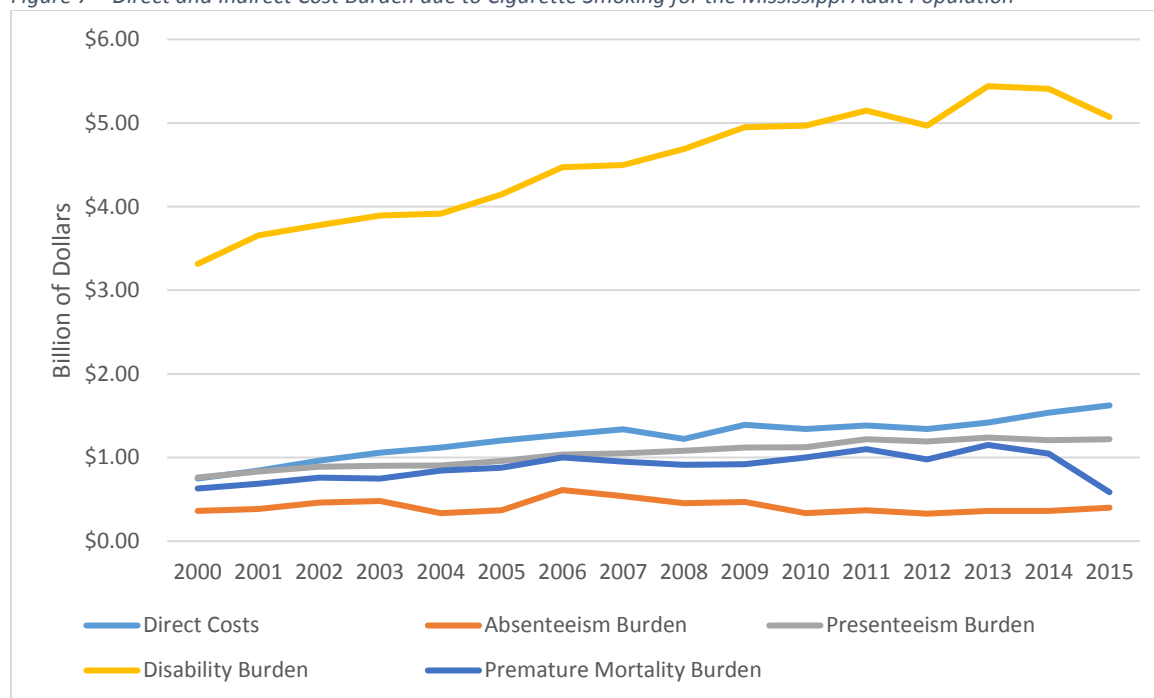
Table 17 – Direct and Indirect Costs Attributable to Cigarette Smoking for the Mississippi Adult Population

Year	Direct Costs	Indirect Costs – Absenteeism	Indirect Costs – Presenteeism	Indirect Costs – Disability	Indirect Costs – Premature Mortality
2000	$748,871,881	$360,806,777	$761,651,283	$3,314,962,245	$630,180,134
2001	$845,404,888	$382,889,414	$833,367,062	$3,654,338,360	$685,404,769
2002	$961,245,780	$459,740,746	$890,262,878	$3,778,405,729	$760,764,787
2003	$1,057,813,387	$479,737,417	$899,694,873	$3,894,878,922	$747,142,630
2004	$1,119,988,285	$335,675,586	$906,188,890	$3,917,800,608	$842,532,748
2005	$1,204,420,383	$370,526,632	$958,285,666	$4,145,517,000	$876,200,996
2006	$1,274,027,487	$611,173,372	$1,035,334,539	$4,473,184,165	$1,001,189,165
2007	$1,336,759,563	$535,680,214	$1,049,421,208	$4,496,729,840	$951,119,060
2008	$1,223,310,012	$452,772,410	$1,081,177,259	$4,689,141,744	$914,152,893
2009	$1,389,517,199	$467,486,590	$1,118,673,619	$4,950,133,135	$919,326,856
2010	$1,341,962,036	$336,327,857	$1,123,672,464	$4,967,175,680	$1,000,998,667
2011	$1,384,814,205	$368,340,121	$1,220,439,189	$5,148,139,032	$1,098,757,698
2012	$1,341,101,744	$328,446,186	$1,191,770,180	$4,968,842,672	$977,184,076
2013	$1,416,089,551	$361,899,430	$1,238,750,275	$5,440,371,237	$1,149,978,818
2014	$1,534,450,856	$361,583,395	$1,208,228,036	$5,407,338,482	$1,044,622,759
2015	$1,622,915,741	$398,095,843	$1,219,879,007	$5,070,673,678	$584,951,456
Total	$19,802,692,998	$6,611,181,990	$16,736,796,428	$72,317,632,529	$14,184,507,512

The second goal was to determine the effectiveness of investments made by the Mississippi State Department of Health – Office of Tobacco Control over the 2000-2015 time period. Four types of analyses were performed (break-even analysis, internal rate of return, net present value and return per dollar of investment) and each found that these investments had positive impacts on the prevalence rates of cigarette smoking on the adult Mississippi population (and, therefore on the direct and indirect cost estimates) while using extremely conservative impact factors. Therefore, it is the conclusion of this study that MSDH–OTC have proven to be effective in reducing the economic burden of cigarette smoking in the state.

References

Barefield, Alan. *Estimation of the Economic Burden of Cigarette Smoking on the State of Mississippi in 2014.* Prepared for the Mississippi State Department of Health – Office of Tobacco Control. Mississippi State University. 2015.

Bunn, W.B., G.M. Stave, K.E. Downs, J.M.J. Alvir and R. Dirani. *Effect of Smoking Status on Productivity Loss.* Journal of Occupational and Environmental Medicine. Vol 48, No. 10. October 2006. Accessible at http://tcyh.org/employers/downloads/Effect%20of%20Smoking%20on%20Productivity%20Loss.pdf.

Etter, J.F. and T.V. Perneger. *Effectiveness of a Computer-Tailored Smoking Cessation Program: A Randomized Trial.* Archives of Internal Medicine. 2001;161(21):2506-2601.

Finkelstein, E.A., J.G. Trogdon, J.W. Cohen and W. Dietz. *Annual medical spending attributable to obesity: payer-and-service-specific estimates.* American Journal of Epidemiology. 2008:167(1):15-19.

Fiore, M.C., R.T. Croyle, S.J. Curry, C.M. Cutler, R.M. Davis, C. Gordon, C. Healton, H.K. Koh, C.T. Orleans, D. Richling, D. Satcher, J. Seffrin, C. Williams, L.N. Williams, P.A. Keller, and T.B. Baker. *Preventing 3 Million Premature Deaths and Helping 5 Million Smokers Quit: A National Plan for Tobacco Cessation.* American Journal of Public Health. February 2004. Vol. 94, No. 2, pp. 205-210.

Goetzel, R.Z., R.J. Ozminkowski, and S.R. Long. *Development and Reliability Analysis of the Work Productivity Short Inventory (WPSI) Instrument Measuring Employee Health and Productivity.* Journal of Occupational and Environmental Medicine. 2003. Volume 45, Number 7. pp 743-762.

Katchova, Ani L. Econometrics Academy [Website and YouTube Channel]. Retrieved from Econometrics Academy website: https://sites.google.com/site/econometricsacademy/.

McMillen, R., N. Valentine, E. McClelland, M. Huell, J. Swinea, M. Dempewolf and M. Winstead. *2015 Tobacco Report: The Health and Economic Burden of Tobacco on Mississippi.* Prepared for the Mississippi State Department of Health – Office of Tobacco Control. Mississippi State University. Mississippi State, MS. Accessible at http://surveillance.mstobaccodata.org/wp-content/uploads/2010/06/2015-mtd-tobacco-report.pdf.

Saul, J.E., B.A. Schillo, S. Evered, M.G. Luxenberg, A. Kavanaugh, N. Cobb, and L.C. An. *Impact of a Statewide Internet-Based Tobacco Cessation Intervention.* Journal of Medical Internet Research. 2007. 9(3):e28.

StataCorp LP. *Reference Manual Series.* Release 12. College Station, TX.

Thun, M.J., C.A. Lally, J.T. Flannery, E.E. Calle, W.D. Flanders and C.W. Health, Jr. *Cigarette smoking and changes in the histopathology of lung cancer.* Journal of the National Cancer Institute. 1997a;89(21):1580-1586.

U.S. Bureau of Labor Statistics. Archived Consumer Price Index Detail Report Information. http://www.bls.gov/cip/cpi_dr.htm#2014

U.S. Centers for Disease Control. *Behavioral Risk Factor Surveillance System.* Datasets, codebooks and other technical documentation. Accessible at www.cdc.gov/brfss.

U.S. Centers for Disease Control. *CDC Wonder Website.* Accessible at wonder.cdc.gov.

U.S. Centers for Disease Control. *National Health Interview Survey.* Datasets, codebooks and other technical documentation. Accessible at http://www.cdc.gov/nchs/nhis.htm.

U.S. Congressional Budget Office. *Raising the Excise Tax on Cigarettes: Effects on Health and the Federal Budget.* Washington: Congressional Budget Office. 2012. Accessible at http://www.cbo.gov/sites/default/files/cbofiles/attachments/06-13-Smoking_Reduction.pdf.

U.S. Department of Health & Human Services – Agency for Healthcare Research and Quality. *Medical Expenditure Panel Survey.* Datasets, codebooks and other technical documentation. Accessible at http://meps.ahrq.gov/mepsweb.

U.S. Department of Health & Human Services – Centers for Medicare and Medicaid. *National Health Expenditure Data.* Accessed from cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html.

U.S. Department of Health and Human Services. *The Health Consequences of Smoking – 50 Years of Progress: A Report of the Surgeon General.* Rockville, MD. 2014. http://www.surgeongeneral.gov/library/reports/50-years-of-progress

University of California at Los Angeles: Statistical Consulting Group. *Logistic Regression with Stata – Chapter 1: Introduction to Logistic Regression with Stata.* Los Angeles, CA. http://www.ats.ucla.edu/stat/stata/webbooks/logistic/chapter1/statalog1.htm

Warnakulasuriya, S. *Effectiveness of tobacco counseling in the dental office.* Journal of Dental Education. September 1, 2002. vol 66, no. 9. pp 1079-1087.

Wax, W., D.P. Rice, H-Y Sung, X. Zhang and L. Miller. *The economic burden of smoking in California.* Tobacco Control. 2004;13:264-267.

Yang, W., T.M. Dall, P. Halder, P. Gallo, S.L. Kowal, and P.F. Hogan. *Economic Costs of Diabetes in the U.S. in 2012 and accompanying Supplementary Data.* Study prepared for the American Diabetes Association. Alexandria, VA. 2013.

Appendices

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Appendix A – Direct Cost Estimation

Direct medical costs are those costs which can be directly attributed to smoking. The most widely accepted method of estimation involves the use of a Smoking Attributable Fraction of Expenditures (SAFE) which is applied to the total medical expenditures of a population to obtain an estimate of the proportion of these expenditures that are attributable to smoking. The ideal estimation method would consist of developing a year- and state/region specific SAFE; however, the lack of publicly available/readily accessible data that contains both smoking history and medical costs precludes this type of analysis.

Since the data for estimating year- and state/region specific SAFEs are not available, an alternative method of identifying an appropriate SAFE had to be determined. The 2014 Surgeon General's report on the health consequences of smoking performed a literature review of widely accepted practices of modeling healthcare costs. The recommendation of this report was a two part regression model that estimated an overall national SAFE for current smokers of 8.7 percent for the years 2006-2010 (U.S. Department of Health and Human Services, 2014, page 674).

While utilizing this type of estimation does not yield as accurate an estimation that could be had if data were available to estimate the more detailed SAFE, we can draw some inferences from data that are available. Smoking prevalence and the number of cigarettes smoked per smoker tend to be higher in the South than in other parts of the country; therefore, the overall national SAFE of 8.7 percent is likely an underestimation of the actual Mississippi SAFE. Second, healthcare expenditures (both per capita and total) were estimated using Medical Expenditure Panel Survey (MEPS) data; estimates from this data tend to be lower (and therefore more conservative) than estimates from other sources. However, the MEPS data only report whether a person smokes or doesn't smoke; there is no indication of whether a non-smoker is a former smoker. There has been speculation that former smokers may actually have higher healthcare costs that are attributable to smoking than do current smokers; this increases the conservative nature of these estimates dramatically.

As previously mentioned the following estimations were developed by using medical cost data from the MEPS survey database (the 2015 estimates were developed utilizing a projected medical expenditure growth rate of 5.7 percent as estimated by the National Health Expenditure Projections from the Centers for Medicare and Medicaid Services), smoking prevalence data were obtained from Behavioral Risk Factor Surveillance System published reports, and population data were obtained using 5-year estimates from the American Community Survey.

2000 Direct Cost Estimations

2000 Mississippi per capita Healthcare Cost $3,022

2000 Mississippi Population .... 2,848,353 persons

2000 Mississippi Population (ages 18-64 years) .... 1,725,982 persons

2000 Current Smoker Prevalence ....23.5 percent

2000 Mississippi Current Smokers.. 406,546 persons

2000 Total MS Healthcare Expenditures ..... $3,022/person *x* 2,848,353 persons = $8,607,722,766

Smoking Attributable Fraction of Expenditures...8.7 percent

Smoking Attributable Expenditures (SAE) ....$8,607,722,766 *x* 8.7 percent = $748,871,881

SAE per Smoker .... $748,871,881 ÷ 406,546 smokers = $1,842 per smoker

2001 Direct Cost Estimations

2001 Mississippi per capita Healthcare Cost $3,406

2001 Mississippi Population .... 2,852,994 persons

2001 Mississippi Population (ages 18-64 years) .... 1,740,014 persons

2001 Current Smoker Prevalence ....25.3 percent

2001 Mississippi Current Smokers.. 440,224 persons

2001 Total MS Healthcare Expenditures ..... $3,406/person *x* 2,852,994 persons = $9,717,297,564

Smoking Attributable Fraction of Expenditures...8.7 percent

Smoking Attributable Expenditures (SAE) ....$9,717,297,564 *x* 8.7 percent = $845,404,888

SAE per Smoker .... $845,404,888 ÷ 440,224 smokers = $1,920 per smoker

2002 Direct Cost Estimations

2002 Mississippi per capita Healthcare Cost $3,865

2002 Mississippi Population .... 2,858,681 persons

2002 Mississippi Population (ages 18-64 years) .... 1,750,133 persons

2002 Current Smoker Prevalence ....27.3 percent

2002 Mississippi Current Smokers.. 477,786 persons

2002 Total MS Healthcare Expenditures ... $3,865/person *x* 2,858,681 persons = $11,048,802,065

Smoking Attributable Fraction of Expenditures...8.7 percent

Smoking Attributable Expenditures (SAE) ....$11,048,802,065 *x* 8.7 percent = $961,245,780

SAE per Smoker .... $961,245,780 ÷ 477,786 smokers = $2,012 per smoker

2003 Direct Cost Estimations

2003 Mississippi per capita Healthcare Cost $4,239

2003 Mississippi Population .... 2,868,312 persons

2003 Mississippi Population (ages 18-64 years) .... 1,760,938 persons

2003 Current Smoker Prevalence ....25.6 percent

2003 Mississippi Current Smokers.. 450,800 persons

2003 Total MS Healthcare Expenditures ... $4,239/person *x* 2,868,312 persons = $12,158,774,568

Smoking Attributable Fraction of Expenditures..8.7 percent

Smoking Attributable Expenditures (SAE) .... $12,158,774,568 *x* 8.7 percent = $1,057,813,387

SAE per Smoker .... $1,057,813,387 ÷ 450,800 smokers = $2,347 per smoker

2004 Direct Cost Estimations

2004 Mississippi per capita Healthcare Cost $4,456

2004 Mississippi Population .... 2,889,010 persons

2004 Mississippi Population (ages 18-64 years) .... 1,777,280 persons

2004 Current Smoker Prevalence ....24.5 percent

2004 Mississippi Current Smokers.. 435,434 persons

2004 Total MS Healthcare Expenditures ... $4,456/person *x* 2,889,010 persons = $12,873,428,560

Smoking Attributable Fraction of Expenditures..8.7 percent

Smoking Attributable Expenditures (SAE) .... $12,873,428,560 *x* 8.7 percent = $1,119,988,285

SAE per Smoker .... $1,119,988,285 ÷ 435,434 smokers = $2,572 per smoker

2005 Direct Cost Estimations

2005 Mississippi per capita Healthcare Cost $4,764

2005 Mississippi Population .... 2,905,943 persons

2005 Mississippi Population (ages 18-64 years) .... 1,788,874 persons

2005 Current Smoker Prevalence ....23.6 percent

2005 Mississippi Current Smokers.. 422,174 persons

2005 Total MS Healthcare Expenditures ... $4,764/person *x* 2,905,943 persons = $13,843,912,452

Smoking Attributable Fraction of Expenditures..8.7 percent

Smoking Attributable Expenditures (SAE) .... $13,843,912,452 *x* 8.7 percent = $1,204,420,383

SAE per Smoker .... $1,204,420,383 ÷ 422,174 smokers = $2,853 per smoker

2006 Direct Cost Estimations

2006 Mississippi per capita Healthcare Cost $5,041

2006 Mississippi Population .... 2,904,978 persons

2006 Mississippi Population (ages 18-64 years) .... 1,789,791 persons

2006 Current Smoker Prevalence ....25.1 percent

2006 Mississippi Current Smokers.. 449,238 persons

2006 Total MS Healthcare Expenditures ... $5,041/person *x* 2,904,978 persons = $14,643,994,098

Smoking Attributable Fraction of Expenditures..8.7 percent

Smoking Attributable Expenditures (SAE) .... $14,643,994,098 *x* 8.7 percent = $1,274,027,487

SAE per Smoker .... $1,274,027,487 ÷ 449,238 smokers = $2,836 per smoker

2007 Direct Cost Estimations

2007 Mississippi per capita Healthcare Cost $5,247

2007 Mississippi Population .... 2,928,350 persons

2007 Mississippi Population (ages 18-64 years) .... 1,804,223 persons

2007 Current Smoker Prevalence ....23.9 percent

2007 Mississippi Current Smokers.. 431,209 persons

2007 Total MS Healthcare Expenditures ... $5,247/person *x* 2,928,350 persons = $15,365,052,450

Smoking Attributable Fraction of Expenditures..8.7 percent

Smoking Attributable Expenditures (SAE) .... $15,365,052,450 *x* 8.7 percent = $1,336,759,563

SAE per Smoker .... $1,336,759,563 ÷ 431,209 smokers = $3,100 per smoker

2008 Direct Cost Estimations

2008 Mississippi per capita Healthcare Cost $4,770

2008 Mississippi Population .... 2,947,806 persons

2008 Mississippi Population (ages 18-64 years) .... 1,816,918 persons

2008 Current Smoker Prevalence ....22.7 percent

2008 Mississippi Current Smokers.. 412,440 persons

2008 Total MS Healthcare Expenditures ... $4,770/person *x* 2,947,806 persons = $14,061,034,620

Smoking Attributable Fraction of Expenditures..8.7 percent

Smoking Attributable Expenditures (SAE) .... $14,061,034,620 *x* 8.7 percent = $1,223,310,012

SAE per Smoker .... $1,223,310,012 ÷ 412,440 smokers = $2,966 per smoker

2009 Direct Cost Estimations

2009 Mississippi per capita Healthcare Cost $5,398

2009 Mississippi Population .... 2,958,774 persons

2009 Mississippi Population (ages 18-64 years) .... 1,824,267 persons

2009 Current Smoker Prevalence .... 23.3 percent

2009 Mississippi Current Smokers... 425,054 persons

2009 Total MS Healthcare Expenditures ... $5,398/person *x* 2,958,774 persons = $15,971,462,052

Smoking Attributable Fraction of Expenditures.. 8.7 percent

Smoking Attributable Expenditures (SAE) .... $15,971,462,052 *x* 8.7 percent = $1,389,517,199

SAE per Smoker .... $1,389,517,199 ÷ 425,054 smokers = $3,269 per smoker

2010 Direct Cost Estimations

2010 Mississippi per capita Healthcare Cost $5,193

2010 Mississippi Population .... 2,970,316 persons

2010 Mississippi Population (ages 18-64 years) .... 1,834,954 persons

2010 Current Smoker Prevalence .... 22.9 percent

2010 Mississippi Current Smokers... 420,204 persons

2010 Total MS Healthcare Expenditures ... $5,193/person *x* 2,970,316 persons = $15,424,850,988

Smoking Attributable Fraction of Expenditures.. 8.7 percent

Smoking Attributable Expenditures (SAE) .... $15,424,850,988 *x* 8.7 percent = $1,341,962,036

SAE per Smoker .... $1,341,962,036 ÷ 420,204 smokers = $3,194 per smoker

2011 Direct Cost Estimations

2011 Mississippi per capita Healthcare Cost $5,345

2011 Mississippi Population .... 2,977,999 persons

2011 Mississippi Population (ages 18-64 years) .... 1,842,044 persons

2011 Current Smoker Prevalence .... 26.0 percent

2011 Mississippi Current Smokers... 478,931 persons

2011 Total MS Healthcare Expenditures ... $5,345/person *x* 2,977,999 persons = $15,917,404,655

Smoking Attributable Fraction of Expenditures.. 8.7 percent

Smoking Attributable Expenditures (SAE) .... $15,917,404,655 *x* 8.7 percent = $1,384,814,205

SAE per Smoker .... $1,384,814,205 ÷ 478,931 smokers = $2,891 per smoker

2012 Direct Cost Estimations

2012 Mississippi per capita Healthcare Cost $5,163

2012 Mississippi Population .... 2,985,660 persons

2012 Mississippi Population (ages 18-64 years) .... 1,839,814 persons

2012 Current Smoker Prevalence ....24.0 percent

2012 Mississippi Current Smokers.. 441,555 persons

2012 Total MS Healthcare Expenditures ...$5,163/person *x* 2,985,660 persons = $15,414,962,580

Smoking Attributable Fraction of Expenditures..8.7 percent

Smoking Attributable Expenditures (SAE) ....$15,414,962,580 *x* 8.7 percent = $1,341,101,744

SAE per Smoker .... $1,341,101,744 ÷ 441,555 smokers = $3,037 per smoker

2013 Direct Cost Estimations

2013 Mississippi per capita Healthcare Cost $5,442

2013 Mississippi Population .... 2,990,976 persons

2013 Mississippi Population (ages 18-64 years) .... 1,839,860 persons

2013 Current Smoker Prevalence ....24.8 percent

2013 Mississippi Current Smokers.. 456,285 persons

2013 Total MS Healthcare Expenditures ...$5,442/person *x* 2,990,976 persons = $16,276,891,392

Smoking Attributable Fraction of Expenditures..8.7 percent

Smoking Attributable Expenditures (SAE) ....$16,276,891,392 *x* 8.7 percent = $1,416,089,551

SAE per Smoker .... $1,416,089,551 ÷ 456,285 smokers = $3,104 per smoker

2014 Direct Cost Estimations

2014 Mississippi per capita Healthcare Cost $5,892

2014 Mississippi Population .... 2,993,443 persons

2014 Mississippi Population (ages 18-64 years) .... 1,834,605 persons

2014 Current Smoker Prevalence ....23.0 percent

2014 Mississippi Current Smokers.. 421,959 persons

2014 Total MS Healthcare Expenditures ...$5,892/person *x* 2,993,443 persons = $17,637,366,156

Smoking Attributable Fraction of Expenditures..8.7 percent

Smoking Attributable Expenditures (SAE) ....$17,637,366,156 *x* 8.7 percent = $1,534,450,856

SAE per Smoker .... $1,534,450,856 ÷ 421,959 smokers = $3,636 per smoker

2015 Direct Cost Estimations

2014 Mississippi per capita Healthcare Cost $5,892

CDC Medical Inflation Rate .... 5.8 percent[1]

2015 MS per capita Healthcare Expenditures ....$5,892/person *x* 5.8 percent = $6,234/person

2014 Mississippi Population .... 2,992,333 persons

2014 Mississippi Population (ages 18-64 years) .... 1,825,784 persons

2014 Current Smoker Prevalence ....23.0 percent

2014 Mississippi Current Smokers .... 419,930 persons

2014 Total MS Healthcare Expenditures ...$6,234/person *x* 2,992,333 persons = $18,654,203,922

Smoking Attributable Fraction of Expenditures..8.7 percent

Smoking Attributable Expenditures (SAE) .... $18,654,203,922 *x* 8.7 percent = $1,622,915,741

SAE per Smoker .... $1,622,915,741 ÷ 419,930 smokers = $3,865 per smoker

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[1] Center for Medicare and Medicaid Services. National Health Expenditure Projections 2015-2025.
https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/Proj2015.pdf. Page modified 2014.

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Appendix B – Indirect Costs due to Absenteeism

Estimating the indirect costs from absenteeism attributable to smoking employed a methodology utilized by Yang, et al. Tobit regression was utilized for the combined sample adult and person datasets from the 2014 National Health Interview Survey (NHIS) dataset to estimate the days lost from work and days that injury or illness kept the person (between the ages of 18 and 64, inclusive) in the bed more than half a day due to the respondent's smoking history while controlling for various socio-demographic and risk variables and for lower-limit responses of zero. The model can be expressed mathematically as:

$Days\ Lost\ -\ Illness = \alpha + \beta_1 Current\ Smoker + \beta_2 Former\ Smoker + \beta_3 Northeast\ Region$
$\quad + \beta_4 Midwest\ Region + \beta_5 West\ Region + \beta_6 Age\ 25\text{-}34\ Years + \beta_7 Age\ 35\text{-}44\ Years$
$\quad + \beta_8 Age\ 45\text{-}54\ Years + \beta_9 Age\ 55\text{-}64\ Years + \beta_{10} Income\ Less\ Than\ \$10,000$
$\quad + \beta_{11} Income\ \$10,000\text{-}\$15,000 + \beta_{12} Income\ \$15,000\text{-}\$25,000$
$\quad + \beta_{13} Income\ \$25,000\text{-}\$35,000 + \beta_{14} Income\ \$35,000\text{-}\$50,000$
$\quad + \beta_{15} Income\ \$50,000\text{-}\$75,000 + \beta_{16} Income\ \$75,000\ Plus + \beta_{17} Married + \beta_{18} Male$
$\quad + \beta_{19} Race\ White + \beta_{20} Race\ Other + \beta_{21} Hispanic + \beta_{22} BMI\ Obese$

where

- Days Lost – Illness is the number of days that the respondent missed from work due to illness.
- Current Smoker is a binary variable coded as "1" if the respondent indicated that s/he is a current smoker; otherwise "0".
- Former Smoker is a binary variable coded as "1" if the respondent indicated that s/he has smoked in the past, but no longer smokes; otherwise "0".
- Northeast Region was coded as "1" if the respondent resided in the northeastern region of the United States, "0" otherwise.
- Midwest Region was coded as "1" if the respondent resided in the Midwestern region of the United States, "0" otherwise.
- West Region was coded as "1" if the respondent resided in the western region of the United States, "0" otherwise.
- South Region was coded as "1" if the respondent resided in the southern region of the United States, "0" otherwise. This region was used as the base region and therefore omitted from the regression equation.
- Age 18-24 Years was coded as "1" if the respondent indicated that s/he was between the ages of 18 and 24, inclusive; "0" otherwise. This category was used as the base age category and was therefore excluded from the regression estimation.
- Age 25-34 Years was coded as "1" if the respondent indicated that s/he was between the ages of 25 and 34, inclusive; "0" otherwise.
- Age 35-44 Years was coded as "1" if the respondent indicated that s/he was between the ages of 35 and 44, inclusive; "0" otherwise.
- Age 45-54 Years was coded as "1" if the respondent indicated that s/he was between the ages of 45 and 54, inclusive; "0" otherwise.
- Age 55-64 Years was coded as "1" if the respondent indicated that s/he was between the ages of 55 and 64, inclusive; "0" otherwise.
- Married was coded as "1" if the respondent indicated that s/he was married; "0" otherwise.

- Income less than $10,000 was coded as "1" if the respondent's indicated level of annual income for the past year was less than $10,000; "0" otherwise.
- Income $10,000-$15,000 was coded as "1" if the respondent's indicated level of annual income was between $10,000 and $14,999, inclusive; "0" otherwise.
- Income $15,000-$25,000 was coded as "1" if the respondent's indicated level of annual income was between $15,000 and $24,999, inclusive; "0" otherwise.
- Income $25,000-$35,000 was coded as "1" if the respondent's indicated level of annual income was between $25,000 and $34,999, inclusive; "0" otherwise.
- Income $35,000-$55,000 was coded as "1" if the respondent's indicated level of annual income was between $35,000 and $54,999, inclusive; "0" otherwise.
- Income $55,000-$75,000 was coded as "1" if the respondent's indicated level of annual income was between $55,000 and $74,999, inclusive; "0" otherwise.
- Income $75,000 Plus was coded as "1" if the respondent's indicated level of annual income was $75,000 or greater; "0" otherwise. This category was used as the base category and was therefore excluded from the regression equation.
- Male was coded as "1" if the respondent indicated a preferred gender of male; "0" otherwise.
- Race White was coded as "1" if the respondent indicated that their race was White Alone; "0" otherwise.
- Race Black was coded as "1" if the respondent indicated that their race was Black Alone; "0" otherwise. This category was used as the base category and was therefore excluded from the regression equation.
- Race Other was coded as "1" if the respondent indicated that their race was anything other than White Alone or Black Alone; "0" otherwise.
- Hispanic was coded as "1" if the respondent indicated that s/he was of Hispanic ethnicity; "0" otherwise.
- BMI Obese was coded as "1" if the respondent's answers indicated that his/her body mass index was 25 or above; "0" otherwise.

