Understanding Tobacco Cessation in Cancer Survivors: What Cancer Coalitions Need to Know

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ACS Webinar Series: Tobacco Cessation in Cancer Survivors
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Outline

What do we know?
• Smoking prevalence trends among cancer survivors
  • Data Sources (National and State)

Why is it important?
• Impact of continued smoking
  • On treatment
  • Other negative outcomes
• Benefits of cessation

Resources to help?
• Smoking cessation
  • Guidelines for cancer survivors
  • Insurance coverage
  • Other useful stuff
National Trends
National Trends

- Data: National Health Interview Study (1992-2017)
  - Annual self-reported measures
  - Current estimate

- Decreasing trend
  - Fairly consistent by gender
  - Differs by age groups

Current Estimate:
Overall – 11.5%

https://progressreport.cancer.gov/after/smoking
National Trends

- Data: National Health Interview Study (1992-2017)
  - Annual self-reported measures
  - Current estimate

- Decreasing trend
  - Fairly consistent by gender
  - Differs by age groups

Current Estimates:
- Males – 10.2%
- Females – 12.1%


https://progressreport.cancer.gov/after/smoking
National Trends

- Data: National Health Interview Study (1992-2017)
  - Annual self-reported measures
  - Current estimate

- Decreasing trend
  - Fairly consistent by gender
  - Differs by age groups

Current Estimates:
- 18-44 – 15.9%
- 45-64 – 17.5%
- 65+ – 7.3%


https://progressreport.cancer.gov/after/smoking
State-Specific Prevalence
State Prevalence

• Data: Behavioral Risk Factor Surveillance System (BRFSS)
  - cdc.gov/BRFSS
• Survey Data & Documentation
• Prevalence Data & Data Analysis Tools

• Web Enabled Analysis Tool
  • Custom tabulations
  • Easy to use
State Prevalence

• **Data: Behavioral Risk Factor Surveillance System (BRFSS)**
  > cdc.gov/BRFSS
  • Survey Data & Documentation
  • Prevalence Data & Data Analysis Tools

• **Web Enabled Analysis Tool**
  • Custom tabulations
  • Easy to use

The Behavioral Risk Factor Surveillance System (BRFSS) is the nation's premier system of health-related telephone surveys that collect state data about U.S. residents regarding their health-related risk behaviors, chronic health conditions, and use of preventive services. Established in 1984 with 15 states, BRFSS now collects data in all 50 states as well as the District of Columbia and three U.S. territories. BRFSS completes more than 400,000 adult interviews each year, making it the largest continuously conducted health survey system in the world. See More.

The Web Enables Analysis Tool (WEAT) permits users to create custom crosstabulation tables for health indicators within selected states. Up to two control variables may be included to create crosstab tables within each category of control variables. WEAT also may be used to create logistic equations using BRFSS data. Users are prompted to make selections of year, state and variables to be included in the analyses.

https://nccd.cdc.gov/weat/#/analysis
Cross-tabulation note

• Enables an examination of the relationship between multiple variables
  • Examples:
    ▪ General health states across age groups
    ▪ Mammography use across ethnic/racial groups
    ▪ Current smoking status across sex groups

• Control variable - can restrict analysis to a specific subpopulation
  • Examples:
    ▪ Cancer survivors
    ▪ Current smokers
The Behavioral Risk Factor Surveillance System (BRFSS) is the nation's premier system of health-related telephone surveys that collect data about U.S. residents regarding their health-related risk behaviors, chronic health conditions, and use of preventive services. Established in 1984 with 15 states, BRFSS now collects data in all 50 states as well as the District of Columbia and three U.S. territories. BRFSS completes more than 400,000 adult interviews each year, making it the largest continuously conducted health survey system in the world. See More.

Prevalence and Trends Data
Using the Prevalence and Trends Data Tools, users may produce charts for individual states or the nation by health topic. Users may select specific years or request multiple year data. The Prevalence and Trend Data Tools will produce line graphs for multiple years and bar charts for single years for each selected indicator.

Web Enabled Analysis Tool (WEAT)
The Web Enabled Analysis Tool (WEAT) permits users to create custom cross-tabulation tables for health indicators within selected states. Up to two control variables may be included to create cross-tab tables within each category of control variables. WEAT also may be used to create logistic equations using BRFSS data. Users are prompted to make selections of year, state and variables to be included in the analyses.

