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

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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

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

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

and older who were current cigarette smokers, Both Sexes. 1992-2017 **Current Estimate:** Overall - 11.5% 35 30 survivors cancer Falling 1992-2017 20 ō Percent ( Healthy People 2020 Target (12) 2002 1992 1997 2007 2012 2017 Year HP 2020 Target TU-1.1: 12%. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey. Data are age-adjusted based on the age distribution of cancer patients diagnosed in 2000 in the SEER 18 areas (http://seer.cancer.gov/registries/terms.html) using age groups: 18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+. Weighted regression lines are calculated using the Joinpoint Trend Analysis Software. Version 4.6 February 2018, National Cancer Institute. The AAPC is the Average Annual Percent Change and is based on the APCs calculated by

The Annual Percent Change (APC)/Average Annual Percent Change (AAPC) is statistically

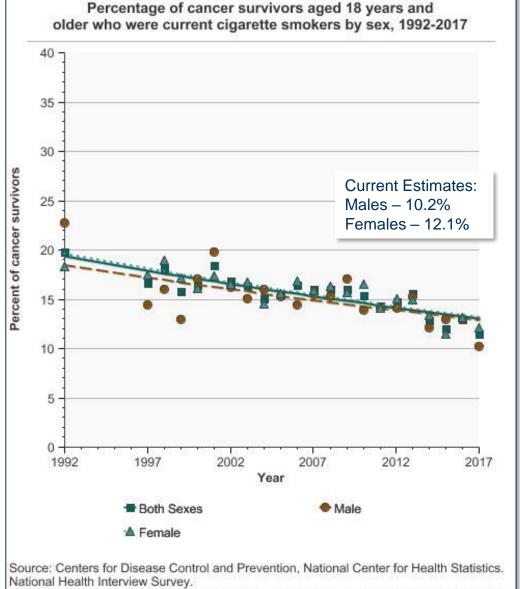
significant.

Percentage of cancer survivors aged 18 years

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

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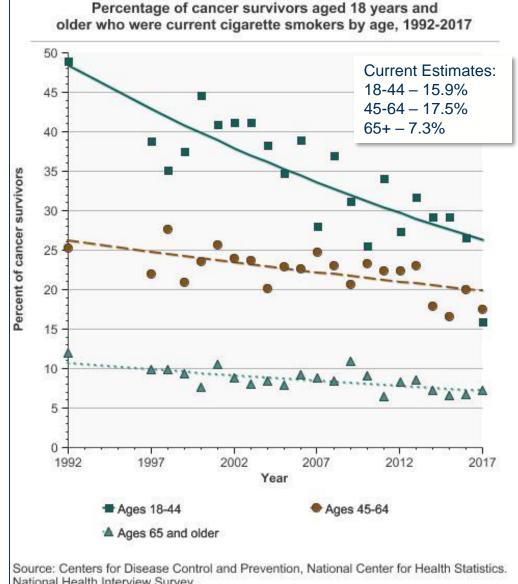


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https://progressreport.cancer.gov/after/smoking

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National Health Interview Survey.

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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

Tools

 Prevalence Data & Data Analysis Tools

- Web Enabled Analysis Tool
  - Custom tabulations
  - Easy to use



#### Web Enabled Analysis Tool (WEAT)

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

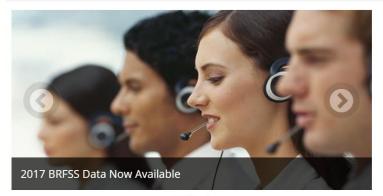
#### Behavioral Risk Factor Surveillance System











\*\*\* BRFSS\*\*

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.

About BRFSS

**BRFSS Questionnaires** 

Publications & Resources

Prevalence Data & Data Analysis

Survey Data & Documentation

BRFSS Fact Sheets

cdc.gov/BRFSS









\*>BRFSS"

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About BRFSS

Prevalence Data & Data Analysis

cdc.gov/BRFSS

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♠ BRFSS		
About BRFSS	+	
Archived		
Prevalence Data and Data Analysis Tools		
Survey Data and Documentation	+	
GIS Maps Data	+	
SMART: City and County Survey Data	+	
Statistical Briefs		
Questionnaires		
Publications and Resources	+	
State Information	+	
Fact Sheets		

Get Email Updates

#### Prevalence Data & Data Analysis Tools



Find city and county data collected through the Selected Metropolitan/Micropolitan Area Risk Trends (SMART) project, the Web Enabled Analysis Tool (WEAT), interactive maps, and other resources provided through BRFSS.

