The Health Consequences of Smoking: 50 Years of Progress
A Report of the Surgeon General

1964

2014
The Grim Statistics

Between 1964 and 2014:

- Over 20 million Americans died because of smoking, including
  - 2.5 million nonsmokers
  - More than 100,000 babies

- Smoking is still the **leading cause** of preventable disease and death in the United States.
21st Century Tobacco Use

Between 2010 and 2014 smoking caused:

- Nearly half a million premature deaths a year
- More than 87% of all lung cancer deaths
- 61% of all pulmonary deaths
- 32% of all coronary deaths
The costs of smoking

- Annual smoking costs are more than $289 billion.
- We spend at least $132 billion in yearly medical care for adults.
- We lose at least $157 billion yearly in productivity costs when smokers get sick and die early.

- In North Carolina
  - We spend at least $3.8 billion per year in medical costs due to smoking.
Smoking and Children

5.6 MILLION
CHILDREN ALIVE TODAY
WILL ULTIMATELY
DIE EARLY FROM SMOKING
IF WE DO NOT DO MORE
TO REDUCE CURRENT
SMOKING RATES

THAT'S EQUAL TO
1 CHILD
OUT OF
EVERY 13
ALIVE IN THE U.S. TODAY

OR

2 OF THE 27
CHILDREN
IN THE AVERAGE
3RD GRADE
CLASSROOM
Nicotine is the primary addicting drug in cigarettes.

Nicotine keeps people smoking longer and that causes more damage to the body.

Nicotine patches, gum, and lozenges are safe when used as directed.
Four-level hierarchy for classifying the strength of causal inferences from available evidence

Level 1  
Evidence is *sufficient* to infer a causal relationship

Level 2  
Evidence is *suggestive but not sufficient* to infer a causal relationship

Level 3  
Evidence is *inadequate* to infer the presence or absence of a causal relationship (which encompasses evidence that is sparse, of poor quality, or conflicting)

Level 4  
Evidence is *suggestive of no causal relationship*

Smoking and Diabetes

Diabetes is the 7th leading cause of death in the U.S.

- Smoking causes type 2 diabetes.
- Smokers are 30-40% more likely to develop type 2 diabetes than nonsmokers.
- The more cigarettes an individual smokes, the higher the risk for diabetes.
Diabetes

- Diabetes – a disease that causes blood sugar levels in the body to be too high – is a growing health crisis around the world.

- In the United States, more than 25 million adults suffer from diabetes.

- In North Carolina, 18.3% of persons with diagnosed diabetes are current smokers.

Surgeon General’s Report 2014 and NC BRFSS 2012
Biological Basis of Causation: Smoking and Type 2 Diabetes

- Smokers have more abdominal or "belly" fat. This kind of fat makes the body more resistant to insulin.
- Nicotine in cigarette smoke may make the body more resistant to insulin and irregularities in glucose metabolism. This means that smokers with diabetes may need to take more insulin and have worse control of their blood sugar than nonsmokers.
- There is growing evidence that some of the risk can stem from prenatal and neonatal exposure to nicotine.
- In addition, smokers with diabetes are more likely to have diseases that result from damaged blood vessels than are nonsmokers with diabetes. Chemicals in cigarette smoke cause injury to the cells lining the blood vessels. This interferes with the body's ability to make blood vessels widen and to control blood clotting.
Smoking – The Cancer Trigger

Smoking is now known to cause 13 different types of cancer—almost everywhere in the body.

- 1 out of 3 U.S. cancer deaths are tobacco-related.
New Cancer Findings

TWO more cancers are caused by smoking:

- Liver cancer
- Colorectal cancer – the second deadliest behind lung cancer

SMOKING keeps cancer treatments from working as well as they should.
Smoking – The Breath Blocker

Chronic Obstructive Pulmonary Disease (COPD)

- Smoking causes most cases of COPD.
- There is NO CURE for COPD
Smoking and Asthma
2014 SGR Conclusions

- Continues to support the 2004 findings that there is a causal relationship between active smoking and exacerbation of asthma in adults.

- **Implications**

  - Asthma is one of the most common chronic conditions in childhood, and is also common in adults.
  
