

Evaluation Monitoring System: Formula for Tracking Smoke Reduction Trends and Calculating Medical Savings in Your County

Tools for Local Evaluators Working in Arkansas

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Formula for Tracking Smoke Reduction Trends in Your County

This guide is designed to help you track reductions in tobacco consumption and estimate lives and medical costs saved in your county. This instructional guide explains how to build your own tracking system to evaluate your effectiveness in terms of reducing tobacco consumption. Many calculations and formula are provided, as well as an Evaluation Monitoring System spreadsheet. This guide will also help you explain to others how you have contributed to saving lives and reducing excess medical costs in the State of Arkansas.

US. Census Bureau: State and County Population Sizes (Baseline Data)

Begin by recording the State Population, your County Population, and the Smoking Rate in your county. One useful resource is the US Census web page (Figure 1) at : <http://quickfacts.census.gov/>

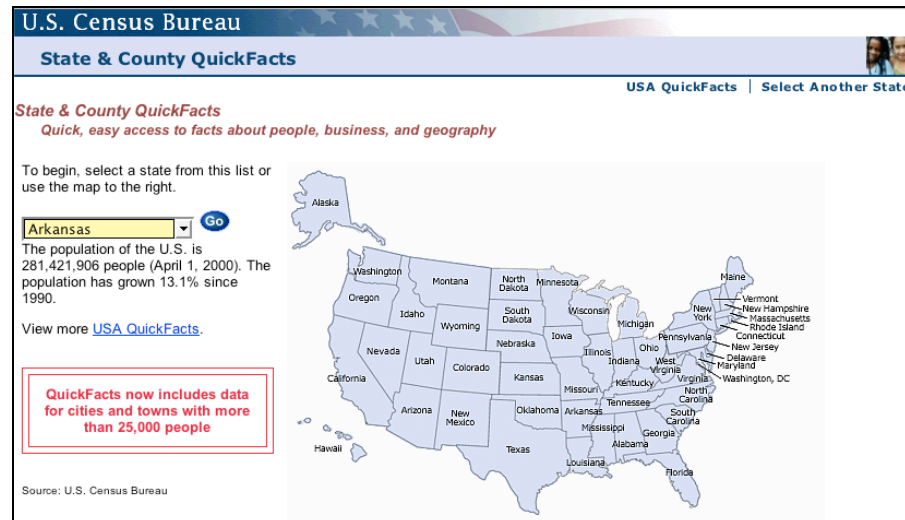


Figure 1. US Census web page for quickfacts.

Select “Arkansas” and you will see the State population in 2004 was 2,752,629 (Figure 2).

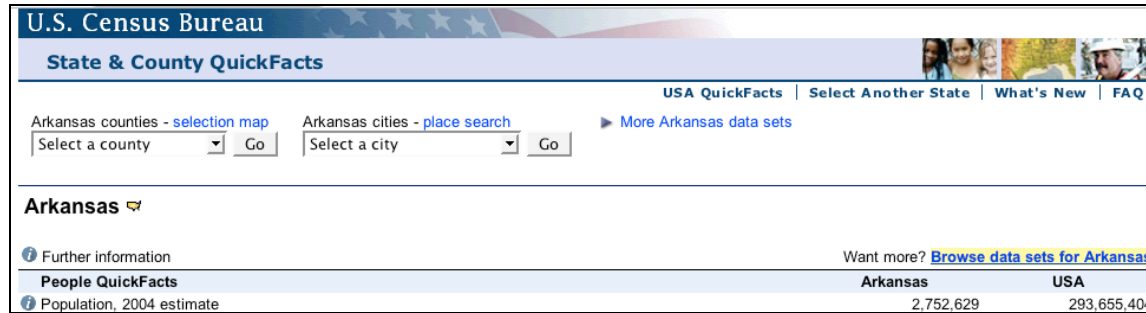


Figure 2. Arkansas population.

Then select you county in the top left hand corner of the page and then select “Go.” You will see your county population (Figure 3).