The results of these estimations by year are shown below:

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2000 Estimates for Indirect Costs Associated with Absenteeism

2000 Mississippi Population .... 2,848,353 persons

2000 Mississippi Population (18-64 years): .... 1,729,982 persons

Current Smoker Prevalence ....23.5 percent

Former Smoker Prevalence..20.5 percent

Average Mississippi Earnings/Year ....$31,087 (EMSI)

Current Smoker Absentee Days ....1,729,982 persons *x* 23.5% *x* 4.71 days = 1,913,080 days

Current Smoker Absentee Years ....1,913,080 days ÷ 280 days/year = 6,832 years

Cost of Current Smoker Absenteeism.......................... 6,832 years *x* $31,087/year = $212,401,285

Former Smoker Absentee Days ...... 1,729,982 persons *x* 20.5% *x* 3.77 days/year = 1,336,675 days

Former Smoker Absentee Years ....1,336,675 days ÷ 280 days/year = 4,774 years

Cost of Former Smoker Absenteeism .... 4,774 years *x* $31,087/year = $148,405,492

Total Cost of Employee Absentee Days Attributable to Smoking............................ $360,806,777

Average Employee Cost/Year (Current Smoker)……………... 4.71/280 days/year *x* $31,087 = $522

Average Employee Cost/Year (Former Smoker)………………..3.77/280 days/year *x* $31,087 = $418

Table B-1 – 2000 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	4.7056940	***	0.7170669
Former Smoker	3.7690380	***	0.8313207
Region Northeast	-0.7847066		0.8712512
Region Midwest	0.0353173		0.8027858
Region West	0.1430260		0.8333351
Age 25-34 Years	0.9611097		1.0656200
Age 35-44 Years	0.6976232		1.0797670
Age 45-54 Years	1.9753320	*	1.1466620
Age 55-64 Years	-1.3940840		1.3289300
Married	-1.8462740	***	0.6305856
Income less than $10,000	-2.3092640	*	1.2891100
Income $10,000-$15,000	2.1437310		1.3599560
Income $15,000-$25,000	1.4751950		1.1898510
Income $25,000-$35,000	1.9211540		1.1987010
Income $35,000-$55,000	0.8611915		1.1667570
Income $55,000-$75,000	-1.7117890		1.5026060
Male	-5.5515420	***	0.6348520
Race White	0.2942501		0.9084996
Race Other	-0.3203283		1.3852360
Hispanic	-4.4539870	***	0.9055980
BMI Obese	3.0488000	***	0.6302012
Constant	-11.7507000	***	1.6116350

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 16,377

Table B -2 – 2000 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	5.136106	21.750750	0	365
Current Smoker	0.266105	0.441933	0	1
Former Smoker	0.181474	0.385422	0	1
Region Northeast	0.180131	0.384308	0	1
Region Midwest	0.235513	0.424332	0	1
Region West	0.223118	0.416349	0	1
Age 25-34 Years	0.262991	0.440271	0	1
Age 35-44 Years	0.284729	0.451299	0	1
Age 45-54 Years	0.210906	0.407964	0	1
Age 55-64 Years	0.108262	0.310720	0	1
Married	0.487757	0.499865	0	1
Income less than $10,000	0.154485	0.361424	0	1
Income $10,000-$15,000	0.104598	0.306044	0	1
Income $15,000-$25,000	0.194297	0.395671	0	1
Income $25,000-$35,000	0.174635	0.379666	0	1
Income $35,000-$55,000	0.201807	0.401362	0	1
Income $55,000-$75,000	0.068694	0.252941	0	1
Male	0.481041	0.499656	0	1
Race White	0.767540	0.422414	0	1
Race Other	0.091714	0.288631	0	1
Hispanic	0.173658	0.378827	0	1
BMI Obese	0.576113	0.494188	0	1

2001 Estimates for Indirect Costs Associated with Absenteeism

2001 Mississippi Population .... 2,852,994 persons

2001 Mississippi Population (18-64 years): .... 1,740,014 persons

Current Smoker Prevalence ....25.3 percent

Former Smoker Prevalence..21.1 percent

Average Mississippi Earnings/Year ....$31,960 (EMSI)

Current Smoker Absentee Days .... 1,740,014 persons *x* 25.3% *x* 3.49 days = 1,536,380 days

Current Smoker Absentee Years ....1,536,380 days ÷ 280 days/year = 5,487 years

Cost of Current Smoker Absenteeism.......................... 5,487 years *x* $31,960/year = $175,365,361

Former Smoker Absentee Days ...... 1,740,014 persons *x* 21.1% *x* 4.13 days/year = 1,818,123 days

Former Smoker Absentee Years ....1,818,123 days ÷ 280 days/year = 6,493 years

Cost of Former Smoker Absenteeism .... 6,493 years *x* $31,960/year = $207,524,052

Total Cost of Employee Absentee Days Attributable to Smoking........................... $382,889,414

Average Employee Cost/Year (Current Smoker) ………………3.49/280 days/year *x* $31,960 = $398

Average Employee Cost/Year (Former Smoker)……………….4.13/280 days/year *x* $31,960 = $471

Table B -1 – 2001 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	3.4909580	***	0.657565
Former Smoker	4.130585	***	0.765293
Region Northeast	1.758471	**	0.807009
Region Midwest	0.295579		0.737681
Region West	2.4686	***	0.75425
Age 25-34 Years	1.879603	*	0.97559
Age 35-44 Years	1.401162		0.994075
Age 45-54 Years	2.409566	**	1.038766
Age 55-64 Years	-1.59259		1.210563
Married	-3.52376	***	0.576897
Income less than $10,000	2.282322	*	1.192846
Income $10,000-$15,000	4.109972	***	1.256267
Income $15,000-$25,000	6.54154	***	1.07798
Income $25,000-$35,000	5.758102	***	1.090918
Income $35,000-$55,000	4.426848	***	1.052661
Income $55,000-$75,000	2.883001	**	1.303318
Male	-5.647949	***	0.57767
Race White	0.701296		0.844977
Race Other	-0.201945		1.26481
Hispanic	-5.219181	***	0.820803
BMI Obese	3.477869	***	0.581078
Constant	-14.85358	***	1.493724

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level
n = 17,078

Table B -2 – 2001 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	5.101710	20.644900	0	365
Current Smoker	0.264200	0.440919	0	1
Former Smoker	0.178241	0.382727	0	1
Region Northeast	0.169516	0.375218	0	1
Region Midwest	0.230004	0.420847	0	1
Region West	0.227251	0.419069	0	1
Age 25-34 Years	0.262970	0.440259	0	1
Age 35-44 Years	0.275969	0.447014	0	1
Age 45-54 Years	0.219405	0.413856	0	1
Age 55-64 Years	0.109615	0.312418	0	1
Married	0.484424	0.499772	0	1
Income less than $10,000	0.139302	0.346272	0	1
Income $10,000-$15,000	0.098021	0.297352	0	1
Income $15,000-$25,000	0.191533	0.393519	0	1
Income $25,000-$35,000	0.172151	0.377523	0	1
Income $35,000-$55,000	0.208280	0.406090	0	1
Income $55,000-$75,000	0.079635	0.270735	0	1
Male	0.489343	0.499901	0	1
Race White	0.770992	0.420207	0	1
Race Other	0.094098	0.291973	0	1
Hispanic	0.172913	0.378183	0	1
BMI Obese	0.585607	0.492631	0	1

2002 Estimates for Indirect Costs Associated with Absenteeism

2002 Mississippi Population .... 2,858,681 persons

2002 Mississippi Population (18-64 years): .... 1,750,133 persons

Current Smoker Prevalence ....27.3 percent

Former Smoker Prevalence...20.0 percent

Average Mississippi Earnings/Year ....$32,977 (EMSI)

Current Smoker Absentee Days ....1,750,133 persons *x* 27.3% *x* 4.54 days = 2,169,150 days

Current Smoker Absentee Years ....2,169,150 days ÷ 280 days/year = 7,747 years

Cost of Current Smoker Absenteeism.......................... 7,747 years *x* $32,977/year = $255,474,050

Former Smoker Absentee Days ...... 1,750,133 persons *x* 20.0% *x* 3.63 days/year = 1,734,364 days

Former Smoker Absentee Years ....1,734,364 days ÷ 280 days/year = 6,194 years

Cost of Former Smoker Absenteeism .... 6,194 years *x* $32,977/year = $204,266,696

Total Cost of Employee Absentee Days Attributable to Smoking........................... $459,740,746

Average Employee Cost/Year (Current Smoker)………………..4.54/280 days/year *x* $32,977 = $535

Average Employee Cost/Year (Former Smoker) ………………3.63/280 days/year *x* $32,977 = $428

Table B -1 – 2002 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	4.5396940	***	0.736807
Former Smoker	3.627278	***	0.839057
Region Northeast	2.524236	***	0.88702
Region Midwest	0.256017		0.810472
Region West	2.011561	**	0.850027
Age 25-34 Years	2.101593	*	1.101413
Age 35-44 Years	2.742693	**	1.114109
Age 45-54 Years	2.039592	*	1.168303
Age 55-64 Years	-1.716766		1.337684
Married	-2.495283	***	0.644351
Income less than $10,000	1.029387		1.317895
Income $10,000-$15,000	1.621984		1.420263
Income $15,000-$25,000	3.949446	***	1.182808
Income $25,000-$35,000	4.300517	***	1.181688
Income $35,000-$55,000	3.598949	***	1.138662
Income $55,000-$75,000	2.059279		1.412273
Male	-6.506042	***	0.646729
Race White	0.840715		0.931833
Race Other	2.09082		1.40293
Hispanic	-4.470734	***	0.917817
BMI Obese	4.178817	***	0.6496
Constant	-17.72618	***	1.612843

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 15,482

Table B -2 – 2002 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	4.673944	20.450310	0	365
Current Smoker	0.261465	0.439447	0	1
Former Smoker	0.184214	0.387671	0	1
Region Northeast	0.170198	0.375819	0	1
Region Midwest	0.238212	0.426003	0	1
Region West	0.214766	0.410673	0	1
Age 25-34 Years	0.254554	0.435624	0	1
Age 35-44 Years	0.275740	0.446901	0	1
Age 45-54 Years	0.219416	0.413864	0	1
Age 55-64 Years	0.118202	0.322857	0	1
Married	0.485855	0.499816	0	1
Income less than $10,000	0.132541	0.339089	0	1
Income $10,000-$15,000	0.088296	0.283734	0	1
Income $15,000-$25,000	0.187573	0.390383	0	1
Income $25,000-$35,000	0.176915	0.381609	0	1
Income $35,000-$55,000	0.215734	0.411344	0	1
Income $55,000-$75,000	0.082612	0.275304	0	1
Male	0.485338	0.499801	0	1
Race White	0.772187	0.419435	0	1
Race Other	0.091590	0.288456	0	1
Hispanic	0.165806	0.371918	0	1
BMI Obese	0.597403	0.490437	0	1

2003 Estimates for Indirect Costs Associated with Absenteeism

2003 Mississippi Population .... 2,868,312 persons

2003 Mississippi Population (18-64 years): .... 1,760,938 persons

Current Smoker Prevalence ....25.6 percent

Former Smoker Prevalence..20.7 percent

Average Mississippi Earnings/Year ....$34,171 (EMSI)

Current Smoker Absentee Days .... 1,760,938 persons *x* 25.6% *x* 4.73 days = 2,132,285 days

Current Smoker Absentee Years ....2,132,285 days ÷ 280 days/year = 7,615 years

Cost of Current Smoker Absenteeism......................... 7,615 years *x* $34,171/year = $260,224,539

Former Smoker Absentee Days ...... 1,760,938 persons *x* 20.7% *x* 3.99 days/year = 1,798,693 days

Former Smoker Absentee Years ....1,798,693 days ÷ 280 days/year = 6,424 years

Cost of Former Smoker Absenteeism .... 6,424 years *x* $34,171/year = $219,512,878

Total Cost of Employee Absentee Days Attributable to Smoking............................ $479,737,417

Average Employee Cost/Year (Current Smoker) ……………....4.73/280 days/year *x* $34,171 = $577

Average Employee Cost/Year (Former Smoker) ……………....3.99/280 days/year x $34,171 = $487

Table B -1 – 2003 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	4.7296870	***	0.735253
Former Smoker	3.993764	***	0.837456
Region Northeast	0.915874		0.896943
Region Midwest	0.139079		0.79969
Region West	-1.037176		0.836171
Age 25-34 Years	1.155912		1.103401
Age 35-44 Years	2.499107	**	1.118339
Age 45-54 Years	0.818957		1.166277
Age 55-64 Years	0.427192		1.309222
Married	-2.340703	***	0.636744
Income less than $10,000	0.566596		1.272354
Income $10,000-$15,000	3.484017	***	1.355946
Income $15,000-$25,000	4.828263	***	1.128895
Income $25,000-$35,000	4.840712	***	1.139927
Income $35,000-$55,000	5.522282	***	1.087569
Income $55,000-$75,000	3.534638	***	1.363665
Male	-5.282697	***	0.634425
Race White	0.227342		0.92118
Race Other	0.494201		1.613263
Hispanic	-4.539736	***	0.872977
BMI Obese	2.800655	***	0.641401
Constant	-16.00696	***	1.5765

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 14,952

Table B -2 – 2003 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	4.563135	19.920130	0	365
Current Smoker	0.249799	0.432911	0	1
Former Smoker	0.175696	0.380574	0	1
Region Northeast	0.163122	0.369489	0	1
Region Midwest	0.237560	0.425603	0	1
Region West	0.227194	0.419033	0	1
Age 25-34 Years	0.257825	0.437452	0	1
Age 35-44 Years	0.267924	0.442893	0	1
Age 45-54 Years	0.222512	0.415947	0	1
Age 55-64 Years	0.122325	0.327672	0	1
Married	0.482812	0.499721	0	1
Income less than $10,000	0.130819	0.337213	0	1
Income $10,000-$15,000	0.092095	0.289169	0	1
Income $15,000-$25,000	0.187467	0.390299	0	1
Income $25,000-$35,000	0.167670	0.373585	0	1
Income $35,000-$55,000	0.207798	0.405745	0	1
Income $55,000-$75,000	0.081862	0.274164	0	1
Male	0.491239	0.499940	0	1
Race White	0.812199	0.390566	0	1
Race Other	0.050294	0.218559	0	1
Hispanic	0.180177	0.384347	0	1
BMI Obese	0.601859	0.489531	0	1

2004 Estimates for Indirect Costs Associated with Absenteeism

2004 Mississippi Population .... 2,889,010 persons

2004 Mississippi Population (18-64 years): .... 1,777,280 persons

Current Smoker Prevalence ....24.5 percent

Former Smoker Prevalence..19.3 percent

Average Mississippi Earnings/Year ....$35,796 (EMSI)

Current Smoker Absentee Days ....1,777,280 persons *x* 24.5% *x* 3.50 days = 1,524,018 days

Current Smoker Absentee Years ....1,524,018 days ÷ 280 days/year = 5,443 years

Cost of Current Smoker Absenteeism.......................... 5,443 years *x* $35,796/year = $194,836,576

Former Smoker Absentee Days ..... 1,777,280 persons *x* 19.3 % *x* 2.53 days/year = 1,101,647 days

Former Smoker Absentee Years ....1,101,647 days ÷ 280 days/year = 3,934 years

Cost of Former Smoker Absenteeism .... 3,934 years *x* $35,796/year = $140,839,010

Total Cost of Employee Absentee Days Attributable to Smoking........................... $335,675,586

Average Employee Cost/Year (Current Smoker) ………………3.50/280 days/year *x* $35,796 = $447

Average Employee Cost/Year (Former Smoker) ………….…....2.53/280 days/year *x* $35,796 = $323

Table B -1 – 2004 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	3.4996860	***	0.579993
Former Smoker	2.532547	***	0.662692
Region Northeast	-0.101159		1.368403
Region Midwest	0.005542		1.152991
Region West	0.98923		1.118138
Age 25-34 Years	0.870973		0.88086
Age 35-44 Years	1.301423		0.885046
Age 45-54 Years	1.785606	*	0.913912
Age 55-64 Years	0.973172		1.022968
Married	-2.105601	***	0.498918
Income less than $10,000	-0.234198		0.9831
Income $10,000-$15,000	2.590234	**	1.055455
Income $15,000-$25,000	3.207123	***	0.871082
Income $25,000-$35,000	3.564575	***	0.889755
Income $35,000-$55,000	3.363261	***	0.834257
Income $55,000-$75,000	5.066495	***	1.00922
Male	-4.37573	***	0.494752
Race White	0.965356	**	0.703403
Race Other	1.504663		1.237212
Hispanic	-5.095045	***	0.671066
BMI Obese	2.770031	***	0.503161
Constant	-12.40059	***	1.19861

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 15,506

Table B -2 – 2004 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	4.054817	15.907070	0	365
Current Smoker	0.240294	0.427276	0	1
Former Smoker	0.173159	0.378397	0	1
Region Northeast	0.030762	0.172679	0	1
Region Midwest	0.043016	0.202899	0	1
Region West	0.047788	0.213324	0	1
Age 25-34 Years	0.243003	0.428911	0	1
Age 35-44 Years	0.269767	0.443853	0	1
Age 45-54 Years	0.232297	0.422311	0	1
Age 55-64 Years	0.127499	0.333542	0	1
Married	0.483490	0.499744	0	1
Income less than $10,000	0.131433	0.337884	0	1
Income $10,000-$15,000	0.087644	0.282785	0	1
Income $15,000-$25,000	0.183219	0.386859	0	1
Income $25,000-$35,000	0.156198	0.363054	0	1
Income $35,000-$55,000	0.209983	0.407309	0	1
Income $55,000-$75,000	0.090997	0.287614	0	1
Male	0.495873	0.499999	0	1
Race White	0.807042	0.394633	0	1
Race Other	0.050690	0.219371	0	1
Hispanic	0.181027	0.385053	0	1
BMI Obese	0.605701	0.488715	0	1

2005 Estimates for Indirect Costs Associated with Absenteeism

2005 Mississippi Population .... 2,905,943 persons

2005 Mississippi Population (18-64 years): .... 1,788,874 persons

Current Smoker Prevalence ....23.6 percent

Former Smoker Prevalence...20.9 percent

Average Mississippi Earnings/Year ....$37,347 (EMSI)

Current Smoker Absentee Days ....1,788,874 persons *x* 23.6% *x* 3.76 days = 1,587,375 days

Current Smoker Absentee Years ....1,587,375 days ÷ 280 days/year = 5,669 years

Cost of Current Smoker Absenteeism.......................... 5,669 years *x* $37,347/year = $211,729,504

Former Smoker Absentee Days ...... 1,788,874 persons *x* 20.9% *x* 2.82 days/year = 1,190,531 days

Former Smoker Absentee Years ....1,190,531 days ÷ 280 days/year = 4,252 years

Cost of Former Smoker Absenteeism .... 4,252 years *x* $37,347 /year = $158,797,128

Total Cost of Employee Absentee Days Attributable to Smoking........................... $370,526,632

Average Employee Cost/Year (Current Smoker) ………………..3.76/280 days/year *x* $37,347 = $502

Average Employee Cost/Year (Former Smoker) ………………..2.82/280 days/year *x* $37,347 = $376

Table B -1 – 2005 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	3.7761730	***	0.694401
Former Smoker	2.81812	***	0.776309
Region Northeast	-0.151729		0.865393
Region Midwest	-1.074281		0.748554
Region West	-0.757608		0.77227
Age 25-34 Years	0.652387		1.046804
Age 35-44 Years	1.454253		1.0725
Age 45-54 Years	3.17462	***	1.09077
Age 55-64 Years	-0.352087		1.204452
Married	-1.774861	***	0.599227
Income less than $10,000	3.164697	***	1.165847
Income $10,000-$15,000	5.829792	***	1.269935
Income $15,000-$25,000	4.90158	***	1.059552
Income $25,000-$35,000	5.017256	***	1.050582
Income $35,000-$55,000	5.540958	***	0.987524
Income $55,000-$75,000	4.754933	***	1.21509
Male	-5.340192	***	0.590963
Race White	0.924271		0.868094
Race Other	-0.030906		1.494568
Hispanic	-5.991098	***	0.810896
BMI Obese	3.492645	***	0.605199
Constant	-15.92229	***	1.462546

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 15,502

Table B -2 – 2005 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	4.505419	19.151190	0	365
Current Smoker	0.241582	0.428056	0	1
Former Smoker	0.181654	0.385572	0	1
Region Northeast	0.151980	0.359014	0	1
Region Midwest	0.242549	0.428639	0	1
Region West	0.232164	0.422226	0	1
Age 25-34 Years	0.246871	0.431205	0	1
Age 35-44 Years	0.256225	0.436562	0	1
Age 45-54 Years	0.234228	0.423529	0	1
Age 55-64 Years	0.139337	0.346309	0	1
Married	0.481228	0.499664	0	1
Income less than $10,000	0.130112	0.336438	0	1
Income $10,000-$15,000	0.084376	0.277960	0	1
Income $15,000-$25,000	0.170043	0.375682	0	1
Income $25,000-$35,000	0.164624	0.370853	0	1
Income $35,000-$55,000	0.215456	0.411152	0	1
Income $55,000-$75,000	0.089537	0.285526	0	1
Male	0.490001	0.499916	0	1
Race White	0.809186	0.392956	0	1
Race Other	0.052187	0.222411	0	1
Hispanic	0.182235	0.386050	0	1
BMI Obese	0.612502	0.487195	0	1

2006 Estimates for Indirect Costs Associated with Absenteeism

2006 Mississippi Population .... 2,904,978 persons

2006 Mississippi Population (18-64 years): .... 1,789,791 persons

Current Smoker Prevalence ....25.1 percent

Former Smoker Prevalence...21.1 percent

Average Mississippi Earnings/Year ....$38,791 (EMSI)

Current Smoker Absentee Days .... 1,789,791 persons *x* 25.1% *x* 5.01 days = 2,250,680 days

Current Smoker Absentee Years ....2,250,680 days ÷ 280 days/year = 8,038 years

Cost of Current Smoker Absenteeism......................... 8,038 years *x* $38,791/year = $311,810,447

Former Smoker Absentee Days ...... 1,789,791 persons *x* 21.1% *x* 4.81 days/year = 2,160,833 days

Former Smoker Absentee Years ....2,160,833 days ÷ 280 days/year = 7,717 years

Cost of Former Smoker Absenteeism .... 7,717 years *x* $38,791 /year = $299,362,924

Total Cost of Employee Absentee Days Attributable to Smoking........................... $611,173,372

Average Employee Cost/Year (Current Smoker) ………………5.01/280 days/year *x* $38,791 = $694

Average Employee Cost/Year (Former Smoker) ………………4.81/280 days/year *x* $38,791 = $666

Table B -1 – 2006 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	5.0128590	***	0.865316
Former Smoker	4.809397	***	0.969212
Region Northeast	2.696426	***	1.029499
Region Midwest	-0.291101		0.934009
Region West	0.68437		0.965282
Age 25-34 Years	2.750905	**	1.245816
Age 35-44 Years	2.945427	**	1.276108
Age 45-54 Years	2.050216		1.310499
Age 55-64 Years	0.847252		1.462849
Married	-3.166267	***	0.74337
Income less than $10,000	3.957654	***	1.425449
Income $10,000-$15,000	4.489656	***	1.595813
Income $15,000-$25,000	4.755596	***	1.292902
Income $25,000-$35,000	6.393276	***	1.310554
Income $35,000-$55,000	6.008264	***	1.206362
Income $55,000-$75,000	4.996451	***	1.494487
Male	-6.27793	***	0.728913
Race White	3.928509	***	0.996436
Race Other	-0.701389		1.69468
Hispanic	-6.080251	***	0.994338
BMI Obese	3.588728	***	0.742892
Constant	-21.36427	***	1.72232

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 11,758

Table B -2 – 2006 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	4.473975	20.322830	0	365
Current Smoker	0.232693	0.422566	0	1
Former Smoker	0.175370	0.380299	0	1
Region Northeast	0.162698	0.369105	0	1
Region Midwest	0.230226	0.420996	0	1
Region West	0.222742	0.416104	0	1
Age 25-34 Years	0.247831	0.431772	0	1
Age 35-44 Years	0.253530	0.435050	0	1
Age 45-54 Years	0.225379	0.417849	0	1
Age 55-64 Years	0.133696	0.340340	0	1
Married	0.472699	0.499275	0	1
Income less than $10,000	0.130379	0.336735	0	1
Income $10,000-$15,000	0.079861	0.271089	0	1
Income $15,000-$25,000	0.175540	0.380445	0	1
Income $25,000-$35,000	0.153087	0.360087	0	1
Income $35,000-$55,000	0.222487	0.415934	0	1
Income $55,000-$75,000	0.090407	0.286776	0	1
Male	0.498554	0.500019	0	1
Race White	0.761779	0.426013	0	1
Race Other	0.066253	0.248734	0	1
Hispanic	0.182514	0.386284	0	1
BMI Obese	0.615666	0.486458	0	1

2007 Estimates for Indirect Costs Associated with Absenteeism

2007 Mississippi Population .... 2,928,350 persons

2007 Mississippi Population (18-64 years): .... 1,804,223 persons

Current Smoker Prevalence ....23.9 percent

Former Smoker Prevalence..21.2 percent

Average Mississippi Earnings/Year ....$40,120 (EMSI)

Current Smoker Absentee Days .... 1,804,223 persons *x* 23.9% *x* 3.97 days = 1,711,901 days

Current Smoker Absentee Years ....1,711,901 days ÷ 280 days/year = 6,114 years

Cost of Current Smoker Absenteeism.......................... 6,114 years *x* $40,120/year = $245,288,402

Former Smoker Absentee Days ...... 1,804,223 persons *x* 21.2% *x* 4.70 days/year = 2,026,684 days

Former Smoker Absentee Years ....2,026,684 days ÷ 280 days/year = 7,238 years

Cost of Former Smoker Absenteeism .... 7,238 years *x* $40,120 /year = $290,391,811

Total Cost of Employee Absentee Days Attributable to Smoking............................ $535,680,214

Average Employee Cost/Year (Current Smoker) ……………...3.97/280 days/year *x* $40,120 = $569

Average Employee Cost/Year (Former Smoker) ……………….4.70/280 days/year *x* $40,120 = $673

Table B -1 – 2007 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	3.9651210	***	0.813121
Former Smoker	4.696672	***	0.864493
Region Northeast	1.299688		0.970941
Region Midwest	1.319042		0.853948
Region West	0.51613		0.865595
Age 25-34 Years	1.444754		1.158416
Age 35-44 Years	2.812198	**	1.194941
Age 45-54 Years	1.387135		1.220492
Age 55-64 Years	0.530998		1.342665
Married	-2.448149	***	0.685793
Income less than $10,000	2.362705	*	1.330954
Income $10,000-$15,000	3.398748	**	1.434932
Income $15,000-$25,000	4.380222	***	1.174752
Income $25,000-$35,000	5.649988	***	1.173221
Income $35,000-$55,000	4.843275	***	1.085262
Income $55,000-$75,000	4.254322	***	1.315017
Male	-4.203588	***	0.668487
Race White	-0.833031		0.899766
Race Other	-4.074411	***	1.519296
Hispanic	-4.186632	***	0.895914
BMI Obese	4.309756	***	0.689694
Constant	-15.83536	***	1.595066

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 11,323

Table B -2 – 2007 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	4.352645	18.721900	0	365
Current Smoker	0.217610	0.412639	0	1
Former Smoker	0.183609	0.387182	0	1
Region Northeast	0.157555	0.364340	0	1
Region Midwest	0.234390	0.423636	0	1
Region West	0.242162	0.428411	0	1
Age 25-34 Years	0.249757	0.432892	0	1
Age 35-44 Years	0.243222	0.429047	0	1
Age 45-54 Years	0.231123	0.421569	0	1
Age 55-64 Years	0.141924	0.348987	0	1
Married	0.460655	0.498472	0	1
Income less than $10,000	0.122317	0.327667	0	1
Income $10,000-$15,000	0.084165	0.277647	0	1
Income $15,000-$25,000	0.168860	0.374645	0	1
Income $25,000-$35,000	0.155083	0.361999	0	1
Income $35,000-$55,000	0.214872	0.410752	0	1
Income $55,000-$75,000	0.097501	0.296651	0	1
Male	0.497571	0.500016	0	1
Race White	0.761282	0.426319	0	1
Race Other	0.069151	0.253722	0	1
Hispanic	0.187583	0.390396	0	1
BMI Obese	0.626159	0.483844	0	1

2008 Estimates for Indirect Costs Associated with Absenteeism

2008 Mississippi Population .... 2,947,806 persons

2008 Mississippi Population (18-64 years): .... 1,816,918 persons

Current Smoker Prevalence ....22.7 percent

Former Smoker Prevalence..22.2 percent

Average Mississippi Earnings/Year ....$41,538 (EMSI)

Current Smoker Absentee Days ....1,816,918 persons *x* 22.7% *x* 2.91 days = 1,200,202 days

Current Smoker Absentee Years ....1,200,202 days ÷ 280 days/year = 4,286 years

Cost of Current Smoker Absenteeism.......................... 4,286 years *x* $41,538/year = $178,049,691

Former Smoker Absentee Days ...... 1,816,918 persons *x* 22.2% *x* 4.49 days/year = 1,851,857 days

Former Smoker Absentee Years ....1,851,857 days ÷ 280 days/year = 6,614 years

Cost of Former Smoker Absenteeism .... 6,614 years *x* $41,538 /year = $274,722,719

Total Cost of Employee Absentee Days Attributable to Smoking........................... $452,722,410

Average Employee Cost/Year (Current Smoker) ………………2.91/280 days/year *x* $41,538 = $432

Average Employee Cost/Year (Former Smoker) ………………4.49/280 days/year *x* $41,538 = $666

Table B -1 – 2008 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	2.9113830	***	0.842719
Former Smoker	4.4907	***	0.909456
Region Northeast	0.242103		1.04799
Region Midwest	-0.15775		0.884654
Region West	1.207977		0.907321
Age 25-34 Years	0.90278		1.245472
Age 35-44 Years	0.876225		1.289571
Age 45-54 Years	1.149289		1.311395
Age 55-64 Years	-1.115697		1.411829
Married	-2.915906	***	0.714364
Income less than $10,000	-0.599636		1.385866
Income $10,000-$15,000	-1.62042		1.545566
Income $15,000-$25,000	1.234411		1.233167
Income $25,000-$35,000	2.769035	**	1.21843
Income $35,000-$55,000	2.823602	**	1.110808
Income $55,000-$75,000	2.368282	*	1.335501
Male	-6.007547	***	0.695989
Race White	2.707938	***	0.962492
Race Other	-1.733593		1.59759
Hispanic	-5.16047	***	0.967509
BMI Obese	4.146698	***	0.719479
Constant	-13.87819	***	1.70855

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 11,026

Table B -2 – 2008 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	4.469527	19.578940	0	365
Current Smoker	0.226102	0.418325	0	1
Former Smoker	0.178669	0.383092	0	1
Region Northeast	0.144477	0.351588	0	1
Region Midwest	0.241792	0.428188	0	1
Region West	0.241611	0.428079	0	1
Age 25-34 Years	0.252676	0.434566	0	1
Age 35-44 Years	0.245057	0.430141	0	1
Age 45-54 Years	0.231634	0.421896	0	1
Age 55-64 Years	0.149284	0.356384	0	1
Married	0.463178	0.498665	0	1
Income less than $10,000	0.117359	0.321862	0	1
Income $10,000-$15,000	0.078542	0.269034	0	1
Income $15,000-$25,000	0.159713	0.366357	0	1
Income $25,000-$35,000	0.154725	0.361659	0	1
Income $35,000-$55,000	0.226011	0.418266	0	1
Income $55,000-$75,000	0.103573	0.304720	0	1
Male	0.485580	0.499815	0	1
Race White	0.763559	0.424915	0	1
Race Other	0.071105	0.257011	0	1
Hispanic	0.176401	0.381179	0	1
BMI Obese	0.629240	0.483030	0	1

2009 Estimates for Indirect Costs Associated with Absenteeism

2009 Mississippi Population .... 2,958,774 persons

2009 Mississippi Population (18-64 years): .... 1,824,267 persons

Current Smoker Prevalence ....23.3 percent

Former Smoker Prevalence..22.1 percent

Average Mississippi Earnings/Year ....$42,127 (EMSI)

Current Smoker Absentee Days .... 1,824,267 persons *x* 23.3% *x* 3.64 days = 1,547,197 days

Current Smoker Absentee Years ....1,547,197 days ÷ 280 days/year = 5,526 years

Cost of Current Smoker Absenteeism......................... 5,526 years *x* $42,127 /year = $232,784,020

Former Smoker Absentee Days ...... 1,824,267 persons *x* 22.1% *x* 3.67 days/year = 1,559,949 days

Former Smoker Absentee Years ....1,559,949 days ÷ 280 days/year = 5,571 years

Cost of Former Smoker Absenteeism .... 5,571 years *x* $42,127/year = $234,702,570

Total Cost of Employee Absentee Days Attributable to Smoking........................... $467,486,590

Average Employee Cost/Year (Current Smoker) ………………3.64/280 days/year *x* $42,127 = $548

Average Employee Cost/Year (Former Smoker) ………………3.67/280 days/year *x* $42,127 = $552

Table B -1 – 2009 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	3.6362300	***	0.665956
Former Smoker	3.66737	***	0.715139
Region Northeast	1.47088	*	0.802856
Region Midwest	0.652049		0.706856
Region West	1.983569	***	0.710883
Age 25-34 Years	0.301525		0.991206
Age 35-44 Years	0.86465		1.025608
Age 45-54 Years	1.118445		1.033632
Age 55-64 Years	0.060674		1.118101
Married	-2.741225	***	0.56269
Income less than $10,000	-1.281037		1.090909
Income $10,000-$15,000	0.62715		1.17538
Income $15,000-$25,000	2.070993	**	0.955632
Income $25,000-$35,000	2.781369	***	0.957658
Income $35,000-$55,000	4.399056	***	0.860565
Income $55,000-$75,000	3.607812	***	1.037258
Male	-6.289139	***	0.550513
Race White	1.610802	**	0.745959
Race Other	-2.651836	**	1.239639
Hispanic	-4.076352	***	0.728932
BMI Obese	3.17511	***	0.575581
Constant	-13.71375	***	1.322573

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 14,485

Table B -2 – 2009 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	3.942630	16.630610	0	365
Current Smoker	0.221885	0.415528	0	1
Former Smoker	0.183362	0.386977	0	1
Region Northeast	0.154229	0.361180	0	1
Region Midwest	0.233483	0.423062	0	1
Region West	0.245081	0.430150	0	1
Age 25-34 Years	0.250949	0.433574	0	1
Age 35-44 Years	0.241767	0.428169	0	1
Age 45-54 Years	0.234311	0.423582	0	1
Age 55-64 Years	0.152572	0.359587	0	1
Married	0.460960	0.498491	0	1
Income less than $10,000	0.115706	0.319883	0	1
Income $10,000-$15,000	0.081464	0.273555	0	1
Income $15,000-$25,000	0.159613	0.366260	0	1
Income $25,000-$35,000	0.147670	0.354785	0	1
Income $35,000-$55,000	0.222092	0.415667	0	1
Income $55,000-$75,000	0.103417	0.304514	0	1
Male	0.485675	0.499812	0	1
Race White	0.755954	0.429535	0	1
Race Other	0.074008	0.261792	0	1
Hispanic	0.197170	0.397875	0	1
BMI Obese	0.643148	0.479087	0	1

2010 Estimates for Indirect Costs Associated with Absenteeism

2010 Mississippi Population .... 2,970,316 persons

2010 Mississippi Population (18-64 years): .... 1,834,954 persons

Current Smoker Prevalence ....22.9 percent

Former Smoker Prevalence...22.0 percent

Average Mississippi Earnings/Year ....$42,688 (EMSI)

Current Smoker Absentee Days ....1,834,954 persons *x* 22.9% *x* 3.29 days = 1,382,473 days

Current Smoker Absentee Years ....1,382,473 days ÷ 280 days/year = 4,937 years

Cost of Current Smoker Absenteeism.......................... 4,937 years *x* $42,688/year = $210,765,457

Former Smoker Absentee Days .... 1,834,954 persons *x* 22.0% *x* 1.96 days/year = 823,601 days

Former Smoker Absentee Years ....823,601 days ÷ 280 days/year = 2,941 years

Cost of Former Smoker Absenteeism .... 2,941 years *x* $42,688/year = $125,562,400

Total Cost of Employee Absentee Days Attributable to Smoking............................ $336,327,857

Average Employee Cost/Year (Current Smoker) ……………….3.29/280 days/year *x* $42,688 = $502

Average Employee Cost/Year (Former Smoker) ……………….1.96/280 days/year *x* $42,688 = $299

Table B -1 – 2010 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	3.2893370	***	0.712554
Former Smoker	1.964502	***	0.758001
Region Northeast	-0.46676		0.861235
Region Midwest	-0.154586		0.740857
Region West	0.409369		0.729012
Age 25-34 Years	0.685386		1.023307
Age 35-44 Years	0.874777		1.055958
Age 45-54 Years	1.126386		1.074859
Age 55-64 Years	1.399765		1.136882
Married	-1.787526	***	0.586919
Income less than $10,000	-2.874336	***	1.106898
Income $10,000-$15,000	-1.100445		1.20859
Income $15,000-$25,000	0.311258		0.99172
Income $25,000-$35,000	1.890726		0.987175
Income $35,000-$55,000	2.142168	**	0.893401
Income $55,000-$75,000	3.291157	***	1.069849
Male	-5.774367	***	0.571992
Race White	1.777705	**	0.79222
Race Other	-1.827262		1.22498
Hispanic	-4.834026	***	0.757218
BMI Obese	3.81012	***	0.598876
Constant	-13.4275	***	1.372429

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 13,744

Table B -2 – 2010 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	3.787180	16.162440	0	365
Current Smoker	0.205835	0.404325	0	1
Former Smoker	0.174549	0.379595	0	1
Region Northeast	0.143845	0.350945	0	1
Region Midwest	0.228609	0.419952	0	1
Region West	0.259823	0.438553	0	1
Age 25-34 Years	0.250946	0.433573	0	1
Age 35-44 Years	0.244470	0.429788	0	1
Age 45-54 Years	0.220824	0.414817	0	1
Age 55-64 Years	0.159415	0.366076	0	1
Married	0.455544	0.498038	0	1
Income less than $10,000	0.125800	0.331636	0	1
Income $10,000-$15,000	0.082800	0.275589	0	1
Income $15,000-$25,000	0.156432	0.363278	0	1
Income $25,000-$35,000	0.145373	0.352489	0	1
Income $35,000-$55,000	0.212093	0.408805	0	1
Income $55,000-$75,000	0.102518	0.303339	0	1
Male	0.489377	0.499905	0	1
Race White	0.749054	0.433573	0	1
Race Other	0.086947	0.281768	0	1
Hispanic	0.203070	0.402299	0	1
BMI Obese	0.631767	0.482343	0	1