#### 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.

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#### 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 (MMSAs) 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 (MMSAs), or regions within states. The tool then creates a table illustrating differences on user selected health indicators by geographic area. Chronic









# 2017 BRFSS Data Now Available

About BRFSS

Prevalence Data & Data Analysis

cdc.gov/BRFSS

\*>BRFSS"

#### **BRFSS Web Enabled Analysis Tool**

CDC > BRFSS > WEAT



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.

#### **BRFSS Analysis**

#### **Cross Tabulation**

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

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  $Y = \exp(a + B1X1)/1 + \exp(a + B1X1)$ .

Questionnaires more respondents BRFSS combined landline and cell phone data for any year. Publications and Resources Web Enabled Analysis Tool (WEAT) The Web Enables Analysis Tool (WEAT) permits users to State Information Chronic Disease Indicators (CDI) create custom crosstabulation tables for health indicators within selected states. Up to two control The Chronic Disease Indicators Tool allows Fact Sheets variables may be included to create crosstab tables users to select two or more geographic areas within each category of control variables. WEAT also such as states, Metropolitan/Micropolitan may be used to create logistic equations using BRFSS Areas (MMSAs), or regions within states. The tool then creates a table illustrating data. Users are prompted to make selections of year, Get Email Updates state and variables to be included in the analyses. differences on user selected health indicators by geographic area. Chronic