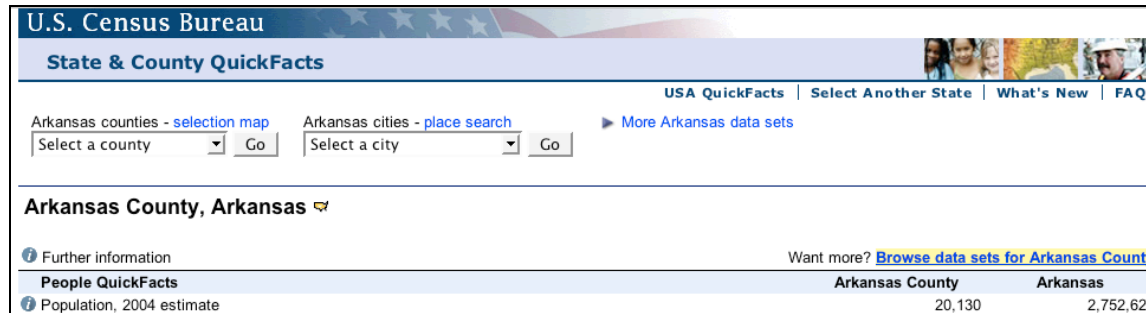


Figure 3. County population statistics.

Place these figures in a spreadsheet to begin constructing an Evaluation Monitoring System (Figure 4).

	Population
State of Arkansas	2,752,629
Counties in Arkansas	
Arkansas County	20,130

Figure 4. First part of the spreadsheet: population figures

Arkansas Department of Health: Prevalence of Smoking, Spit Tobacco, and Snuff Use by County (Baseline Data)

The next web page to go to is the Arkansas Department of Health’s StampOut Smoking web page concerning smoking, spit tobacco, and snuff use rates in Arkansas by county (Figure 5 and 6). The PDF document is available at:

www.stampoutsmoking.com/pdf/county_specific_tobacco_use.pdf

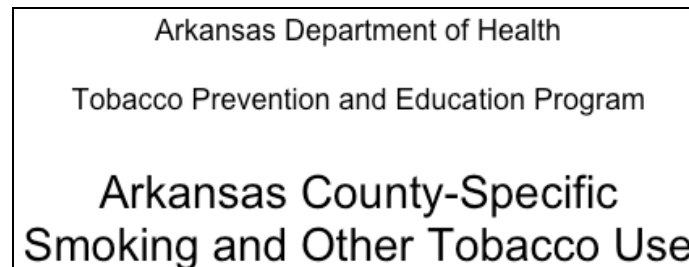


Figure 5. ADH report of smoking by county.

**Prevalence of Smoking and Spit Tobacco/Snuff Use by County
Arkansas 2001, 2002 and 2003**

STATE / COUNTY	SMOKING RATE	SPIT TOBACCO/SNUFF USE RATE
<i>State Total</i>	25.66	5.94
Arkansas	28.19	4.95
Ashley	24.84	6.42
Baxter	24.68	5.65
Benton	22.50	5.54
Boone	29.52	4.73
Bradley	25.44	7.49
Calhoun	22.66	7.99
Carroll	24.42	4.76
Chicot	25.35	7.00
Clark	20.50	8.84
Clay	31.99	5.69
Cleburne	25.06	5.30
Cleveland	24.80	5.94
Columbia	24.22	6.95
Conway	28.49	8.93
Craighead	31.65	5.91
Crawford	24.24	6.72
Crittenden	31.82	7.17
Cross	33.80	6.57
Dallas	22.03	9.08
Desha	28.29	5.37
Drew	26.46	7.89
Faulkner	23.57	4.43
Franklin	26.90	7.75
Fulton	23.33	5.41
Garland	26.26	6.03
Grant	21.85	4.28
Greene	31.58	5.12
Hempstead	28.14	8.01
Hot Spring	23.80	5.90
Howard	24.21	7.48
Independence	26.54	6.12
Izard	23.53	6.27
Jackson	31.59	4.88
Jefferson	23.41	4.04

Johnson	30.88	11.63
Lafayette	27.13	6.09
Lawrence	29.60	5.65
Lee	26.51	6.79
Lincoln	27.57	5.49
Little River	30.28	7.22
Logan	27.47	8.71
Lonoke	23.06	4.07
Madison	24.11	6.31
Marion	25.75	2.55
Miller	29.03	7.87
Mississippi	30.64	5.33
Monroe	27.09	7.05
Montgomery	24.55	7.28
Nevada	22.24	7.10
Newton	29.62	9.35
Ouachita	22.01	7.01
Perry	23.11	4.29
Phillips	28.93	7.31
Pike	20.64	8.22
Poinsett	31.66	5.76
Polk	24.27	11.59
Pope	31.48	9.83
Prairie	30.51	5.16
Pulaski	22.88	4.25
Randolph	31.97	5.70
Saline	31.23	7.61
Scott	22.67	4.30
Searcy	24.06	7.62
Sebastian	27.78	6.73
Sevier	26.61	7.59
Sharp	27.14	11.16
St. Francis	29.36	6.29
Stone	24.87	6.27
Union	24.33	7.22
Van Buren	26.97	8.07
Washington	22.94	5.58
White	25.50	5.53
Woodruff	29.23	5.68
Yell	29.10	8.93

Figure 6. Smoking, spit, snuff use rate by counties Arkansas – Yell (See Appendix B).