2011 Estimates for Indirect Costs Associated with Absenteeism

2011 Mississippi Population .... 2,977,999 persons

2011 Mississippi Population (18-64 years): .... 1,842,044 persons

Current Smoker Prevalence ....26.0 percent

Former Smoker Prevalence...20.7 percent

Average Mississippi Earnings/Year ....$43,416 (EMSI)

Current Smoker Absentee Days .... 1,842,044 persons *x* 26.0% *x* 2.22 days = 1,063,228 days

Current Smoker Absentee Years .... 1,063,228 days ÷ 280 days/year = 3,797 years

Cost of Current Smoker Absenteeism.......................... 3,797 years *x* $43,416/year = $164,861,909

Former Smoker Absentee Days ...... 1,842,044 persons *x* 20.7% *x* 2.74 days/year = 1,312,272 days

Former Smoker Absentee Years ....1,312,272 days ÷ 280 days/year = 4,687 years

Cost of Former Smoker Absenteeism .... 4,687 years *x* $43,416/year = $203,478,212

Total Cost of Employee Absentee Days Attributable to Smoking........................... $368,340,121

Average Employee Cost/Year (Current Smoker) ………………2.22/280 days/year *x* $43,416 = $344

Average Employee Cost/Year (Former Smoker) ………………2.74/280 days/year *x* $43,416 = $425

Table B -1 – 2011 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	2.2219800	***	0.674918
Former Smoker	2.74111	***	0.706505
Region Northeast	-0.38136		0.795716
Region Midwest	-0.302452		0.695568
Region West	-0.445143		0.689852
Age 25-34 Years	2.921442	***	0.975314
Age 35-44 Years	2.886562	***	1.016805
Age 45-54 Years	2.741975	***	1.033255
Age 55-64 Years	2.096525	*	1.087535
Married	-1.59331	***	0.54976
Income less than $10,000	-0.078353		1.037976
Income $10,000-$15,000	1.419051		1.169981
Income $15,000-$25,000	4.66368	***	0.937487
Income $25,000-$35,000	5.517983	***	0.925131
Income $35,000-$55,000	5.067547	***	0.846539
Income $55,000-$75,000	5.409005	***	1.000363
Male	-4.935459	***	0.535126
Race White	2.59375	***	0.758859
Race Other	-1.833385		1.155811
Hispanic	-5.768146	***	0.729441
BMI Obese	3.481331	***	0.561782
Constant	-18.69506	***	1.31812

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 16,809

Table B -2 – 2011 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	3.848236	16.707090	0	365
Current Smoker	0.203879	0.402892	0	1
Former Smoker	0.175799	0.380660	0	1
Region Northeast	0.151645	0.358687	0	1
Region Midwest	0.234220	0.423523	0	1
Region West	0.260218	0.438766	0	1
Age 25-34 Years	0.262300	0.439898	0	1
Age 35-44 Years	0.234398	0.423635	0	1
Age 45-54 Years	0.219109	0.413655	0	1
Age 55-64 Years	0.162592	0.369004	0	1
Married	0.447855	0.497288	0	1
Income less than $10,000	0.128919	0.335120	0	1
Income $10,000-$15,000	0.078410	0.268824	0	1
Income $15,000-$25,000	0.151942	0.358976	0	1
Income $25,000-$35,000	0.147600	0.354713	0	1
Income $35,000-$55,000	0.207924	0.405834	0	1
Income $55,000-$75,000	0.104944	0.306490	0	1
Male	0.498780	0.500013	0	1
Race White	0.754001	0.430691	0	1
Race Other	0.089357	0.285267	0	1
Hispanic	0.188233	0.390909	0	1
BMI Obese	0.631566	0.482394	0	1

2012 Estimates for Indirect Costs Associated with Absenteeism

2012 Mississippi Population .... 2,985,660 persons

2012 Mississippi Population (18-64 years): .... 1,839,814 persons

Current Smoker Prevalence ....24.0 percent

Former Smoker Prevalence..19.9 percent

Average Mississippi Earnings/Year ....$44,984 (EMSI)

Current Smoker Absentee Days ....1,839,814 persons *x* 24.0% *x* 2.65 days = 1,170,122 days

Current Smoker Absentee Years ....1,170,122 days ÷ 280 days/year = 4,179 years

Cost of Current Smoker Absenteeism.......................... 4,179 years *x* $44,984/year = $187,987,558

Former Smoker Absentee Days .... 1,839,814 persons *x* 19.9% *x* 1.98 days/year = 874,280 days

Former Smoker Absentee Years ....874,280 days ÷ 280 days/year = 3,122 years

Cost of Former Smoker Absenteeism .... 3,122 years *x* $44,984/year = $140,458,628

Total Cost of Employee Absentee Days Attributable to Smoking........................... $328,446,186

Average Employee Cost/Year (Current Smoker) ……………….2.65/280 days/year *x* $44,984 = $426

Average Employee Cost/Year (Former Smoker) ……………….1.98/280 days/year *x* $44,984 = $318

Table B -1 – 2012 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	2.6506690	***	0.602688
Former Smoker	1.984419	***	0.627795
Region Northeast	1.228855	*	0.697648
Region Midwest	-0.579229		0.640858
Region West	1.737353	***	0.609195
Age 25-34 Years	1.279279		0.871212
Age 35-44 Years	1.669626	*	0.904183
Age 45-54 Years	1.143986		0.916903
Age 55-64 Years	-0.071551		0.96306
Married	-1.643698	***	0.492925
Income less than $10,000	1.328426		0.933843
Income $10,000-$15,000	3.124111	***	1.008389
Income $15,000-$25,000	4.379077	***	0.837345
Income $25,000-$35,000	4.998389	***	0.837696
Income $35,000-$55,000	4.630715	***	0.752688
Income $55,000-$75,000	5.725794	***	0.881519
Male	-4.307177	***	0.480964
Race White	1.915102	***	0.682952
Race Other	-0.861798		1.035865
Hispanic	-5.449295	***	0.656895
BMI Obese	3.583939	***	0.503584
Constant	-15.37324	***	1.169772

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 17,414

Table B -2 – 2012 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	3.970082	16.385560	0	365
Current Smoker	0.202768	0.402073	0	1
Former Smoker	0.180774	0.384842	0	1
Region Northeast	0.161077	0.367613	0	1
Region Midwest	0.217411	0.412497	0	1
Region West	0.268060	0.442962	0	1
Age 25-34 Years	0.248249	0.432009	0	1
Age 35-44 Years	0.233088	0.422810	0	1
Age 45-54 Years	0.221776	0.415453	0	1
Age 55-64 Years	0.177099	0.381763	0	1
Married	0.447571	0.497258	0	1
Income less than $10,000	0.122258	0.327593	0	1
Income $10,000-$15,000	0.083841	0.277157	0	1
Income $15,000-$25,000	0.151487	0.358534	0	1
Income $25,000-$35,000	0.140462	0.347475	0	1
Income $35,000-$55,000	0.209831	0.407200	0	1
Income $55,000-$75,000	0.109510	0.312287	0	1
Male	0.487941	0.499869	0	1
Race White	0.760193	0.426978	0	1
Race Other	0.086367	0.280914	0	1
Hispanic	0.181406	0.385365	0	1
BMI Obese	0.633686	0.481811	0	1

2013 Estimates for Indirect Costs Associated with Absenteeism

2013 Mississippi Population .... 2,990,976 persons

2013 Mississippi Population (18-64 years): .... 1,839,860 persons

Current Smoker Prevalence ....24.8 percent

Former Smoker Prevalence..20.5 percent

Average Mississippi Earnings/Year ....$45,047 (EMSI)

Current Smoker Absentee Days ....1,839,860 persons *x* 24.8% *x* 2.58 days = 1,177,216 days

Current Smoker Absentee Years ....1,177,216 days ÷ 280 days/year = 4,204 years

Cost of Current Smoker Absenteeism.......................... 4,204 years *x* $45,047/year = $189,391,588

Former Smoker Absentee Days ...... 1,839,860 persons *x* 20.5% *x* 2.35 days/year = 1,072,270 days

Former Smoker Absentee Years ....1,072,270 days ÷ 280 days/year = 3,830 years

Cost of Former Smoker Absenteeism .... 3,830 years *x* $45,047/year = $172,507,842

Total Cost of Employee Absentee Days Attributable to Smoking........................... $361,899,430

Average Employee Cost/Year (Current Smoker) ………………2.58/280 days/year *x* $45,047 = $415

Average Employee Cost/Year (Former Smoker) ………………2.35/280 days/year *x* $45,047 = $378

Table B -1 – 2013 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	2.5816590	***	0.637182
Former Smoker	2.345103	***	0.648987
Region Northeast	1.044282		0.727765
Region Midwest	0.602466		0.663445
Region West	1.659342	***	0.625399
Age 25-34 Years	1.496036	*	0.896176
Age 35-44 Years	2.258891	**	0.941929
Age 45-54 Years	0.971483		0.96119
Age 55-64 Years	0.626884		0.996184
Married	-2.166265	***	0.513468
Income less than $10,000	-3.208961	***	0.979187
Income $10,000-$15,000	-0.561209		1.076109
Income $15,000-$25,000	1.450969	*	0.855275
Income $25,000-$35,000	1.891943	**	0.856382
Income $35,000-$55,000	3.436523	***	0.763258
Income $55,000-$75,000	3.409932	***	0.917194
Male	-4.289544	***	0.495216
Race White	0.731399		0.699575
Race Other	-2.110013	**	1.071554
Hispanic	-4.86395	***	0.675456
BMI Obese	2.317604	***	0.521552
Constant	-12.1794	***	1.207476

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 17,235

Table B -2 – 2013 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	3.891036	16.938930	0	365
Current Smoker	0.188222	0.390900	0	1
Former Smoker	0.180099	0.384281	0	1
Region Northeast	0.156890	0.363708	0	1
Region Midwest	0.208877	0.406518	0	1
Region West	0.269046	0.443477	0	1
Age 25-34 Years	0.261793	0.439623	0	1
Age 35-44 Years	0.229069	0.420246	0	1
Age 45-54 Years	0.213171	0.409559	0	1
Age 55-64 Years	0.174587	0.379624	0	1
Married	0.437656	0.496112	0	1
Income less than $10,000	0.118538	0.323253	0	1
Income $10,000-$15,000	0.076240	0.265390	0	1
Income $15,000-$25,000	0.156600	0.363434	0	1
Income $25,000-$35,000	0.142791	0.349870	0	1
Income $35,000-$55,000	0.215782	0.411376	0	1
Income $55,000-$75,000	0.104961	0.306512	0	1
Male	0.496316	0.500001	0	1
Race White	0.757470	0.428625	0	1
Race Other	0.085930	0.280269	0	1
Hispanic	0.187003	0.389925	0	1
BMI Obese	0.636612	0.480989	0	1

2014 Estimates for Indirect Costs Associated with Absenteeism

2014 Mississippi Population .... 2,993,443 persons

2014 Mississippi Population (18-64 years): .... 1,834,605 persons

Current Smoker Prevalence ....23.0 percent

Former Smoker Prevalence...20.7 percent

Average Mississippi Earnings/Year ....$45,877 (EMSI)

Current Smoker Absentee Days ....1,834,605 persons *x* 23.0% *x* 3.44 days = 1,451,539 days

Current Smoker Absentee Years ....1,451,539 days ÷ 280 days/year = 5,184 years

Cost of Current Smoker Absenteeism.......................... 5,184 years *x* $45,877/year = $237,829,231

Former Smoker Absentee Days .... 1,834,605 persons *x* 20.7% *x* 1.79 days/year = 755,307 days

Former Smoker Absentee Years ....755,307 days ÷ 280 days/year = 2,698 years

Cost of Former Smoker Absenteeism .... 2,698 years *x* $45,877/year = $123,754,164

Total Cost of Employee Absentee Days Attributable to Smoking............................ $361,583,395

Average Employee Cost/Year (Current Smoker) ………………3.44/280 days/year *x* $45,877 = $564

Average Employee Cost/Year (Former Smoker) ………………1.79/280 days/year *x* $45,877 = $293

Table B -1 – 2014 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	3.4440930	***	0.563155
Former Smoker	1.785824	***	0.570936
Region Northeast	1.34068	**	0.664279
Region Midwest	0.983705	*	0.58636
Region West	1.528587	***	0.557681
Age 25-34 Years	0.687239		0.794643
Age 35-44 Years	0.845451		0.836186
Age 45-54 Years	0.09601		0.84609
Age 55-64 Years	-0.698575		0.877598
Married	-1.351779	***	0.455914
Income less than $10,000	-2.341477	***	0.872743
Income $10,000-$15,000	-0.053508		0.942636
Income $15,000-$25,000	0.597868		0.757629
Income $25,000-$35,000	2.179245	***	0.752995
Income $35,000-$55,000	3.432521	***	0.676582
Income $55,000-$75,000	3.801425	***	0.797965
Male	-3.6456	***	0.439366
Race White	2.402145	***	0.65149
Race Other	-1.606816		0.997668
Hispanic	-4.405185	***	0.599616
BMI Obese	2.245121	***	0.463929
Constant	-11.49616	***	1.092144

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 18,210

Table B -2 – 2014 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	3.918891	16.294230	0	365
Current Smoker	0.189731	0.392099	0	1
Former Smoker	0.184130	0.387601	0	1
Region Northeast	0.149808	0.356893	0	1
Region Midwest	0.224053	0.416968	0	1
Region West	0.284239	0.451064	0	1
Age 25-34 Years	0.255574	0.436195	0	1
Age 35-44 Years	0.230203	0.420974	0	1
Age 45-54 Years	0.216749	0.412042	0	1
Age 55-64 Years	0.178473	0.382921	0	1
Married	0.448435	0.497348	0	1
Income less than $10,000	0.113125	0.316754	0	1
Income $10,000-$15,000	0.078364	0.268750	0	1
Income $15,000-$25,000	0.153597	0.360572	0	1
Income $25,000-$35,000	0.144866	0.351975	0	1
Income $35,000-$55,000	0.208951	0.406571	0	1
Income $55,000-$75,000	0.109336	0.312068	0	1
Male	0.497749	0.500009	0	1
Race White	0.777650	0.415837	0	1
Race Other	0.080066	0.271403	0	1
Hispanic	0.180615	0.384710	0	1
BMI Obese	0.647886	0.477643	0	1

2015 Estimates for Indirect Costs Associated with Absenteeism

2015 Mississippi Population .... 2,992,333 persons

2015 Mississippi Population (18-64 years): .... 1,825,784 persons

Current Smoker Prevalence ....23.0 percent

Former Smoker Prevalence..20.7 percent

Average Mississippi Earnings/Year ....$46,543 (EMSI)

Current Smoker Absentee Days ....1,825,784 persons *x* 23.0% *x* 3.30 days = 1,386,530 days

Current Smoker Absentee Years ....1,386,530 days ÷ 280 days/year = 4,952 years

Cost of Current Smoker Absenteeism........................... 4,952 years *x* $46,543/year = $230,476,541

Former Smoker Absentee Days ...... 1,825,784 persons *x* 20.7% *x* 2.40 days/year = 1,008,386 days

Former Smoker Absentee Years ....1,008,386 days ÷ 280 days/year = 3,601 years

Cost of Former Smoker Absenteeism .... 3,601 years *x* $46,543/year = $167,619,302

Total Cost of Employee Absentee Days Attributable to Smoking........................... $398,095,843

Average Employee Cost/Year (Current Smoker) ………………3.30/280 days/year *x* $46,543 = $549

Average Employee Cost/Year (Former Smoker) ………………2.40/280 days/year x $46,543 = $399

Table B -1 – 2015 Indirect Costs due to Absenteeism Regression Results

Variable	Coefficient	Significance	Robust Std Error
Current Smoker	3.303817	***	0.704269
Former Smoker	2.39848	***	0.685066
Region Northeast	0.984998		0.789383
Region Midwest	-0.507744		0.710601
Region West	2.238032	***	0.663753
Age 25-34 Years	1.566		0.969028
Age 35-44 Years	2.114602	**	1.018675
Age 45-54 Years	1.366289		1.027917
Age 55-64 Years	1.738159		1.062245
Married	-1.717755	***	0.544591
Income less than $10,000	-1.054488		1.062322
Income $10,000-$15,000	2.354039	**	1.135519
Income $15,000-$25,000	2.126744	**	0.906458
Income $25,000-$35,000	1.338597		0.902455
Income $35,000-$55,000	1.710111	**	0.799634
Income $55,000-$75,000	3.200843	***	0.915194
Male	-4.372659	***	0.528345
Race White	2.73077	***	0.78179
Race Other	-0.261056		1.165301
Hispanic	-5.432369	***	0.727433
BMI Obese	2.930309	***	0.55394
Constant	-15.68045	***	1.311083

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 16,580

Table B -2 – 2014 Indirect Costs due to Absenteeism Regression Statistics Table

Variable	Mean	Std Dev	Minimum	Maximum
Work days	3.862244	17.649930	0	365
Current Smoker	0.170567	0.376142	0	1
Former Smoker	0.181906	0.385779	0	1
Region Northeast	0.154101	0.361057	0	1
Region Midwest	0.221894	0.415533	0	1
Region West	0.288420	0.453041	0	1
Age 25-34 Years	0.255308	0.436047	0	1
Age 35-44 Years	0.227986	0.419546	0	1
Age 45-54 Years	0.220748	0.414763	0	1
Age 55-64 Years	0.182328	0.386126	0	1
Married	0.454705	0.497959	0	1
Income less than $10,000	0.101749	0.302327	0	1
Income $10,000-$15,000	0.074186	0.262081	0	1
Income $15,000-$25,000	0.147346	0.354461	0	1
Income $25,000-$35,000	0.139867	0.346860	0	1
Income $35,000-$55,000	0.209168	0.406727	0	1
Income $55,000-$75,000	0.120205	0.325211	0	1
Male	0.493908	0.499978	0	1
Race White	0.773100	0.418840	0	1
Race Other	0.085766	0.280027	0	1
Hispanic	0.178227	0.382715	0	1
BMI Obese	0.649216	0.477230	0	1

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Appendix C – Indirect Costs due to Presenteeism

2000 Estimates for Indirect Costs Associated with Presenteeism

2000 Mississippi Population (U.S. Census Estimates)... 2,848,353 persons

2000 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,729,982 persons

Current Smoker Prevalence ....23.5 percent

Former Smoker Prevalence...20.5 percent

Average Mississippi Earnings/Year ....$31,087 (EMSI)

Current Smoker Presenteeism Hours ....1,729,982 *x* 23.5% *x* 76.5 = 31,100,751 hours

Current Smoker Presenteeism Years ....31,100,751 hours ÷ 2,080 hours/year = 14,952 years

Cost of Current Smoker Presenteeism...................... 14,952 years *x* $31,087 /year = $464,825,119

Former Smoker Presenteeism Hours.........................1,729,982 *x* 20.5% *x* 56.0 = 19,860,193 hours

Former Smoker Presenteeism Years................19,860,193 hours ÷ 2,080 hours/year = 9,548 years

Cost of Former Smoker Presenteeism .... 9,548 years *x* $31,087/year = $296,826,164

Total Cost of Presenteeism Attributable to Smoking $761,651,283

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $31,087 = $1,143

Presenteeism Cost per Employed Former Smoker ...... 56.0 ÷ 2,080 hours/year *x* $31,087 = $837

2001 Estimates for Indirect Costs Associated with Presenteeism

2001 Mississippi Population (U.S. Census Estimates)... 2,852,994 persons

2001 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,740,014 persons

Current Smoker Prevalence ....25.3 percent

Former Smoker Prevalence...21.1 percent

Average Mississippi Earnings/Year ....$31,960 (EMSI)

Current Smoker Presenteeism Hours ....1,740,014 *x* 25.3% *x* 76.5 = 33,677,101 hours

Current Smoker Presenteeism Years ....33,677,101 hours ÷ 2,080 hours/year = 16,191 years

Cost of Current Smoker Presenteeism...................... 16,191 years *x* $31,960 /year = $517,457,301

Former Smoker Presenteeism Hours.........................1,740,014 *x* 21.1% *x* 56.0 = 20,560,005 hours

Former Smoker Presenteeism Years................20,560,005 hours ÷ 2,080 hours/year = 9,885 years

Cost of Former Smoker Presenteeism .... 9,885 years *x* $31,960 /year = $315,909,761

Total Cost of Presenteeism Attributable to Smoking $833,367,062

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $31,960 = $1,175

Presenteeism Cost per Employed Former Smoker ...... 56.0 ÷ 2,080 hours/year *x* $31,960 = $860

2002 Estimates for Indirect Costs Associated with Presenteeism

2002 Mississippi Population (U.S. Census Estimates)... 2,858,681 persons

2002 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,750,133 persons

Current Smoker Prevalence ....27.3 percent

Former Smoker Prevalence...20.0 percent

Average Mississippi Earnings/Year ....$32,977 (EMSI)

Current Smoker Presenteeism Hours ....1,750,133 *x* 27.3% *x* 76.5 = 36,550,653 hours

Current Smoker Presenteeism Years ....36,550,653 hours ÷ 2,080 hours/year = 17,572 years

Cost of Current Smoker Presenteeism...................... 17,572 years *x* $32,977 /year = $579,491,501

Former Smoker Presenteeism Hours........................1,750,133 *x* 20.0% *x* 56.0 = 19,601,490 hours

Former Smoker Presenteeism Years................19,601,490 hours ÷ 2,080 hours/year = 9,424 years

Cost of Former Smoker Presenteeism .... 9,424 years *x* $31,087/year = $310,771,377

Total Cost of Presenteeism Attributable to Smoking $890,262,878

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $32,977 = $1,213

Presenteeism Cost per Employed Former Smoker ...... 56.0 ÷ 2,080 hours/year *x* $32,977 = $888

2003 Estimates for Indirect Costs Associated with Presenteeism

2003 Mississippi Population (U.S. Census Estimates)... 2,868,312 persons

2003 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,760,938 persons

Current Smoker Prevalence ....25.5 percent

Former Smoker Prevalence...20.7 percent

Average Mississippi Earnings/Year ....$34,171 (EMSI)

Current Smoker Presenteeism Hours ....1,760,938 *x* 25.5% *x* 76.5 = 34,351,498 hours

Current Smoker Presenteeism Years ....34,351,498 hours ÷ 2,080 hours/year = 16,515 years

Cost of Current Smoker Presenteeism...................... 16,515 years *x* $34,171 /year = $564,343,405

Former Smoker Presenteeism Hours........................1,760,938 *x* 20.7% *x* 56.0 = 20,412,793 hours

Former Smoker Presenteeism Years................20,412,793 hours ÷ 2,080 hours/year = 9,814 years

Cost of Former Smoker Presenteeism .... 9,814 years *x* $34,171 /year = $335,351,468

Total Cost of Presenteeism Attributable to Smoking $899,694,873

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $34,171 = $1,257

Presenteeism Cost per Employed Former Smoker ...... 56.0 ÷ 2,080 hours/year *x* $34,171 = $920

2004 Estimates for Indirect Costs Associated with Presenteeism

2004 Mississippi Population (U.S. Census Estimates)... 2,889,010 persons

2004 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,777,280 persons

Current Smoker Prevalence ....24.6 percent

Former Smoker Prevalence...19.3 percent

Average Mississippi Earnings/Year ....$35,796 (EMSI)

Current Smoker Presenteeism Hours ....1,777,280 *x* 24.6% *x* 76.5 = 33,446,632 hours

Current Smoker Presenteeism Years ....33,446,632 hours ÷ 2,080 hours/year = 16,080 years

Cost of Current Smoker Presenteeism...................... 16,080 years *x* $35,796 /year = $575,609,030

Former Smoker Presenteeism Hours ....1,777,280 *x* 19.3 % *x* 56.0 = 19,208,842 hours

Former Smoker Presenteeism Years................19,208,842 hours ÷ 2,080 hours/year = 9,235 years

Cost of Former Smoker Presenteeism .... 9,235 years *x* $35,796 /year = $330,579,860

Total Cost of Presenteeism Attributable to Smoking $906,188,890

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $35,796 = $1,317

Presenteeism Cost per Employed Former Smoker ...... 56.0 ÷ 2,080 hours/year *x* $35,796 = $964

2005 Estimates for Indirect Costs Associated with Presenteeism

2005 Mississippi Population (U.S. Census Estimates)... 2,905,943 persons

2005 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,788,874 persons

Current Smoker Prevalence ....23.7 percent

Former Smoker Prevalence...20.9 percent

Average Mississippi Earnings/Year ....$37,347 (EMSI)

Current Smoker Presenteeism Hours ....1,788,874 *x* 23.7% *x* 76.5 = 32,433,180 hours

Current Smoker Presenteeism Years ....32,433,180 hours ÷ 2,080 hours/year = 15,593 years

Cost of Current Smoker Presenteeism...................... 15,593 years *x* $37,347 /year = $582,352,587

Former Smoker Presenteeism Hours ....1,788,874 *x* 20.9% *x* 56.0 = 20,936,981 hours

Former Smoker Presenteeism Years..............20,936,981 hours ÷ 2,080 hours/year = 10,066 years

Cost of Former Smoker Presenteeism .... 10,066 years *x* $37,347 /year = $375,933,079

Total Cost of Presenteeism Attributable to Smoking $958,285,666

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $37,347 = $1,374

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $37,347 = $1,006

2006 Estimates for Indirect Costs Associated with Presenteeism

2006 Mississippi Population (U.S. Census Estimates)... 2,904,978persons

2006 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,789,791 persons

Current Smoker Prevalence ....25.1 percent

Former Smoker Prevalence...21.1 percent

Average Mississippi Earnings/Year ....$38,791 (EMSI)

Current Smoker Presenteeism Hours ....1,789,791 *x* 25.1% *x* 76.5 = 34,366,672 hours

Current Smoker Presenteeism Years ....34,366,672 hours ÷ 2,080 hours/year = 16,522 years

Cost of Current Smoker Presenteeism....................... 16,522 years *x* $38,791/year = $640,927,739

Former Smoker Presenteeism Hours.........................1,789,791 *x* 21.1% *x* 56.0 = 21,148,170 hours

Former Smoker Presenteeism Years..............21,148,170 hours ÷ 2,080 hours/year = 10,167 years

Cost of Former Smoker Presenteeism .... 10,167 years *x* $38,791/year = $394,406,800

Total Cost of Presenteeism Attributable to Smoking $1,035,334,539

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $38,791 = $1,427

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $38,791 = $1,044

2007 Estimates for Indirect Costs Associated with Presenteeism

2007 Mississippi Population (U.S. Census Estimates)... 2,928,350 persons

2007 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,804,223 persons

Current Smoker Prevalence ....23.9 percent

Former Smoker Prevalence...21.2 percent

Average Mississippi Earnings/Year ....$40,120 (EMSI)

Current Smoker Presenteeism Hours ....1,804,223 *x* 23.9% *x* 76.5 = 32,987,511 hours

Current Smoker Presenteeism Years ....32,987,511 hours ÷ 2,080 hours/year = 15,859 years

Cost of Current Smoker Presenteeism....................... 15,859 years *x* $40,120 /year = $636,271,747

Former Smoker Presenteeism Hours.........................1,804,223 *x* 21.2% *x* 56.0 = 21,419,735 hours

Former Smoker Presenteeism Years..............21,419,735 hours ÷ 2,080 hours/year = 10,298 years

Cost of Former Smoker Presenteeism .... 10,298 years *x* $40,120/year = $413,149,462

Total Cost of Presenteeism Attributable to Smoking $1,049,421,208

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $40,120 = $1,476

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $40,120 = $1,080

2008 Estimates for Indirect Costs Associated with Presenteeism

2008 Mississippi Population (U.S. Census Estimates)... 2,947,806 persons

2008 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,816,918 persons

Current Smoker Prevalence ....22.7 percent

Former Smoker Prevalence...22.2 percent

Average Mississippi Earnings/Year ....$41,538 (EMSI)

Current Smoker Presenteeism Hours ....1,816,918 *x* 22.7% *x* 76.5 = 31,551,690 hours

Current Smoker Presenteeism Years ....31,551,690 hours ÷ 2,080 hours/year = 15,169 years

Cost of Current Smoker Presenteeism........................ 15,169 years *x* $41,538/year = $630,092,582

Former Smoker Presenteeism Hours.........................1,816,918 *x* 22.2% *x* 56.0 = 22,287,925 hours

Former Smoker Presenteeism Years..............22,287,925 hours ÷ 2,080 hours/year = 10,860 years

Cost of Former Smoker Presenteeism .... 10,860 years *x* $41,538/year = $451,084,678

Total Cost of Presenteeism Attributable to Smoking $1,081,177,259

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $41,538 = $1,528

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $41,538 = $1,118

2009 Estimates for Indirect Costs Associated with Presenteeism

2009 Mississippi Population (U.S. Census Estimates)... 2,958,774 persons

2009 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,824,267 persons

Current Smoker Prevalence ....23.4 percent

Former Smoker Prevalence...22.1 percent

Average Mississippi Earnings/Year ....$42,127 (EMSI)

Current Smoker Presenteeism Hours ....1,824,267 *x* 23.4% *x* 76.5 = 32,656,204 hours

Current Smoker Presenteeism Years ....32,551,690 hours ÷ 2,080 hours/year = 15,700 years

Cost of Current Smoker Presenteeism........................ 15,700 years *x* $42,127/year = $61,405,570

Former Smoker Presenteeism Hours.........................1,824,267 *x* 22.1% *x* 56.0 = 22,577,128 hours

Former Smoker Presenteeism Years..............22,577,128 hours ÷ 2,080 hours/year = 10,854 years

Cost of Former Smoker Presenteeism .... 10,854 years *x* $42,127/year = $457,268,049

Total Cost of Presenteeism Attributable to Smoking $1,118,673,619

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $42,127 = $1,549

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $42,127 = $1,134

2010 Estimates for Indirect Costs Associated with Presenteeism

2010 Mississippi Population (U.S. Census Estimates).. 2,970,316 persons

2010 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,834,954 persons

Current Smoker Prevalence ....22.9 percent

Former Smoker Prevalence...22.0 percent

Average Mississippi Earnings/Year ....$42,688 (EMSI)

Current Smoker Presenteeism Hours ....1,834,954 *x* 22.9% *x* 76.5 = 32,145,642 hours

Current Smoker Presenteeism Years ....32,145,642 hours ÷ 2,080 hours/year = 15,455 years

Cost of Current Smoker Presenteeism........................ 15,455 years *x* $42,688/year = $659,720,028

Former Smoker Presenteeism Hours ....1,834,954 *x* 22.0% *x* 56.0 = 22,606,633 hours

Former Smoker Presenteeism Years..............22,606,633 hours ÷ 2,080 hours/year = 10,869 years

Cost of Former Smoker Presenteeism .... 10,869 years *x* $42,688/year = $463,952,436

Total Cost of Presenteeism Attributable to Smoking $1,123,672,464

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $42,688 = $1,570

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $42,688 = $1,149

2011 Estimates for Indirect Costs Associated with Presenteeism

2011 Mississippi Population (U.S. Census Estimates).. 2,977,999 persons

2011 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,842,044 persons

Current Smoker Prevalence ....25.9 percent

Former Smoker Prevalence...21.3 percent

Average Mississippi Earnings/Year ....$43,416 (EMSI)

Current Smoker Presenteeism Hours ....1,842,044 *x* 25.9% *x* 76.5 = 36,497,339 hours

Current Smoker Presenteeism Years ....36,497,339 hours ÷ 2,080 hours/year = 17,547 years

Cost of Current Smoker Presenteeism........................ 17,547 years *x* $43,416/year = $761,815,663

Former Smoker Presenteeism Hours ....1,842,044 *x* 21.3% *x* 56.0 = 21,971,901 hours

Former Smoker Presenteeism Years..............21,971,901 hours ÷ 2,080 hours/year = 10,563 years

Cost of Former Smoker Presenteeism .... 10,563 years *x* $43,416/year = $458,623,526

Total Cost of Presenteeism Attributable to Smoking $1,220,439,189

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $43,416 = $1,597

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $43,416 = $1,169

2012 Estimates for Indirect Costs Associated with Presenteeism

2012 Mississippi Population (U.S. Census Estimates)... 2,985,660 persons

2012 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,839,814 persons

Current Smoker Prevalence ....24.0 percent

Former Smoker Prevalence..20.7 percent

Average Mississippi Earnings/Year ....$44,984 (EMSI)

Current Smoker Presenteeism Hours ....1,839,814 *x* 24.0% *x* 76.5 = 33,778,985 hours

Current Smoker Presenteeism Years ....33,778,985 hours ÷ 2,080 hours/year = 16,240 years

Cost of Current Smoker Presenteeism....................... 16,240 years *x* $44,984/year = $730,532,201

Former Smoker Presenteeism Hours ....1,839,814 *x* 20.7% *x* 56.0 = 21,327,124 hours

Former Smoker Presenteeism Years..............20,327,124 hours ÷ 2,080 hours/year = 10,253 years

Cost of Former Smoker Presenteeism .... 10,253 years *x* $44,984/year = $461,237,978

Total Cost of Presenteeism Attributable to Smoking $1,191,770,180

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $44,984 = $1,654

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $44,984 = $1,211

2013 Estimates for Indirect Costs Associated with Presenteeism

2013 Mississippi Population (U.S. Census Estimates)... 2,990,976 persons

2013 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,839,860 persons

Current Smoker Prevalence ....24.9 percent

Former Smoker Prevalence..21.5 percent

Average Mississippi Earnings/Year ....$45,047 (EMSI)

Current Smoker Presenteeism Hours ....1,839,860 *x* 24.9% *x* 76.5 = 35,046,573 hours

Current Smoker Presenteeism Years ....35,046,573 hours ÷ 2,080 hours/year = 16,849 years

Cost of Current Smoker Presenteeism....................... 16,849 years *x* $45,047/year = $759,005,247

Former Smoker Presenteeism Hours ....1,839,860 *x* 21.5% *x* 56.0 = 22,151,914 hours

Former Smoker Presenteeism Years..............22,151,914 hours ÷ 2,080 hours/year = 10,650 years

Cost of Former Smoker Presenteeism .... 10,650 years *x* $45,047/year = $479,745,028

Total Cost of Presenteeism Attributable to Smoking $1,238,750,275

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $45,047 = $1,657

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $45,047 = $1,213

2014 Estimates for Indirect Costs Associated with Presenteeism

2014 Mississippi Population (U.S. Census Estimates)... 2,993,443 persons

2014 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,834,605 persons

Current Smoker Prevalence ....23.0 percent

Former Smoker Prevalence..21.9 percent

Average Mississippi Earnings/Year ....$45,877 (EMSI)

Current Smoker Presenteeism Hours ....1,834,605 *x* 23.0% *x* 76.5 = 32,279,875 hours

Current Smoker Presenteeism Years ....32,279,875 hours ÷ 2,080 hours/year = 15,519 years

Cost of Current Smoker Presenteeism........................ 15,519 years *x* $45,877/year = $711,972,012

Former Smoker Presenteeism Hours.........................1,834,605 *x* 21.9% *x* 56.0 = 22,499,596 hours

Former Smoker Presenteeism Years..............22,499,596 hours ÷ 2,080 hours/year = 10,817 years

Cost of Former Smoker Presenteeism .... 10,817 years *x* $45,877/year = $496,256,024

Total Cost of Presenteeism Attributable to Smoking $1,208,228,036

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $45,877 = $1,687

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $45,877 = $1,235

2015 Estimates for Indirect Costs Associated with Presenteeism

2015 Mississippi Population (U.S. Census Estimates)... 2,992,333 persons

2015 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,825,784 persons

Current Smoker Prevalence ....23.0 percent

Former Smoker Prevalence..21.9 percent

Average Mississippi Earnings/Year ....$46,543 (EMSI)

Current Smoker Presenteeism Hours ....1,825,784 *x* 23.0% *x* 76.5 = 32,124,669 hours

Current Smoker Presenteeism Years ....32,124,669 hours ÷ 2,080 hours/year = 15,445 years

Cost of Current Smoker Presenteeism........................ 15,445 years *x* $46,543/year = $718,837,574

Former Smoker Presenteeism Hours.........................1,825,784 *x* 21.9% *x* 56.0 = 22,391,415 hours

Former Smoker Presenteeism Years..............22,391,415 hours ÷ 2,080 hours/year = 10,765 years

Cost of Former Smoker Presenteeism .... 10,765 years *x* $46,543/year = $501,041,433

Total Cost of Presenteeism Attributable to Smoking $1,219,879,007

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $46,543 = $1,712

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $46,543 = $1,253

Appendix D – Indirect Costs due to Inability to Work (Disability)

Estimating the indirect costs due to disability attributable to smoking employed a regression methodology utilized by Yang, et al, described at the end of this appendix.