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Prevalence Data and Data

Survey Data and Documentation

SMART: City and County Survey

**♠** BRFSS

Archived

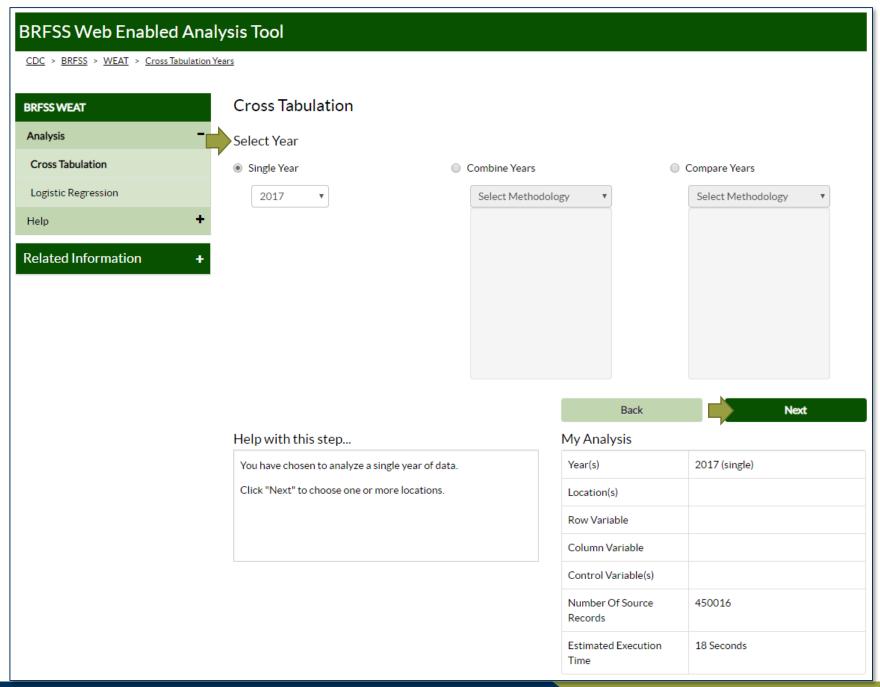
About BRFSS

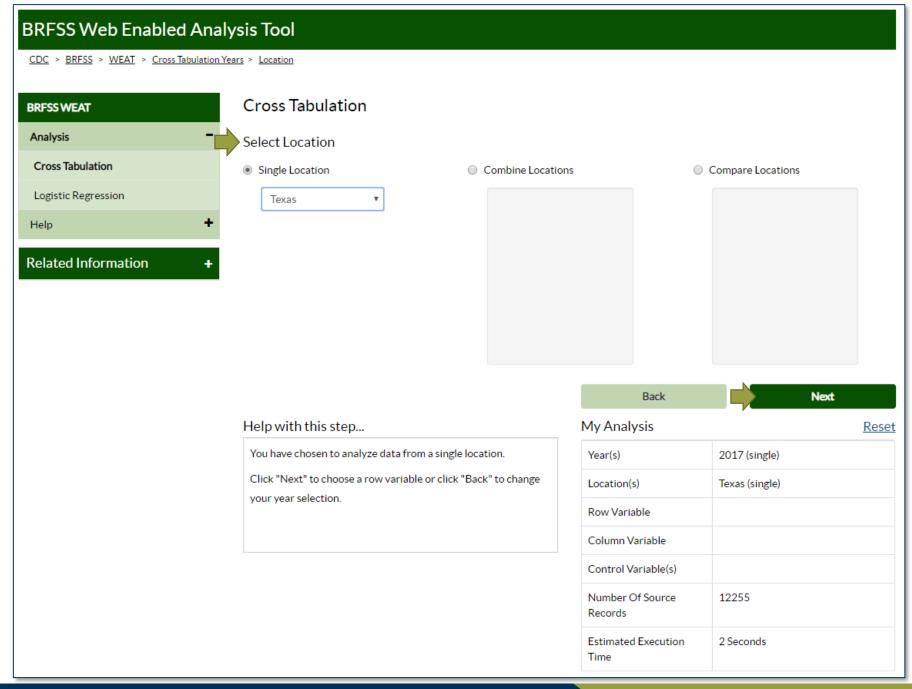