  - *“The clinical implications are clear: people with asthma should not smoke.”*
Smoking – The Heart Stopper

- Smoking causes cells lining veins and arteries to swell.
- Narrower arteries mean reduced blood flow to the heart, brain, and organs.
- Clots can block narrowed arteries, causing heart attack, stroke, and even sudden death.
- Even occasional smoking damages blood vessels.
Smoking and Reproduction

- Smoking increases the risk of ectopic pregnancy.
- Other smoking complications include:
  - miscarriage
  - early delivery
  - low birth weight
Smoking and Reproduction

Smoking also causes reproductive issues for men:

- Smoking can cause erectile dysfunction (ED).
- Smoking damages DNA in sperm.
Smoking and Eye Disease

- Smoking causes serious eye disease, including:
  - Age-related macular degeneration (AMD)
  - Cataracts

- These diseases are the most common causes of blindness.
Smoking and the Immune System

- Smoking harms the immune system and causes autoimmune disorders.
- Smoking is a cause of rheumatoid arthritis (RA).
- RA treatment can be less effective for smokers.
Smoking Today – The Persistent Epidemic

Cigarettes cause almost all tobacco-related disease and death.

- Smoking claims nearly **500,000** lives every year.
- More than **16 million** people have at least one smoking-related disease.
- **88 million** Americans continue to be exposed to SHS.
Saving Millions of Lives – Doing Much More

We know what works to lower smoking rates:

- Higher prices on cigarettes and other tobacco products
- Well-funded, continuous mass media campaigns about the dangers of smoking
- State and community outreach, educational and public health programs
Saving Millions of Lives – Doing Much More

We know what works to lower smoking rates:

- Smokefree policies in public places
- Make smoking the exception – not the norm
- Easy-to-get affordable smoking cessation treatments
Cessation – Lifeline to a Tobacco-Free Life

- Most smokers want to quit and half already have.
- Cessation therapies improve your chances of quitting successfully.
- Talk to your doctor, call 1-800-QUIT-NOW, or go to www.SmokeFree.gov for free help.
We Can Be Tobacco-Free

LET’S MAKE THE NEXT GENERATION TOBACCO-FREE
Your Guide to the 50th Anniversary Surgeon General’s Report on Smoking and Health

U.S. Department of Health and Human Services
Full report and/or Executive Summary

The Health Consequences of Smoking—50 Years of Progress

A Report of the Surgeon General

U.S. Department of Health and Human Services
Resources

- **www.BeTobaccoFree.gov** - information portal for additional tobacco-related Web sites

- **www.SurgeonGeneral.gov** - SGRs, consumer guides, Public Service Announcements

- **www.cdc.gov/tobacco** - statistics, reports, plain language products for download and ordering

- **www.smokefree.gov** - help for people who want to quit smoking

- **www.cdc.gov/tips** - stories of real people dealing with smoking-related diseases and how they quit
Overview of CDC’s
Best Practices for Comprehensive Tobacco Control Programs–2014
Nationally, Current State Spending on Tobacco Control is 85% Less than CDC-Recommended Levels; North Carolina’s gap is much greater

- Annual revenue states receive in tobacco settlement payments and sales:
  - ~$80 per person

- CDC-recommended annual spending on tobacco control:
  - $10.53 per person

- Nationally, annual average state spending on tobacco control: $1.50 per person.

- In NC in 2013, TOTAL spending dedicated to tobacco control is 41 cents per person
  - NC state spending on tobacco is 18 cents per person.
  - NC’s federal funds dedicated to tobacco is 23 cents per person.

North Carolina

Program Intervention Budgets

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended Annual Investment</td>
<td>$99.3 million</td>
</tr>
</tbody>
</table>

Deaths in State Caused by Smoking

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
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<tbody>
<tr>
<td>Annual average smoking-attributable deaths</td>
<td>12,500</td>
</tr>
<tr>
<td>Youth aged 0-17 projected to die from smoking</td>
<td>180,000</td>
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Annual Costs Incurred in State from Smoking

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Total medical</td>
<td>$3.810 million</td>
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State Revenue from Tobacco Sales and Settlement

<table>
<thead>
<tr>
<th>Description</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2012 tobacco tax revenue</td>
<td>$294.8 million</td>
</tr>
<tr>
<td>FY 2012 tobacco settlement payment</td>
<td>$141.0 million</td>
</tr>
<tr>
<td>Total state revenue from tobacco sales and settlement</td>
<td>$435.8 million</td>
</tr>
</tbody>
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Percent Tobacco Revenue to Fund at Recommended Level

<table>
<thead>
<tr>
<th>Percentage</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>23%</td>
</tr>
</tbody>
</table>

Annual Total (Millions): Minimum | Recommended | Annual Per Capita: Minimum | Recommended |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I. State and Community Interventions</td>
<td>$26.4</td>
<td>$33.3</td>
<td>$2.71</td>
</tr>
<tr>
<td>II. Mass-Reach Health Communication Interventions</td>
<td>$6.8</td>
<td>$8.8</td>
<td>$0.70</td>
</tr>
<tr>
<td>III. Cessation Interventions</td>
<td>$27.1</td>
<td>$43.5</td>
<td>$2.78</td>
</tr>
<tr>
<td>IV. Surveillance and Evaluation</td>
<td>$6.0</td>
<td>$8.6</td>
<td>$0.62</td>
</tr>
<tr>
<td>V. Infrastructure, Administration, and Management</td>
<td>$3.0</td>
<td>$4.3</td>
<td>$0.31</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$99.3 million</strong></td>
<td><strong>$99.3 million</strong></td>
<td><strong>$7.32 million</strong></td>
</tr>
</tbody>
</table>