By calculating the probability at the means for Current Smokers, we find the probability that current smokers are more likely to be unable to work due to disability. Coupling that with American Community Survey estimates of the percentage of the population between the ages of 18 and 64, inclusive, that is not working and has a disability, this provides an estimate of the proportion of smokers who are not able to work due to a disability attributable to smoking. Average annual wages obtained from the Economic Modeling Systems Incorporated (EMSI – a proprietary dataset) provides an estimate of the loss of productivity due to a current or former smoker being disabled due to smoking.

2000 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,848,353 persons

Mississippi Population (18-64 years): .... 1,729,982 persons

Current Smoker Prevalence ....23.5 percent

Former Smoker Prevalence..20.5 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled ....36.0 percent

Additional Probability of Former Smoker being Disabled ....26.8 percent

Average Mississippi Earnings/Year ....$31,087 (EMSI)

Number of Current Smokers...1,729,982 *x* 23.5% = 406,546 persons

Number of Former Smokers ....1,729,982 *x* 20.5% = 354,646 persons

Current Smoker Disability Rate................. 406,546 persons *x* 10.6% *x* (1+36.0%) = 58,803 persons (This is also the number of years in lost wages)

Former Smoker Disability Rate .... 354,646 persons *x* 10.6% *x* (1+26.8%) = 47,832 persons (This is also the number of years in lost wages)

Current Smoker Disability Cost .... 58,803 persons *x* $31,087 = $1,828,008,861

Former Smoker Disability Cost................................ 47,832 persons *x* $31,807 = $1,486,953,384

Total Cost of Smoker Disability....................$1,828,008,861 + $1,486,953,384 = $3,314,962,245

2001 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,852,994 persons

Mississippi Population (18-64 years): .... 1,740,014 persons

Current Smoker Prevalence ....25.3 percent

Former Smoker Prevalence...21.1 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled...38.0 percent

Additional Probability of Former Smoker being Disabled ....27.4 percent

Average Mississippi Earnings/Year ....$31,960 (EMSI)

Number of Current Smokers...1,740,014 *x* 25.3% = 440,224 persons

Number of Former Smokers ....1,740,014 *x* 21.1% = 367,143 persons

Current Smoker Disability Rate................. 440,224 persons *x* 10.6% *x* (1+38.0%) = 64,588 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 367,143 persons *x* 10.6% *x* (1+21.1%) = 49,753 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 64,588 persons *x* $31,960 = $2,064,232,480

Former Smoker Disability Cost............................... 49,753 persons *x* $31,960 = $1,590,105,880

Total Cost of Smoker Disability ....$2,064,232,480 + $1,590,105,880 = $3,654,338,360

2002 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,858,681 persons

Mississippi Population (18-64 years): .... 1,750,133 persons

Current Smoker Prevalence ....27.3 percent

Former Smoker Prevalence...20.0 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled...34.5 percent

Additional Probability of Former Smoker being Disabled ....24.2 percent

Average Mississippi Earnings/Year ....$32,977 (EMSI)

Number of Current Smokers...1,750,133 *x* 27.3% = 477,786 persons

Number of Former Smokers ....1,750,133 *x* 20.0% = 350,027 persons

Current Smoker Disability Rate................. 477,786 persons *x* 10.6% *x* (1+34.5%) = 68,349 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 350,027 persons *x* 10.6% *x* (1+20.0%) = 46,228 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 68,349 persons *x* $32,977 = $2,253,944,973

Former Smoker Disability Cost............................... 46,228 persons *x* $32,977 = $1,524,460,759

Total Cost of Smoker Disability ....$2,253,944,973 + $1,524,460,759 = $3,778,405,729

2003 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,868,312 persons

Mississippi Population (18-64 years): .... 1,760,938 persons

Current Smoker Prevalence ....25.5 percent

Former Smoker Prevalence..20.7 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled...37.2 percent

Additional Probability of Former Smoker being Disabled ....25.0 percent

Average Mississippi Earnings/Year ....$34,171 (EMSI)

Number of Current Smokers...1,760,938 *x* 25.5% = 449,039 persons

Number of Former Smokers ....1,760,938 *x* 20.7% = 364,514 persons

Current Smoker Disability Rate................. 449,039 persons *x* 10.6% *x* (1+37.2%) = 65,537 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 364,514 persons *x* 10.6% *x* (1+20.7%) = 48,445 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 65,537 persons *x* $34,171 = $2,239,464,827

Former Smoker Disability Cost................................ 48,445 persons *x* $34,171 = $1,655,414,095

Total Cost of Smoker Disability....................$2,239,464,827 + $1,655,414,095 = $3,894,878,922

2004 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,889,010 persons

Mississippi Population (18-64 years): .... 1,777,280 persons

Current Smoker Prevalence ....24.6 percent

Former Smoker Prevalence..19.3 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled...35.4 percent

Additional Probability of Former Smoker being Disabled ....27.4 percent

Average Mississippi Earnings/Year ....$35,796 (EMSI)

Number of Current Smokers...1,777,280 *x* 24.6% = 437,211 persons

Number of Former Smokers ....1,777,280 *x* 19.3% = 343,015 persons

Current Smoker Disability Rate................. 437,211 persons *x* 10.6% *x* (1+35.4%) = 62,959 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 343,015 persons *x* 10.6% *x* (1+27.4%) = 46,489 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 62,959 persons *x* $35,796 = $2,253,680,364

Former Smoker Disability Cost.............................. 46,489 persons *x* $35,796 = $1,664,120,244

Total Cost of Smoker Disability ....$2,253,680,364 + $1,664,120,244 = $3,917,800,608

2005 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,905,943 persons

Mississippi Population (18-64 years): .... 1,788,874 persons

Current Smoker Prevalence ....23.7 percent

Former Smoker Prevalence...20.9 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled...35.3 percent

Additional Probability of Former Smoker being Disabled ....25.7 percent

Average Mississippi Earnings/Year ....$37,347 (EMSI)

Number of Current Smokers...1,788,874 *x* 23.7% = 423,963 persons

Number of Former Smokers ....1,788,874 *x* 20.9% = 373,875 persons

Current Smoker Disability Rate................. 423,963 persons *x* 10.6% *x* (1+35.3%) = 61,029 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 373,875 persons *x* 10.6% *x* (1+20.9%) = 49,971 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 61,029 persons *x* $37,347 = $2,279,250,063

Former Smoker Disability Cost.............................. 49,971 persons *x* $37,347 = $1,866,266,937

Total Cost of Smoker Disability ....$2,279,250,063 + $1,866,266,397 = $4,145,517,000

2006 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,904,978 persons

Mississippi Population (18-64 years): .... 1,789,791 persons

Current Smoker Prevalence ....25.1 percent

Former Smoker Prevalence...21.1 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled...36.7 percent

Additional Probability of Former Smoker being Disabled ....24.5 percent

Average Mississippi Earnings/Year ....$38,791 (EMSI)

Number of Current Smokers...1,789,791 *x* 25.1% = 449,238 persons

Number of Former Smokers .... 1,789,791 *x* 24.5% = 377,646 persons

Current Smoker Disability Rate................ 449,238 persons *x* 10.6% *x* (1+36.7%) = 65,305 persons (This is also the number of years in lost wages)

Former Smoker Disability Rate .... 377,646 persons *x* 10.6% *x* (1+24.5%) = 50,010 persons (This is also the number of years in lost wages)

Current Smoker Disability Cost .... 65,305 persons *x* $38,791 = $2,533,246,255

Former Smoker Disability Cost............................... 50,010 persons *x* $38,791 = $1,939,937,910

Total Cost of Smoker Disability ....$2,533,246,255 + $1,939,937,910 = $4,473,184,165

2007 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,928,350 persons

Mississippi Population (18-64 years): .... 1,804,223 persons

Current Smoker Prevalence ....23.9 percent

Former Smoker Prevalence..21.2 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled.............................35.6 percent

Additional Probability of Former Smoker being Disabled ....22.6 percent

Average Mississippi Earnings/Year ....$40,120 (EMSI)

Number of Current Smokers... 1,804,223 *x* 23.9% = 431,209 persons

Number of Former Smokers .... 1,804,233 *x* 21.2% = 382,495 persons

Current Smoker Disability Rate................. 431,209 persons *x* 10.6% *x* (1+35.6%) = 62,206 persons (This is also the number of years in lost wages)

Former Smoker Disability Rate .... 382,495 persons *x* 10.6% *x* (1+22.6%) = 49,876 persons (This is also the number of years in lost wages)

Current Smoker Disability Cost .... 62,206 persons *x* $40,120 = $2,495,704,720

Former Smoker Disability Cost............................... 49,876 persons *x* $40,120 = $2,001,025,120

Total Cost of Smoker Disability ....$2,495,704,720 + $2,001,025,120 = $4,496,729,840

2008 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,947,806 persons

Mississippi Population (18-64 years): .... 1,816,918 persons

Current Smoker Prevalence ....22.7 percent

Former Smoker Prevalence..22.2 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled..38.4 percent

Additional Probability of Former Smoker being Disabled ....21.7 percent

Average Mississippi Earnings/Year ....$41,538 (EMSI)

Number of Current Smokers..1,816,918 *x* 22.7% = 412,440 persons

Number of Former Smokers ....1,816,918 *x* 22.2% = 403,356 persons

Current Smoker Disability Rate................. 412,440 persons *x* 10.6% *x* (1+38.4%) = 60,687 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 403,356 persons *x* 10.6% *x* (1+21.7%) = 52,201 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 60,687 persons *x* $41,538 = $2,520,816,606

Former Smoker Disability Cost............................... 52,201 persons *x* $41,538 = $2,168,325,138

Total Cost of Smoker Disability ....$2,520,816,606 + $2,168,325,138 = $4,689,141,744

2009 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,958,774 persons

Mississippi Population (18-64 years): .... 1,824,267 persons

Current Smoker Prevalence ....23.4 percent

Former Smoker Prevalence..22.1 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.8 percent

Additional Probability of Current Smoker being Disabled..35.4 percent

Additional Probability of Former Smoker being Disabled ....25.5 percent

Average Mississippi Earnings/Year ....$42,127 (EMSI)

Number of Current Smokers..1,824,267 *x* 23.4% = 426,878 persons

Number of Former Smokers ....1,824,267 *x* 22.1% = 403,163 persons

Current Smoker Disability Rate................. 426,878 persons *x* 10.8% *x* (1+35.4%) = 62,664 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 403,163 persons *x* 10.8% *x* (1+25.5%) = 54,841 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 62,664 persons *x* $42,127 = $2,639,846,328

Former Smoker Disability Cost............................... 54,841 persons *x* $42,127 = $2,310,286,807

Total Cost of Smoker Disability ....$2,639,846,328 + $2,310,286,807 = $4,950,133,135

2010 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,970,316 persons

Mississippi Population (18-64 years): .... 1,834,954 persons

Current Smoker Prevalence .... 22.9 percent

Former Smoker Prevalence .... 22.0 percent

Proportion Disabled in Mississippi (not hearing disabled) .... 10.9 percent

Additional Probability of Current Smoker being Disabled .... 35.2 percent

Additional Probability of Former Smoker being Disabled .... 23.8 percent

Average Mississippi Earnings/Year .... $42,688 (EMSI)

Number of Current Smokers .... 1,834,954 *x* 22.9% = 420,204 persons

Number of Former Smokers .... 1,834,954 *x* 22.0% = 403,690 persons

Current Smoker Disability Rate .... 420,204 persons *x* 10.9% *x* (1+35.2%) = 61,919 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 403,690 persons *x* 10.9% *x* (1+23.8%) = 54,441 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 61,919 persons *x* $42,688 = $2,643,198,272

Former Smoker Disability Cost .... 54,441 persons *x* $42,688 = $2,323,977,408

Total Cost of Smoker Disability .... $2,643,198,272 + $2,323,977,408 = $4,967,175,680

2011 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,977,999 persons

Mississippi Population (18-64 years): .... 1,842,044 persons

Current Smoker Prevalence .... 25.9 percent

Former Smoker Prevalence .... 21.3 percent

Proportion Disabled in Mississippi (not hearing disabled) .... 10.3 percent

Additional Probability of Current Smoker being Disabled .... 37.1 percent

Additional Probability of Former Smoker being Disabled .... 25.7 percent

Average Mississippi Earnings/Year .... $43,416 (EMSI)

Number of Current Smokers .... 1,842,044 *x* 25.9% = 477,089 persons

Number of Former Smokers .... 1,842,044 *x* 21.3% = 392,355 persons

Current Smoker Disability Rate .... 477,089 persons *x* 10.3% *x* (1+37.1%) = 67,602 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 392,355 persons *x* 10.3% *x* (1+25.7%) = 50,975 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 67,602 persons *x* $43,416 = $2,935,008,432

Former Smoker Disability Cost.............................. 50,975 persons *x* $43,416 = $2,213,130,600

Total Cost of Smoker Disability ....$2,935,008,432 + $2,213,130,600 = $5,148,139,032

2012 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,985,660 persons

Mississippi Population (18-64 years): .... 1,839,814 persons

Current Smoker Prevalence ....24.0 percent

Former Smoker Prevalence..20.7 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.3 percent

Additional Probability of Current Smoker being Disabled..34.4 percent

Additional Probability of Former Smoker being Disabled ....26.2 percent

Average Mississippi Earnings/Year ....$44,984 (EMSI)

Number of Current Smokers...1,839,814 *x* 24.0% = 441,555 persons

Number of Former Smokers ....1,839,814 *x* 20.7% = 380,841 persons

Current Smoker Disability Rate................. 441,555 persons *x* 10.3% *x* (1+34.4%) = 61,034 persons (This is also the number of years in lost wages)

Former Smoker Disability Rate .... 380,841 persons *x* 10.3% *x* (1+26.2%) = 49,424 persons (This is also the number of years in lost wages)

Current Smoker Disability Cost .... 61,034 persons *x* $44,984 = $2,745,553,456

Former Smoker Disability Cost.............................. 49,424 persons *x* $44,984 = $2,223,289,216

Total Cost of Smoker Disability ....$2,745,553,456 + $2,223,289,216 = $4,968,842,672

2013 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,990,976 persons

Mississippi Population (18-64 years): .... 1,839,860 persons

Current Smoker Prevalence ....24.9 percent

Former Smoker Prevalence..20.7 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.8 percent

Additional Probability of Current Smoker being Disabled..35.1 percent

Additional Probability of Former Smoker being Disabled ....25.5 percent

Average Mississippi Earnings/Year ....$45,047 (EMSI)

Number of Current Smokers...1,839,860 *x* 24.9% = 458,125 persons

Number of Former Smokers .... 1,839,860 *x* 20.7% = 395,570 persons

Current Smoker Disability Rate .... 458,125 persons *x* 10.8% *x* (1+35.1%) = 67,032 persons (This is also the number of years in lost wages)

Former Smoker Disability Rate .... 395,570 persons *x* 10.8% *x* (1+25.1%) = 53,739 persons (This is also the number of years in lost wages)

Current Smoker Disability Cost .... 67,032 persons *x* $45,047 = $3,019,590,504

Former Smoker Disability Cost.............................. 53,739 persons *x* $45,047 = $2,420,780,733

Total Cost of Smoker Disability ....$3,019,590,504 + $2,420,780,733 = $5,440,371,237

2014 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,993,443 persons

Mississippi Population (18-64 years): .... 1,834,605 persons

Current Smoker Prevalence ....23.0 percent

Former Smoker Prevalence...21.9 percent

Proportion Disabled in Mississippi (not hearing disabled) ....11.0 percent

Additional Probability of Current Smoker being Disabled ....36.3 percent

Additional Probability of Former Smoker being Disabled ....24.0 percent

Average Mississippi Earnings/Year ....$45,877 (EMSI)

Number of Current Smokers.. 1,834,605 *x* 23.0% = 421,959 persons

Number of Former Smokers .... 1,834,608 *x* 21.9% = 401,778 persons

Current Smoker Disability Rate .... 421,959 persons *x* 11.0% *x* (1+36.3%) = 63,153 persons (This is also the number of years in lost wages)

Former Smoker Disability Rate .... 401,778 persons *x* 11.0% *x* (1+24.0%) = 54,713 persons (This is also the number of years in lost wages)

Current Smoker Disability Cost .... 63,153 persons *x* $45,877 = $2,897,270,181

Former Smoker Disability Cost.............................. 54,713 persons *x* $45,877 = $2,510,068,301

Total Cost of Smoker Disability ....$2,897,270,181 + $2,510,068,301 = $5,407,338,482

2015 Estimates for Indirect Costs Associated with Disability

Mississippi Population .... 2,992,333 persons

Mississippi Population (18-64 years): .... 1,825,784 persons

Current Smoker Prevalence ....23.0 percent

Former Smoker Prevalence...21.9 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.3 percent

Additional Probability of Current Smoker being Disabled..34.8 percent

Additional Probability of Former Smoker being Disabled ....23.4 percent

Average Mississippi Earnings/Year ....$46,543 (EMSI)

Number of Current Smokers...1,825,784 x 23.0% = 421,959 persons

Number of Former Smokers ....1,825,784 x 21.9% = 399,847 persons

Current Smoker Disability Rate................. 421,959 persons x 10.3% x (1+34.8%) = 58,201 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 399,847 persons x 10.3% x (1+23.4%) = 50,745 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 58,201 persons x $46,543 = $2,708,849,143

Former Smoker Disability Cost................................ 50,745 persons x $46,543 = $2,361,824,535

Total Cost of Smoker Disability ....$2,708,849,143 + $2,361,824,535 = $5,070,673,678

We utilized a logistic regression for the combined sample adult and person datasets from the 2014 National Health Interview Survey (NHIS) dataset to estimate the probability of a person between the ages of 18 and 64, inclusive, receiving Social Security or railroad disability benefits as a result of disability (the variable utilized for this is Disability Benefits). This type of measure is considered a conservative measure of disability. The estimation was performed while controlling for various socio-demographic and risk variables. This estimation is demonstrated mathematically as:

Disability Benefits = α + β_1Current Smoker + β_2Former Smoker + β_3Northeast Region + β_4Midwest Region + β_5West Region + β_6Age 25-34 Years + β_7Age 35-44 Years + β_8Age 45-54 Years + β_9Age 55-64 Years + β_{10}Married + β_{11}Male + β_{12}Race White + β_{13}Race Other + β_{14}Hispanic + β_{15}BMI Obese

where:

- Disability Benefits (the dependent variable) is coded as "1" if the respondent indicated that s/he receives either Social Security and/or railroad disability benefits and that s/he is receiving those benefits as a result of disability; otherwise "0."
- Current Smoker is a binary variable coded as "1" if the respondent indicated that s/he is a current smoker; otherwise "0".
- Former Smoker is a binary variable coded as "1" if the respondent indicated that s/he has smoked in the past, but no longer smokes; otherwise "0".
- Northeast Region was coded as "1" if the respondent resided in the northeastern region of the United States, "0" otherwise.
- Midwest Region was coded as "1" if the respondent resided in the Midwestern region of the United States, "0" otherwise.
- West Region was coded as "1" if the respondent resided in the western region of the United States, "0" otherwise.

- South Region was coded as "1" if the respondent resided in the southern region of the United States, "0" otherwise. This region was used as the base region and therefore omitted from the regression equation.
- Age 18-24 Years was coded as "1" if the respondent indicated that s/he was between the ages of 18 and 24, inclusive; "0" otherwise. This category was used as the base age category and was therefore excluded from the regression estimation.
- Age 25-34 Years was coded as "1" if the respondent indicated that s/he was between the ages of 25 and 34, inclusive; "0" otherwise.
- Age 35-44 Years was coded as "1" if the respondent indicated that s/he was between the ages of 35 and 44, inclusive; "0" otherwise.
- Age 45-54 Years was coded as "1" if the respondent indicated that s/he was between the ages of 45 and 54, inclusive; "0" otherwise.
- Age 55-64 Years was coded as "1" if the respondent indicated that s/he was between the ages of 55 and 64, inclusive; "0" otherwise.
- Married was coded as "1" if the respondent indicated that s/he was married; "0" otherwise.
- Male was coded as "1" if the respondent indicated a preferred gender of male; "0" otherwise.
- Race White was coded as "1" if the respondent indicated that their race was White Alone; "0" otherwise.
- Race Black was coded as "1" if the respondent indicated that their race was Black Alone; "0" otherwise. This category was used as the base category and was therefore excluded from the regression equation.
- Race Other was coded as "1" if the respondent indicated that their race was anything other than White Alone or Black Alone; "0" otherwise.
- Hispanic was coded as "1" if the respondent indicated that s/he was of Hispanic ethnicity; "0" otherwise.
- BMI Obese was coded as "1" if the respondent's answers indicated that his/her body mass index was 25 or above; "0" otherwise.

The results of these regressions are shown below:

Table D-1 – 2000 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	0.4732952	*	0.3600000	0.2545211
Former Smoker	3.1638340		0.2681481	2.6728320
Region Northeast	2.3745950		0.1762963	1.8918820
Region Midwest	1.0580320		0.2088889	0.5870438
Region West	2.5367770		0.1985185	2.0277730
Age 25-34 Years	10.0231600		0.0666667	13.2839100
Age 35-44 Years	23.5031600	**	0.1555556	31.5185900
Age 45-54 Years	16.2319300	**	0.3214815	17.8325600
Age 55-64 Years	3.6406600	***	0.4385185	3.5217210
Married	1.2921490	***	0.3600000	0.6937738
Male	1.1743090		0.4888889	0.5695299
Race White	0.5205171		0.7303704	0.3519388
Race Other	0.7922487		0.0607407	1.0023580
Hispanic	0.9249409		0.1081481	0.7759602
BMI Obese	0.7039868		0.7081481	0.3835116
Constant	8.2197170	***		9.1119450

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 675

Table D-2 – 2000 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.968889	0.173747	0	1
Current Smoker	0.360000	0.480356	0	1
Former Smoker	0.268148	0.443324	0	1
Region Northeast	0.176296	0.381355	0	1
Region Midwest	0.208889	0.406816	0	1
Region West	0.198519	0.399180	0	1
Age 25-34 Years	0.066667	0.249629	0	1
Age 35-44 Years	0.155556	0.362702	0	1
Age 45-54 Years	0.321482	0.467392	0	1
Age 55-64 Years	0.438519	0.496574	0	1
Married	0.360000	0.480356	0	1
Male	0.488889	0.500247	0	1
Race White	0.730370	0.444097	0	1
Race Other	0.060741	0.239031	0	1
Hispanic	0.108148	0.310798	0	1
BMI Obese	0.708148	0.454952	0	1

Table D-1 – 2001 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	2.2929560		0.3795094	1.6656390
Former Smoker	1.0573890		0.2741703	0.6459348
Region Northeast	0.2720583		0.1875902	0.1711826
Region Midwest	0.6632338		0.2135642	0.5073704
Region West	0.9229047		0.1659452	0.8042273
Age 25-34 Years	2.0578220		0.0663781	2.6576160
Age 35-44 Years	8.2365930	**	0.1601732	11.1772900
Age 45-54 Years	10.3097200	**	0.2900433	13.4643600
Age 55-64 Years	6.5475180	***	0.4689755	8.1076560
Married	0.8272641	***	0.3333333	0.4754228
Male	0.6691426		0.5007215	0.3589794
Race White	1.0418850	**	0.7460317	0.6641067
Race Other	1.0000000		0.0000000	(omitted)
Hispanic	0.3339137		0.0865801	0.2153442
BMI Obese	0.4492627		0.7128427	0.3026717
Constant	22.4130300	***		30.3018800

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 728

Table D-2 – 2001 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.976648	0.151122	0	1
Current Smoker	0.387363	0.487483	0	1
Former Smoker	0.276099	0.447374	0	1
Region Northeast	0.181319	0.385547	0	1
Region Midwest	0.211539	0.408680	0	1
Region West	0.181319	0.385547	0	1
Age 25-34 Years	0.063187	0.243466	0	1
Age 35-44 Years	0.163462	0.370041	0	1
Age 45-54 Years	0.291209	0.454632	0	1
Age 55-64 Years	0.468407	0.499344	0	1
Married	0.336539	0.472850	0	1
Male	0.504121	0.500327	0	1
Race White	0.710165	0.453998	0	1
Race Other	0.048077	0.214076	0	1
Hispanic	0.090659	0.287322	0	1
BMI Obese	0.704670	0.456505	0	1

Table D-1 – 2002 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	4.6059910	*	0.3450704	3.8848460
Former Smoker	1.8311460		0.2417840	1.2014300
Region Northeast	1.1499380		0.2488263	0.7406606
Region Midwest	1.0000000		0.0000000	(omitted)
Region West	0.8799478		0.2018779	0.5940008
Age 25-34 Years	8.8565270		0.0821596	10.9330600
Age 35-44 Years	1.0000000		0.0000000	(omitted)
Age 45-54 Years	35.8631100	***	0.3239437	42.8304600
Age 55-64 Years	14.0914500	***	0.5680751	14.3938200
Married	0.5586043	***	0.3286385	0.3088768
Male	2.4947640		0.4577465	1.4379580
Race White	0.3885061	*	0.7746479	0.3157578
Race Other	1.0000000		0.0000000	(omitted)
Hispanic	1.1162880		0.1384977	0.8044100
BMI Obese	0.2704228		0.7370892	0.2360974
Constant	5.9832630	***		7.5782570

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level
n = 681

Table D-2 – 2002 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.975037	0.156128	0	1
Current Smoker	0.367107	0.482370	0	1
Former Smoker	0.233480	0.423356	0	1
Region Northeast	0.176212	0.381280	0	1
Region Midwest	0.227607	0.419595	0	1
Region West	0.173275	0.378763	0	1
Age 25-34 Years	0.061674	0.240739	0	1
Age 35-44 Years	0.160059	0.366930	0	1
Age 45-54 Years	0.293686	0.455785	0	1
Age 55-64 Years	0.462555	0.498962	0	1
Married	0.305433	0.460929	0	1
Male	0.462555	0.498962	0	1
Race White	0.726872	0.445893	0	1
Race Other	0.046990	0.211772	0	1
Hispanic	0.105727	0.307714	0	1
BMI Obese	0.706314	0.455785	0	1

Table D-1 – 2003 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	2.7767340		0.3722944	2.1739210
Former Smoker	1.0230610		0.2496392	0.7558939
Region Northeast	1.7035450		0.1746032	2.1285540
Region Midwest	0.4508802		0.2554113	0.3663606
Region West	0.2043228		0.1572872	0.1631680
Age 25-34 Years	12.6192700		0.0649351	17.2295400
Age 35-44 Years	16.7719800	**	0.1572872	19.0230400
Age 45-54 Years	81.8388700	**	0.2943723	110.8436000
Age 55-64 Years	18.5293900	***	0.4660895	18.4675000
Married	0.3831751	***	0.3131313	0.2472412
Male	11.7111600		0.4502165	12.5962100
Race White	1.2110000		0.7503608	0.8743938
Race Other	1.0000000		0.0000000	(omitted)
Hispanic	2.1179420		0.1111111	2.4209210
BMI Obese	2.0733930		0.7085137	1.2434210
Constant	1.5160400	***		1.9584390

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 707

Table D-2 – 2003 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.980198	0.139418	0	1
Current Smoker	0.370580	0.483302	0	1
Former Smoker	0.248939	0.432705	0	1
Region Northeast	0.176803	0.381772	0	1
Region Midwest	0.256011	0.436737	0	1
Region West	0.159830	0.366708	0	1
Age 25-34 Years	0.066478	0.249292	0	1
Age 35-44 Years	0.155587	0.362720	0	1
Age 45-54 Years	0.297030	0.457273	0	1
Age 55-64 Years	0.463932	0.499051	0	1
Married	0.311174	0.463302	0	1
Male	0.445545	0.497378	0	1
Race White	0.735502	0.441378	0	1
Race Other	0.019802	0.139418	0	1
Hispanic	0.111740	0.315269	0	1
BMI Obese	0.707214	0.455363	0	1

Table D-1 – 2004 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	0.000000	*	0.3539823	0.000015
Former Smoker	0.000000		0.2743363	0.000010
Region Northeast	0.017135		0.1592920	0.042724
Region Midwest	0.135555		0.1592920	0.271432
Region West	0.305921		0.1769912	0.582982
Age 25-34 Years	1.000000	**	0.0000000	(omitted)
Age 35-44 Years	66.718260	*	0.1327434	157.983900
Age 45-54 Years	77.166750	***	0.3185841	176.332900
Age 55-64 Years	4255.45	***	0.5221239	16239.54
Married	0.070541	***	0.2920354	0.144636
Male	0.077205		0.4955752	0.147885
Race White	7.144012		0.7345133	10.981450
Race Other	1.000000	**	0.0000000	(omitted)
Hispanic	1.000000		0.0000000	(omitted)
BMI Obese	3.371628		0.6902655	4.539691
Constant	1.38E+08	***		5.18E+11

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 132

Table D-2 – 2004 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.966667	0.179567	0	1
Current Smoker	0.349741	0.477197	0	1
Former Smoker	0.256477	0.436971	0	1
Region Northeast	0.173575	0.378989	0	1
Region Midwest	0.252591	0.434780	0	1
Region West	0.163212	0.369799	0	1
Age 25-34 Years	0.047928	0.213751	0	1
Age 35-44 Years	0.154145	0.361322	0	1
Age 45-54 Years	0.299223	0.458215	0	1
Age 55-64 Years	0.472798	0.499583	0	1
Married	0.316062	0.465239	0	1
Male	0.488342	0.500188	0	1
Race White	0.740933	0.438407	0	1
Race Other	0.036269	0.187081	0	1
Hispanic	0.139896	0.347104	0	1
BMI Obese	1.000000	0.000000	0	1

Table D-1 – 2005 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	0.453286		0.3534946	0.238243
Former Smoker	0.517338		0.2567204	0.302710
Region Northeast	0.632485		0.1787634	0.329177
Region Midwest	1.463792	*	0.2486559	0.835691
Region West	2.633678		0.1518817	2.166653
Age 25-34 Years	12.658480		0.0456989	15.793970
Age 35-44 Years	9.526535	**	0.1545699	8.369607
Age 45-54 Years	22.375420	**	0.3037634	20.219210
Age 55-64 Years	11.169770	***	0.4690860	8.985211
Married	0.496812	***	0.3212366	0.226024
Male	2.140676	**	0.4892473	0.952137
Race White	1.265192		0.7688172	0.655855
Race Other	1.000000		0.0000000	(omitted)
Hispanic	0.613744		0.1397849	0.351948
BMI Obese	1.000000		1.0000000	(omitted)
Constant	3.265402	***		2.619018

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 772

Table D-2 – 2005 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.966667	0.179567	0	1
Current Smoker	0.349741	0.477197	0	1
Former Smoker	0.256477	0.436971	0	1
Region Northeast	0.173575	0.378989	0	1
Region Midwest	0.252591	0.434780	0	1
Region West	0.163212	0.369799	0	1
Age 25-34 Years	0.047928	0.213751	0	1
Age 35-44 Years	0.154145	0.361322	0	1
Age 45-54 Years	0.299223	0.458215	0	1
Age 55-64 Years	0.472798	0.499583	0	1
Married	0.316062	0.465239	0	1
Male	0.488342	0.500188	0	1
Race White	0.740933	0.438407	0	1
Race Other	0.036269	0.187081	0	1
Hispanic	0.139896	0.347104	0	1
BMI Obese	1.000000	0.000000	0	1

Table D-1 – 2006 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	1.8902810	**	0.3668430	0.9952447
Former Smoker	3.2756300	*	0.2451499	2.6700460
Region Northeast	1.2960520	**	0.1728395	1.0790500
Region Midwest	0.4153729	***	0.2328042	0.2310944
Region West	0.6652425		0.1710758	0.5004630
Age 25-34 Years	2.6875590		0.0493827	2.7880690
Age 35-44 Years	2.3074210	*	0.1269841	1.9629010
Age 45-54 Years	11.2633900	***	0.3015873	10.8019600
Age 55-64 Years	6.4926900	***	0.4920635	5.7905330
Married	0.6071300	***	0.3104056	0.3241932
Male	0.7825026	**	0.4744268	0.3644662
Race White	1.3759700	***	0.7301587	0.8148290
Race Other	0.9202751		0.0370370	1.1547070
Hispanic	0.8664237		0.1216931	0.6109603
BMI Obese	1.0127310		0.6843034	0.5094329
Constant	5.1286810	***		4.8527300

