



# The Economic Impact of Increasing Cigarette Taxes in the State of Nebraska

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## HIGHLIGHTS

- One out of every five Nebraskan adults and more than 1 in 10 high school students currently smoke tobacco.
- At 64 cents per pack, Nebraska's cigarette tax is lower than the national average by nearly one dollar.
- A one dollar increase in the cigarette tax would avert 3,842 smoking-related premature deaths.
- The tax increase is predicted to result in \$27.5 million in medical cost savings.
- The state economic impact from reduced absenteeism and improved work productivity from workers who quit smoking after the tax increase is estimated to be \$6.8 million annually.
- A one dollar increase in the cigarette tax is predicted to increase annual state revenues by \$80.5 million and decrease annual state expenditures on the Medicaid program by \$2.8 million.

## BACKGROUND

In 2015, one out of every five Nebraskan adults and more than 1 in 10 high school students smoke tobacco.<sup>1</sup> In fact, each year, an estimated 1,800 youth aged less than 18 start smoking. As a result, there are 2,500 deaths annually from smoking-related illnesses in the state of Nebraska.<sup>1</sup>

Cigarette taxes have been a long-standing policy tool used by state and municipal governments to reduce smoking rates. Although Nebraska's cigarette tax is 64 cents per pack, this compares to the national average of \$1.60 per pack. In fact, the tax in



Nebraska has remained at 64 cents since 2002.<sup>2</sup> Nebraska’s tax is also lower than the neighboring states of Colorado, Minnesota, Iowa, and South Dakota. (see Table 1).<sup>3</sup> Nebraska’s current tax rate of 64 cents is unlikely to significantly offset the increased medical costs and lost workplace productivity associated with smoking. For example, results from one study suggest that these medical costs and productivity losses totaled \$17.33 per cigarette pack smoked in 2009 for the state of Nebraska.<sup>4</sup>

**Table 1. Cigarette excise taxes in dollars per pack in Nebraska and neighboring states, 2015** <sup>3</sup>

State	Tax, \$	Rank Among All States and DC
Nebraska	0.64	39
Colorado	0.84	37
Iowa	1.36	28
Minnesota	2.90	8
Missouri	0.17	51
South Dakota	1.53	26
Wyoming	0.60	41

A substantial evidence base exists establishing the health benefits from lowering smoking rates, but updated research concerning the potential impact of raising Nebraska’s cigarette tax on smoking-related morbidities, mortality or healthcare cost savings is needed. Thus, in this report, we estimate the impact of increasing Nebraska’s cigarette tax on the number of youth and adult smokers, the number of smoking-related deaths averted, and potential healthcare cost savings from decreases in smoking-related morbidities. We also forecast annual state tax revenues that may result from increasing the cigarette tax.

**METHODS AND RESULTS**

We follow assumptions used by the American Cancer Society to predict the impact of increasing Nebraska’s cigarette tax by one dollar.<sup>5</sup> These assumptions are presented in Table 2. In addition, all dollars are inflation-adjusted to 2015 dollars using the Consumer Price Index.



**Table 2. Assumptions used to predict impact of a \$1.00 increase in the cigarette tax**

A 10% increase in cigarette prices will result in 6.5% fewer youth (aged 12-17) smoking.
A 10% increase in cigarette prices will result in 4% decrease in packs of cigarettes smoked.
The cigarette tax is entirely passed on to consumers.
The average probability of premature death from smoking-related illness is 0.50, but decreases to 0.10 after smoking cessation.

The average price of a pack of cigarettes is currently \$5.45 in Nebraska.<sup>6</sup> Thus, this price will increase to \$6.45—a 18.0% increase—with the one dollar increase in cigarette taxes. Table 3 presents the predicted state-wide health impact from this increase in Nebraska’s cigarette tax.

**Table 3. Predicted impact of a \$1.00 increase in the cigarette tax in Nebraska**

Measure	Before Tax Increase	After Tax Increase	Decrease
Number of youth smokers (aged 12-17) <sup>a</sup>	16,627	14,644	1,983
Number of adult smokers (aged 18+) <sup>b</sup>	261,755	252,149	9,606
Number of packs per smoker per year <sup>c</sup>	305	294	11
Number of tobacco-related premature deaths <sup>d</sup>	130,878	127,035	3,842

The increase in Nebraska’s cigarette tax is predicted to result in decreases in both number of cigarette packs smoked and the prevalence of smoking among state residents. For example, the average number of packs smoked by smokers is predicted to decrease from 305 packs per year to 294—a decrease of 11 packs. This translates into a decrease of 5.9 million packs smoked by Nebraskan residents.

<sup>a</sup> Based on number of youth aged 12-17 and their smoking rate and cigarette price elasticity of demand.<sup>1,5</sup>

<sup>b</sup> Based on number of adults smokers in Nebraska and their cigarette price elasticity of demand.<sup>1,5,7</sup>

<sup>c</sup> Based on estimated annual number of cigarette packs sold to Nebraska residents and their cigarette price elasticity of demand.<sup>4,5</sup>