**Analysis Tools** 

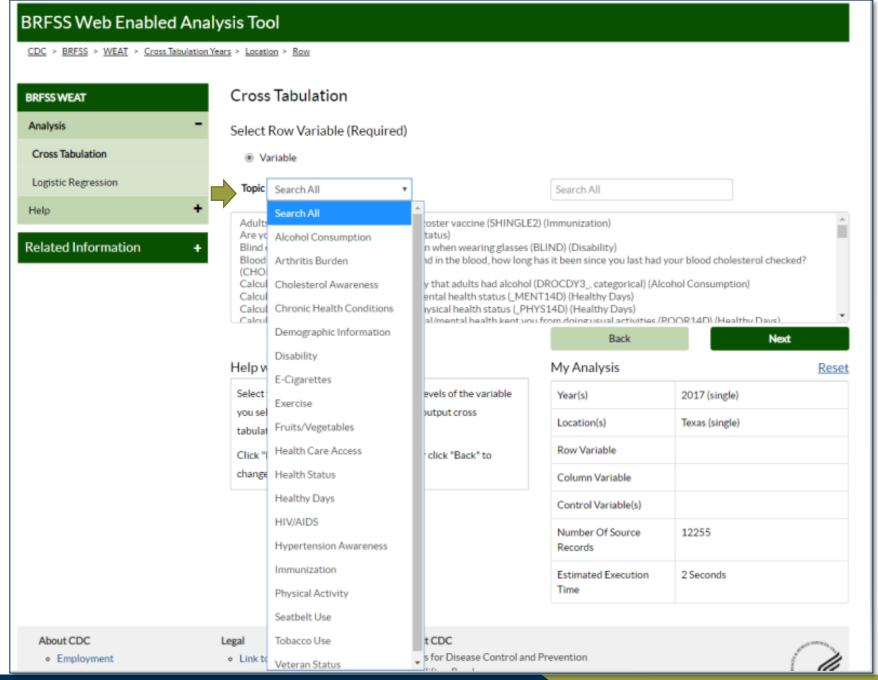
GIS Maps Data

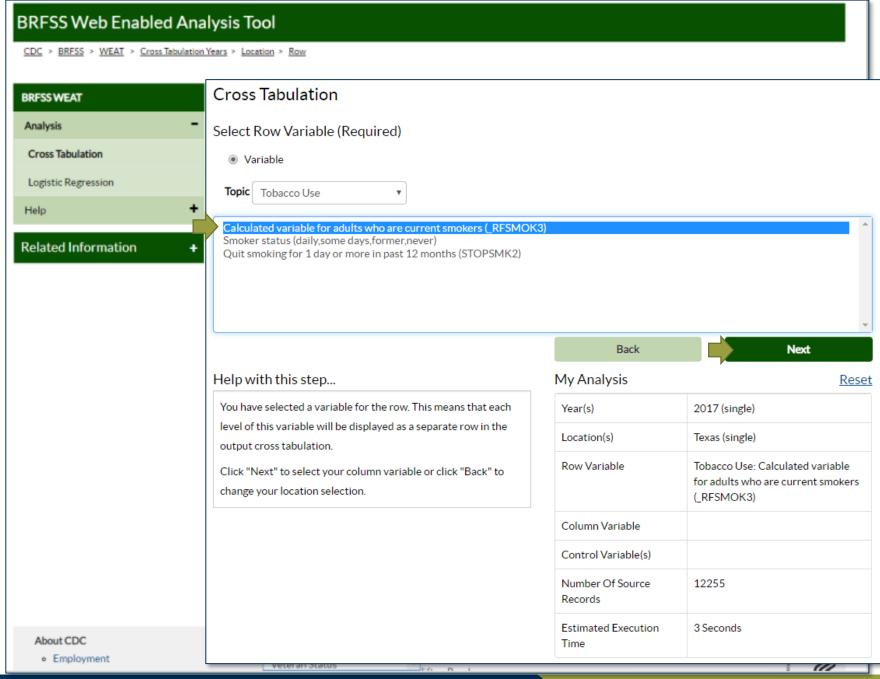
Statistical Briefs

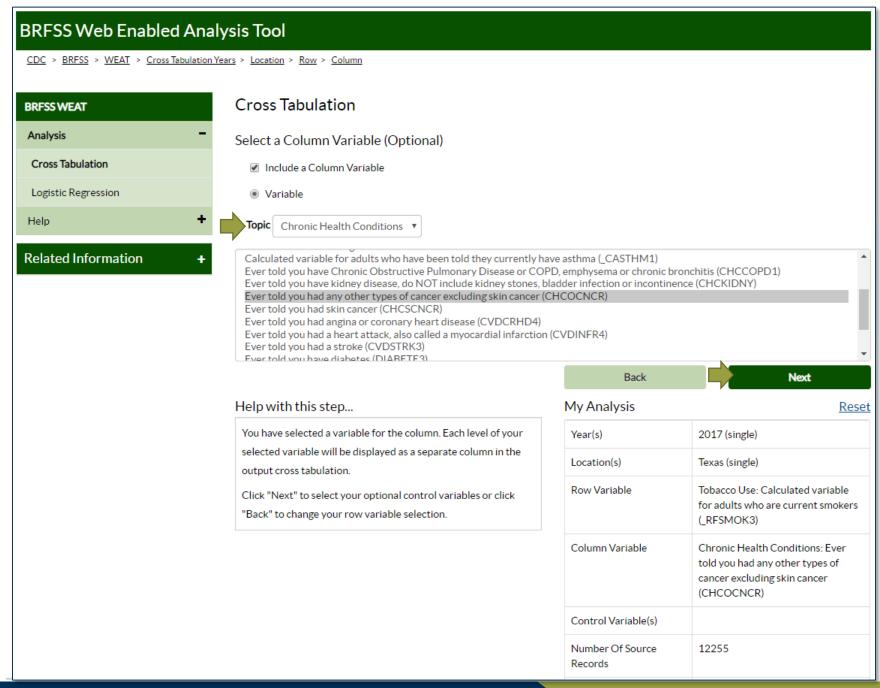
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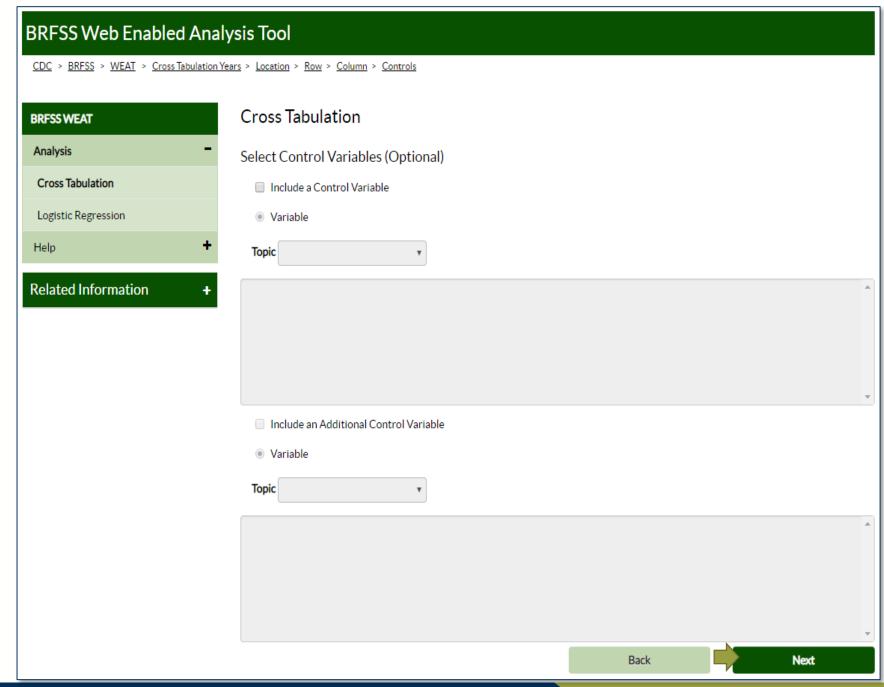