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 567

Table D-2 – 2006 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.961326	0.192906	0	1
Current Smoker	0.366843	0.482369	0	1
Former Smoker	0.245150	0.430556	0	1
Region Northeast	0.172840	0.378442	0	1
Region Midwest	0.232804	0.422992	0	1
Region West	0.171076	0.376908	0	1
Age 25-34 Years	0.049383	0.216857	0	1
Age 35-44 Years	0.126984	0.333249	0	1
Age 45-54 Years	0.301587	0.459352	0	1
Age 55-64 Years	0.492064	0.500379	0	1
Married	0.310406	0.463068	0	1
Male	0.474427	0.499787	0	1
Race White	0.730159	0.444269	0	1
Race Other	0.037037	0.189019	0	1
Hispanic	0.121693	0.327220	0	1
BMI Obese	0.684303	0.465203	0	1

Table D-1 – 2007 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	1.3136690		0.3564155	0.812983
Former Smoker	3.0111810	**	0.2260692	2.466353
Region Northeast	0.4969877		0.1425662	0.377619
Region Midwest	0.8622034	**	0.2342159	0.654920
Region West	0.5188238		0.1995927	0.365791
Age 25-34 Years	1.0000000		0.0000000	(omitted)
Age 35-44 Years	0.0000030	**	0.1507128	0.003932
Age 45-54 Years	0.0000021	*	0.3014257	0.002655
Age 55-64 Years	0.0000009	***	0.5213849	0.001183
Married	0.4748690	***	0.3340122	0.263554
Male	0.9984175		0.4786151	0.538477
Race White	0.6570051		0.7128310	0.449477
Race Other	1.0000000		0.0000000	(omitted)
Hispanic	2.7037390	**	0.1221996	2.891551
BMI Obese	1.5244420		0.7433809	0.895896
Constant	31000000	***		4.00E+10

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 543

Table D-2 – 2007 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.966272	0.180611	0	1
Current Smoker	0.346225	0.476205	0	1
Former Smoker	0.232044	0.422526	0	1
Region Northeast	0.141805	0.349172	0	1
Region Midwest	0.237569	0.425986	0	1
Region West	0.204420	0.403649	0	1
Age 25-34 Years	0.049724	0.217574	0	1
Age 35-44 Years	0.139963	0.347269	0	1
Age 45-54 Years	0.294659	0.456310	0	1
Age 55-64 Years	0.489871	0.500358	0	1
Married	0.314917	0.464911	0	1
Male	0.482505	0.500155	0	1
Race White	0.675875	0.468479	0	1
Race Other	0.049724	0.217574	0	1
Hispanic	0.117864	0.322744	0	1
BMI Obese	0.738490	0.439862	0	1

Table D-1 – 2008 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	1.671372	*	0.3835125	1.133922
Former Smoker	1.831287		0.2168459	1.360113
Region Northeast	0.670679		0.1433692	0.598254
Region Midwest	1.278371		0.2544803	1.140125
Region West	0.316144		0.1935484	0.221437
Age 25-34 Years	1.94E-06		0.0537634	0.003432
Age 35-44 Years	4.15E-06		0.1487455	0.007331
Age 45-54 Years	2.81E-06	*	0.2903226	0.004966
Age 55-64 Years	1.22E-06	***	0.4856631	0.00216
Married	0.612887	**	0.2956989	0.359022
Male	0.564929		0.4946237	0.325459
Race White	0.688592	**	0.7491039	0.561884
Race Other	1.000000		0.0000000	(omitted)
Hispanic	0.79785		0.1308244	0.576021
BMI Obese	2.057268		0.7347670	1.165444
Constant	3.20E+07	***		5.64E+10

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level
n = 576

Table D-2 – 2008 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.969466	0.172125	0	1
Current Smoker	0.383681	0.486704	0	1
Former Smoker	0.217014	0.412570	0	1
Region Northeast	0.142361	0.349724	0	1
Region Midwest	0.255208	0.436357	0	1
Region West	0.203125	0.402675	0	1
Age 25-34 Years	0.055556	0.229261	0	1
Age 35-44 Years	0.152778	0.360086	0	1
Age 45-54 Years	0.282986	0.450841	0	1
Age 55-64 Years	0.487847	0.500287	0	1
Married	0.291667	0.454925	0	1
Male	0.494792	0.500407	0	1
Race White	0.725694	0.446552	0	1
Race Other	0.031250	0.174144	0	1
Hispanic	0.128472	0.334906	0	1
BMI Obese	0.729167	0.444776	0	1

Table D-1 – 2009 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	0.948967		0.3541667	0.649527
Former Smoker	0.784033		0.2548077	0.505598
Region Northeast	0.389197		0.1618590	0.274123
Region Midwest	0.925870		0.2387821	0.695426
Region West	0.523731		0.1570513	0.403307
Age 25-34 Years	1.000000		0.0000000	(omitted)
Age 35-44 Years	1.000000		0.0000000	(omitted)
Age 45-54 Years	6.32E-06		0.3461538	0.010803
Age 55-64 Years	1.72E-06		0.6346154	0.002942
Married	0.542153		0.3285256	0.302284
Male	2.935399	*	0.4775641	1.79081
Race White	1.068436		0.7307692	0.666249
Race Other	1.000000		0.0000000	(omitted)
Hispanic	1.126320		0.1185897	0.921792
BMI Obese	0.312075		0.8060897	0.326882
Constant	5.83E+07			9.96E+10

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 792

Table D-2 – 2009 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.977124	0.149557	0	1
Current Smoker	0.363636	0.481350	0	1
Former Smoker	0.226010	0.418510	0	1
Region Northeast	0.169192	0.375158	0	1
Region Midwest	0.252525	0.434735	0	1
Region West	0.159091	0.365992	0	1
Age 25-34 Years	0.071970	0.258601	0	1
Age 35-44 Years	0.102273	0.303198	0	1
Age 45-54 Years	0.294192	0.455967	0	1
Age 55-64 Years	0.516414	0.500046	0	1
Married	0.308081	0.461992	0	1
Male	0.482323	0.500003	0	1
Race White	0.690657	0.462515	0	1
Race Other	0.050505	0.219123	0	1
Hispanic	0.127525	0.333771	0	1
BMI Obese	0.803030	0.397961	0	1

Table D-1 – 2010 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	1.6983690	**	0.3524492	0.9217024
Former Smoker	7.3611080		0.2377539	7.8679020
Region Northeast	0.7244761	**	0.1732378	0.4445708
Region Midwest	1.4692550	**	0.2293907	0.9858000
Region West	1.6164290		0.1875747	1.1822860
Age 25-34 Years	11.4089100		0.0692951	14.4116400
Age 35-44 Years	7.9824980		0.1218638	7.8162690
Age 45-54 Years	59.7073500	***	0.2795699	77.3540900
Age 55-64 Years	11.4818800	***	0.5125448	10.0570300
Married	0.1666148	***	0.2867384	0.0906987
Male	1.0351510		0.4695341	0.5124084
Race White	0.6625692	***	0.6666667	0.4577554
Race Other	0.6235238	*	0.0430108	0.8027058
Hispanic	0.5603366		0.1158901	0.3384666
BMI Obese	2.8646220	*	0.7287933	1.4202820
Constant	3.5109960	***		3.2632840

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 837

Table D-2 – 2010 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.969849	0.171056	0	1
Current Smoker	0.352449	0.478019	0	1
Former Smoker	0.237754	0.425962	0	1
Region Northeast	0.173238	0.378679	0	1
Region Midwest	0.229391	0.420692	0	1
Region West	0.187575	0.390606	0	1
Age 25-34 Years	0.069295	0.254107	0	1
Age 35-44 Years	0.121864	0.327324	0	1
Age 45-54 Years	0.279570	0.449056	0	1
Age 55-64 Years	0.512545	0.500142	0	1
Married	0.286738	0.452509	0	1
Male	0.469534	0.499369	0	1
Race White	0.666667	0.471686	0	1
Race Other	0.043011	0.203003	0	1
Hispanic	0.115890	0.320285	0	1
BMI Obese	0.728793	0.444848	0	1

Table D-1 – 2011 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	2.4892810		0.3706816	1.1580630
Former Smoker	3.8154210		0.2567694	2.1890250
Region Northeast	0.7205456	**	0.1531279	0.4484950
Region Midwest	0.4206796		0.1988796	0.2142375
Region West	0.5565042		0.2035481	0.2696362
Age 25-34 Years	5.8596390		0.0662932	6.8491940
Age 35-44 Years	4.9467660		0.1083100	4.1898460
Age 45-54 Years	6.4843190	**	0.2922502	5.0841800
Age 55-64 Years	3.3701900	**	0.5032680	2.2680800
Married	0.4241443	***	0.2941176	0.1783233
Male	0.7865268		0.4939309	0.3010698
Race White	0.6930656		0.6694678	0.3672162
Race Other	0.1568645		0.0494865	0.1044074
Hispanic	0.7777269		0.1325864	0.3872143
BMI Obese	0.7606549		0.7488329	0.3474497
Constant	22.6982600	***		18.2141700

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level
n = 1,071

Table D-2 – 2011 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.966650	0.179592	0	1
Current Smoker	0.370682	0.483213	0	1
Former Smoker	0.256769	0.437055	0	1
Region Northeast	0.153128	0.360279	0	1
Region Midwest	0.198880	0.399344	0	1
Region West	0.203548	0.402825	0	1
Age 25-34 Years	0.066293	0.248910	0	1
Age 35-44 Years	0.108310	0.310917	0	1
Age 45-54 Years	0.292250	0.455009	0	1
Age 55-64 Years	0.503268	0.500223	0	1
Married	0.294118	0.455858	0	1
Male	0.493931	0.500197	0	1
Race White	0.669468	0.470625	0	1
Race Other	0.049487	0.216983	0	1
Hispanic	0.132586	0.339286	0	1
BMI Obese	0.748833	0.433887	0	1

Table D-1 – 2012 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	1.6688110	***	0.344406	0.7141596
Former Smoker	1.3550900	***	0.262238	0.5795760
Region Northeast	1.9414210	**	0.182692	1.1287030
Region Midwest	1.5038200	***	0.191434	0.7421740
Region West	0.8014341		0.197552	0.3417110
Age 25-34 Years	2.4664860		0.061189	2.0214170
Age 35-44 Years	14.5214500	*	0.117133	16.9805300
Age 45-54 Years	5.2467290	***	0.280594	3.6074100
Age 55-64 Years	3.5252670	***	0.510490	2.2749470
Married	0.4615067	***	0.275350	0.1694196
Male	0.8805650		0.486014	0.3003480
Race White	0.4602542	***	0.669580	0.2166372
Race Other	1.6368890	**	0.053322	1.8298390
Hispanic	3.7221650		0.110140	2.8152340
BMI Obese	1.9498740		0.743007	0.7183513
Constant	7.5245070	***		5.5614920

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 1,144

Table D-2 – 2012 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.965486	0.182587	0	1
Current Smoker	0.344406	0.475382	0	1
Former Smoker	0.262238	0.440044	0	1
Region Northeast	0.182692	0.386583	0	1
Region Midwest	0.191434	0.393602	0	1
Region West	0.197552	0.398327	0	1
Age 25-34 Years	0.061189	0.239781	0	1
Age 35-44 Years	0.117133	0.321719	0	1
Age 45-54 Years	0.280594	0.449486	0	1
Age 55-64 Years	0.510490	0.500109	0	1
Married	0.275350	0.446886	0	1
Male	0.486014	0.500023	0	1
Race White	0.669580	0.470570	0	1
Race Other	0.053322	0.224772	0	1
Hispanic	0.110140	0.313201	0	1
BMI Obese	0.743007	0.437167	0	1

Table D-1 – 2013 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	2.7371690	*	0.3514002	1.4397780
Former Smoker	0.8961715	**	0.2547425	0.3710782
Region Northeast	0.4521715	**	0.1607949	0.2426248
Region Midwest	0.4913338		0.2086721	0.2429354
Region West	0.4909586		0.2077687	0.2501489
Age 25-34 Years	5.6387230	*	0.0659440	5.2371850
Age 35-44 Years	10.2439300	**	0.1138211	9.5811510
Age 45-54 Years	9.0376470	***	0.2646793	6.7752540
Age 55-64 Years	4.8613900	***	0.5329720	3.1561630
Married	0.6626871	***	0.2583559	0.2648312
Male	1.4629160		0.4814815	0.5431748
Race White	1.2830700		0.6892502	0.5560798
Race Other	1.2379950		0.0542005	1.0464320
Hispanic	1.3905910		0.1156278	0.8813099
BMI Obese	1.2773390		0.7696477	0.5308939
Constant	4.8605960	***		3.5932690

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 1,107

Table D-2 – 2013 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.965792	0.181806	0	1
Current Smoker	0.351400	0.477624	0	1
Former Smoker	0.254743	0.435913	0	1
Region Northeast	0.160795	0.367508	0	1
Region Midwest	0.208672	0.406543	0	1
Region West	0.207769	0.405894	0	1
Age 25-34 Years	0.065944	0.248296	0	1
Age 35-44 Years	0.113821	0.317737	0	1
Age 45-54 Years	0.264679	0.441362	0	1
Age 55-64 Years	0.532972	0.499137	0	1
Married	0.258356	0.437929	0	1
Male	0.481482	0.499883	0	1
Race White	0.689250	0.463010	0	1
Race Other	0.054201	0.226515	0	1
Hispanic	0.115628	0.319923	0	1
BMI Obese	0.769648	0.421249	0	1

Table D-1 – 2014 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	0.9872238	**	0.362573	0.4436089
Former Smoker	1.8147610		0.239766	1.0168150
Region Northeast	1.0171780		0.160401	0.5283628
Region Midwest	3.1290460	*	0.254804	2.0442940
Region West	1.8570810		0.197995	1.0441190
Age 25-34 Years	4.7452250	**	0.055138	6.9994430
Age 35-44 Years	4.9800540	***	0.119465	6.4912640
Age 45-54 Years	5.7358860	***	0.265664	6.8824190
Age 55-64 Years	2.1324510	***	0.547201	2.3943340
Married	0.8697112	***	0.249791	0.3890193
Male	0.9297621		0.472013	0.3745954
Race White	0.4379645		0.702590	0.2508742
Race Other	0.2176030		0.036759	0.1994432
Hispanic	0.5203800	**	0.096909	0.2830046
BMI Obese	0.6058146		0.752715	0.3105119
Constant	33.3673500	***		42.0062500

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 1,197

Table D-2 – 2014 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.972626	0.163205	0	1
Current Smoker	0.362573	0.480944	0	1
Former Smoker	0.239766	0.427119	0	1
Region Northeast	0.160401	0.367131	0	1
Region Midwest	0.254804	0.435933	0	1
Region West	0.197995	0.398655	0	1
Age 25-34 Years	0.055138	0.228345	0	1
Age 35-44 Years	0.119465	0.324471	0	1
Age 45-54 Years	0.265664	0.441871	0	1
Age 55-64 Years	0.547201	0.497975	0	1
Married	0.249791	0.433073	0	1
Male	0.472013	0.499425	0	1
Race White	0.702590	0.457310	0	1
Race Other	0.036759	0.188247	0	1
Hispanic	0.096909	0.295957	0	1
BMI Obese	0.752715	0.431614	0	1

Table D-1 – 2015 Indirect Costs due to Inability to Work (Disability) Regression Results

Variable	Odds Ratio	Significance	Prob at mean	Std Error
Current Smoker	1.7927470	**	0.3480176	0.8466231
Former Smoker	3.7510260		0.2343612	2.4000060
Region Northeast	1.1353750	**	0.1982379	0.6933390
Region Midwest	0.9817267	**	0.2026432	0.5519991
Region West	0.7013936		0.2158590	0.3482313
Age 25-34 Years	3.0234570	*	0.0607930	3.1894310
Age 35-44 Years	2.8567060	**	0.1171806	2.6766520
Age 45-54 Years	27.1207100	***	0.2775330	34.6418800
Age 55-64 Years	2.3617100	***	0.5224670	1.9593600
Married	0.4784531	***	0.2431718	0.2026282
Male	1.5227900		0.4687225	0.6184849
Race White	1.2394200	**	0.7004405	0.6028772
Race Other	0.6222982		0.0458150	0.4727987
Hispanic	0.4907399		0.1110132	0.2574486
BMI Obese	0.9718433		0.7471366	0.4542447
Constant	9.1800700	***		8.6195130

*** - significant at the 99% level; ** - significant at the 95% level; * - significant at the 90% level

n = 1,135

Table D-2 – 2015 Indirect Costs due to Inability to Work (Disability) Regression Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Disability Recipient	0.969601	0.171722	0	1
Current Smoker	0.348018	0.476552	0	1
Former Smoker	0.234361	0.423786	0	1
Region Northeast	0.198238	0.398848	0	1
Region Midwest	0.202643	0.402146	0	1
Region West	0.215859	0.411598	0	1
Age 25-34 Years	0.060793	0.239056	0	1
Age 35-44 Years	0.117181	0.321777	0	1
Age 45-54 Years	0.277533	0.447979	0	1
Age 55-64 Years	0.522467	0.499715	0	1
Married	0.243172	0.429187	0	1
Male	0.468723	0.499241	0	1
Race White	0.700441	0.458267	0	1
Race Other	0.045815	0.209176	0	1
Hispanic	0.111013	0.314287	0	1
BMI Obese	0.747137	0.434845	0	1

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Appendix E – Indirect Costs due to Premature Mortality

The 2014 Surgeon General's report identified asset of diseases that are closely linked to smoking. These diseases (and their ICD-10 Codes) include the following:

Malignant neoplasms

C00-C14	Lip, oral cavity, pharynx
C15	Esophagus
C16	Stomach
C25	Pancreas
C32	Larynx
C33-C34	Trachea, lung, bronchus
C53	Cervix uteri
C64-C65	Kidney and renal pelvis
C67	Urinary bladder
C92.0	Acute myeloid leukemia

Cardiovascular diseases

I20-I25	Coronary heart disease
I00-I09, I26-I51	Other heart disease
I60-I69	Cerebrovascular disease
I70	Atherosclerosis
I71	Aortic aneurysm
I72-I78	Other arterial disease

Respiratory diseases

J10-J11, J12-J18	Influenza, pneumonia
J40-J42, J43	Bronchitis, emphysema
J44	Chronic airways obstruction

Using data from Thun, et al, that was updated by the CDC in 2011, relative risks for persons over the age of 35 were utilized. Risks for males and females, as well as the average of these relative risks, are presented in Table A-3. These averages were used in the analysis due to the lack of male/female prevalence available from the data; however, it is believed that the prevalence of females is lower than that of males, so the estimates resulting from these averages will be more conservative than would be the case if erroneous male and female prevalences were used.

Table E-1 – Indirect Costs due to Premature Mortality by Disease Category

Disease	Male		Female		Average	
	Current Smoker	Former Smoker	Current Smoker	Former Smoker	Current Smoker	Former Smoker
C00-C14	10.89	3.40	5.08	2.29	7.99	2.85
C15	6.76	4.46	7.75	2.79	7.26	3.63
C16	1.96	1.47	1.36	1.32	1.66	1.40
C25	2.31	1.15	2.25	1.55	2.28	1.35
C32	14.60	6.34	13.02	5.16	13.81	5.75
C33-C34	23.26	8.70	12.69	4.53	17.98	6.62
C53	n/a	n/a	1.59	1.14	n/a	n/a
C64-C65	2.72	1.73	1.29	1.05	2.01	1.39
C67	3.27	2.09	2.22	1.89	2.75	1.99
C92.0	1.86	1.33	1.13	1.38	1.50	1.36
I20-I25						
Age 35-64	2.80	1.64	3.08	1.32	2.94	1.48
Age 65+	1.51	1.21	1.60	1.20	1.56	1.21
I00-I09, I26-I51	1.78	1.22	1.59	1.14	1.69	1.18
I60-I69						
Age 35-64	3.27	1.04	4.00	1.30	3.64	1.17

Disease	Male		Female		Average	
	Current Smoker	Former Smoker	Current Smoker	Former Smoker	Current Smoker	Former Smoker
Age 65+	1.63	1.04	1.49	1.03	1.56	1.04
I70	2.44	1.33	1.83	1.00	2.14	1.17
I71	6.21	3.07	7.07	2.07	6.64	2.57
I72-I78	2.07	1.01	2.17	1.12	2.12	1.07
J10-J11, J12-J18	1.75	1.36	2.17	1.10	1.96	1.23
J40-J42, J43	17.10	15.64	12.04	11.77	14.57	13.71
J44	10.58	6.80	13.08	6.78	11.83	6.79

Total mortality by each disease for Mississippi was obtained from the CDC's Wonder database. Utilizing the Smoking Attributable Fraction formula enumerated by Wax, et al, we obtained the total smoking attributable mortality. This can be expressed mathematically as follows:

$$SAM_{i,t} = \frac{[p_N + (p_D + p_{ND}) \times RR(C)_{i,t} + pF \times RR(F)_{i,t}] - 1}{[p_N + (p_D + p_{ND}) \times RR(C)_{i,t} + pF \times RR(F)_{i,t}]} \times M_{i,t}$$

where:

- $SAM_{i,t}$ is total smoking attributable mortality for disease i and age category t
- p_N is the prevalence for respondents who have never smoked
- p_D is the prevalence for current daily smokers (the sum of p_N and p_{ND} equals the prevalence for all current smokers)
- p_{ND} is the prevalence for current nondaily smokers
- $RR(C)_{I,t}$ is the relative risk of mortality for current smokers for disease i and age category t
- p_F is the prevalence for former smokers
- $RR(F)_{i,t}$ is the relative risk of mortality for former smokers for disease i and age category t
- $M_{i,t}$ is the total mortality for disease i and age category t

The summary of total and estimated smoking attributable mortalities for all ages and for ages 35-74 years is presented in the following table:

The values for $SAM_{i,t}$ were summed over all diseases for each age category to calculate a total smoking attributable mortality for each age group; these values were utilized in calculating the net present value of lifetime earnings (NPVLE) for each age group. Earnings data were obtained from the Economic Modeling Systems Incorporated (EMSI) proprietary dataset in the form of average earnings for Mississippi workers by year from 2000-2015. It was assumed that each wage group would have worked until the age of 65; the median age in each group was assumed to be constant for the whole group (e.g., the median age for the 35-44 year old age group is 30; therefore, it was assumed that this group would have worked an additional 35 years until the age of 65). The net present value of a constant annuity was calculated using the average wage by year to ensure the most conservative estimate available (this would assume that no one who passed away in a particular year would have ever received a nominal wage adjustment over their potential lifetime earnings). Discounting the lifetime annual earnings (a discount rate of three percent was used) replicated the net present value of an annuity with constant payments. The formula used to discount total wages is:

$$NPVLE_{a,t} = Annual\ Earnings_{a,t} \times \frac{1 - \left(\dfrac{1}{\left(1 + r\right)^{n}} \right)}{r} \times Mortality_{a,t}$$

where:

- NPLVE is the total net present value of lifetime earnings for all age categories and time periods (years)
- Annual Earnings$_{a,t}$ represent the annual earnings for each age category a in year t
- r is the interest rate used for discounting future earnings (we used 3 percent)
- n is the total number of working years for each age group
- Mortality is the number of deaths for each age category a in year t

2000 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $141,285,178

NPLVE for 45-54 year age group $309,509,566

NPLVE for 55-64 year age group $179,385,390

Total NPLVE for all age groups $630,180,134

Table E-2 – 2000 Total/Estimated Smoking Attributable Mortalities by Age and Disease Category*

Disease	Male			Female		
	35-44 Yrs	45-54 Yrs	55-64 Yrs	35-44 Yrs	45-54 Yrs	55-64 Yrs
C00-C14	0/0	0/0	0/0	0/0	0/0	0/0
C15	0/0	0/0	35/24	0/0	0/0	0/0
C16	0/0	18/4	14/3	0/0	0/0	16/2
C25	0/0	37/9	45/11	0/0	0/0	28/8
C32	0/0	0/0	0/0	0/0	0/0	0/0
C33-C34	64/56	227/198	300/262	28/22	84/65	203/158
C53				0/0	0/0	0/0
C64-C65	0/0	0/0	17/6	0/0	0/0	0/0
C67	0/0	0/0	0/0	0/0	0/0	0/0
C92	0/0	0/0	0/0	0/0	0/0	0/0
I20-I25	116/41	299/107	312/111	53/19	138/49	178/63
I26-I51	25/5	21/4	30/6	0/0	30/4	13/2
I60-I69	23/8	23/8	20/7	0/0	28/12	14/6
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	18/4	21/4	0/0	0/0	22/5
J40-J43	0/0	0/0	0/0	0/0	0/0	0/0
J44	0/0	23/18	61/47	0/0	0/0	67/54
Total	228/110	666/352	855/481	81/41	280/130	541/298

*Only includes those persons 35-64 years of age

2001 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $141,357,147

NPLVE for 45-54 year age group $341,475,083

NPLVE for 55-64 year age group $202,572,539

Total NPLVE for all age groups $685,404,769

Table E-2 – 2001 Total/Estimated Smoking Attributable Mortalities by Age and Disease Category*

Disease	Male			Female		
	35-44 Yrs	45-54 Yrs	55-64 Yrs	35-44 Yrs	45-54 Yrs	55-64 Yrs
C00-C14	0/0	18/14	0/0	0/0	0/0	0/0
C15	0/0	24/16	31/21	0/0	0/0	0/0
C16	0/0	0/0	14/4	0/0	0/0	15/2
C25	0/0	24/6	37/10	0/0	0/0	24/7
C32	0/0	0/0	0/0	0/0	0/0	0/0
C33-C34	53/47	202/178	349/307	48/38	99/78	166/131
C53				0/0	19/3	13/2
C64-C65	0/0	0/0	22/8	0/0	0/0	13/1
C67	0/0	0/0	0/0	0/0	0/0	0/0
C92	0/0	0/0	0/0	0/0	0/0	0/0
I20-I25	106/39	297/110	299/111	65/24	147/55	150/56
I26-I51	25/5	26/5	17/3	0/0	21/3	20/3
I60-I69	0/0	20/7	19/7	22/10	19/9	13/6
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	0/0	23/5	0/0	25/6	18/4
J40-J43	0/0	0/0	12/11	0/0	0/0	0/0
J44	0/0	28/22	85/67	0/0	31/25	79/64
Total	184/91	639/358	908/554	135/72	361/179	511/276

*Only includes those persons 35-64 years of age

2002 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $140,687,176

NPLVE for 45-54 year age group $375,568,130

NPLVE for 55-64 year age group $244,509,481

Total NPLVE for all age groups $760,764,787

Table E-2 – 2002 Total/Estimated Smoking Attributable Mortalities by Age and Disease Category*

Disease	Male			Female		
	35-44 Yrs	45-54 Yrs	55-64 Yrs	35-44 Yrs	45-54 Yrs	55-64 Yrs
C00-C14	0/0	0/0	15/11	0/0	0/0	0/0
C15	0/0	22/15	43/30	0/0	0/0	0/0
C16	0/0	0/0	0/0	0/0	0/0	14/2
C25	0/0	24/7	48/13	0/0	20/6	37/12
C32	0/0	0/0	0/0	0/0	0/0	0/0
C33-C34	42/37	234/207	352/311	53/42	104/83	195/155
C53				0/0	22/3	0/0
C64-C65	0/0	0/0	32/12	0/0	0/0	0/0
C67	0/0	0/0	14/6	0/0	0/0	0/0
C92	0/0	0/0	0/0	0/0	0/0	14/1
I20-I25	141/54	322/123	352/135	53/21	110/43	198/77
I26-I51	0/0	26/5	25/5	0/0	37/6	18/3
I60-I69	0/0	19/7	24/9	0/0	26/12	61/29
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	0/0	23/5	0/0	24/6	29/7
J40-J43	0/0	0/0	18/16	0/0	0/0	0/0
J44	0/0	26/21	115/91	0/0	31/25	55/45
Total	183/91	673/385	1061/644	106/63	374/184	621/331

*Only includes those persons 35-64 years of age

2003 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $106,509,416

NPLVE for 45-54 year age group $394,469,451

NPLVE for 55-64 year age group $246,163,763

Total NPLVE for all age groups $747,142,630

Table E-2 – 2003 Total/Estimated Smoking Attributable Mortalities by Age and Disease Category*

Disease	Male			Female		
	35-44 Yrs	45-54 Yrs	55-64 Yrs	35-44 Yrs	45-54 Yrs	55-64 Yrs
C00-C14	0/0	0/0	24/18	0/0	0/0	0/0
C15	0/0	32/22	45/31	0/0	0/0	0/0
C16	0/0	0/0	30/8	0/0	0/0	0/0
C25	0/0	28/7	42/11	0/0	24/7	49/15
C32	0/0	0/0	0/0	0/0	0/0	0/0
C33-C34	36/32	218/192	385/338	33/26	118/93	211/166
C53				23/3	26/4	0/0
C64-C65	0/0	23/9	22/8	0/0	0/0	0/0
C67	0/0	0/0	0/0	0/0	0/0	0/0
C92	0/0	0/0	0/0	0/0	0/0	0/0
I20-I25	95/35	309/115	327/122	42/16	118/44	164/61
I26-I51	0/0	25/5	18/4	0/0	24/4	17/3
I60-I69	0/0	49/18	22/8	0/0	20/9	65/29
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	30/6	28/6	0/0	0/0	17/4
J40-J43	0/0	0/0	0/0	0/0	0/0	0/0
J44	0/0	27/21	78/61	0/0	20/16	80/65
Total	131/67	741/395	1021/615	98/45	350/177	603/343

*Only includes those persons 35-64 years of age

2004 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $120,924,281

NPLVE for 45-54 year age group $445,705,582

NPLVE for 55-64 year age group $275,902,939

Total NPLVE for all age groups $842,532,748

Table E-2 – 2004 Total/Estimated Smoking Attributable Mortalities by Age and Disease Category*

Disease	Male			Female		
	35-44 Yrs	45-54 Yrs	55-64 Yrs	35-44 Yrs	45-54 Yrs	55-64 Yrs
C00-C14	0/0	21/16	23/17	0/0	0/0	0/0
C15	0/0	52/35	40/27	0/0	0/0	0/0
C16	0/0	25/6	19/5	0/0	0/0	0/0
C25	0/0	29/8	64/17	0/0	24/7	36/11
C32	0/0	0/0	0/0	0/0	0/0	0/0
C33-C34	35/31	231/202	413/361	48/37	139/109	216/169
C53				27/4	20/3	0/0
C64-C65	0/0	0/0	25/9	0/0	0/0	0/0
C67	0/0	0/0	15/7	0/0	0/0	0/0
C92	0/0	0/0	0/0	0/0	0/0	0/0
I20-I25	104/38	285/103	351/127	41/15	120/44	146/53
I26-I51	0/0	25/5	19/4	0/0	33/5	19/3
I60-I69	0/0	25/9	30/11	0/0	29/13	39/17
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	19/4	41/8	0/0	0/0	18/4
J40-J43	0/0	0/0	15/13	0/0	0/0	0/0
J44	0/0	37/29	88/68	0/0	35/28	97/78
Total	139/69	749/417	1143/674	116/56	400/209	571/335

*Only includes those persons 35-64 years of age

2005 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $107,304,256

NPLVE for 45-54 year age group $469,921,749

NPLVE for 55-64 year age group $298,974,991

Total NPLVE for all age groups $876,200,996

Table E-2 – 2005 TotaL/Estimated Smoking Attributable Mortalities by Age and Disease Category*

Disease	Male			Female		
	35-44 Yrs	45-54 Yrs	55-64 Yrs	35-44 Yrs	45-54 Yrs	55-64 Yrs
C00-C14	0/0	0/0	21/16	0/0	0/0	0/0
C15	0/0	31/21	49/33	0/0	0/0	0/0
C16	0/0	20/5	27/7	0/0	0/0	0/0
C25	0/0	25/6	47/12	0/0	21/6	39/11
C32	0/0	0/0	14/11	0/0	0/0	0/0
C33-C34	41/36	221/193	389/340	31/24	143/111	231/180
C53				0/0	0/0	19/3
C64-C65	0/0	27/10	26/9	0/0	0/0	19/1
C67	0/0	0/0	20/9	0/0	0/0	0/0
C92	0/0	0/0	0/0	0/0	0/0	0/0
I20-I25	78/28	339/122	420/151	37/13	139/50	170/61
I26-I51	0/0	20/4	26/5	0/0	29/4	22/3
I60-I69	0/0	25/9	21/7	0/0	21/9	31/14
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	20/4	14/3	0/0	0/0	22/5
J40-J43	0/0	0/0	17/15	0/0	0/0	0/0
J44	0/0	59/46	104/81	0/0	42/34	90/72
Total	119/64	787/420	1195/699	68/37	395/214	643/350

*Only includes those persons 35-64 years of age

2006 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $128,339,948

NPLVE for 45-54 year age group $543,661,133

NPLVE for 55-64 year age group $329,188,084

Total NPLVE for all age groups $1,001,189,165

Table E-2 – 2006 Total/Estimated Smoking Attributable Mortalities by Age and Disease Category*

Disease	Male			Female		
	35-44 Yrs	45-54 Yrs	55-64 Yrs	35-44 Yrs	45-54 Yrs	55-64 Yrs
C00-C14	0/0	22/16	15/11	0/0	0/0	0/0
C15	0/0	44/30	47/32	0/0	0/0	0/0
C16	0/0	24/6	21/5	0/0	0/0	0/0
C25	0/0	38/10	55/15	0/0	0/0	45/14
C32	0/0	0/0	25/20	0/0	0/0	0/0
C33-C34	44/39	267/234	442/388	22/17	164/129	240/189
C53				24/4	42/6	19/3
C64-C65	0/0	22/8	21/8	0/0	0/0	0/0
C67	0/0	0/0	0/0	0/0	0/0	0/0
C92	0/0	0/0	0/0	0/0	0/0	0/0
I20-I25	90/33	303/112	376/139	46/17	162/60	165/61
I26-I51	23/4	22/4	37/7	0/0	25/4	18/3
I60-I69	0/0	24/9	19/7	0/0	27/12	61/27
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	20/4	31/6	0/0	29/7	24/6
J40-J43	0/0	0/0	0/0	0/0	0/0	0/0
J44	0/0	36/28	122/96	0/0	42/34	101/82
Total	157/76	822/461	1211/734	92/38	491/252	673/385