Note: A justification for each program element and the rationale for the budget estimates are provided in Section A. The funding estimates presented are based on adjustments for changes in population and cost-of-living increases since Best Practices—2010 was published. The actual funding required for implementing programs will vary depending on state characteristics, such as prevalence of tobacco use, sociodemographic factors, and other factors. See Appendix E for data sources on deaths, costs, revenue, and state-specific factors.
FY2014 Funding for State Tobacco Prevention Programs

- States that are spending 50% or more of CDC recommendation on tobacco prevention programs.
- States that are spending 25% - 49% of CDC recommendation on tobacco prevention programs.
- States that are spending 10% - 24% of CDC recommendation on tobacco prevention programs.
- States that are spending less than 10% of CDC recommendation on tobacco prevention programs.
<table>
<thead>
<tr>
<th>State</th>
<th>FY2014 Current Annual Funding (millions)</th>
<th>CDC Annual Recommendation* (millions)</th>
<th>FY2014 Percent of CDC’s Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td>$10.1</td>
<td>$10.2</td>
<td>99.4%</td>
</tr>
<tr>
<td>North Dakota</td>
<td>$9.5</td>
<td>$9.8</td>
<td>97.1%</td>
</tr>
<tr>
<td>Delaware</td>
<td>$8.3</td>
<td>$13.0</td>
<td>64.0%</td>
</tr>
<tr>
<td>Wyoming</td>
<td>$5.1</td>
<td>$8.5</td>
<td>60.0%</td>
</tr>
<tr>
<td>Hawaii</td>
<td>$7.9</td>
<td>$13.7</td>
<td>57.3%</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>$22.7</td>
<td>$42.3</td>
<td>53.7%</td>
</tr>
<tr>
<td>Maine</td>
<td>$8.1</td>
<td>$15.9</td>
<td>50.7%</td>
</tr>
<tr>
<td>Colorado</td>
<td>$26.0</td>
<td>$52.9</td>
<td>49.1%</td>
</tr>
<tr>
<td>Arkansas</td>
<td>$17.5</td>
<td>$36.7</td>
<td>47.6%</td>
</tr>
<tr>
<td>Vermont</td>
<td>$3.9</td>
<td>$8.4</td>
<td>48.4%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>$21.3</td>
<td>$52.9</td>
<td>40.2%</td>
</tr>
<tr>
<td>Utah</td>
<td>$7.5</td>
<td>$19.3</td>
<td>39.1%</td>
</tr>
<tr>
<td>Montana</td>
<td>$5.4</td>
<td>$14.6</td>
<td>37.0%</td>
</tr>
<tr>
<td>South Dakota</td>
<td>$4.0</td>
<td>$11.7</td>
<td>34.2%</td>
</tr>
<tr>
<td>Florida</td>
<td>$65.6</td>
<td>$194.2</td>
<td>33.8%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>$10.9</td>
<td>$36.5</td>
<td>29.9%</td>
</tr>
<tr>
<td>Arizona</td>
<td>$18.6</td>
<td>$64.4</td>
<td>28.9%</td>
</tr>
<tr>
<td>New Mexico</td>
<td>$5.9</td>
<td>$22.8</td>
<td>26.0%</td>
</tr>
<tr>
<td>Oregon</td>
<td>$9.9</td>
<td>$39.3</td>
<td>25.2%</td>
</tr>
<tr>
<td>New York</td>
<td>$39.3</td>
<td>$203.0</td>
<td>19.4%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>$5.3</td>
<td>$27.4</td>
<td>19.2%</td>
</tr>
<tr>
<td>California</td>
<td>$64.8</td>
<td>$347.9</td>
<td>18.8%</td>
</tr>
<tr>
<td>Maryland</td>
<td>$8.5</td>
<td>$48.0</td>
<td>17.8%</td>
</tr>
<tr>
<td>Iowa</td>
<td>$5.1</td>
<td>$30.1</td>
<td>17.1%</td>
</tr>
<tr>
<td>Idaho</td>
<td>$2.2</td>
<td>$15.6</td>
<td>14.1%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>$8.0</td>
<td>$59.6</td>
<td>13.4%</td>
</tr>
<tr>
<td>Nebraska</td>
<td>$2.4</td>
<td>$20.8</td>
<td>11.4%</td>
</tr>
<tr>
<td>Virginia</td>
<td>$9.5</td>
<td>$91.6</td>
<td>10.3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>State</th>
<th>FY2014 Current Annual Funding (millions)</th>
<th>CDC Annual Recommendation* (millions)</th>
<th>FY2014 Percent of CDC’s Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Carolina</td>
<td>$5.0</td>
<td>$51.0</td>
<td>9.8%</td>
</tr>
<tr>
<td>Connecticut</td>
<td>$3.0</td>
<td>$32.0</td>
<td>9.4%</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>$5.3</td>
<td>$57.5</td>
<td>9.2%</td>
</tr>
<tr>
<td>Illinois</td>
<td>$11.1</td>
<td>$136.7</td>
<td>8.1%</td>
</tr>
<tr>
<td>Indiana</td>
<td>$5.8</td>
<td>$73.5</td>
<td>7.8%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>$5.0</td>
<td>$75.6</td>
<td>6.6%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>$4.0</td>
<td>$66.9</td>
<td>5.9%</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>$405,000</td>
<td>$10.7</td>
<td>4.6%</td>
</tr>
<tr>
<td>Texas</td>
<td>$11.2</td>
<td>$264.1</td>
<td>4.2%</td>
</tr>
<tr>
<td>Kentucky</td>
<td>$2.1</td>
<td>$56.4</td>
<td>3.7%</td>
</tr>
<tr>
<td>Pennsylvania**</td>
<td>$5.0</td>
<td>$140.0</td>
<td>3.6%</td>
</tr>
<tr>
<td>Kansas</td>
<td>$946,671</td>
<td>$27.9</td>
<td>3.4%</td>
</tr>
<tr>
<td>Nevada</td>
<td>$1.0</td>
<td>$30.0</td>
<td>3.3%</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>$388,027</td>
<td>$12.8</td>
<td>3.0%</td>
</tr>
<tr>
<td>Georgia</td>
<td>$2.2</td>
<td>$106.0</td>
<td>2.1%</td>
</tr>
<tr>
<td>Michigan</td>
<td>$1.5</td>
<td>$110.6</td>
<td>1.4%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>$1.2</td>
<td>$99.3</td>
<td>1.2%</td>
</tr>
<tr>
<td>Washington</td>
<td>$756,000</td>
<td>$63.6</td>
<td>1.2%</td>
</tr>
<tr>
<td>Ohio</td>
<td>$1.5</td>
<td>$132.0</td>
<td>1.1%</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>$125,000</td>
<td>$16.5</td>
<td>0.8%</td>
</tr>
<tr>
<td>Alabama</td>
<td>$275,000</td>
<td>$55.9</td>
<td>0.5%</td>
</tr>
<tr>
<td>Missouri</td>
<td>$78,364</td>
<td>$72.9</td>
<td>0.1%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>$0.0</td>
<td>$103.3</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