SMART: City and County Data
Selected Metropolitan/Micropolitan Area Risk Trends (SMART) is an ongoing project that uses BRFSS data to produce some local area estimates. Counties and Metropolitan/Micropolitan Areas (MMAs) were selected for SMART if there were 500 or more respondents BRFSS combined landline and cell phone data for any year.

Chronic Disease Indicators (CDI)
The Chronic Disease Indicators Tool allows users to select two or more geographic areas such as states, Metropolitan/Micropolitan Areas (MMAs), or regions within states. The tool then creates a table illustrating differences on user selected health indicators by geographic area.
The BRFSS is the world's largest telephone health survey system, tracking health risks in the United States. Information from the survey is used to improve the health of US residents. The BRFSS Web Enabled Analysis Tool (WEAT) allows users to conduct real-time state-level data analysis.

A cross tabulation, or "crosstab," produces frequencies or percentages for one or more variables, in one or more tables. For example, one can use the cross-tabulation procedure in the BRFSS to generate a table showing numbers and percentages of respondents with diabetes by age group. A general formula for cross tabulation can be depicted as A x B, where A is the dependent variable or outcome (e.g., diabetes) and B is the independent or exposure variable (e.g., age). For our purposes, "crosstab" includes frequencies or percentages for a single variable.

Logistic regression is a calculation of the contribution of one or more predictors on a particular outcome, such as "Risk factor: At risk for binge drinking." The results provide a predictive model and can be converted to log odds. The basic logistic formula using one predictor is depicted in the form Y = exp(a * x) / (1 + exp(a * x)).
Help with this step...

You have chosen to analyze a single year of data. Click "Next" to choose one or more locations.
Help with this step...

You have chosen to analyze data from a single location. Click "Next" to choose a row variable or click "Back" to change your year selection.

My Analysis

<table>
<thead>
<tr>
<th>Year(s)</th>
<th>2017 (single)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location(s)</td>
<td>Texas (single)</td>
</tr>
</tbody>
</table>
BRFSS Web Enabled Analysis Tool

Cross Tabulation

Calculated Statistics
- Sample Size
- Chi Square / Degrees of Freedom / p-value
- Row Percentage
- Column Percentage
- Total Percentage

Select Additional Statistics
- Standard Error
- 95% Confidence Interval

Other
- Include Weighted N
- Include Non Response Categories

Back  Run Report
## Behavioral Risk Factor Surveillance System
### Cross Tabulation, Texas, 2017
#### of Tobacco Use by Chronic Health Conditions

<table>
<thead>
<tr>
<th>Calculated variable for adults who are current smokers (RFSMOK3)</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Former smoker or never smoked</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>n</strong></td>
<td>1,015</td>
<td>9,162</td>
<td>10,180</td>
</tr>
<tr>
<td><strong>Row%</strong></td>
<td>5.6% (4.7 - 6.4)</td>
<td>94.4% (93.6 - 95.3)</td>
<td>100.0% (100.0 - 100.0)</td>
</tr>
<tr>
<td><strong>Col%</strong></td>
<td>85.5% (80.1 - 90.8)</td>
<td>15.5% (82.7 - 85.7)</td>
<td>84.3% (82.8 - 85.7)</td>
</tr>
<tr>
<td><strong>%</strong></td>
<td>4.7% (4.0 - 5.4)</td>
<td>79.6% (76.0 - 81.1)</td>
<td>84.3% (82.8 - 85.7)</td>
</tr>
<tr>
<td><strong>Weighted N</strong></td>
<td>937,373</td>
<td>15,885,706</td>
<td>16,823,079</td>
</tr>
<tr>
<td><strong>Current smoker</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>n</strong></td>
<td>123</td>
<td>1,371</td>
<td>1,494</td>
</tr>
<tr>
<td><strong>Row%</strong></td>
<td>5.1% (3.1 - 7.1)</td>
<td>94.9% (92.9 - 96.9)</td>
<td>100.0% (100.0 - 100.0)</td>
</tr>
<tr>
<td><strong>Col%</strong></td>
<td>14.5% (9.2 - 19.9)</td>
<td>85.5% (14.3 - 17.2)</td>
<td>15.7% (14.3 - 17.2)</td>
</tr>
<tr>
<td><strong>%</strong></td>
<td>0.8% (0.5 - 1.1)</td>
<td>14.9% (13.5 - 16.3)</td>
<td>15.7% (14.3 - 17.2)</td>
</tr>
<tr>
<td><strong>Weighted N</strong></td>
<td>159,264</td>
<td>2,977,514</td>
<td>3,136,778</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>n</strong></td>
<td>1,141</td>
<td>10,533</td>
<td>11,674</td>
</tr>
<tr>
<td><strong>Row%</strong></td>
<td>5.5% (4.7 - 6.3)</td>
<td>94.5% (93.7 - 95.3)</td>
<td>100.0% (100.0 - 100.0)</td>
</tr>
<tr>
<td><strong>Col%</strong></td>
<td>100.0% (100.0 - 100.0)</td>
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<td>5.5% (4.7 - 6.3)</td>
<td>94.5% (93.7 - 95.3)</td>
<td>100.0% (100.0 - 100.0)</td>
</tr>
<tr>
<td><strong>Weighted N</strong></td>
<td>1,096,637</td>
<td>18,863,621</td>
<td>19,960,257</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wald Chi-Square Value</th>
<th>Degrees of Freedom</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.883,621</td>
<td>1</td>
<td>0.0567</td>
</tr>
</tbody>
</table>