*Only includes those persons 35-64 years of age

2007 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $127,846,634

NPLVE for 45-54 year age group $492,360,554

NPLVE for 55-64 year age group $330,911,872

Total NPLVE for all age groups $951,119,060

Table E-2 – 2007 Total/Estimated Smoking Attributable Mortalities by Age and Disease Category*

	Male			Female		
Disease	**35-44 Yrs**	**45-54 Yrs**	**55-64 Yrs**	**35-44 Yrs**	**45-54 Yrs**	**55-64 Yrs**
C00-C14	0/0	0/0	18/13	0/0	0/0	0/0
C15	0/0	30/20	47/32	0/0	0/0	0/0
C16	0/0	0/0	21/5	0/0	0/0	0/0
C25	0/0	44/11	64/16	0/0	23/7	46/13
C32	0/0	0/0	17/14	0/0	0/0	0/0
C33-C34	53/46	216/189	391/342	0/0	136/106	247/193
C53				20/3	26/4	25/4
C64-C65	0/0	20/7	38/14	0/0	0/0	18/1
C67	0/0	0/0	0/0	0/0	0/0	0/0
C92	0/0	0/0	0/0	0/0	0/0	0/0
I20-I25	105/38	317/114	401/145	32/12	138/50	174/63
I26-I51	0/0	36/7	40/8	0/0	34/5	22/3
I60-I69	0/0	54/19	23/8	0/0	32/14	40/18
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	38/8	31/6	0/0	23/5	20/5
J40-J43	0/0	0/0	15/13	0/0	0/0	0/0
J44	0/0	34/26	126/98	0/0	43/35	91/73
Total	158/84	789/401	1232/714	52/15	455/226	683/373

*Only includes those persons 35-64 years of age

2008 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $78,117,192

NPLVE for 45-54 year age group $519,680,089

NPLVE for 55-64 year age group $316,355,612

Total NPLVE for all age groups $914,152,893

Table E-2 – 2008 Total/Estimated Smoking Attributable Mortalities by Age and Disease Category*

Disease	Male			Female		
	35-44 Yrs	**45-54 Yrs**	**55-64 Yrs**	**35-44 Yrs**	**45-54 Yrs**	**55-64 Yrs**
C00-C14	0/0	0/0	22/16	0/0	0/0	0/0
C15	0/0	28/19	53/36	0/0	0/0	0/0
C16	0/0	24/6	31/8	0/0	0/0	0/0
C25	0/0	32/8	71/18	0/0	0/0	60/17
C32	0/0	0/0	0/0	0/0	0/0	0/0
C33-C34	23/20	259/226	429/374	0/0	157/122	280/217
C53				0/0	37/5	27/4
C64-C65	0/0	22/8	42/15	0/0	0/0	19/1
C67	0/0	0/0	19/8	0/0	0/0	0/0
C92	0/0	0/0	0/0	0/0	0/0	0/0
I20-I25	81/29	259/92	405/144	28/10	161/57	176/62
I26-I51	0/0	20/4	17/3	0/0	21/3	20/3
I60-I69	0/0	42/14	27/9	0/0	28/12	17/7
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	38/8	31/6	0/0	26/6	32/7
J40-J43	0/0	0/0	17/15	0/0	0/0	0/0
J44	0/0	36/28	17/13	0/0	21/17	19/15
Total	104/49	760/413	1181/665	28/10	451/222	650/333

*Only includes those persons 35-64 years of age

2009 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $71,889,240

NPLVE for 45-54 year age group $515,985,036

NPLVE for 55-64 year age group $331,452,580

Total NPLVE for all age groups $919,326,856

Table E-2 – 2009 Total/Estimated Smoking Attributable Mortalities by Age and Disease Category*

	Male			Female		
Disease	**35-44 Yrs**	**45-54 Yrs**	**55-64 Yrs**	**35-44 Yrs**	**45-54 Yrs**	**55-64 Yrs**
C00-C14	0/0	0/0	24/18	0/0	0/0	0/0
C15	0/0	41/28	53/36	0/0	0/0	0/0
C16	0/0	0/0	21/5	0/0	0/0	0/0
C25	0/0	47/12	76/19	0/0	24/7	53/16
C32	0/0	0/0	0/0	0/0	0/0	0/0
C33-C34	26/23	227/198	448/391	0/0	136/106	220/171
C53				0/0	0/0	23/3
C64-C65	0/0	30/11	34/12	0/0	0/0	18/1
C67	0/0	0/0	19/8	0/0	0/0	0/0
C92	0/0	0/0	0/0	0/0	0/0	0/0
I20-I25	61/22	336/121	405/146	23/8	110/39	200/72
I26-I51	0/0	20/4	29/5	0/0	22/3	21/3
I60-I69	0/0	22/8	16/6	0/0	26/11	18/8
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	26/5	34/7	0/0	0/0	32/7
J40-J43	0/0	0/0	16/14	0/0	0/0	0/0
J44	0/0	24/19	19/15	0/0	60/48	91/73
Total	87/45	773/406	1194/682	23/8	378/214	676/354

*Only includes those persons 35-64 years of age

2010 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $66,899,920

NPLVE for 45-54 year age group $580,441,887

NPLVE for 55-64 year age group $353,656,860

Total NPLVE for all age groups $1,000,998,667

Table E-2 – 2010 Total/Estimated Smoking Attributable Mortalities by Age and Disease Category*

Disease	Male			Female		
	35-44 Yrs	45-54 Yrs	55-64 Yrs	35-44 Yrs	45-54 Yrs	55-64 Yrs
C00-C14	0/0	24/18	40/29	0/0	0/0	0/0
C15	0/0	32/22	43/29	0/0	0/0	0/0
C16	0/0	0/0	25/6	0/0	0/0	0/0
C25	0/0	51/13	58/14	0/0	21/6	56/16
C32	0/0	0/0	0/0	0/0	0/0	0/0
C33-C34	0/0	249/217	509/444	0/0	161/125	257/199
C53				0/0	34/5	20/3
C64-C65	0/0	0/0	40/14	0/0	0/0	0/0
C67	0/0	0/0	22/9	0/0	0/0	0/0
C92	0/0	0/0	0/0	0/0	0/0	18/2
I20-I25	86/31	340/121	419/149	31/11	150/53	168/59
I26-I51	0/0	22/4	18/3	19/3	58/8	20/3
I60-I69	20/7	30/10	17/6	0/0	41/18	18/8
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	24/5	48/10	0/0	0/0	38/9
J40-J43	0/0	0/0	17/15	0/0	0/0	0/0
J44	0/0	36/28	22/17	0/0	60/48	25/20
Total	106/38	808/438	1278/745	50/14	525/263	620/319

*Only includes those persons 35-64 years of age

2011 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $64,260,784

NPLVE for 45-54 year age group $591,895,619

NPLVE for 55-64 year age group $442,601,295

Total NPLVE for all age groups $1,098,757,698

Table E-2 – 2011 Total/Estimated Smoking Attributable Mortalities by Age and Disease Category*

	Male			Female		
Disease	**35-44 Yrs**	**45-54 Yrs**	**55-64 Yrs**	**35-44 Yrs**	**45-54 Yrs**	**55-64 Yrs**
C00-C14	0/0	0/0	45/34	0/0	0/0	0/0
C15	0/0	48/33	55/38	0/0	0/0	0/0
C16	0/0	0/0	28/7	0/0	0/0	0/0
C25	0/0	38/10	84/23	0/0	38/12	62/19
C32	0/0	0/0	0/0	0/0	0/0	0/0
C33-C34	0/0	207/182	507/447	0/0	195/154	354/280
C53				0/0	0/0	19/3
C64-C65	0/0	28/11	43/16	0/0	0/0	21/2
C67	0/0	0/0	26/12	0/0	0/0	0/0
C92	0/0	0/0	0/0	0/0	0/0	0/0
I20-I25	90/34	352/132	479/180	46/17	142/54	201/76
I26-I51	0/0	30/6	19/4	0/0	21/3	23/4
I60-I69	0/0	32/12	28/10	0/0	30/14	23/11
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	0/0	41/9	0/0	28/7	34/8
J40-J43	0/0	0/0	0/0	0/0	0/0	0/0
J44	0/0	56/44	157/124	0/0	47/38	19/15
Total	90/34	791/430	1512/904	46/17	501/282	756/418

*Only includes those persons 35-64 years of age

2012 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $86,164,434

NPLVE for 45-54 year age group $501,035,995

NPLVE for 55-64 year age group $389,983,647

Total NPLVE for all age groups $977,184,076

Table E-2 – 2012 Total/Estimated Smoking Attributable Mortalities by Age and Disease Category*

Disease	Male			Female		
	35-44 Yrs	45-54 Yrs	55-64 Yrs	35-44 Yrs	45-54 Yrs	55-64 Yrs
C00-C14	0/0	21/16	23/17	0/0	0/0	0/0
C15	0/0	23/16	61/41	0/0	0/0	0/0
C16	0/0	27/7	28/7	0/0	0/0	0/0
C25	0/0	47/12	90/23	0/0	37/11	66/19
C32	0/0	0/0	28/23	0/0	0/0	0/0
C33-C34	18/16	169/148	430/376	0/0	127/99	313/244
C53				21/3	0/0	27/4
C64-C65	0/0	0/0	43/16	0/0	0/0	23/2
C67	0/0	0/0	29/13	0/0	0/0	0/0
C92	0/0	0/0	0/0	0/0	0/0	0/0
I20-I25	83/30	294/106	539/194	42/15	129/47	205/74
I26-I51	0/0	19/4	31/6	0/0	21/3	19/3
I60-I69	0/0	19/7	31/11	0/0	27/12	23/10
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	0/0	45/9	0/0	0/0	51/12
J40-J43	0/0	0/0	0/0	0/0	0/0	0/0
J44	0/0	47/37	24/19	0/0	69/55	19/15
Total	101/46	666/353	1402/755	63/18	410/227	746/383

*Only includes those persons 35-64 years of age

2013 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $115,308,279

NPLVE for 45-54 year age group $571,109,788

NPLVE for 55-64 year age group $463,560,751

Total NPLVE for all age groups $1,149,978,818

Table E-2 – 2013 Total/Estimated Smoking Attributable Mortalities by Age and Disease Category*

Disease	Male			Female		
	35-44 Yrs	45-54 Yrs	55-64 Yrs	35-44 Yrs	45-54 Yrs	55-64 Yrs
C00-C14	0/0	27/20	21/16	0/0	0/0	0/0
C15	0/0	31/21	93/64	0/0	0/0	0/0
C16	0/0	23/6	33/8	0/0	0/0	31/4
C25	0/0	50/13	77/20	0/0	39/12	67/20
C32	0/0	0/0	0/0	0/0	0/0	0/0
C33-C34	20/18	183/161	525/461	23/18	166/130	325/255
C53				0/0	39/6	33/5
C64-C65	0/0	29/11	39/14	0/0	0/0	0/0
C67	0/0	0/0	33/15	0/0	0/0	0/0
C92	0/0	0/0	18/4	0/0	0/0	0/0
I20-I25	99/37	289/107	511/189	30/11	115/43	219/81
I26-I51	20/4	21/4	26/5	0/0	29/4	25/4
I60-I69	0/0	31/11	19/7	0/0	20/9	23/10
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	40/8	70/15	0/0	29/7	58/14
J40-J43	0/0	0/0	18/16	0/0	0/0	0/0
J44	0/0	54/42	28/22	0/0	53/43	175/142
Total	139/59	778/404	1511/856	53/29	490/254	956/535

*Only includes those persons 35-64 years of age

2014 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $53,523,819

NPLVE for 45-54 year age group $506,600,899

NPLVE for 55-64 year age group $484,498,041

Total NPLVE for all age groups $1,044,622,759

Table E-2 – 2014 Total/Estimated Smoking Attributable Mortalities by Age and Disease Category*

	Male			Female		
Disease	**35-44 Yrs**	**45-54 Yrs**	**55-64 Yrs**	**35-44 Yrs**	**45-54 Yrs**	**55-64 Yrs**
C00-C14	0/0	0/0	34/25	0/0	0/0	0/0
C15	0/0	23/16	62/42	0/0	0/0	0/0
C16	0/0	19/5	41/10	0/0	0/0	0/0
C25	0/0	36/9	124/31	0/0	20/6	78/23
C32	0/0	0/0	0/0	0/0	0/0	0/0
C33-C34	0/0	171/149	541/472	21/16	131/102	303/235
C53				0/0	20/3	22/3
C64-C65	0/0	23/8	53/19	0/0	0/0	0/0
C67	0/0	0/0	20/9	0/0	0/0	0/0
C92	0/0	0/0	0/0	0/0	0/0	0/0
I20-I25	47/17	261/93	580/207	47/17	121/43	233/83
I26-I51	0/0	32/6	18/3	0/0	26/4	20/3
I60-I69	0/0	51/18	32/11	0/0	38/16	25/11
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	28/6	105/21	0/0	34/8	78/18
J40-J43	0/0	0/0	21/18	0/0	0/0	0/0
J44	0/0	51/40	23/18	0/0	54/43	197/158
Total	47/17	695/350	1654/886	68/33	444/225	956/534

Only includes those persons 35-64 years of age

2015 Estimates for Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $42,954,387

NPLVE for 45-54 year age group $261,700,464

NPLVE for 55-64 year age group $280,296,605

Total NPLVE for all age groups $584,951,456

Table E-2 – 2015 Total/Estimated Smoking Attributable Mortalities by Age and Disease Category*

Disease	Male			Female		
	35-44 Yrs	45-54 Yrs	55-64 Yrs	35-44 Yrs	45-54 Yrs	55-64 Yrs
C00-C14	0/0	0/0	23/17	0/0	0/0	0/0
C15	0/0	12/8	36/24	0/0	0/0	0/0
C16	0/0	0/0	20/5	0/0	0/0	0/0
C25	0/0	23/6	57/14	0/0	16/5	39/11
C32	0/0	0/0	0/0	0/0	0/0	0/0
C33-C34	0/0	73/64	271/236	0/0	52/40	166/129
C53				0/0	12/2	13/2
C64-C65	0/0	0/0	29/10	0/0	0/0	0/0
C67	0/0	0/0	0/0	0/0	0/0	0/0
C92	0/0	0/0	0/0	0/0	0/0	0/0
I20-I25	64/23	214/76	439/157	20/7	86/30	137/49
I26-I51	0/0	67/12	186/35	0/0	34/5	95/14
I60-I69	0/0	60/21	92/32	0/0	16/7	67/29
I70	0/0	0/0	0/0	0/0	0/0	0/0
I71	0/0	0/0	0/0	0/0	0/0	0/0
I72-I78	0/0	0/0	0/0	0/0	0/0	0/0
J10-J18	0/0	14/3	37/7	0/0	10/2	31/7
J40-J43	0/0	0/0	0/0	0/0	0/0	0/0
J44	0/0	0/0	0/0	0/0	0/0	0/0
Total	64/23	463/190	1190/537	20/7	226/91	548/241

Only includes those persons 35-64 years of age

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Appendix F – Projected Direct Cost Estimation

2000 Projected Direct Cost Projected Estimations

2000 Mississippi per capita Healthcare Cost $3,022

2000 Mississippi Population .... 2,848,353 persons

2000 Mississippi Population (ages 18-64 years) .... 1,729,982 persons

2000 Projected Current Smoker Prevalence..24.8 percent

2000 Mississippi Projected Current Smokers .... 1,729,982 persons *x* 24.8% = 428,603 persons

SAE per Smoker .... $1,842 per smoker

Smoking Attrib Expenditures (SAE) .... $1,842 per smoker *x* 428,603 smokers = $789,486,726

2001 Projected Direct Cost Estimations

2001 Mississippi per capita Healthcare Cost $3,406

2001 Mississippi Population .... 2,852,994 persons

2001 Mississippi Population (ages 18-64 years) .... 1,740,014 persons

2001 Projected Current Smoker Prevalence..25.2 percent

2001 Mississippi Projected Current Smokers .... 1,740,014 persons *x* 25.2% = 439,064 persons

SAE per Smoker .... $1,920 per smoker

Smoking Attributable Expenditures (SAE) ....$1,920 per smoker *x* 439,603 = $843,002,880

2002 Projected Direct Cost Estimations

2002 Mississippi per capita Healthcare Cost $3,865

2002 Mississippi Population .... 2,858,681 persons

2002 Mississippi Population (ages 18-64 years) .... 1,750,133 persons

2002 Projected Current Smoker Prevalence..25.7 percent

2002 Mississippi Projected Current Smokers .... 1,750,133 persons *x* 26.2% = 449,638 persons

SAE per Smoker .... $2,012 per smoker

Smoking Attrib Expenditures (SAE) ....$2,012 per smoker *x* 449,638 persons = $904,671,656

2003 Projected Direct Cost Estimations

2003 Mississippi per capita Healthcare Cost $4,239

2003 Mississippi Population .... 2,868,312 persons

2003 Mississippi Population (ages 18-64 years) .... 1,760,938 persons

2003 Projected Current Smoker Prevalence...26.2 percent

2003 Mississippi Projected Current Smokers .... 1,760,938 persons *x* 26.2% = 460,485 persons

SAE per Smoker .... $2,347 per smoker

Smoking Attrib Expenditures (SAE) .... $2,347 per smoker x 460,485 persons = $1,080,758,295

2004 Projected Direct Cost Estimations

2004 Mississippi per capita Healthcare Cost $4,456

2004 Mississippi Population .... 2,889,010 persons

2004 Mississippi Population (ages 18-64 years) .... 1,777,280 persons

2004 Projected Current Smoker Prevalence...26.6 percent

2004 Mississippi Projected Current Smokers .... 1,777,280 persons x 26.6% = 472,905 persons

SAE per Smoker .... $2,572 per smoker

Smoking Attrib Expenditures (SAE) .... $2,572 per smoker *x* 472,905 persons = $1,216,311,660

2005 Projected Direct Cost Estimations

2005 Mississippi per capita Healthcare Cost $4,764

2005 Mississippi Population .... 2,905,943 persons

2005 Mississippi Population (ages 18-64 years) .... 1,788,874 persons

2005 Projected Current Smoker Prevalence...27.1 percent

2005 Mississippi Projected Current Smokers .... 1,788,874 persons x 27.1% = 484,189 persons

SAE per Smoker .... $2,853 per smoker

Smoking Attrib Expenditures (SAE) ...... $2,853 per smoker *x* 484,189 smokers = $1,381,391,217

2006 Projected Direct Cost Estimations

2006 Mississippi per capita Healthcare Cost $5,041

2006 Mississippi Population .... 2,904,978 persons

2006 Mississippi Population (ages 18-64 years) .... 1,789,791 persons

2006 Projected Current Smoker Prevalence..27.5 percent

2006 Mississippi Projected Current Smokers .... 492,640 persons

SAE per Smoker .... $2,836 per smoker

Smoking Attrib Expenditures (SAE) ...... $2,836 per smoker *x* 492,640 smokers = $1,397,127,040

2007 Projected Direct Cost Estimations

2007 Mississippi per capita Healthcare Cost $5,247

2007 Mississippi Population .... 2,928,350 persons

2007 Mississippi Population (ages 18-64 years) .... 1,804,223 persons

2007 Projected Current Smoker Prevalence..28.0 percent

2007 Mississippi Projected Current Smokers .... 504,882 persons

SAE per Smoker .... $3,100 per smoker

Smoking Attrib Expenditures (SAE) ...... $3,100 per smoker *x* 504,882 smokers = $1,565,134,200

2008 Projected Direct Cost Estimations

2008 Mississippi per capita Healthcare Cost $4,770

2008 Mississippi Population .... 2,947,806 persons

2008 Mississippi Population (ages 18-64 years) .... 1,816,918 persons

2008 Projected Current Smoker Prevalence..28.4 percent

2008 Mississippi Projected Current Smokers .... 1,816,918 persons *x* 28.4% = 516,762 persons

SAE per Smoker .... $2,966 per smoker

Smoking Attrib Expenditures (SAE) ...... $2,966 per smoker *x* 516,762 smokers = $1,532,716,092

2009 Projected Direct Cost Estimations

2009 Mississippi per capita Healthcare Cost $5,398

2009 Mississippi Population .... 2,958,774 persons

2009 Mississippi Population (ages 18-64 years) .... 1,824,267 persons

2009 Projected Current Smoker Prevalence..28.9 percent

2009 Mississippi Projected Current Smokers .... 1,824,267 persons x 28.9% = 527,213 persons

SAE per Smoker .... $3,269 per smoker

Smoking Attrib Expenditures (SAE) ...... $3,269 per smoker *x* 527,213 smokers = $1,723,459,297

2010 Projected Direct Cost Estimations

2010 Mississippi per capita Healthcare Cost $5,193

2010 Mississippi Population .... 2,970,316 persons

2010 Mississippi Population (ages 18-64 years) .... 1,834,954 persons

2010 Projected Current Smoker Prevalence..29.4 percent

2010 Mississippi Projected Current Smokers .... 1,834,954 persons x 29.4% = 538,712 persons

SAE per Smoker .... $3,194 per smoker

Smoking Attrib Expenditures (SAE) ...... $3,194 per smoker *x* 538,712 smokers = $1,720,646,128

2011 Projected Direct Cost Estimations

2011 Mississippi per capita Healthcare Cost $5,345

2011 Mississippi Population .... 2,977,999 persons

2011 Mississippi Population (ages 18-64 years) .... 1,842,044 persons

2011 Projected Current Smoker Prevalence..29.8 percent

2011 Mississippi Projected Current Smokers .... 1,842,044 persons *x* 29.8% = 549,236 persons

SAE per Smoker .... $2,891 per smoker

Smoking Attrib Expenditures (SAE) ...... $2,891 per smoker *x* 549,236 smokers = $1,587,841,276

2012 Projected Direct Cost Estimations

2012 Mississippi per capita Healthcare Cost $5,163

2012 Mississippi Population .... 2,985,660 persons

2012 Mississippi Population (ages 18-64 years) .... 1,839,814 persons

2012 Projected Current Smoker Prevalence...30.3 percent

2012 Mississippi Projected Current Smokers .... 557,004 persons

SAE per Smoker .... $3,037 per smoker

Smoking Attrib Expenditures (SAE) ...... $3,037 per smoker *x* 557,004 smokers = $1,691,621,148

2013 Projected Direct Cost Estimations

2013 Mississippi per capita Healthcare Cost $5,442

2013 Mississippi Population .... 2,990,976 persons

2013 Mississippi Population (ages 18-64 years) .... 1,839,860 persons

2013 Projected Current Smoker Prevalence...30.7 percent

2013 Mississippi Projected Current Smokers .... 565,450 persons

SAE per Smoker .... $3,104 per smoker

Smoking Attrib Expenditures (SAE) ...... $3,104 per smoker *x* 565,450 smokers = $1,755,156,800

2014 Projected Direct Cost Estimations

2014 Mississippi per capita Healthcare Cost $5,892

2014 Mississippi Population .... 2,993,443 persons

2014 Mississippi Population (ages 18-64 years) .... 1,834,605 persons

2014 Projected Current Smoker Prevalence...31.2 percent

2014 Mississippi Projected Current Smokers .... 572,244 persons

SAE per Smoker .... $3,636 per smoker

Smoking Attrib Expenditures (SAE) ...... $3,636 per smoker *x* 572,244 smokers = $2,080,679,184

2015 Projected Direct Cost Estimations

2014 Mississippi per capita Healthcare Cost $5,892

CDC Medical Inflation Rate .... 5.8 percent[2]

2015 MS per capita Healthcare Exp .... $5,892/person *x* (1 + 5.8 percent) = $6,234/person

2014 Mississippi SAE per smoker $3,636

CDC Medical Inflation Rate .... 5.8 percent[3]

2015 MS SAE per smoker .... $3,636/person *x* (1 + 5.8 percent) = $3,847/person

2015 Mississippi Population .... 2,992,333 persons

2015 Mississippi Population (ages 18-64 years) .... 1,825,784 persons

2015 Projected Current Smoker Prevalence .... 31.7 percent

2015 Mississippi Projected Current Smokers .... 1,825,784 persons *x* 31.7% = 577,861 persons

Smoking Attributable Expenditures (SAE) ... 577,861 persons *x* $3,847/person = $2,222,966,547

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[2] Center for Medicare and Medicaid Services. National Health Expenditure Projections 2015-2025.
https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/Proj2015.pdf. Page modified 2014.
[3] Center for Medicare and Medicaid Services. National Health Expenditure Projections 2015-2025.
https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/Proj2015.pdf. Page modified 2014.

Appendix G – Projected Indirect Costs due to Absenteeism

2000 Estimates for Projected Indirect Costs Associated with Absenteeism

2000 Mississippi Population .... 2,848,353 persons

2000 Mississippi Population (18-64 years): .... 1,729,982 persons

Current Smoker Prevalence ....24.8 percent

Former Smoker Prevalence..20.7 percent

Average Mississippi Earnings/Year ....$31,087 (EMSI)

Current Smoker Absentee Days .... 1,729,982 persons *x* 24.8% *x* 4.71 days = 2,016,875 days

Current Smoker Absentee Years .... 2,016,875 days ÷ 280 days/year = 7,203 years

Cost of Current Smoker Absenteeism.......................... 7,203 years *x* $31,087/year = $223,925,185

Former Smoker Absentee Days ...... 1,729,982 persons *x* 20.7% *x* 3.77 days/year = 1,349,949 days

Former Smoker Absentee Years .... 1,349,949 days ÷ 280 days/year = 4,821 years

Cost of Former Smoker Absenteeism .... 4,821 years *x* $31,087/year = $149,879,205

Total Cost of Employee Absentee Days Attributable to Smoking........................... $373,804,389

Average Employee Cost/Year (Current Smoker)……………... 4.71/280 days/year *x* $31,087 = $522

Average Employee Cost/Year (Former Smoker)………………..3.77/280 days/year *x* $31,087 = $418

2001 Estimates for Projected Indirect Costs Associated with Absenteeism

2001 Mississippi Population .... 2,852,994 persons

2001 Mississippi Population (18-64 years): .... 1,740,014 persons

Current Smoker Prevalence ....25.2 percent

Former Smoker Prevalence..20.6 percent

Average Mississippi Earnings/Year ....$31,960 (EMSI)

Current Smoker Absentee Days .... 1,740,014 persons *x* 25.2% *x* 3.49 days = 1,532,332 days

Current Smoker Absentee Years .... 1,532,332 days ÷ 280 days/year = 5,473 years

Cost of Current Smoker Absenteeism.......................... 5,473 years *x* $31,960/year = $174,903,266

Former Smoker Absentee Days ...... 1,740,014 persons *x* 20.6% *x* 4.13 days/year = 1,813,332 days

Former Smoker Absentee Years .... 1,813,332 days ÷ 280 days/year = 6,476 years

Cost of Former Smoker Absenteeism .... 6,476 years *x* $31,960/year = $206,977,217

Total Cost of Employee Absentee Days Attributable to Smoking........................... $381,880,482

Average Employee Cost/Year (Current Smoker) ……………...3.49/280 days/year *x* $31,960 = $398

Average Employee Cost/Year (Former Smoker)………………..4.13/280 days/year *x* $31,960 = $471

2002 Estimates for Projected Indirect Costs Associated with Absenteeism

2002 Mississippi Population .... 2,858,681 persons

2002 Mississippi Population (18-64 years): .... 1,750,133 persons

Current Smoker Prevalence ....25.7 percent

Former Smoker Prevalence..20.5 percent

Average Mississippi Earnings/Year ....$32,977 (EMSI)

Current Smoker Absentee Days ....1,750,133 persons *x* 25.7% *x* 4.54 days = 2,041,358 days

Current Smoker Absentee Years ....2,041,358 days ÷ 280 days/year = 7,291 years

Cost of Current Smoker Absenteeism.......................... 7,297 years *x* $32,977/year = $240,423,228

Former Smoker Absentee Days ...... 1,750,133 persons *x* 20.5% *x* 3.63 days/year = 1,632,187 days

Former Smoker Absentee Years ....1,632,187 days ÷ 280 days/year = 5,829 years

Cost of Former Smoker Absenteeism .... 5,829 years *x* $32,977/year = $192,232,669

Total Cost of Employee Absentee Days Attributable to Smoking........................... $432,655,897

Average Employee Cost/Year (Current Smoker)………….…...4.54/280 days/year *x* $32,977 = $535

Average Employee Cost/Year (Former Smoker) …………….…3.63/280 days/year *x* $32,977 = $428

2003 Estimates for Projected Indirect Costs Associated with Absenteeism

2003 Mississippi Population .... 2,868,312 persons

2003 Mississippi Population (18-64 years): .... 1,760,938 persons

Current Smoker Prevalence ....26.2 percent

Former Smoker Prevalence..20.4 percent

Average Mississippi Earnings/Year ....$34,171 (EMSI)

Current Smoker Absentee Days ....1,760,938 persons *x* 26.2% *x* 4.73 days = 2,178,095 days

Current Smoker Absentee Years ....2,178,095 days ÷ 280 days/year = 7,779 years

Cost of Current Smoker Absenteeism.......................... 7,779 years *x* $34,171/year = $265,815,301

Former Smoker Absentee Days ...... 1,760,938 persons *x* 20.4% *x* 3.99 days/year = 1,837,336 days

Former Smoker Absentee Years ....1,837,336 days ÷ 280 days/year = 6,562 years

Cost of Former Smoker Absenteeism .... 6,562 years *x* $34,171/year = $224,228,975

Total Cost of Employee Absentee Days Attributable to Smoking........................... $490,044,276

Average Employee Cost/Year (Current Smoker) ……………...4.73/280 days/year *x* $34,171 = $577

Average Employee Cost/Year (Former Smoker) ………….…...3.99/280 days/year *x* $34,171 = $487

2004 Estimates for Projected Indirect Costs Associated with Absenteeism

2004 Mississippi Population .... 2,889,010 persons

2004 Mississippi Population (18-64 years): .... 1,777,280 persons

Current Smoker Prevalence ....26.6 percent

Former Smoker Prevalence...20.2 percent

Average Mississippi Earnings/Year ....$35,796 (EMSI)

Current Smoker Absentee Days ....1,777,280 persons *x* 26.6% *x* 3.50 days = 1,655,166 days

Current Smoker Absentee Years ....1,655,166 days ÷ 280 days/year = 5,911 years

Cost of Current Smoker Absenteeism.......................... 5,911 years *x* $35,796/year = $211,603,125

Former Smoker Absentee Days ...... 1,777,280 persons *x* 20.2% *x* 2.53 days/year = 1,196,449 days

Former Smoker Absentee Years ....1,196,449 days ÷ 280 days/year = 4,273 years

Cost of Former Smoker Absenteeism .... 4,273 years *x* $35,796/year = $152,958,830

Total Cost of Employee Absentee Days Attributable to Smoking............................ $364,561,955

Average Employee Cost/Year (Current Smoker) ………………3.50/280 days/year *x* $35,796 = $447

Average Employee Cost/Year (Former Smoker) ………….……2.53/280 days/year *x* $35,796 = $323

2005 Estimates for Projected Indirect Costs Associated with Absenteeism

2005 Mississippi Population .... 2,905,943 persons

2005 Mississippi Population (18-64 years): .... 1,788,874 persons

Current Smoker Prevalence ....27.1 percent

Former Smoker Prevalence...20.1 percent

Average Mississippi Earnings/Year ....$37,347 (EMSI)

Current Smoker Absentee Days ....1,788,874 persons *x* 27.1% *x* 3.76 days = 1,820,549 days

Current Smoker Absentee Years ....1,820,549 days ÷ 280 days/year = 6,502 years

Cost of Current Smoker Absenteeism.......................... 6,502 years *x* $37,347/year = $242,831,013

Former Smoker Absentee Days ...... 1,788,874 persons *x* 20.1% *x* 2.82 days/year = 1,365,412 days

Former Smoker Absentee Years ....1,365,412 days ÷ 280 days/year = 4,876 years

Cost of Former Smoker Absenteeism .... 4,876 years *x* $37,347/year = $182,123,260

Total Cost of Employee Absentee Days Attributable to Smoking............................ $424,954,272

Average Employee Cost/Year (Current Smoker) ………………..3.76/280 days/year *x* $37,347 = $502

Average Employee Cost/Year (Former Smoker) ………….…....2.82/280 days/year *x* $37,347 = $376

2006 Estimates for Projected Indirect Costs Associated with Absenteeism

2006 Mississippi Population .... 2,904,978 persons

2006 Mississippi Population (18-64 years): .... 1,789,791 persons

Current Smoker Prevalence ....27.5 percent

Former Smoker Prevalence..20.0 percent

Average Mississippi Earnings/Year ....$38,791 (EMSI)

Current Smoker Absentee Days ....1,789,791 persons *x* 27.5% *x* 5.01 days = 2,468,126 days

Current Smoker Absentee Years ....2,468,126 days ÷ 280 days/year = 8,815 years

Cost of Current Smoker Absenteeism.......................... 8,815 years *x* $38,791/year = $341,935,560

Former Smoker Absentee Days ...... 1,789,791 persons *x* 20.0% *x* 4.81 days/year = 2,369,598 days

Former Smoker Absentee Years ....2,369,598 days ÷ 280 days/year = 8,463 years

Cost of Former Smoker Absenteeism .... 8,463 years *x* $38,791/year = $328,285,438

Total Cost of Employee Absentee Days Attributable to Smoking........................... $670,220,998

Average Employee Cost/Year (Current Smoker) ………………5.01/280 days/year *x* $38,791 = $694

Average Employee Cost/Year (Former Smoker) ………………4.81/280 days/year *x* $38,791 = $666

2007 Estimates for Projected Indirect Costs Associated with Absenteeism

2007 Mississippi Population .... 2,928,350 persons

2007 Mississippi Population (18-64 years): .... 1,804,223 persons

Current Smoker Prevalence ....28.0 percent

Former Smoker Prevalence..19.9 percent

Average Mississippi Earnings/Year ....$40,120 (EMSI)

Current Smoker Absentee Days ....1,804,223 persons *x* 28.0% *x* 3.97 days = 2,004,380 days