Place these figures in the same spreadsheet to continue building the Evaluation Monitoring System (Figure 7).

	Population	Smoking Rate	Spit Snuff Rate
State of Arkansas	2,752,629	25.66	5.94
Counties in Arkansas			
Arkansas County	20,130	28.19	4.95

Figure 7. Evaluation Monitoring Spreadsheet with smoking, spit, and snuff data.

Tobacco-Free Kids Site: Annual Tobacco Deaths and Excess Medical Costs (Baseline Data)

Now that you have build the foundation of your monitoring system, including the population of your county, smoking rate in your county, and spit and snuff tobacco use in your county, you are ready to determine the annual death rate and excess medical costs associated with tobacco use in your county.

Go to the Tobacco Free Kids site (Figure 8). It is at:

<http://www.tobaccofreekids.org/> It has a “Select a State” button on the bottom left hand column (Figure 9).

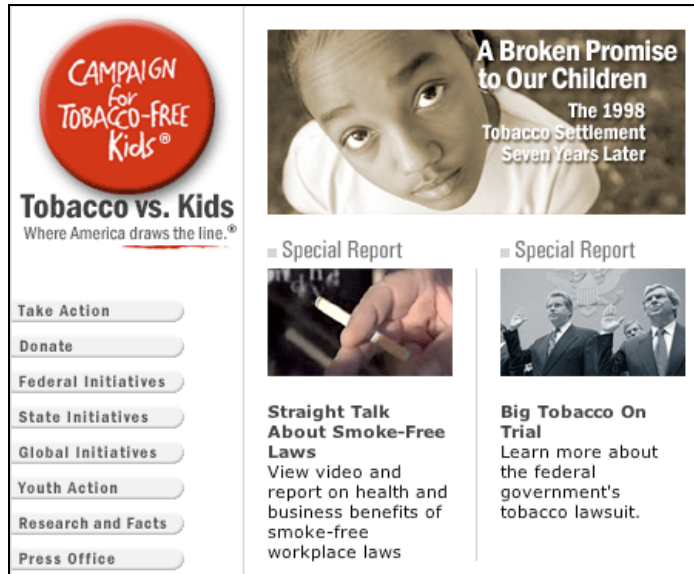



Figure 8. Tobacco Free Kids web site



Figure 9. Select a State option

Select “Arkansas” and it will bring you to the “Toll of Tobacco in Arkansas” page (Figure 10 and 11) at:

<http://www.tobaccofreekids.org/reports/settlements/toll.php?StateID=AR>



Home Site Help Contact
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Special Reports

State Tobacco Settlement

The Toll of Tobacco in Arkansas

[State Settlement Overview for Arkansas](#) [Printable Version](#)
[View sources of information](#)

Tobacco Use in Arkansas

High school students who smoke	29.3% (45,700)
Male high school students who use smokeless or spit tobacco	24.9% (females use much lower)
Kids (under 18) who become new daily smokers each year	6,000
Kids exposed to secondhand smoke at home	177,000
Packs of cigarettes bought or smoked by kids each year	11.5 million
Adults in Arkansas who smoke	25.7% (533,500)

Nationwide, youth smoking has declined since 1997, but remains at high levels. The 2004 National Youth Tobacco Survey (YTS) found that 21.7% of U.S. high school kids smoke and 9.9% of high school males use spit tobacco. U.S. adult smoking has decreased gradually since the 1980s, and 20.9% of U.S. adults (about 45 million) currently smoke.

Take Action
Donate
Federal Initiatives
State Initiatives
Global Initiatives
Youth Action
Research and Facts
Press Office
Tobacco Ad Gallery
Special Reports

The Tobacco Toll
Find out what tobacco has done to your state!

Select a State...

Figure 10. Toll of Tobacco in Arkansas top of web page highlighting statistics on tobacco use in Arkansas.