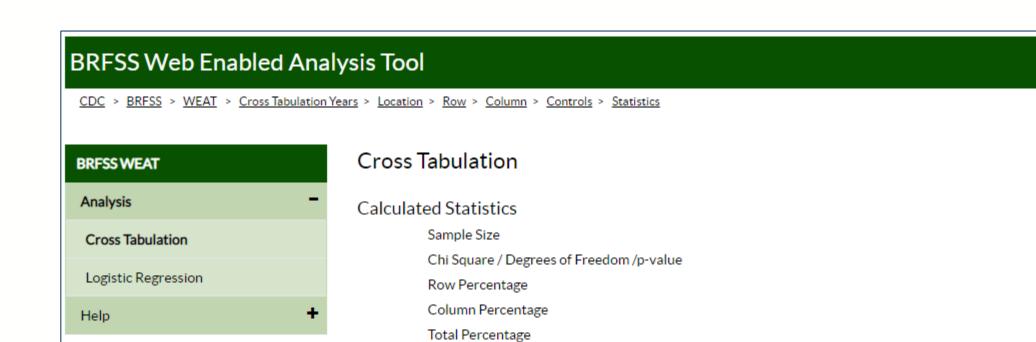












#### Related Information + Select Additional Statistics

- Standard Error

#### 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

Sami	nie.	S176	
John	210	OILL	

Row% (95% Confidence Interval)
Column % (95% Confidence Interval)
Total % (Weighted) (95% Confidence Interval)
Weighted N (95% Confidence Interval)

#### Ever told you had any other types of cancer excluding skin cancer (CHCOCNCR)

			Yes	١	No	To	Total		
Calculated variable for add	ults who are current	smokers (_R	FSMOK3)						
Former smoker or never smoked	n Row% Col% % Weighted N	1,018 5.6% 85.5% 4.7% 937,373	(4.7 - 6.4) (80.1 - 90.8) (4.0 - 5.4) (792546 - 1082199)	9,162 94.4% 84.2% 79.6% 15,885,706	(93.6 - 95.3) (82.7 - 85.7) (78.0 - 81.1) (15431845 - 16339568)	10,180 100.0% 84.3% 84.3% 16,823,079	(100.0 - 100.0) (82.8 - 85.7) (82.8 - 85.7) (16375533 - 17270625)		
Current smoker	n Row% Col% % Weighted N	123 5.1% 14.5% 0.8% 159,264	(3.1 - 7.1) (9.2 - 19.9) (0.5 - 1.1) (95416 - 223112)	1,371 94.9% 15.8% 14.9% 2,977,914	(92.9 - 96.9) (14.3 - 17.3) (13.5 - 16.3) (2682569 - 3273259)	1,494 100.0% 15.7% 15.7% 3,137,178	(100.0 - 100.0) (14.3 - 17.2) (14.3 - 17.2) (2836590 - 3437767)		
Total	n Row% Col% % Weighted N	1,141 5.5% 100.0% 5.5% 1,096,637	(4.7 - 6.3) (100.0 - 100.0) (4.7 - 6.3) (939519 - 1253754)	10,533 94.5% 100.0% 94.5% 18,863,621	(93.7 - 95.3) (100.0 - 100.0) (93.7 - 95.3) (18426543 - 19300698)	11,674 19,960,257			
	Wald Chi-Square Value Degrees of Freedo			n 1	p-value 0.65	567			