Current Smoker Absentee Years ....2,004,380 days ÷ 280 days/year = 7,159 years

Cost of Current Smoker Absenteeism.......................... 7,159 years *x* $40,120/year = $287,196,114

Former Smoker Absentee Days ...... 1,804,223 persons *x* 19.9% *x* 4.70 days/year = 2,372,944 days

Former Smoker Absentee Years ....2,372,944 days ÷ 280 days/year = 8,475 years

Cost of Former Smoker Absenteeism .... 8,475 years *x* $40,120/year = $340,005,475

Total Cost of Employee Absentee Days Attributable to Smoking........................... $627,201,589

Average Employee Cost/Year (Current Smoker) ……………..3.97/280 days/year *x* $40,120 = $569

2008 Estimates for Projected Indirect Costs Associated with Absenteeism

2008 Mississippi Population .... 2,947,806 persons

2008 Mississippi Population (18-64 years): .... 1,816,918 persons

Current Smoker Prevalence ....28.4 percent

Former Smoker Prevalence...19.8 percent

Average Mississippi Earnings/Year ....$41,538 (EMSI)

Current Smoker Absentee Days .... 1,816,918 persons *x* 28.4% *x* 2.91 days = 1,503,777 days

Current Smoker Absentee Years .... 1,503,777 days ÷ 280 days/year = 5,371 years

Cost of Current Smoker Absenteeism .... 5,371 years *x* $41,538/year = $223,085,020

Former Smoker Absentee Days ...... 1,816,918 persons *x* 19.8% *x* 4.49 days/year = 2,320,260 days

Former Smoker Absentee Years .... 2,320,260 days ÷ 280 days/year = 8,287 years

Cost of Former Smoker Absenteeism .... 8,287 years *x* $41,538/year = $344,210,220

Total Cost of Employee Absentee Days Attributable to Smoking............................ $567,295,240

Average Employee Cost/Year (Current Smoker) ………………2.91/280 days/year *x* $41,538 = $432

Average Employee Cost/Year (Former Smoker) ………………4.49/280 days/year *x* $41,538 = $666

2009 Estimates for Projected Indirect Costs Associated with Absenteeism

2009 Mississippi Population .... 2,958,774 persons

2009 Mississippi Population (18-64 years): .... 1,824,267 persons

Current Smoker Prevalence ....28.9 percent

Former Smoker Prevalence...19.7 percent

Average Mississippi Earnings/Year ....$42,127 (EMSI)

Current Smoker Absentee Days .... 1,824,267 persons *x* 28.9% *x* 3.64 days = 1,919,056 days

Current Smoker Absentee Years .... 1,919,056 days ÷ 280 days/year = 6,854 years

Cost of Current Smoker Absenteeism .... 6,854 years *x* $42,127/year = $288,732,111

Former Smoker Absentee Days ...... 1,824,267 persons *x* 19.7% *x* 3.67 days/year = 1,934,872 days

Former Smoker Absentee Years .... 1,934,872 days ÷ 280 days/year = 6,910 years

Cost of Former Smoker Absenteeism .... 6,910 years *x* $42,127/year = $291,111,771

Total Cost of Employee Absentee Days Attributable to Smoking............................ $579,843,882

Average Employee Cost/Year (Current Smoker) ………………3.64/280 days/year *x* $42,127 = $548

Average Employee Cost/Year (Former Smoker) ………………3.67/280 days/year *x* $42,127 = $552

2010 Estimates for Projected Indirect Costs Associated with Absenteeism

2010 Mississippi Population .... 2,970,316 persons

2010 Mississippi Population (18-64 years): .... 1,834,954 persons

Current Smoker Prevalence ....29.4 percent

Former Smoker Prevalence..19.6 percent

Average Mississippi Earnings/Year ....$42,688 (EMSI)

Current Smoker Absentee Days ....1,834,954 persons *x* 29.4% *x* 3.29 days = 1,772,362 days

Current Smoker Absentee Years ....1,772,362 days ÷ 280 days/year = 6,330 years

Cost of Current Smoker Absenteeism.......................... 6,330 years *x* $42,688/year = $210,206,225

Former Smoker Absentee Days ...... 1,834,954 persons *x* 19.6% *x* 1.96 days/year = 1,055,875 days

Former Smoker Absentee Years ....1,055,875 days ÷ 280 days/year = 3,771 years

Cost of Former Smoker Absenteeism .... 3,771 years *x* $42,688/year = $160,973,921

Total Cost of Employee Absentee Days Attributable to Smoking........................... $431,180,146

Average Employee Cost/Year (Current Smoker) ………………3.29/280 days/year *x* $42,688 = $502

Average Employee Cost/Year (Former Smoker) ………………1.96/280 days/year *x* $42,688 = $299

2011 Estimates for Projected Indirect Costs Associated with Absenteeism

2011 Mississippi Population .... 2,977,999 persons

2011 Mississippi Population (18-64 years): .... 1,842,044 persons

Current Smoker Prevalence ....29.8 percent

Former Smoker Prevalence..19.4 percent

Average Mississippi Earnings/Year ....$43,416 (EMSI)

Current Smoker Absentee Days ....1,842,044 persons *x* 29.8% *x* 2.22 days = 1,219,304 days

Current Smoker Absentee Years ....1,219,304 days ÷ 280 days/year = 4,355 years

Cost of Current Smoker Absenteeism.......................... 4,355 years *x* $43,416/year = $189,062,792

Former Smoker Absentee Days ...... 1,842,044 persons *x* 19.4% *x* 2.74 days/year = 1,504,907 days

Former Smoker Absentee Years ....1,504,907 days ÷ 280 days/year = 5,375 years

Cost of Former Smoker Absenteeism .... 5,375 years *x* $43,416/year = $233,347,770

Total Cost of Employee Absentee Days Attributable to Smoking........................... $422,410,562

Average Employee Cost/Year (Current Smoker) ………………2.22/280 days/year *x* $43,416 = $344

Average Employee Cost/Year (Former Smoker) ………………2.74/280 days/year *x* $43,416 = $425

2012 Estimates for Projected Indirect Costs Associated with Absenteeism

2012 Mississippi Population .... 2,985,660 persons

2012 Mississippi Population (18-64 years): .... 1,839,814 persons

Current Smoker Prevalence ....30.3 percent

Former Smoker Prevalence...19.3 percent

Average Mississippi Earnings/Year ....$44,984 (EMSI)

Current Smoker Absentee Days ....1,839,814 persons *x* 30.3% *x* 2.65 days = 1,476,060 days

Current Smoker Absentee Years ....1,476,060 days ÷ 280 days/year = 5,272 years

Cost of Current Smoker Absenteeism.......................... 5,272 years *x* $44,984/year = $237,138,472

Former Smoker Absentee Days ...... 1,839,814 persons *x* 19.3% *x* 1.98 days/year = 1,102,867 days

Former Smoker Absentee Years ....1,102,867 days ÷ 280 days/year = 3,939 years

Cost of Former Smoker Absenteeism .... 3,939 years *x* $44,984/year = $177,182,707

Total Cost of Employee Absentee Days Attributable to Smoking........................... $414,321,179

Average Employee Cost/Year (Current Smoker) ………………2.65/280 days/year *x* $44,984 = $426

2013 Estimates for Projected Indirect Costs Associated with Absenteeism

2013 Mississippi Population .... 2,990,976 persons

2013 Mississippi Population (18-64 years): .... 1,839,860 persons

Current Smoker Prevalence ....30.7 percent

Former Smoker Prevalence...19.2 percent

Average Mississippi Earnings/Year ....$45,047 (EMSI)

Current Smoker Absentee Days ....1,839,860 persons *x* 30.7% *x* 2.58 days = 1,458,862 days

Current Smoker Absentee Years ....1,458,862 days ÷ 280 days/year = 5,210 years

Cost of Current Smoker Absenteeism.......................... 5,210 years *x* $45,047/year = $234,703,017

Former Smoker Absentee Days ...... 1,839,860 persons *x* 19.2% *x* 2.35 days/year = 1,328,808 days

Former Smoker Absentee Years ....1,328,808 days ÷ 280 days/year = 4,746 years

Cost of Former Smoker Absenteeism .... 4,746 years *x* $45,047/year = $213,779,880

Total Cost of Employee Absentee Days Attributable to Smoking........................... $448,482,896

Average Employee Cost/Year (Current Smoker) ………………2.58/280 days/year *x* $45,047 = $415

Average Employee Cost/Year (Former Smoker) ………………2.35/280 days/year *x* $45,047 = $378

2014 Estimates for Projected Indirect Costs Associated with Absenteeism

2014 Mississippi Population .... 2,993,443 persons

2014 Mississippi Population (18-64 years): .... 1,834,605 persons

Current Smoker Prevalence ....31.2 percent

Former Smoker Prevalence..19.1 percent

Average Mississippi Earnings/Year ....$45,877 (EMSI)

Current Smoker Absentee Days ....1,834,605 persons *x* 31.2% *x* 3.44 days = 1,968,519 days

Current Smoker Absentee Years ....1,968,519 days ÷ 280 days/year = 7,030 years

Cost of Current Smoker Absenteeism.......................... 7,030 years *x* $45,877/year = $322,534,353

Former Smoker Absentee Days ...... 1,834,605 persons *x* 19.1% *x* 1.79 days/year = 1,024,317 days

Former Smoker Absentee Years ....1,024,317 days ÷ 280 days/year = 3,658 years

Cost of Former Smoker Absenteeism .... 3,658 years *x* $45,877/year = $167,830,375

Total Cost of Employee Absentee Days Attributable to Smoking........................... $490,364,728

Average Employee Cost/Year (Current Smoker) ………………3.44/280 days/year *x* $45,877 = $564

Average Employee Cost/Year (Former Smoker) ………………1.79/280 days/year *x* $45,877 = $293

2015 Estimates for Projected Indirect Costs Associated with Absenteeism

2015 Mississippi Population .... 2,992,333 persons

2015 Mississippi Population (18-64 years): .... 1,825,784 persons

Current Smoker Prevalence ....31.7 percent

Former Smoker Prevalence..19.0 percent

Average Mississippi Earnings/Year ....$46,543 (EMSI)

Current Smoker Absentee Days ....1,825,784 persons *x* 31.7% *x* 3.30 days = 1,906,940 days

Current Smoker Absentee Years ....1,906,940 days ÷ 280 days/year = 6,811 years

Cost of Current Smoker Absenteeism.......................... 6,811 years *x* $46,543/year = $316,981,894

Former Smoker Absentee Days ...... 1,825,784 persons *x* 19.0% *x* 2.40 days/year = 1,386,866 days

Former Smoker Absentee Years ....1,386,866 days ÷ 280 days/year = 4,953 years

Cost of Former Smoker Absenteeism .... 4,953 years *x* $46,543/year = $230,532,287

Total Cost of Employee Absentee Days Attributable to Smoking........................... $547,514,181

Average Employee Cost/Year (Current Smoker) ………………3.30/280 days/year *x* $46,543 = $549

Average Employee Cost/Year (Former Smoker) ………………2.40/280 days/year x $46,543 = $399

Appendix H – Projected Indirect Costs due to Presenteeism

2000 Estimates for Projected Indirect Costs Associated with Presenteeism

2000 Mississippi Population (U.S. Census Estimates)... 2,848,353 persons

2000 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,729,982 persons

Current Smoker Prevalence ....24.8 percent

Former Smoker Prevalence...20.7 percent

Average Mississippi Earnings/Year ....$31,087 (EMSI)

Current Smoker Presenteeism Hours ....1,729,982 *x* 24.8% *x* 76.5 = 32,788,133 hours

Current Smoker Presenteeism Years ....32,788,133 hours ÷ 2,080 hours/year = 15,764 years

Cost of Current Smoker Presenteeism...................... 15,764 years *x* $31,087 /year = $490,044,354

Former Smoker Presenteeism Hours ....1,729,982 *x* 20.7% *x* 56.0 = 20,057,411 hours

Former Smoker Presenteeism Years................20,057,411 hours ÷ 2,080 hours/year = 9,643 years

Cost of Former Smoker Presenteeism .... 9,643 years *x* $31,087/year = $299,733,741

Total Cost of Presenteeism Attributable to Smoking $789,818,095

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $31,087 = $1,143

Presenteeism Cost per Employed Former Smoker ...... 56.0 ÷ 2,080 hours/year *x* $31,087 = $837

2001 Estimates for Projected Indirect Costs Associated with Presenteeism

2001 Mississippi Population (U.S. Census Estimates)... 2,852,994 persons

2001 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,740,014 persons

Current Smoker Prevalence ....25.2 percent

Former Smoker Prevalence...20.6 percent

Average Mississippi Earnings/Year ....$31,960 (EMSI)

Current Smoker Presenteeism Hours ....1,740,014 *x* 25.2% *x* 76.5 = 33,588,360 hours

Current Smoker Presenteeism Years ....33,588,360 hours ÷ 2,080 hours/year = 16,148 years

Cost of Current Smoker Presenteeism...................... 16,148 years *x* $31,960 /year = $516,093,777

Former Smoker Presenteeism Hours ....1,740,014 *x* 20.6% *x* 56.0 = 20,062,361 hours

Former Smoker Presenteeism Years................20,062,361 hours ÷ 2,080 hours/year = 9,645 years

Cost of Former Smoker Presenteeism .... 9,645 years *x* $31,960 /year = $308,263,333

Total Cost of Presenteeism Attributable to Smoking $824,357,110

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $31,960 = $1,175

Presenteeism Cost per Employed Former Smoker ...... 56.0 ÷ 2,080 hours/year *x* $31,960 = $860

2002 Estimates for Projected Indirect Costs Associated with Presenteeism

2002 Mississippi Population (U.S. Census Estimates).. 2,858,681 persons

2002 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,750,133 persons

Current Smoker Prevalence ....25.7 percent

Former Smoker Prevalence..20.5 percent

Average Mississippi Earnings/Year ....$32,977 (EMSI)

Current Smoker Presenteeism Hours ....1,750,133 *x* 25.7% *x* 76.5 = 34,397,333 hours

Current Smoker Presenteeism Years ....34,397,333 hours ÷ 2,080 hours/year = 16,537 years

Cost of Current Smoker Presenteeism...................... 16,537 years *x* $32,977 /year = $545,351,740

Former Smoker Presenteeism Hours.........................1,750,133 *x* 20.5% *x* 56.0 = 20,067,025 hours

Former Smoker Presenteeism Years................20,067,025 hours ÷ 2,080 hours/year = 9,648 years

Cost of Former Smoker Presenteeism .... 9,648 years *x* $31,087/year = $318,152,197

Total Cost of Presenteeism Attributable to Smoking $863,503,936

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $32,977 = $1,213

Presenteeism Cost per Employed Former Smoker ...... 56.0 ÷ 2,080 hours/year *x* $32,977 = $888

2003 Estimates for Projected Indirect Costs Associated with Presenteeism

2003 Mississippi Population (U.S. Census Estimates).. 2,868,312 persons

2003 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,760,938 persons

Current Smoker Prevalence ....26.2 percent

Former Smoker Prevalence..20.4 percent

Average Mississippi Earnings/Year ....$34,171 (EMSI)

Current Smoker Presenteeism Hours ....1,760,938 *x* 26.2% *x* 76.5 = 35,227,124 hours

Current Smoker Presenteeism Years ....35,227,124 hours ÷ 2,080 hours/year = 16,936 years

Cost of Current Smoker Presenteeism...................... 16,936 years *x* $34,171 /year = $578,728,629

Former Smoker Presenteeism Hours.........................1,760,938 *x* 20.4% *x* 56.0 = 20,078,215 hours

Former Smoker Presenteeism Years................20,078,215 hours ÷ 2,080 hours/year = 9,653 years

Cost of Former Smoker Presenteeism .... 9,653 years *x* $34,171 /year = $329,854,851

Total Cost of Presenteeism Attributable to Smoking $908,583,480

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $34,171 = $1,257

Presenteeism Cost per Employed Former Smoker ...... 56.0 ÷ 2,080 hours/year *x* $34,171 = $920

2004 Estimates for Projected Indirect Costs Associated with Presenteeism

2004 Mississippi Population (U.S. Census Estimates)... 2,889,010 persons

2004 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,777,280 persons

Current Smoker Prevalence ....2636 percent

Former Smoker Prevalence..20.2 percent

Average Mississippi Earnings/Year ....$35,796 (EMSI)

Current Smoker Presenteeism Hours ....1,777,280 *x* 26.6% *x* 76.5 = 36,177,201 hours

Current Smoker Presenteeism Years ....36,177,201 hours ÷ 2,080 hours/year = 17,393 years

Cost of Current Smoker Presenteeism...................... 17,393 years *x* $35,796 /year = $622,601,501

Former Smoker Presenteeism Hours........................1,777,280 *x* 20.2% *x* 56.0 = 20,150,801 hours

Former Smoker Presenteeism Years...............20,150,801 hours ÷ 2,080 hours/year = 9,688 years

Cost of Former Smoker Presenteeism .... 9,688 years *x* $35,796 /year = $346,790,753

Total Cost of Presenteeism Attributable to Smoking $969,392,254

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $35,796 = $1,317

Presenteeism Cost per Employed Former Smoker ...... 56.0 ÷ 2,080 hours/year *x* $35,796 = $964

2005 Estimates for Projected Indirect Costs Associated with Presenteeism

2005 Mississippi Population (U.S. Census Estimates)... 2,905,943 persons

2005 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,788,874 persons

Current Smoker Prevalence ....27.1 percent

Former Smoker Prevalence..20.1 percent

Average Mississippi Earnings/Year ....$37,347 (EMSI)

Current Smoker Presenteeism Hours ....1,788,874 *x* 27.1% *x* 76.5 = 37,040,425 hours

Current Smoker Presenteeism Years ....37,040,425 hours ÷ 2,080 hours/year = 17,808 years

Cost of Current Smoker Presenteeism...................... 17,808 years *x* $37,347 /year = $665,077,779

Former Smoker Presenteeism Hours........................1,788,874 *x* 20.1% *x* 56.0 = 20,167,765 hours

Former Smoker Presenteeism Years...............20,167,765 hours ÷ 2,080 hours/year = 9,696 years

Cost of Former Smoker Presenteeism .... 9,696 years *x* $37,347 /year = $362,121,457

Total Cost of Presenteeism Attributable to Smoking $1,027,199,236

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $37,347 = $1,374

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $37,347 = $1,006

2006 Estimates for Projected Indirect Costs Associated with Presenteeism

2006 Mississippi Population (U.S. Census Estimates).. 2,904,978persons

2006 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,789,791 persons

Current Smoker Prevalence ....27.5 percent

Former Smoker Prevalence...20.0 percent

Average Mississippi Earnings/Year ....$38,791 (EMSI)

Current Smoker Presenteeism Hours ....1,789,791 *x* 27.5% *x* 76.5 = 37,686,958 hours

Current Smoker Presenteeism Years ....37,686,958 hours ÷ 2,080 hours/year = 18,119 years

Cost of Current Smoker Presenteeism....................... 18,119 years *x* $38,791/year = $702,850,040

Former Smoker Presenteeism Hours ....1,789,791 *x* 20.0% *x* 56.0 = 20,069,557 hours

Former Smoker Presenteeism Years................20,069,557 hours ÷ 2,080 hours/year = 9,646 years

Cost of Former Smoker Presenteeism .... 9,646 years *x* $38,791/year = $374,179,098

Total Cost of Presenteeism Attributable to Smoking $1,077,029,139

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $38,791 = $1,427

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $38,791 = $1,044

2007 Estimates for Projected Indirect Costs Associated with Presenteeism

2007 Mississippi Population (U.S. Census Estimates)... 2,928,350 persons

2007 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,804,223 persons

Current Smoker Prevalence ....28.0 percent

Former Smoker Prevalence...19.9 percent

Average Mississippi Earnings/Year ....$40,120 (EMSI)

Current Smoker Presenteeism Hours ....1,804,223 *x* 28.0% *x* 76.5 = 38,623,453 hours

Current Smoker Presenteeism Years ....38,623,453 hours ÷ 2,080 hours/year = 18,569 years

Cost of Current Smoker Presenteeism....................... 18,569 years *x* $40,120 /year = $744,466,219

Former Smoker Presenteeism Hours ....1,804,223 *x* 19.9% *x* 56.0 = 20,109,870 hours

Former Smoker Presenteeism Years................20,109,870 hours ÷ 2,080 hours/year = 9,668 years

Cost of Former Smoker Presenteeism .... 9,668 years *x* $40,120/year = $387,884,425

Total Cost of Presenteeism Attributable to Smoking $1,132,863,688

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $40,120 = $1,476

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $40,120 = $1,080

2008 Estimates for Projected Indirect Costs Associated with Presenteeism

2008 Mississippi Population (U.S. Census Estimates).. 2,947,806 persons

2008 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,816,918 persons

Current Smoker Prevalence ....28.4 percent

Former Smoker Prevalence...19.8 percent

Average Mississippi Earnings/Year ....$41,538 (EMSI)

Current Smoker Presenteeism Hours .... 1,816,918 *x* 28.4% *x* 76.5 = 39,532,275 hours

Current Smoker Presenteeism Years .... 39,532,275 hours ÷ 2,080 hours/year = 19,006 years

Cost of Current Smoker Presenteeism........................ 19,006 years *x* $41,538/year = $789,466,219

Former Smoker Presenteeism Hours .... 1,816,918 *x* 19.8% *x* 56.0 = 20,135,085 hours

Former Smoker Presenteeism Years................ 20,135,085 hours ÷ 2,080 hours/year = 9,680 years

Cost of Former Smoker Presenteeism .... 9,680 years *x* $41,538/year = $402,101,062

Total Cost of Presenteeism Attributable to Smoking $1,191,567,281

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $41,538 = $1,528

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $41,538 = $1,118

2009 Estimates for Projected Indirect Costs Associated with Presenteeism

2009 Mississippi Population (U.S. Census Estimates).. 2,958,774 persons

2009 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,824,267 persons

Current Smoker Prevalence ....28.9 percent

Former Smoker Prevalence...19.7 percent

Average Mississippi Earnings/Year ....$42,127 (EMSI)

Current Smoker Presenteeism Hours .... 1,824,267 *x* 28.9% *x* 76.5 = 40,331,807 hours

Current Smoker Presenteeism Years .... 40,331,807 hours ÷ 2,080 hours/year = 19,006 years

Cost of Current Smoker Presenteeism........................ 19,006 years *x* $42,127/year = $816,864,145

Former Smoker Presenteeism Hours .... 1,824,267 *x* 19.7% *x* 56.0 = 20,099,774 hours

Former Smoker Presenteeism Years................ 20,099,774 hours ÷ 2,080 hours/year = 9,663 years

Cost of Former Smoker Presenteeism .... 9,663 years *x* $42,127/year = $407,092,708

Total Cost of Presenteeism Attributable to Smoking $1,223,956,853

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $42,127 = $1,549

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $42,127 = $1,134

2010 Estimates for Projected Indirect Costs Associated with Presenteeism

2010 Mississippi Population (U.S. Census Estimates)... 2,970,316 persons

2010 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,834,954 persons

Current Smoker Prevalence ....29.4 percent

Former Smoker Prevalence..19.6 percent

Average Mississippi Earnings/Year ....$42,688 (EMSI)

Current Smoker Presenteeism Hours ....1,834,954 *x* 29.4% *x* 76.5 = 41,211,461 hours

Current Smoker Presenteeism Years ....41,211,461 hours ÷ 2,080 hours/year = 19,813 years

Cost of Current Smoker Presenteeism........................ 19,813 years *x* $42,688/year = $845,776,441

Former Smoker Presenteeism Hours ....1,834,954 *x* 19.6% *x* 56.0 = 20,100,086 hours

Former Smoker Presenteeism Years................20,100,086 hours ÷ 2,080 hours/year = 9,664 years

Cost of Former Smoker Presenteeism .... 9,664 years *x* $42,688/year = $412,510,956

Total Cost of Presenteeism Attributable to Smoking $1,258,287,397

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $42,688 = $1,570

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $42,688 = $1,149

2011 Estimates for Projected Indirect Costs Associated with Presenteeism

2011 Mississippi Population (U.S. Census Estimates)... 2,977,999 persons

2011 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,842,044 persons

Current Smoker Prevalence ....29.8 percent

Former Smoker Prevalence..19.4 percent

Average Mississippi Earnings/Year ....$43,416 (EMSI)

Current Smoker Presenteeism Hours ....1,842,044 *x* 29.8% *x* 76.5 = 42,016,563 hours

Current Smoker Presenteeism Years ....42,016,563 hours ÷ 2,080 hours/year = 20,200 years

Cost of Current Smoker Presenteeism........................ 20,200 years *x* $43,416/year = $877,019,447

Former Smoker Presenteeism Hours ....1,842,044 *x* 19.4% *x* 56.0 = 20,059,859 hours

Former Smoker Presenteeism Years................20,059,859 hours ÷ 2,080 hours/year = 9,644 years

Cost of Former Smoker Presenteeism .... 9,644 years *x* $43,416/year = $418,713,128

Total Cost of Presenteeism Attributable to Smoking $1,295,732,575

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $43,416 = $1,597

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $43,416 = $1,169

2012 Estimates for Projected Indirect Costs Associated with Presenteeism

2012 Mississippi Population (U.S. Census Estimates)... 2,985,660 persons

2012 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,839,814 persons

Current Smoker Prevalence ....30.3 percent

Former Smoker Prevalence...19.3 percent

Average Mississippi Earnings/Year ....$44,984 (EMSI)

Current Smoker Presenteeism Hours ....1,839,814 *x* 30.3% *x* 76.5 = 42,610,782 hours

Current Smoker Presenteeism Years ....42,610,782 hours ÷ 2,080 hours/year = 20,486 years

Cost of Current Smoker Presenteeism....................... 20,486 years *x* $44,984/year = $921,535,933

Former Smoker Presenteeism Hours.........................1,839,814 *x* 19.3% *x* 56.0 = 19,917,826 hours

Former Smoker Presenteeism Years................19,917,826 hours ÷ 2,080 hours/year = 9,576 years

Cost of Former Smoker Presenteeism .... 9,576 years *x* $44,984/year = $430,759,347

Total Cost of Presenteeism Attributable to Smoking $1,352,295,280

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $44,984 = $1,654

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $44,984 = $1,211

2013 Estimates for Projected Indirect Costs Associated with Presenteeism

2013 Mississippi Population (U.S. Census Estimates)... 2,990,976 persons

2013 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,839,860 persons

Current Smoker Prevalence ....30.7 percent

Former Smoker Prevalence...19.2 percent

Average Mississippi Earnings/Year ....$45,047 (EMSI)

Current Smoker Presenteeism Hours ....1,839,860 *x* 30.7% *x* 76.5 = 43,776,657 hours

Current Smoker Presenteeism Years ....43,776,657 hours ÷ 2,080 hours/year = 20,797 years

Cost of Current Smoker Presenteeism....................... 20,797 years *x* $45,047/year = $936,817,721

Former Smoker Presenteeism Hours.........................1,839,860 *x* 19.2% *x* 56.0 = 19,800,573 hours

Former Smoker Presenteeism Years................19,800,573 hours ÷ 2,080 hours/year = 9,520 years

Cost of Former Smoker Presenteeism .... 9,520 years *x* $45,047/year = $428,821,926

Total Cost of Presenteeism Attributable to Smoking $1,365,639,647

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $45,047 = $1,657

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $45,047 = $1,213

2014 Estimates for Projected Indirect Costs Associated with Presenteeism

2014 Mississippi Population (U.S. Census Estimates)... 2,993,443 persons

2014 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,834,605 persons

Current Smoker Prevalence ....31.2 percent

Former Smoker Prevalence...19.1 percent

Average Mississippi Earnings/Year ....$45,877 (EMSI)

Current Smoker Presenteeism Hours ....1,834,605 *x* 31.2% *x* 76.5 = 43,776,657 hours

Current Smoker Presenteeism Years ....43,776,657 hours ÷ 2,080 hours/year = 21,046 years

Cost of Current Smoker Presenteeism........................ 21,046 years *x* $45,877/year = $965,547,550

Former Smoker Presenteeism Hours.........................1,834,605 *x* 19.1% *x* 56.0 = 19,626,604 hours

Former Smoker Presenteeism Years................19,626,604 hours ÷ 2,080 hours/year = 9,436 years

Cost of Former Smoker Presenteeism .... 9,436 years *x* $45,877/year = $432,888,695

Total Cost of Presenteeism Attributable to Smoking $1,398,436,245

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $45,877 = $1,687

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $45,877 = $1,235

2015 Estimates for Projected Indirect Costs Associated with Presenteeism

2015 Mississippi Population (U.S. Census Estimates)... 2,992,333 persons

2015 Mississippi Population (18-64 years) (U.S. Census Estimates).................... 1,825,784 persons

Current Smoker Prevalence ....31.7 percent

Former Smoker Prevalence...19.0 percent

Average Mississippi Earnings/Year ....$46,543 (EMSI)

Current Smoker Presenteeism Hours ....1,825,784 *x* 31.7% *x* 76.5 = 44,206,339 hours

Current Smoker Presenteeism Years ....44,206,339 hours ÷ 2,080 hours/year = 21,253 years

Cost of Current Smoker Presenteeism........................ 21,253 years *x* $46,543/year = $989,183,010

Former Smoker Presenteeism Hours.........................1,825,784 *x* 19.0% *x* 56.0 = 19,415,387 hours

Former Smoker Presenteeism Years................19,415,387 hours ÷ 2,080 hours/year = 9,334 years

Cost of Former Smoker Presenteeism .... 9,334 years *x* $46,543/year = $434,448,353

Total Cost of Presenteeism Attributable to Smoking $1,423,631,362

Presenteeism Cost per Employed Current Smoker... 76.5 ÷ 2,080 hours/year *x* $46,543 = $1,712

Presenteeism Cost per Employed Former Smoker ... 56.0 ÷ 2,080 hours/year *x* $46,543 = $1,253

Appendix I – Projected Indirect Costs due to Inability to Work (Disability)

Estimating the indirect costs due to disability attributable to smoking employed a regression methodology utilized by Yang, et al, described at the end of this appendix.

By calculating the probability at the means for Current Smokers, we find the probability that current smokers are more likely to be unable to work due to disability. Coupling that with American Community Survey estimates of the percentage of the population between the ages of 18 and 64, inclusive, that is not working and has a disability, this provides an estimate of the proportion of smokers who are not able to work due to a disability attributable to smoking. Average annual wages obtained from the Economic Modeling Systems Incorporated (EMSI – a proprietary dataset) provides an estimate of the loss of productivity due to a current or former smoker being disabled due to smoking.