### Notes
- The table above shows the cross-tabulation of tobacco use by chronic health conditions in Texas, 2017.
- The data is reported as weighted percentages and counts for current smokers and former smokers or never smoked.
- The Wald Chi-Square test was used to determine the statistical significance of the association between tobacco use and chronic health conditions.
- The p-value of 0.0567 indicates a marginally significant association.
Alternatively, using control variable.
Impact of Continued Smoking
Evidence of harm

2014 SG Report\textsuperscript{1}

- Current smoking increased overall mortality by a median of 51\% and cancer-related mortality by a median of 61\% 
  - The risk of dying could be lowered by 30-40\% by quitting smoking at the time of diagnosis 
  - For some cancers, the benefit of smoking cessation may be equal to, or even exceed, the value of state-of-the-art cancer therapies

This is a common theme across cancers
Evidence of harm

2014 SG Report

• **Evidence is sufficient to infer a causal relationship**: cigarette smoking and adverse outcomes, including increased all-cause mortality, cancer-specific mortality, and risk for second primary cancers

• **Evidence is suggestive, but not sufficient, to infer a causal relationship**: smoking and cancer recurrence, poorer response to treatment, and increased treatment-related toxicities
Benefits of Cessation
**Within minutes of smoking your last cigarette, everyone can enjoy important health benefits...**

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 minutes after quitting</td>
<td>Your heart rate and blood pressure drop.</td>
</tr>
<tr>
<td>12 hours after quitting</td>
<td>The carbon monoxide level in your blood drops to normal.</td>
</tr>
<tr>
<td>2 weeks to 3 months after quitting</td>
<td>Your circulation improves and your lung function increases.</td>
</tr>
<tr>
<td>1 to 9 months after quitting</td>
<td>Coughing and shortness of breath decrease. Tiny hair-like structures move mucus out of the lungs.</td>
</tr>
<tr>
<td>1 year after quitting</td>
<td>The excess risk of coronary heart disease is half that of someone who still smokes. Your heart attack risk drops dramatically.</td>
</tr>
<tr>
<td>5 years after quitting</td>
<td>Your risk of cancers of the mouth, throat, esophagus, and bladder is cut in half. Cervical cancer risk falls to that of a non-smoker. Your stroke risk can fall to that of a non-smoker after 2 to 5 years.</td>
</tr>
<tr>
<td>10 years after quitting</td>
<td>Your risk of dying from lung cancer is about half that of a person who is still smoking. Your risk of cancer of the larynx (voice box) and pancreas decreases.</td>
</tr>
<tr>
<td>15 years after quitting</td>
<td>Your risk of coronary heart disease is that of a non-smoker's.</td>
</tr>
</tbody>
</table>

