



Graphic Warning Labels and the Cost Savings from Reduced Secondhand Smoke Exposure

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BACKGROUND

- FDA has conducted an analysis on the economic impact of Graphic Warning Labels (GWL).
- FDA analysis omits the impact of GWL on secondhand smoke (SHS) exposure among nonsmokers.
- SHS causes lung cancer, heart disease, and other illness in adults, middle ear disease, impaired lung function, respiratory illness in children, and sudden infant death syndrome in infants.
- Treating the SHS attributable health illness generates health care costs, and the death associated with those illness creates the losses in productivity due to premature death.
- By omitting the impact on SHS among nonsmokers, the FDA analysis underestimates the economic benefits from the GWL.

EFFICACY OF GRAPHIC WARNING LABELS

- Huang et al. 2013: Graphic Warning Labels result in 5.3 to 8.6 million less smokers in 2013.
- 42.1 Million Smokers in 2012
- Graphic warning labels reduce smoking by 12.6 percent to 20.4 percent.

STUDY AIMS

- This study quantifies the national medical care cost and other cost savings from the reductions in SHS that will arise if GWL are implemented in the US.

NATIONAL COST OF SECONDHAND SMOKE EXPOSURE

Max et al. (2014) used a prevalence-based annual cost approach to estimate the cost of SHS in California.

- SHS-attributable healthcare costs
- SHS-attributable productivity losses

Max et al. (2014) estimated the cost of SHS exposure in the home is \$360 million (\$9.60 per capita) in California in 2009.

Max et al. (2014) estimated the cost of SHS exposure at home in California.

- Max et al. (2014) used the data from
 - California Health Interview Survey (CHIS)
 - CHIS was used to estimate the SHS exposure at home
 - Medical Expenditures Panel Surveys (MEPS)
 - MEPS were used to determine the mean health care costs per person for each SHS associated disease
 - California Death Statistical Master File
 - California specific life tables
 - The present value of lifetime earnings was calculated.

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CONCEPTUAL FRAMEWORK



SIMULATION AND STATISTICAL ANALYSIS

Use carefully estimated state per capita cost of second hand cigarettes in this case California (Max et al. 2014). Per capita cost is \$9.60 (2009 dollars)

For other states adjust linearly for state difference in cost of living, population, overall adult prevalence rate, difference in average exposure rates.

Using this method, Alaska has the highest per capita cost, \$19.25 and Utah has the lowest at \$6.22 (2013 dollars).

Costs of first year hospitalization from the decrease in LBW Babies (Russell et al 2007; AHRQ, 2013)

SIMULATION AND COST SAVINGS

Extremely low Birth weight (<1,000g)	Predicted percent of total births	Reduction in ELBW	Excess Cost in First Year Hospitalization	Excess Cost in >1 year Hospitalization	Excess Cost in Special Education	Excess Cost in Grade Repetition	Cost savings
current prev. of smoking	0.65269						
12% decline in smoking	0.65084	72.75	101,297	1,745	13,319	14,986	\$7,589,576
20% decline in smoking	0.64961	121.11	101,297	1,745	13,319	14,986	\$12,634,688
Very low Birth weight (1,000g-1,499g)	Predicted percent of total births	Reduction in VLBW	Excess Cost in First Year Hospitalization	Excess Cost in >1 year Hospitalization	Excess Cost in Special Education	Excess Cost in Grade Repetition	Cost savings
current prev. of smoking	0.73477						
12% decline in smoking	0.73209	105.38	80,532	1,745	13,319	14,986	\$8,805,453
20% decline in smoking	0.73031	175.38	80,532	1,745	13,319	14,986	\$14,654,587
Low Birth weight (1,500g-2,500g)	Predicted percent of total births	Reduction in VLBW	Excess Cost in First Year Hospitalization	Excess Cost in >1 year Hospitalization	Excess Cost in Special Education	Excess Cost in Grade Repetition	Cost savings
current prev. of smoking	6.4307						
12% decline in smoking	6.39539	1,388.45	22,597	1,745	13,319	14,986	\$35,577,724
20% decline in smoking	6.37195	2,310.16	22,597	1,745	13,319	14,986	\$59,195,677
total cost savings 12% reduction in smoking							\$51,972,753
total cost savings 20% reduction in smoking							\$86,484,952

- All dollars are 2015 dollar.
- Excess cost = Cost of LBW - Cost of normal birth weight
- The excess cost for LBW is used for the excess costs of longer term hospitalization, special education and grade repetition for ELBW, VLBW, and LBW.
- The excess costs of longer term hospitalization, special education, and grade repetition are annual.
- Longer term hospitalization is measured for children aged 3-10
- This study assumes that 4.4% LBW children enrolled in special education (Chalkind & Corman, 1991); 5% LBW

Aggregate costs of second hand smoke using this approach for the U.S. are \$3.8 billion (2013 dollars). This is only medical expenditures and lost productivity. This estimate is lower than other recent estimates (about \$10 billion)

Effectiveness of graphic warning labels is estimated in Huang et al. (2013). Estimated impact on prevalence ranges between 12.1 percent and 19.6 percent

If graphic warning labels lead to a 5 percent reduction in smoking prevalence, then cost savings from second hand smoke would be \$191 million annually.

A 12.1 percent drop, would generate \$460 million dollar savings annually

A 19.6 percent drop, would generate a \$750 million dollar saving annually.

RESULTS AND CONCLUSION

Through decreased smoking rate, GWL will protect the health of nonsmokers and lead to substantial cost savings for society. Our results indicated that GWL for this population will lead to cost saving of approximately \$460 - \$750 million dollars annually. GWLs could protect the health of nonsmokers and lead to a substantial cost savings for society.