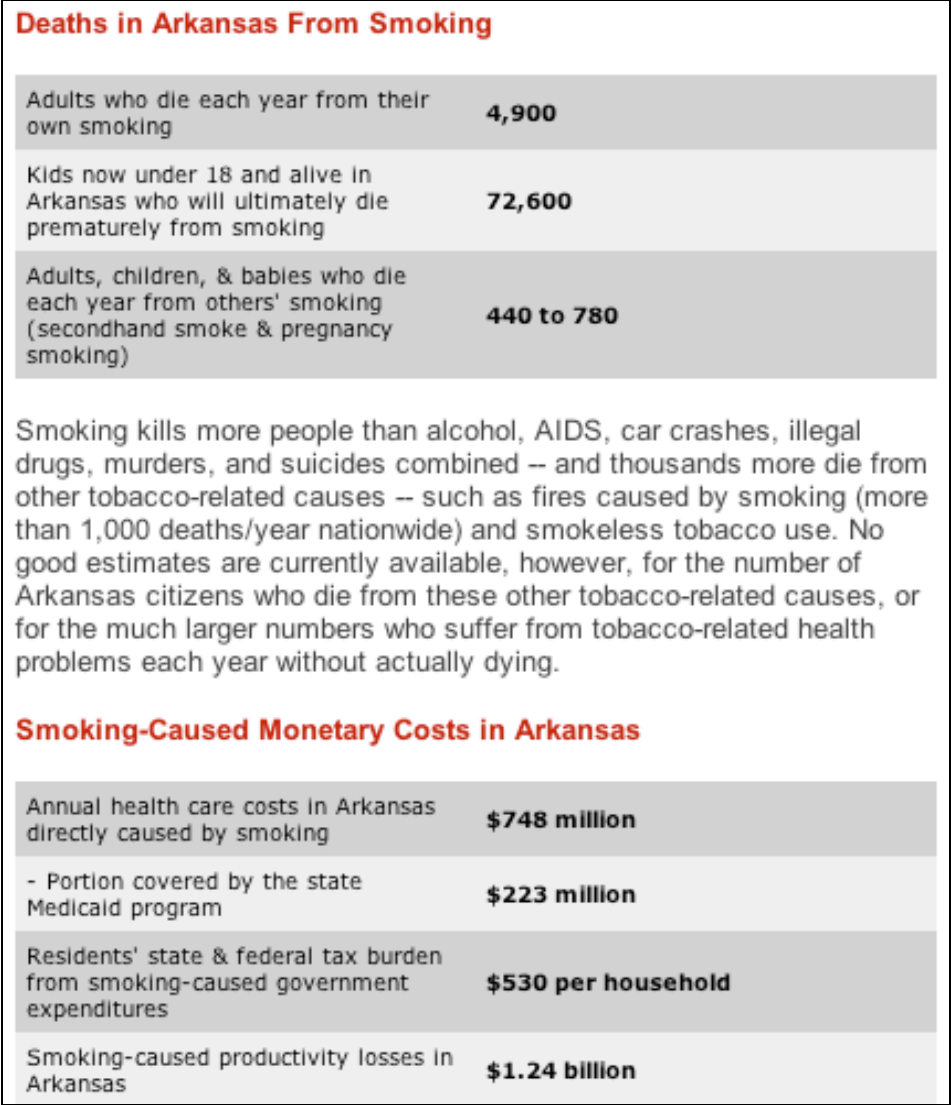


Figure 11. Toll of Tobacco in Arkansas bottom of web page highlighting statistics on tobacco use in Arkansas.

Take the Annual Tobacco Deaths and the Annual Excess Medical Costs from these pages and post them in an Excel spreadsheet or Word document (Figure 11).

Annual Tobacco Deaths	Annual Excess Medical Costs
4900	\$748,000,000

Figure 11. Annual tobacco deaths and excess medical costs information from Tobacco-Free Kids web site.

Calculating Annual County Tobacco Deaths

You can see the annual tobacco deaths and excess medical cost figures for the State of Arkansas on the Tobacco-Free Kids web site. It is easy to calculate the local County figures using their information.

Take your county population and divide it by the State population. For example, using Arkansas County: 20,130 divided by the State population of 2,752,629. This equals .00731313009. (You could also just use .007.) (Figure 12.)

Formula for Calculating Annual County Tobacco Death Rates			
County	County Pop	State Pop	Ratio
Arkansas County	20,130	2,752,629	0.00731313009

Figure 12. Calculating the ratio to determine the number of deaths by county.

Then take that figure or ratio and multiply it times the State's annual tobacco deaths. Using the same county as an example:

Multiply the ratio of .00731313009 times the State annual tobacco death rate of 4900 per year. This equals: 36. (See Figure 13.)