### Alternatively, using control variable

	Reported age (18-24,25-44,45-64,65+)											
			18 to 24	Ag	ge 25 to 44	Ag	Age 45 to 64		Age 65 or older		Total	
Calculated variable for adults who are current smokers (_RFSMOK3)												
Former smoker or never smoked	n Row% Col% % Weighted N	6 1.6% * 1.4% 15,309	(0.0 - 3.3) (0.0 - 2.8) (0 - 31121)	40 11.4% 72.3% 9.8% 107,193	(4.8 - 18.1) (52.5 - 92.1) (4.0 - 15.6) (38876 - 175509)	247 32.3% 81.1% 27.6% 302,513	(25.0 - 39.5) (70.6 - 91.7) (21.2 - 34.0) (222267 - 382760)	725 54.7% 91.9% 46.7% 512,358	(46.7 - 62.6) (86.2 - 97.6) (39.4 - 54.0) (411258 - 613457)	1,018 100.0% 85.5% 85.5% 937,373	(100.0 - 100.0) (80.1 - 90.8) (80.1 - 90.8) (792546 - 1082199)	
Current smoker	n Row% Col% % Weighted N	2 1.7% * 0.3% 2,748	(0.0 - 4.4) (0.0 - 0.6) (0 - 6989)	15 25.8% 27.7% 3.8% 41,157	(8.8 - 42.9) (7.9 - 47.5) (1.0 - 6.5) (10262 - 72052)	53 44.2% 18.9% 6.4% 70,347	(24.0 - 64.3) (8.3 - 29.4) (2.5 - 10.3) (25615 - 115079)	53 28.3% 8.1% 4.1% 45,012	(10.4 - 46.2) (2.4 - 13.8) (1.1 - 7.1) (11643 - 78381)	123 100.0% 14.5% 14.5% 159,264	(100.0 - 100.0) (9.2 - 19.9) (9.2 - 19.9) (95416 - 223112)	
Total	n Row% Col% % Weighted N	1.6%	(0.2 - 3.1) (100.0 - 100.0) (0.2 - 3.1) (1687 - 34427)	55 13.5% 100.0% 13.5% 148,350	(7.4-19.7) (100.0-100.0) (7.4-19.7) (73557-223143)	300 34.0% 100.0% 34.0% 372,860	(27.1 · 40.9) (100.0 · 100.0) (27.1 · 40.9) (281334 · 464387)	778 50.8% 100.0% 50.8% 557,369	(43.5 - 58.2) (100.0 - 100.0) (43.5 - 58.2) (451176 - 663562)	1,141 1,096,637		
	Chi-Square Value 6.03 suppressed. Estimate		es of Freedom 3 essed when the d	<u> </u>	p-value 0.1099 or sample size is less	_						

#### My Analysis

Controlling for

Table Type	Cross Tabulation Table			
Year(s)	2017 (single)			
Location(s)	Texas (single)			
Row Variable	Tobacco Use: Calculated variable for adults who are current smokers (_RFSMOK3)			
Column Variable	Demographic Information: Reported age (18-24,25-44,45-64,65+)			
Control Variable(s)	Chronic Health Conditions: Ever told you had any other types of cancer excluding skin cancer (CHCOCNCR)			

Ever told you had any other types of cancer excluding skin cancer (CHCOCNCR)

Yes

### Impact of Continued Smoking

### **Evidence of harm**

### 2014 SG Report<sup>1</sup>

- 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

Table 1.1	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	2 Evidence is <b>suggestive but not sufficient</b> to infer a causal relationship				
Level 3	Evidence is <b>inadequate</b> 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				

### 2014 SG Report<sup>1</sup>

- 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...

20 minutes after quitting



Your heart rate and blood pressure drop.

12 hours after quitting



The carbon monoxide level in your blood drops to normal.

2 weeks to 3 months after quitting



Your circulation improves and your lung function increases.

1 to 9 months after quitting



Coughing and shortness of breath decrease. Tiny hair-like structures that move mucus out of the lungs (called cilia) start to regain normal function in your lungs, increasing their ability to handle mucus, clean the lungs, and reduce the risk of infection.

1 year after quitting



The excess risk of coronary heart disease is half that of someone who still smokes. Your heart attack risk drops dramatically.

5 years after quitting



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.

10 years after quitting



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.

15 years after quitting



Your risk of coronary heart disease is that of a non-smoker's.