2000 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,848,353 persons

Mississippi Population (18-64 years): .... 1,729,982 persons

Current Smoker Prevalence ....24.8 percent

Former Smoker Prevalence...20.7 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled ....36.0 percent

Additional Probability of Former Smoker being Disabled ....26.8 percent

Average Mississippi Earnings/Year ....$31,087 (EMSI)

Number of Current Smokers.. 1,729,982 *x* 24.8% = 428,603 persons

Number of Former Smokers .... 1,729,982 *x* 20.7% = 358,168 persons

Current Smoker Disability Rate................. 428,603 persons *x* 10.6% *x* (1+36.0%) = 61,994 persons (This is also the number of years in lost wages)

Former Smoker Disability Rate .... 358,168 persons *x* 10.6% *x* (1+26.8%) = 48,307 persons (This is also the number of years in lost wages)

Current Smoker Disability Cost .... 61,994 persons *x* $31,087 = $1,927,207,478

Former Smoker Disability Cost................................ 48,307 persons *x* $31,807 = $1,501,719,709

Total Cost of Smoker Disability ....$1,927,207,478 + $1,501,719,709 = $3,428,927,187

2001 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,852,994 persons

Mississippi Population (18-64 years): .... 1,740,014 persons

Current Smoker Prevalence ....25.2 percent

Former Smoker Prevalence..20.6 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled...38.0 percent

Additional Probability of Former Smoker being Disabled ....27.4 percent

Average Mississippi Earnings/Year ....$31,960 (EMSI)

Number of Current Smokers..1,740,014 *x* 25.2% = 439,064 persons

Number of Former Smokers ....1,740,014 *x* 20.6% = 358,356 persons

Current Smoker Disability Rate................. 439,064 persons *x* 10.6% *x* (1+38.0%) = 61,994 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 358,356 persons *x* 10.6% *x* (1+21.1%) = 48,548 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 61,994 persons *x* $31,960 = $2,058,799,280

Former Smoker Disability Cost................................ 48,548 persons *x* $31,960 = $1,551,594,080

Total Cost of Smoker Disability ....$2,058,799,280 + $1,551,594,080 = $3,610,393,360

2002 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,858,681 persons

Mississippi Population (18-64 years): .... 1,750,133 persons

Current Smoker Prevalence ....25.7 percent

Former Smoker Prevalence...20.5 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled...34.5 percent

Additional Probability of Former Smoker being Disabled ....24.2 percent

Average Mississippi Earnings/Year ....$32,977 (EMSI)

Number of Current Smokers..1,750,133 *x* 25.7% = 449,638 persons

Number of Former Smokers ....1,750,133 *x* 20.5% = 358,340 persons

Current Smoker Disability Rate................. 449,638 persons *x* 10.6% *x* (1+34.5%) = 64,322 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 358,340 persons *x* 10.6% *x* (1+20.0%) = 47,326 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 61,994 persons *x* $32,977 = $2,121,146,594

Former Smoker Disability Cost................................ 47,326 persons *x* $32,977 = $1,560,669,502

Total Cost of Smoker Disability ....$2,121,146,594 + $1,560,669,502 = $3,681,816,096

2003 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,868,312 persons

Mississippi Population (18-64 years): .... 1,760,938 persons

Current Smoker Prevalence ....26.2 percent

Former Smoker Prevalence..20.4 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled.............................37.2 percent

Additional Probability of Former Smoker being Disabled ....25.0 percent

Average Mississippi Earnings/Year ....$34,171 (EMSI)

Number of Current Smokers...1,760,938 x 26.2% = 460,485 persons

Number of Former Smokers ....1,760,938 x 20.4% = 358,540 persons

Current Smoker Disability Rate................. 460,485 persons x 10.6% x (1+37.2%) = 67,207 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 358,540 persons x 10.6% x (1+20.7%) = 47,651 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 67,207 persons x $34,171 = $2,296,530,397

Former Smoker Disability Cost............................... 47,651 persons x $34,171 = $1,628,282,321

Total Cost of Smoker Disability ....$2,296,530,397 + $1,628,282,321 = $3,924,812,718

2004 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,889,010 persons

Mississippi Population (18-64 years): .... 1,777,280 persons

Current Smoker Prevalence ....26.6 percent

Former Smoker Prevalence..20.2 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled.............................35.4 percent

Additional Probability of Former Smoker being Disabled ....27.4 percent

Average Mississippi Earnings/Year ....$35,796 (EMSI)

Number of Current Smokers...1,777,280 x 26.6% = 472,905 persons

Number of Former Smokers ....1,777,280 x 20.2% = 359,836 persons

Current Smoker Disability Rate................. 472,905 persons x 10.6% x (1+35.4%) = 68,099 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 3359,836 persons x 10.6% x (1+27.4%) = 48,769 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 68,099 persons *x* $35,796 = $2,437,671,804

Former Smoker Disability Cost.............................. 48,769 persons *x* $35,796 = $1,745,735,124

Total Cost of Smoker Disability ....$2,437,671,804 + $1,745,735,124 = $4,183,406,928

2005 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,905,943 persons

Mississippi Population (18-64 years): .... 1,788,874 persons

Current Smoker Prevalence ....27.1 percent

Former Smoker Prevalence...20.1 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled..35.3 percent

Additional Probability of Former Smoker being Disabled ....25.7 percent

Average Mississippi Earnings/Year ....$37,347 (EMSI)

Number of Current Smokers...1,788,874 *x* 27.1% = 484,189 persons

Number of Former Smokers ....1,788,874 *x* 20.1% = 360,139 persons

Current Smoker Disability Rate................. 484,189 persons *x* 10.6% *x* (1+35.3%) = 69,699 persons (This is also the number of years in lost wages)

Former Smoker Disability Rate .... 360,139 persons *x* 10.6% *x* (1+20.9%) = 48,135 persons (This is also the number of years in lost wages)

Current Smoker Disability Cost .... 69,699 persons *x* $37,347 = $2,603,048,553

Former Smoker Disability Cost.............................. 48,135 persons *x* $37,347 = $1,797,697,845

Total Cost of Smoker Disability ....$2,603,048,553 + $1,797,697,845 = $4,400,746,398

2006 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,904,978 persons

Mississippi Population (18-64 years): .... 1,789,791 persons

Current Smoker Prevalence ....27.5 percent

Former Smoker Prevalence...20.0 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled..36.7 percent

Additional Probability of Former Smoker being Disabled ....24.5 percent

Average Mississippi Earnings/Year ....$38,791 (EMSI)

Number of Current Smokers...1,789,791 *x* 27.5% = 492,640 persons

Number of Former Smokers .... 1,789,791 *x* 20.0% = 358,278 persons

Current Smoker Disability Rate................. 492,640 persons *x* 10.6% *x* (1+36.7%) = 71,615 persons (This is also the number of years in lost wages)

Former Smoker Disability Rate .... 358,278 persons *x* 10.6% *x* (1+24.5%) = 47,446 persons (This is also the number of years in lost wages)

Current Smoker Disability Cost .... 71,615 persons *x* $38,791 = $2,778,017,465

Former Smoker Disability Cost............................... 47,446 persons *x* $38,791 = $1,840,477,786

Total Cost of Smoker Disability ....$2,778,017,465 + $1,840,477,786 = $4,618,495,251

2007 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,928,350 persons

Mississippi Population (18-64 years): .... 1,804,223 persons

Current Smoker Prevalence ....28.0 percent

Former Smoker Prevalence...19.9 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled ....35.6 percent

Additional Probability of Former Smoker being Disabled ....22.6 percent

Average Mississippi Earnings/Year ....$40,120 (EMSI)

Number of Current Smokers... 1,804,223 *x* 28.0% = 504,882 persons

Number of Former Smokers .... 1,804,233 *x* 19.9% = 359,105 persons

Current Smoker Disability Rate................. 504,882 persons *x* 10.6% *x* (1+35.6%) = 72,834 persons (This is also the number of years in lost wages)

Former Smoker Disability Rate .... 359,105 persons *x* 10.6% *x* (1+22.6%) = 46,826 persons (This is also the number of years in lost wages)

Current Smoker Disability Cost .... 72,834 persons *x* $40,120 = $2,922,100,080

Former Smoker Disability Cost............................... 46,826 persons *x* $40,120 = $1,878,659,120

Total Cost of Smoker Disability ....$2,922,100,080 + $1,878,659,120 = $4,800,759,200

2008 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,947,806 persons

Mississippi Population (18-64 years): .... 1,816,918 persons

Current Smoker Prevalence ....28.4 percent

Former Smoker Prevalence...19.8 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.6 percent

Additional Probability of Current Smoker being Disabled ....38.4 percent

Additional Probability of Former Smoker being Disabled ....21.7 percent

Average Mississippi Earnings/Year ....$41,538 (EMSI)

Number of Current Smokers...1,816,918 *x* 28.4% = 516,762 persons

Number of Former Smokers ....1,816,918 *x* 19.8% = 359,555 persons

Current Smoker Disability Rate................. 516,762 persons *x* 10.6% *x* (1+38.4%) = 76,038 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 359,555 persons *x* 10.6% *x* (1+21.7%) = 46,532 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 76,038 persons *x* $41,538 = $3,158,466,444

Former Smoker Disability Cost............................... 46,532 persons *x* $41,538 = $1,932,846,216

Total Cost of Smoker Disability ....$3,158,466,444 + $1,932,846,216 = $5,091,312,660

2009 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,958,774 persons

Mississippi Population (18-64 years): .... 1,824,267 persons

Current Smoker Prevalence ....28.9 percent

Former Smoker Prevalence...19.7 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.8 percent

Additional Probability of Current Smoker being Disabled ....35.4 percent

Additional Probability of Former Smoker being Disabled ....25.5 percent

Average Mississippi Earnings/Year ....$42,127 (EMSI)

Number of Current Smokers...1,824,267 *x* 28.9% = 527,213 persons

Number of Former Smokers ....1,824,267 *x* 19.7% = 358,925 persons

Current Smoker Disability Rate................. 527,213 persons *x* 10.8% *x* (1+35.4%) = 77,393 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 358,925 persons *x* 10.8% *x* (1+25.5%) = 48,823 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 77,393 persons *x* $42,127 = $3,260,334,911

Former Smoker Disability Cost............................... 48,823 persons *x* $42,127 = $2,056,766,521

Total Cost of Smoker Disability ....$3,260,334,911 + $2,056,766,521 = $5,317,101,432

2010 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,970,316 persons

Mississippi Population (18-64 years): .... 1,834,954 persons

Current Smoker Prevalence ....29.4 percent

Former Smoker Prevalence...19.6 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.9 percent

Additional Probability of Current Smoker being Disabled.............................35.2 percent

Additional Probability of Former Smoker being Disabled ....23.8 percent

Average Mississippi Earnings/Year ....$42,688 (EMSI)

Number of Current Smokers...1,834,954 x 29.4% = 538,712 persons

Number of Former Smokers ....1,834,954 x 19.6% = 358,930 persons

Current Smoker Disability Rate................. 538,712 persons x 10.9% x (1+35.2%) = 79,382 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 358,930 persons x 10.9% x (1+23.8%) = 48,405 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 79,382 persons x $42,688 = $3,388,658,816

Former Smoker Disability Cost............................... 48,405 persons x $42,688 = $2,066,312,640

Total Cost of Smoker Disability ....$3,388,658,816 + $2,066,312,640 = $5,454,971,456

2011 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,977,999 persons

Mississippi Population (18-64 years): .... 1,842,044 persons

Current Smoker Prevalence ....29.8 percent

Former Smoker Prevalence...19.4 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.3 percent

Additional Probability of Current Smoker being Disabled.............................37.1 percent

Additional Probability of Former Smoker being Disabled ....25.7 percent

Average Mississippi Earnings/Year ....$43,416 (EMSI)

Number of Current Smokers...1,842,044 x 29.8% = 549,236 persons

Number of Former Smokers ....1,842,044 x 19.4% = 358,212 persons

Current Smoker Disability Rate................. 549,236 persons x 10.3% x (1+37.1%) = 77,825 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 358,212 persons x 10.3% x (1+25.7%) = 46,539 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 77,825 persons *x* $43,416 = $3,378,850,200

Former Smoker Disability Cost .... 46,539 persons *x* $43,416 = $2,020,537,224

Total Cost of Smoker Disability .... $3,378,850,200 + $2,020,537,224 = $5,399,387,424

2012 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,985,660 persons

Mississippi Population (18-64 years): .... 1,839,814 persons

Current Smoker Prevalence .... 30.3 percent

Former Smoker Prevalence.. 19.3 percent

Proportion Disabled in Mississippi (not hearing disabled) .... 10.3 percent

Additional Probability of Current Smoker being Disabled .... 34.4 percent

Additional Probability of Former Smoker being Disabled .... 26.2 percent

Average Mississippi Earnings/Year .... $44,984 (EMSI)

Number of Current Smokers... 1,839,814 *x* 30.3% = 557,004 persons

Number of Former Smokers .... 1,839,814 *x* 19.3% = 355,675 persons

Current Smoker Disability Rate .... 557,004 persons *x* 10.3% *x* (1+34.4%) = 76,992 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 355,675 persons *x* 10.3% *x* (1+26.2%) = 46,158 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 76,992 persons *x* $44,984 = $3,463,408,128

Former Smoker Disability Cost .... 46,158 persons *x* $44,984 = $2,076,371,472

Total Cost of Smoker Disability .... $3,463,408,128 + $2,076,371,472 = $5,539,779,600

2013 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,990,976 persons

Mississippi Population (18-64 years): .... 1,839,860 persons

Current Smoker Prevalence .... 30.7 percent

Former Smoker Prevalence.. 19.2 percent

Proportion Disabled in Mississippi (not hearing disabled) .... 10.8 percent

Additional Probability of Current Smoker being Disabled .... 35.1 percent

Additional Probability of Former Smoker being Disabled .... 25.5 percent

Average Mississippi Earnings/Year .... $45,047 (EMSI)

Number of Current Smokers... 1,839,860 *x* 30.7% = 565,450 persons

Number of Former Smokers .... 1,839,860 *x* 19.2% = 353,582 persons

Current Smoker Disability Rate................ 565,450 persons *x* 10.8% *x* (1+35.1%) = 82,736 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 353,582 persons *x* 10.8% *x* (1+25.1%) = 48,035 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 82,736 persons *x* $45,045 = $3,727,008,592

Former Smoker Disability Cost.............................. 48,035 persons *x* $45,047 = $2,163,832,645

Total Cost of Smoker Disability ....$3,727,008,592 + $2,163,832,645 = $5,890,841,237

2014 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,993,443 persons

Mississippi Population (18-64 years): .... 1,834,605 persons

Current Smoker Prevalence ....31.2 percent

Former Smoker Prevalence...19.1 percent

Proportion Disabled in Mississippi (not hearing disabled) ....11.0 percent

Additional Probability of Current Smoker being Disabled ....36.3 percent

Additional Probability of Former Smoker being Disabled ....24.0 percent

Average Mississippi Earnings/Year ....$45,877 (EMSI)

Number of Current Smokers...1,834,605 *x* 31.2% = 572,244 persons

Number of Former Smokers .... 1,834,608 *x* 19.1% = 350,475 persons

Current Smoker Disability Rate................ 572,244 persons *x* 11.0% *x* (1+36.3%) = 85,646 persons
(This is also the number of years in lost wages)

Former Smoker Disability Rate .... 350,475 persons *x* 11.0% *x* (1+24.0%) = 47,727 persons
(This is also the number of years in lost wages)

Current Smoker Disability Cost .... 85,646 persons *x* $45,877 = $3,929,181,542

Former Smoker Disability Cost.............................. 47,727 persons *x* $45,877 = $2,189,571,579

Total Cost of Smoker Disability ....$3,929,181,542 + $2,189,571,579 = $6,118,753,121

2015 Estimates for Projected Indirect Costs Associated with Disability

Mississippi Population .... 2,992,333 persons

Mississippi Population (18-64 years): .... 1,825,784 persons

Current Smoker Prevalence ....31.7 percent

Former Smoker Prevalence...19.0 percent

Proportion Disabled in Mississippi (not hearing disabled) ....10.3 percent

Additional Probability of Current Smoker being Disabled ....34.8 percent

Additional Probability of Former Smoker being Disabled ....23.4 percent

Average Mississippi Earnings/Year ....$46,543 (EMSI)

Number of Current Smokers..1,825,784 *x* 31.7% = 577,861 persons

Number of Former Smokers ....1,825,784 *x* 19.0% = 346,703 persons

Current Smoker Disability Rate................. 577,861 persons *x* 10.3% *x* (1+34.8%) = 80,090 persons (This is also the number of years in lost wages)

Former Smoker Disability Rate .... 346,703 persons *x* 10.3% *x* (1+23.4%) = 44,001 persons (This is also the number of years in lost wages)

Current Smoker Disability Cost .... 80,090 persons *x* $46,543 = $3,727,628,870

Former Smoker Disability Cost............................... 50,745 persons *x* $46,543 = $2,047,938,543

Total Cost of Smoker Disability ....$3,727,628,870 + $2,047,938,543 = $5,775,567,413

Appendix J – Projected Indirect Costs due to Premature Mortality

2000 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $143,450,468

NPLVE for 45-54 year age group $315,076,285

NPLVE for 55-64 year age group $181,805,669

Total NPLVE for all age groups $660,332,422

2001 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $141,357,147

NPLVE for 45-54 year age group $339,948,937

NPLVE for 55-64 year age group $201,987,070

Total NPLVE for all age groups $683,293,154

2002 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $138,964,476

NPLVE for 45-54 year age group $369,662,971

NPLVE for 55-64 year age group $241,791,031

Total NPLVE for all age groups $750,418,478

2003 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $108,294,490

NPLVE for 45-54 year age group $396,509,107

NPLVE for 55-64 year age group $247,259,215

Total NPLVE for all age groups $752,062,812

2004 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $123,417,565

NPLVE for 45-54 year age group $453,824,804

NPLVE for 55-64 year age group $281,312,801

Total NPLVE for all age groups $858,555,170

2005 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $111,206,229

NPLVE for 45-54 year age group $485,080,515

NPLVE for 55-64 year age group $307,697,945

Total NPLVE for all age groups $903,984,689

2006 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $133,743,736

NPLVE for 45-54 year age group $556,164,412

NPLVE for 55-64 year age group $335,583,535

Total NPLVE for all age groups $1,025,491,683

2007 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $134,134,173

NPLVE for 45-54 year age group $512,955,403

NPLVE for 55-64 year age group $342,487,357

Total NPLVE for all age groups $989,576,933

2008 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $83,180,343

NPLVE for 45-54 year age group $546,457,498

NPLVE for 55-64 year age group $332,525,321

Total NPLVE for all age groups $962,163,162

2009 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $75,557,058

NPLVE for 45-54 year age group $543,645,052

NPLVE for 55-64 year age group $346,693,996

Total NPLVE for all age groups $965,896,106

2010 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $73,589,912

NPLVE for 45-54 year age group $614,585,527

NPLVE for 55-64 year age group $373,597,711

Total NPLVE for all age groups $1,061,773,150

2011 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $68,796,839

NPLVE for 45-54 year age group $612,109,217

NPLVE for 55-64 year age group $455,127,746

Total NPLVE for all age groups $1,136,033,802

2012 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $93,214,251

NPLVE for 45-54 year age group $529,497,847

NPLVE for 55-64 year age group $413,263,178

Total NPLVE for all age groups $1,035,975,276

2013 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $121,583,560

NPLVE for 45-54 year age group $602,838,109

NPLVE for 55-64 year age group $484,397,260

Total NPLVE for all age groups $1,208,818,929

2014 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $59,914,723

NPLVE for 45-54 year age group $545,485,941

NPLVE for 55-64 year age group $519,165,073

Total NPLVE for all age groups $1,124,565,737

2015 Estimates for Projected Indirect Costs Associated with Premature Mortality (ages 35-64)

NPLVE for 35-44 year age group $48,627,608

NPLVE for 45-54 year age group $291,148,712

NPLVE for 55-64 year age group $308,859,149

Total NPLVE for all age groups $648,635,469

Appendix K – Input-Output Methodology and IMPLAN

Public policy makers, elected officials and decision makers at the local level frequently assess the priority of potential and ongoing projects. These projects often take the form of either a new industry locating in an area or the expansion of an existing industry. In either case, there is often an expectation that a new project will expand the labor market through increased demand for employment and local services. As new jobs are added, total income increases and local unemployment decreases. Demographic aspects of the economy, such as population and commuting patterns, also change. New businesses are created to support expansion and provide locally available inputs to production. Increased income stimulates the growth of retail and service sectors. These changes to the economic and fiscal landscape of a local area, or region, have implications on further economic development, as well as on tax policy and the provision of public services, such as education and public safety.

Input-output analysis was developed in the 1930's by Wasily Leontief, who won the Nobel Prize in 1973 for his contributions to economics. Since then it has become one of the best-known and most widely used techniques for assessing regional economic impacts. It excels at analyzing the economic relationships or linkages among major sectors of the economy. Input-output analysis is based on the fact that an initial change (increase or decrease in sales) in one sector of the economy can affect other sectors of the economy.

The initial change is often referred to as an impact, or a direct effect. The direct effect is measured in terms of sales to final demand, and it is the economic variable that drives an input-output model. The initial impact requires increased production by secondary industries, the suppliers of goods and services to the primary industry. Increased production by secondary industries is referred to collectively as indirect effects. Additionally, induced effects arise as a result of spending of the new income by households. Through careful examination of the relationships among industries themselves and between industries and households one can estimate the total effect, which is the sum of the direct, indirect and induced effects.

IMPLAN® is a commercial software product from IMPLAN, LLC, located in Huntersville, North Carolina. Its popularity is due to its geographic and model formulation flexibility and the provision of extensive economic information. IMPLAN, developed originally for use by the U.S. Forest Service, has been in use since 1979 and is capable of developing input-output models for any county, state or group of counties or states in the United States.

The data is put together to create a large table that shows all transactions that occur between industries, households and governments. The basis of the industry accounts (or input-output matrix allows for the building of *multipliers* for input-output analysis) which allow us to make estimations of how changes in the target industry's production will result in additional production in the economy on the basis of business to business purchases. The addition of the social accounts allows us to also examine changes in the economy that result from *labor income* spending (all forms of paid employee-based income including benefits). The result is a model that allows users to estimate, based on actual collected federal data, how an increase or decrease in production of an industry or industries in a local economy might affect the remaining industries.

To illustrate in a simplified fashion, let's say that demand for windows increase by $10 million in Washington County, MN. In IMPLAN, we can see how this increase in production will affect the rest of the economy of Washington County, MN. In this example, the appropriate Sector is 99 (the Sector defines the type of industry that experiences the change in production). We can create the *event* (or transaction) that describes an increase in sales for Sector 99 and then enter the value of $10 million dollars into the *industry sales* field. Based on the relationships for the region (that are derived from the accounts described above), there is an established annual relationship of production to total employment and to total labor payments, tax collection and profits.

From these annual relationships, IMPLAN® can estimate the *employment* in Sector 99 associated to those sales, as well as estimated labor payments associated to this increase in production. If the *employment* and *income* values are known, these can also be entered into IMPLAN® overwriting the underlying regional data for just that one firm. Then, based on what that industry purchases to make its products (basically a grocery list of all the goods and services needed to produce a product in our example) and the underlying data which can be used to determine how much locally produced supply can be used to meet demand, the software estimates what additional production will be required in the local economy to meet this increase in production (*indirect effects*) and the additional production required from the local economy to meet the spending associated to the increase in labor payments (*induced effects*). However, since all of the spending in our analyses were derived from households, the total level of spending are induced effects.

Definitions and Relationships

The following provides definitions of the input-output methodology or IMPLAN® specific terms used in the analysis. These definitions were taken directly from *Principles of Impact Analysis & IMPLAN Applications.*

Table 7 – IMPLAN Definitions

Term	Definition and Relationships
Induced Effects	The results of local spending of employee's wages and salaries for both employees of the directly affected industry and the employees of the indirectly affected industries.
Value Added	Comprised of Labor Income, Indirect Business Taxes, and Other Type Property Income. Value Added demonstrates an industry's value of production over the cost of its purchasing the goods and services required to make its products. Value Added is often referred to as Gross Regional Product. **Value Added = Labor Income + Indirect Business Taxes + Other Property Type Income**

Appendix L – Induced Consequences Related to Lost Wages

Table L-1 – Current and Projected Induced Effects on Employment and Labor Income

Year	Induced Employment Effects			Income Labor Income Effects		
	Current	Projected	Savings	Current	Projected	Savings
2000	32,171.9	32,788.50	616.6	$1,094,000,341	$1,114,967,386	$20,967,045
2001	35,285.2	34,349.70	-935.5	$1,199,865,912	$1,168,055,110	-$31,810,802
2002	37,349.4	35,740.60	-1,608.8	$1,270,059,267	$1,215,352,081	-$54,707,186
2003	38,267.3	37,959.50	-307.8	$1,301,270,836	$1,290,805,391	-$10,465,445
2004	38,400.6	39,719.80	1,319.2	$1,301,040,162	$1,350,663,579	$49,623,417
2005	39,229.2	40,987.50	1,758.3	$1,334,450,722	$1,394,261,444	$59,810,722
2006	43,547.2	44,428.30	881.1	$1,482,588,179	$1,512,586,787	$29,998,608
2007	42,082.7	44,380.80	2,298.1	$1,433,534,387	$1,511,818,398	$78,284,011
2008	42,148.1	45,308.20	3,160.1	$1,436,181,493	$1,543,859,277	$107,677,784
2009	44,705.3	47,606.20	2,900.9	$1,522,832,750	$1,621,648,091	$98,815,341
2010	44,346.8	48,055.90	3,709.1	$1,511,492,855	$1,637,913,240	$126,420,385
2011	46,247.1	47,829.20	1,582.1	$1,575,579,082	$1,629,480,707	$53,901,625
2012	44,911.0	49,174.00	4,263.0	$1,554,711,188	$1,702,285,108	$147,573,920
2013	47,236.4	52,049.30	4,812.9	$1,679,794,785	$1,850,948,664	$171,153,879
2014	46,317.0	52,571.90	6,254.9	$1,608,400,438	$1,825,607,775	$217,207,337
2015	39,300.6	47,318.10	8,017.5	$1,360,638,087	$1,638,216,304	$277,578,217
Total	661,545.8	700,267.5	38,721.7	$22,666,440,484	$24,008,469,342	$1,342,028,858

Table L-2 – Current Economic Burden Induced Effects on Local/State Tax Revenues

Year	Employment Compensation Taxes	Property Taxes	Production/ Import Taxes	Household Taxes	Corporation Taxes	Total
2000	$2,317,790	$0	$214,024,174	$18,322,215	$8,278,403	$242,942,582
2001	$2,542,081	$0	$234,735,131	$20,095,241	$9,079,498	$266,451,951
2002	$2,690,795	$0	$248,467,359	$21,270,832	$9,610,658	$282,039,644
2003	$2,756,922	$0	$254,573,425	$21,793,562	$9,846,838	$288,970,747
2004	$2,756,311	$0	$254,244,332	$21,789,760	$9,870,756	$288,661,159
2005	$2,827,256	$0	$261,171,938	$22,349,236	$10,096,311	$296,444,741
2006	$3,141,111	$0	$290,148,535	$24,830,225	$11,212,573	$329,332,444
2007	$3,037,297	$0	$280,753,018	$24,008,620	$10,839,227	$318,638,162
2008	$3,043,002	$0	$281,454,665	$24,052,904	$10,860,261	$319,410,832
2009	$3,226,514	$0	$298,296,367	$25,504,168	$11,515,797	$338,542,846
2010	$3,202,464	$0	$296,010,491	$25,314,260	$11,424,240	$335,951,455
2011	$3,338,292	$0	$308,677,939	$26,387,544	$11,911,576	$350,315,351
2012	$4,046,849	$0	$285,803,665	$26,168,783	$11,792,719	$327,812,016
2013	$6,039,363	$0	$314,684,206	$34,868,987	$15,279,651	$370,872,207
2014	$6,226,529	$0	$298,327,734	$32,650,322	$16,028,953	$353,233,538
2015	$5,257,566	$0	$262,924,579	$28,260,626	$15,881,420	$312,324,191
Total	$56,450,142	$0	$4,384,297,558	$397,667,285	$183,528,881	$5,021,943,866

Table L-3 – Projected Economic Burden Induced Effects on Local/State Tax Revenues in the Absence of Intervention/Education Programs

Year	Employment Compensation Taxes	Property Taxes	Production/ Import Taxes	Household Taxes	Corporation Taxes	Total
2000	$2,362,212	$0	$218,126,054	$18,673,369	$8,437,063	$247,598,698
2001	$2,474,686	$0	$228,511,842	$19,562,478	$8,838,783	$259,387,789
2002	$2,574,891	$0	$237,764,757	$20,354,603	$9,196,683	$269,890,934
2003	$2,734,749	$0	$252,526,026	$21,618,287	$9,767,645	$286,646,707
2004	$2,861,567	$0	$264,236,354	$22,620,786	$10,220,598	$299,939,305
2005	$2,953,975	$0	$272,877,792	$23,350,939	$10,548,832	$309,731,538
2006	$3,204,668	$0	$296,019,400	$25,332,638	$11,439,448	$335,996,154
2007	$3,203,161	$0	$296,084,676	$25,319,708	$11,431,147	$336,038,692
2008	$3,271,151	$0	$302,556,732	$25,856,271	$11,674,510	$343,358,664
2009	$3,435,880	$0	$317,652,561	$27,159,111	$12,263,048	$360,510,600
2010	$3,470,316	$0	$320,768,640	$27,431,531	$12,379,757	$364,050,244
2011	$3,452,498	$0	$319,238,026	$27,290,280	$12,319,080	$362,299,884
2012	$4,430,977	$0	$312,932,274	$28,652,736	$12,912,089	$358,928,076
2013	$6,654,713	$0	$346,747,294	$38,421,778	$16,836,491	$408,660,276
2014	$7,067,394	$0	$338,615,572	$37,059,601	$18,193,592	$400,936,159
2015	$6,330,140	$0	$316,562,747	$34,025,961	$19,121,324	$376,040,172
Total	$60,482,978	$0	$4,641,220,747	$422,730,077	$195,580,090	$5,320,013,892

Table L-4 – Induced Effect State/Local Tax Savings due to Intervention/Education Programs

Year	Employment Compensation Taxes	Property Taxes	Production/ Import Taxes	Household Taxes	Corporation Taxes	Total
2000	$44,422	$0	$4,101,880	$351,154	$158,660	$4,656,116
2001	-$67,395	$0	-$6,223,289	-$532,763	-$240,715	-$7,064,162
2002	-$115,904	$0	-$10,702,602	-$916,229	-$413,975	-$12,148,710
2003	-$22,173	$0	-$2,047,399	-$175,275	-$79,193	-$2,324,040
2004	$105,256	$0	$9,992,022	$831,026	$349,842	$11,278,146
2005	$126,719	$0	$11,705,854	$1,001,703	$452,521	$13,286,797
2006	$63,557	$0	$5,870,865	$502,413	$226,875	$6,663,710
2007	$165,864	$0	$15,331,658	$1,311,088	$591,920	$17,400,530
2008	$228,149	$0	$21,102,067	$1,803,367	$814,249	$23,947,832
2009	$209,366	$0	$19,356,194	$1,654,943	$747,251	$21,967,754
2010	$267,852	$0	$24,758,149	$2,117,271	$955,517	$28,098,789
2011	$114,206	$0	$10,560,087	$902,736	$407,504	$11,984,533
2012	$384,128	$0	$27,128,609	$2,483,953	$1,119,370	$31,116,060
2013	$615,350	$0	$32,063,088	$3,552,791	$1,556,840	$37,788,069
2014	$840,865	$0	$40,287,838	$4,409,279	$2,164,639	$47,702,621
2015	$1,072,574	$0	$53,638,168	$5,765,335	$3,239,904	$63,715,981
Total	$4,032,836	$0	$256,923,189	$25,062,792	$12,051,209	$298,070,026

Table L-5 – Current Economic Burden Induced Effects on Federal Tax Revenues

Year	Employment Compensation Taxes	Property Taxes	Production/ Import Taxes	Household Taxes	Corporation Taxes	Total
2000	$97,073,944	$7,472,201	$22,190,611	$51,101,208	$46,119,224	$223,957,188
2001	$106,467,712	$8,195,280	$24,337,979	$56,046,232	$50,582,144	$245,629,347
2002	$112,696,184	$8,674,712	$25,761,775	$59,324,996	$53,541,252	$259,998,919
2003	$115,465,676	$8,887,892	$26,394,867	$60,782,900	$54,857,024	$266,388,359
2004	$115,440,092	$8,888,226	$26,360,747	$60,772,296	$54,990,268	$266,451,629
2005	$118,411,424	$9,113,921	$27,079,020	$62,332,692	$56,246,836	$273,183,893
2006	$131,556,336	$10,125,640	$30,083,392	$69,252,248	$62,465,572	$303,483,188
2007	$127,208,408	$9,788,817	$29,109,239	$66,960,764	$60,385,648	$293,452,876
2008	$127,447,336	$9,805,388	$29,181,988	$67,084,276	$60,502,828	$294,021,816
2009	$135,133,192	$10,398,339	$30,928,182	$71,131,888	$64,154,840	$311,746,441
2010	$134,125,928	$10,321,274	$30,691,177	$70,602,232	$63,644,776	$309,385,387
2011	$139,814,712	$10,758,165	$32,004,571	$73,595,656	$66,359,736	$322,532,840
2012	$151,636,844	$8,841,254	$33,483,047	$78,660,856	$62,955,436	$335,577,437
2013	$181,686,528	$11,697,723	$39,716,356	$80,879,024	$75,000,888	$388,980,519
2014	$171,383,704	$13,220,313	$38,966,557	$80,701,112	$79,601,784	$383,873,470
2015	$148,447,952	$9,974,956	$33,698,365	$69,264,080	$73,680,192	$335,065,545
Total	$2,113,995,972	$156,164,101	$479,987,873	$1,078,492,460	$985,088,448	$4,813,728,854

Table L-6 – Projected Economic Burden Induced Effects on Federal Tax Revenues in the Absence of Intervention/Education Programs

Year	Employment Compensation Taxes	Property Taxes	Production/ Import Taxes	Household Taxes	Corporation Taxes	Total
2000	$98,934,412	$7,615,410	$22,615,905	$52,080,588	$47,003,120	$228,249,435
2001	$103,645,044	$7,978,007	$23,692,731	$54,560,340	$49,241,112	$239,117,234
2002	$107,841,848	$8,301,053	$24,652,099	$56,769,600	$51,234,988	$248,799,588
2003	$114,537,048	$8,816,412	$26,182,588	$60,294,056	$54,415,836	$264,245,940
2004	$119,848,448	$9,225,253	$27,396,747	$63,090,056	$56,939,248	$276,499,752
2005	$123,718,680	$9,522,411	$28,292,715	$65,126,472	$58,767,848	$285,428,126
2006	$134,218,240	$10,330,521	$30,692,100	$70,653,496	$63,729,496	$309,623,853
2007	$134,155,144	$10,323,375	$30,698,867	$70,617,432	$63,683,252	$309,478,070
2008	$137,002,708	$10,540,548	$31,369,908	$72,113,920	$65,039,032	$316,066,116
2009	$143,901,876	$11,073,079	$32,935,086	$75,747,576	$68,317,792	$331,975,409
2010	$145,344,144	$11,184,539	$33,258,168	$76,507,368	$68,967,984	$335,262,203
2011	$144,597,872	$11,126,209	$33,099,470	$76,113,408	$68,629,952	$333,566,911
2012	$166,030,288	$9,680,470	$36,661,274	$86,127,384	$68,931,192	$367,430,608
2013	$200,198,520	$12,889,601	$43,763,046	$89,119,768	$82,642,712	$428,613,647
2014	$194,528,320	$15,005,658	$44,228,818	$91,599,440	$90,351,656	$435,713,892
2015	$178,732,208	$12,009,907	$40,573,031	$83,394,360	$88,711,392	$403,420,898
Total	$2,247,234,800	$165,622,453	$510,112,553	$1,143,915,264	$1,046,606,612	$5,113,491,682

Table L-7 – Induced Effect Federal Tax Savings due to Intervention/Education Programs

Year	Employment Compensation Taxes	Property Taxes	Production/ Import Taxes	Household Taxes	Corporation Taxes	Total
2000	$1,860,468	$143,209	$425,294	$979,380	$883,896	$4,292,247
2001	-$2,822,668	-$217,273	-$645,248	-$1,485,892	-$1,341,032	-$6,512,113
2002	-$4,854,336	-$373,659	-$1,109,676	-$2,555,396	-$2,306,264	-$11,199,331
2003	-$928,628	-$71,480	-$212,279	-$488,844	-$441,188	-$2,142,419
2004	$4,408,356	$337,027	$1,036,000	$2,317,760	$1,948,980	$10,048,123
2005	$5,307,256	$408,490	$1,213,695	$2,793,780	$2,521,012	$12,244,233
2006	$2,661,904	$204,881	$608,708	$1,401,248	$1,263,924	$6,140,665
2007	$6,946,736	$534,558	$1,589,628	$3,656,668	$3,297,604	$16,025,194
2008	$9,555,372	$735,160	$2,187,920	$5,029,644	$4,536,204	$22,044,300
2009	$8,768,684	$674,740	$2,006,904	$4,615,688	$4,162,952	$20,228,968
2010	$11,218,216	$863,265	$2,566,991	$5,905,136	$5,323,208	$25,876,816
2011	$4,783,160	$368,044	$1,094,899	$2,517,752	$2,270,216	$11,034,071
2012	$14,393,444	$839,216	$3,178,227	$7,466,528	$5,975,756	$31,853,171
2013	$18,511,992	$1,191,878	$4,046,690	$8,240,744	$7,641,824	$39,633,128
2014	$23,144,616	$1,785,345	$5,262,261	$10,898,328	$10,749,872	$51,840,422
2015	$30,284,256	$2,034,951	$6,874,666	$14,130,280	$15,031,200	$68,355,353
Total	$133,238,828	$9,458,352	$30,124,680	$65,422,804	$61,518,164	$299,762,828