**Improved:**
- Sense of smell
- Sense of taste
- Appetite

**Lower risk of:**
- Osteoporosis-related bone fractures
- Erectile dysfunction and infertility
- Premature aging of the skin
- Loss of teeth and gum disease

Resources to help
Guidelines

• At present there is no standard format to promote smoking cessation in cancer patients

  • Recommendations
    ➢ American Society of Clinical Oncology
    ➢ American Association for Cancer Research
    ➢ International Association for Study of Lung Cancer

  • Assessments
    ➢ National Cancer Institute
    ➢ National Comprehensive Cancer Network

• Context of addressing tobacco use in cancer patients is different from the general population
In 2017, NCI launched the Cancer Center Cessation Initiative, as part of the NCI Cancer Moonshot™ program. The long-term goal of this Initiative is to help cancer centers build and implement sustainable tobacco cessation treatment programs to routinely address tobacco cessation with cancer patients.

# Insurance Coverage* – Tobacco Cessation

<table>
<thead>
<tr>
<th>INSURANCE STATUS</th>
<th>COVERAGE INFORMATION</th>
</tr>
</thead>
</table>
| **MEDICARE**          | • Evidence-based tobacco cessation counseling is covered  
                        • Part D covers FDA-approved cessation drug therapies; over-the-counter therapies are typically excluded |
| **MEDICAID**          | • Comprehensive cessation benefits are covered for pregnant women with no cost sharing  
                        • As of January 1, 2014, all state Medicaid programs will be required to support all FDA-approved tobacco cessation medications without requiring co-pays |
| **PRIVATE INSURANCE** | • Patient Protection and Affordable Care Act (ACA or health reform bill) requires all insurance plans to provide evidence-based tobacco cessation interventions  
                        • Providers should check with individual insurance plans for coverage specifics |
| **NO INSURANCE**      | Options could include:  
                        • Quitlines (1-800-QUITNOW)  
                        • **Online cessation resources**  
                        • Flexible spending account  
                        • Employee assistance programs  
                        • Community resources  
                        • Out-of-pocket spending |

* Coverage varies by insurer and state
Resources – Tobacco Activities

https://www.cdc.gov/statesystem/

Also see: Best Practices for Comprehensive Tobacco Control Program Programs, 2014
Resources – Cancer Statistics

United States Cancer Statistics: Data Visualizations

The official federal statistics for cancer incidence and deaths, produced by the Centers for Disease Control and Prevention (CDC) and the National Cancer Institute (NCI).

Overview | Demographics | Trends | State/County | Congressional Districts | Survival | Prevalence | Risk Factors | More Topics | Related Data

Area | County (2012-2016) | New Cases (Incidence) or Deaths (Mortality) | Cancer Type | Year

Texas | All Counties | Rate per 100,000 people | All Types of Cancer | 2016

Cancer burden: Texas
All Types of Cancer, 2016

In Texas in 2016, there were 109,083 new cases of cancer. For every 100,000 people, 392 cancer cases were reported.
The same year, there were 40,195 people who died of cancer. For every 100,000 people in Texas, 149 died of cancer.

Rate of New Cancers in Texas
All Types of Cancer, All Ages, All Races/Ethnicities, Male and Female, 2012-2016

Rate per 100,000 people

Rate of New Cancers by Sex, All Races/Ethnicities
All Types of Cancer
Rate per 100,000 people

Data Visualizations Tool
https://gis.cdc.gov/Cancer/USCS/DataViz.html
Surgeon General Report, Tobacco Cessation, 2019

Coming soon! November 2019?

Tobacco Reports And Publications

In 1964, a landmark Surgeon General report was released warning of the health hazards of smoking. Since then, the rate of tobacco use in the United States has significantly decreased but there is still work to do. Preventing tobacco use remains a high priority of the Office of the Surgeon General because, even with that decrease, it continues to be the leading cause of preventable death in the United States. Today, we know that there is no safe level of exposure to tobacco smoke. We know that the very design of tobacco products, especially e-cigarettes, makes them more attractive and addictive than ever. And we know, without a doubt, that quitting smoking saves lives.

Learn what the Surgeon General has been doing to eradicate the scourge of tobacco. Explore the wide range of publications below on how we can protect all Americans from the dangers of tobacco and nicotine and prevent our youth from starting to use tobacco in the first place.

References