#### 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

 $\underline{https://www.cancer.org/healthy/stay-away-from-tobacco/benefits-of-quitting-smoking-over-time.html}$ 

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### 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
  - ► <u>National Comprehensive Cancer Network</u>
- Context of addressing tobacco use in cancer patients is different from the general population

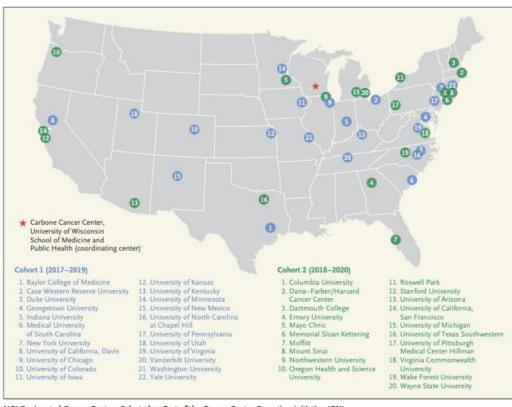
# Resources – Cancer Center Cessation Initiative (C3I)

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.

https://cancercontrol.cancer.gov/brp/tcrb/cessation-initiative.html

### Addressing a Core Gap in Cancer Care — The NCI Moonshot Program to Help Oncology Patients Stop Smoking

Robert T. Croyle, Ph.D., Glen D. Morgan, Ph.D., and Michael C. Fiore, M.D., M.P.H., M.B.A.



NCI-Designated Cancer Centers Selected as Part of the Cancer Center Cessation Initiative (C3I).

### **Insurance Coverage\* - Tobacco Cessation**

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

<sup>\*</sup> Coverage varies by insurer and state

### Resources - Tobacco Activities

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







Use the State Highlights report to see a variety of data from across the system for a single selected state. View highlights in the System or export to PDF.



Use Custom Reports to build your own report by selecting the topics, states, and years of



Use Interactive Maps to access key data from across the System in a US map and data



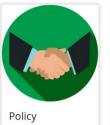
Coverage





Consequences and Costs

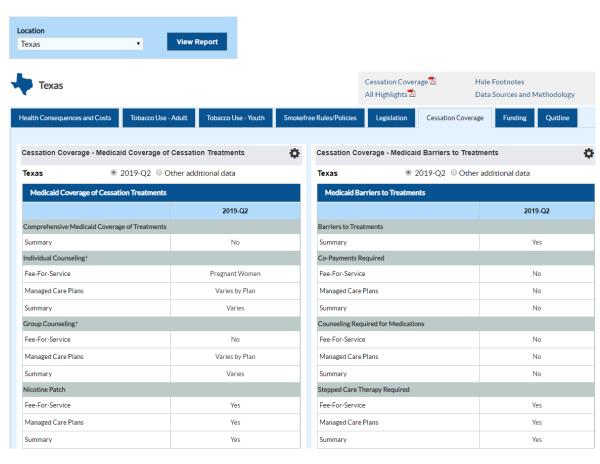




Ouitline







Also see: Best Practices for Comprehensive Tobacco Control Program Programs, 2014

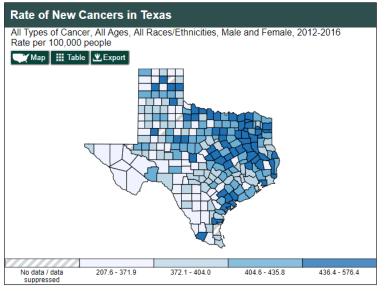
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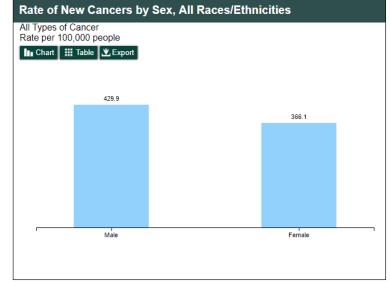
### **Resources – Cancer Statistics**



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.

	Title	Туре	Date	
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https://www.hhs.gov/surgeongeneral/reports-and-publications/tobacco/index.html

### References

1. U.S. Department of Health and Human Services Centers for Disease Control and Prevention: <u>The Health Consequences of Smoking–50 Years of Progress: A Report of the Surgeon General</u>. National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014.

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Go to the official source of cancer prevention information: www.cdc.gov/cancer.

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.