** Alaska and North Dakota currently fund tobacco prevention programs at CDC-recommended levels when a federal grant of $1.1 million is added to state funding levels.
** Pennsylvania’s current annual spending is estimated, not confirmed.

North Carolina Ranks 45th Of the 50 states + D.C.
# National *Recommended* Funding Levels, by Program Component

<table>
<thead>
<tr>
<th>National Recommended Investment</th>
<th>Total</th>
<th>State and Community Interventions</th>
<th>Mass-Reach Health Communication Interventions</th>
<th>Cessation Interventions</th>
<th>Surveillance and Evaluation</th>
<th>Infrastructure, Administration, and Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Level ($ millions)</td>
<td>$3,306.3</td>
<td>$1,071.0</td>
<td>$532.0</td>
<td>$1,271.9</td>
<td>$287.7</td>
<td>$143.7</td>
</tr>
<tr>
<td>Per Person</td>
<td>$10.53</td>
<td>$3.41</td>
<td>$1.69</td>
<td>$4.05</td>
<td>$0.92</td>
<td>$0.46</td>
</tr>
</tbody>
</table>
Please submit any additional comments or questions to: 

tcbestpractices@cdc.gov

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov Web: www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
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Upcoming Events: Mark your Calendars!

- **Webinar on How to Use the SGR 50 and CDC Best Practices 2014.** For Government and Advocacy Partners. March 27, 11am-12:30. Contact: pam.diggs@dhhs.nc.gov

- **Plenary Session on the SGR 50.** Acting Surgeon General Rear Admiral (RADM) Boris D. Lushniak, M.D., M.P.H., is the invited speaker. NC Town Hall Meeting to follow. NCPHA Annual Conference September 17, 2014. Wilmington Hilton.
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