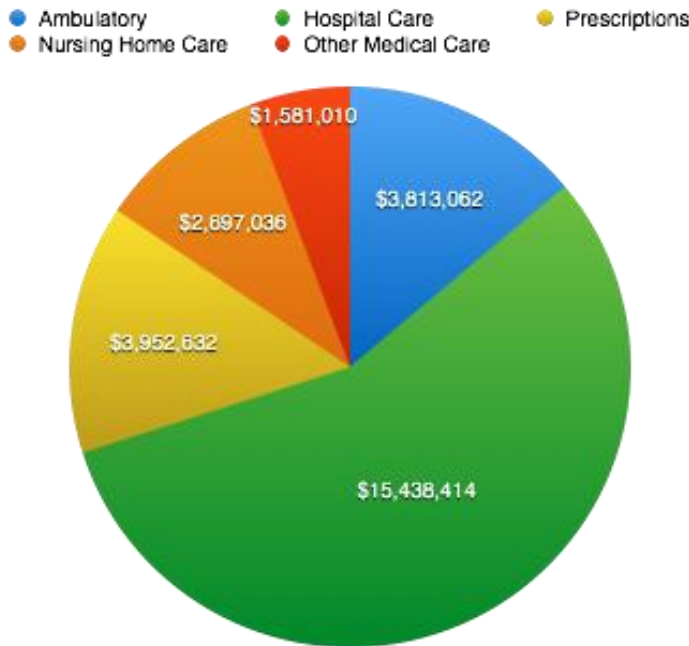
<sup>d</sup> Based on assumptions in Table 2.<sup>5</sup>



Smoking prevalence will also decrease among both youth and adults. The number of youth smokers is predicted to decrease by 1,983 and number of adult smokers by 9,606 state-wide. This decrease in smoking will result in 3,842 tobacco-related deaths averted.

The \$1.00 increase in cigarette taxes is predicted to generate total medical care savings of \$27,482,155 associated with the decrease in number of adult smokers. 56% of these savings result from decreased hospital care, followed by prescriptions (14.4%), ambulatory care (13.9%), nursing home care (9.8%) and other medical care (5.8%) (see Figure 1).<sup>e</sup> (Note that any medical care incurred by youth smokers is excluded from this analysis.)

**Figure 1. Distribution of direct medical care savings in dollars from the decrease in number of adult smokers in response to a \$1.00 increase in the cigarette tax**



Smoking-related health issues negatively impact workplace productivity due to sick days and lowered productivity during workdays. One study estimates that smokers miss an extra 2.3 days from work each year and have nearly 80% more hours lost to “presenteeism” (i.e., unproductive work hours) compared to non-smokers.<sup>8</sup> Using these data and results from Rumberger and colleagues(2010),<sup>4</sup> we estimate that the economic impact of improved workplace productivity associated with the decrease in adult smokers after a \$1.00 increase in cigarette taxes would be \$6,808,644 per year.

<sup>e</sup> Analysis based on medical cost estimates provided by Rumberger and colleagues (2010).<sup>4</sup>



Finally, we estimate the tax revenues and Medicaid cost savings that would result from the cigarette tax and consequent decrease in smoking in Nebraska. These estimates are provided in Table 4. The annual number of packs sold to both residents and visitors in Nebraska is predicted to be 80.5 million after the cigarette tax increase of \$1.00. This compares to 86.9 million packs currently sold in the state.<sup>9</sup> Annual cigarette tax revenues are estimated to increase by \$80,484,028, and total annual tax revenues are predicted to be \$135.1 million for the state.

In addition, we calculate Medicaid cost savings of \$5,955,963 resulting from decreases in smoking-related illnesses among Medicaid beneficiaries. With a Federal Medical Assistance Percentage (FMAP) of 53.27% in FY2015,<sup>10</sup> this implies the state contribution to Medicaid coverage of smokers will decrease by approximately \$2.8 million. Thus, the total budgetary impact for the state of Nebraska will be an increase of \$83.3 million annually from the increased cigarette tax revenues and Medicaid cost savings to the state of Nebraska.

**Table 4. Predicted annual revenue and Medicaid cost savings to the state of Nebraska resulting from a \$1.00 increase in cigarette taxes**

Measure	Before Tax Increase <sup>1,9</sup>	After Tax Increase	Difference
Tax revenue from cigarette tax	\$54,590,559	\$135,074,587	\$80,484,028
Medicaid cost to state from smoking-related illness	\$162,300,000	\$159,516,778	\$2,783,222
Net impact to annual state budget	-\$107,709,441	-\$24,442,191	\$83,267,250

### Limitations

This study is subject to certain limitations. Although we use assumptions consistent with those used by the American Cancer Society, these assumptions may or may not be accurate for the Nebraskan population. It is difficult to gauge the appropriateness of these assumptions without further research on Nebraskan smokers and their potential responsiveness to a cigarette tax increase. In addition, our study does not account for potential smuggling of cigarettes from states with lower retail prices. For example, Missouri’s cigarette excise tax is only 17 cents per pack (and its sales tax rate is as low as 4.225% depending on the municipality). A one dollar increase in Nebraska’s tax would also result in higher taxes per pack than Iowa. To the extent that smuggling occurs in response to a tax increase in Nebraska, particularly in counties bordering low tax states, this will mitigate aggregate health benefits, tax revenues and Medicaid cost savings to the state of Nebraska.



## CONCLUSIONS

Based on prior literature and consistent with assumptions used by the American Cancer Society, we estimate significant decreases in the number of smokers and cigarette packs smoked if the cigarette excise tax increases in the state of Nebraska. This decrease in smoking will consequently lead to smoking-related premature deaths averted and reduced health care expenditures associated with treating smoking-related illnesses. Although the number of cigarette packs sold is expected to decrease by 6.4 million packs annually after a one dollar tax increase, total annual tax revenues are expected to increase by \$80.5 million. In addition, state expenditures on the medical care of Medicaid beneficiaries are predicted to decrease significantly.

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