Formula for Calculating Annual County Tobacco Death Rates			
County	Ratio	State Deaths	County Deaths
Arkansas County	0.00731313009	4900	36

Figure 13. Calculating the county deaths as a result of tobacco use

Calculating Annual County Excess Medical Costs

Calculating the excess medical costs for each county is the same as calculating the county's tobacco death rates. Using Arkansas County as an example again:

Multiply the ratio of .00731313009 times the State's annual excess medical costs of \$748,000,000. This equals: \$5,470,131. (See Figure 14.)

Formula for Calculating Annual County Excess Medical Costs			
County	Ratio	State Excess Costs	County Excess Costs
Arkansas County	0.00731313009	\$748,000,000	\$5,470,131

Figure 14. Calculating the county annual excess medical costs as a result of tobacco use

Your Data: Numbers Reached and Numbers Quit

Now it is time to add your data to the Evaluation Monitoring system. This should be updated monthly. It is the most important data needed to help you evaluate your effectiveness, improve your program, and inform others about your performance.

You should be using sign-in sheets and pledge sheets to document the number of people you have educated about tobacco consumption and influenced to quit smoking or using tobacco products. Other tools are appropriate as well.

However, the focus should be on numbers reached. (You may also be collecting information on coalitions build and efforts associated with banning smoking in homes and public areas as well as educating people about the tobacco excise tax among other activities.) (Figure 15.)

Community Name	# Smokers in Your Community	#People Contacted w/Educational Materials	#Pledge Quit	# Quit
Arkansas County	X insert your data	X insert your data	X insert your data	X insert your data

Figure 15. Grantee local community and program data

Calculating Lives Saved and Medical Cost Savings

Using the data you calculated to determine how much money was lost as a result of tobacco deaths, you can now determine how much money is saved each time you record another person who has quit smoking. This is a tremendous tool to demonstrate your effectiveness in numbers and specifically in State dollars.

Basically, you calculate the excess medical costs and the number of deaths due to smoking in your county. Then divide the excess medical costs by the number of deaths. That will give you the excess medical costs per person.

Then if you reduce the number of people smoking in your county by 25% (which you can use as a goal) and you succeed you simply multiply 25% times the number of deaths in the county. That will give you the number of people you saved. Multiply the number of people you saved by the excess medical costs per person and you will have the medical cost savings as a result of your efforts. Using Arkansas County as an example again : Take the excess medical costs of \$5,470,131 and divide it by 36 deaths. The result is \$151,948.08 excess medical costs per person (approximately). Then establish a goal or target number of people you would like to see stop smoking or using tobacco products as a result of your efforts. One target might be a 25% reduction in smoking in your community. That would results in 9 lives saved. Multiply 9 lives saved times \$151,948.08 (the excess medical costs per person). The results is a savings of \$1,367,532.75. Here is the table you want to use to guide you when calculating lives saved and medical cost savings (Figure 16).

Formula to Calculate Approximate Health Costs Saved						
	Excess Medical Costs	Deaths	Excess Per Person (approx)	Target of 25% Reduction	Lives Saved	Med Cost Savings
State	\$748,000,000	4900	\$152,653.06	1225	3675	\$560,999,995.50
Arkansas County	\$5,470,131	36	\$151,948.08	27	9	\$1,367,532.75

Figure 16. Formula to calculate approximate health costs saved

Evaluation Monitoring System: Pulling the Data Together in One Place

The Evaluation Monitoring System is a simple spreadsheet that draws from each of the data sources discussed in this guide. All you have to do is put the data from each category into this system each month and you will have a useful tracking system and tool to evaluate your own performance. It is like a consolidated statement. It is presented below (Figure 17):

	Population	Multiplier	Smoking Rate	Spit/Snuff Rate	Annual Tobacco Deaths	Annual Excess Med Cost	#People Contacted	#Pledge Quit	#Quit	25% Target Reduct	Cost Saved
State of Arkansas	2,752,629	1	25.66	5.94	4900	\$748,000,000	X insert your data	X insert your data	X insert	1225	\$560,999,995.50
Counties											
Arkansas County	20,130	.007	28.19	4.95	36	\$5,470,131	X insert your data	X insert your data	X insert	27	\$1,367,532.75

Figure 17. Evaluation Monitoring System

Conclusion

This Evaluation Monitoring System and the data in it will help you:

1. cumulatively keep track of the numbers of people you have served or educated
2. allow you to compare the numbers you serve and the numbers who quit from month-to-month and year-to-year
3. enable you to calculate how much money you have saved the State by reducing deaths and excess medical costs

This data should be used to help you monitor your progress toward specific goals in reducing tobacco consumption and help you advocate for your program by providing evidence of your program's effectiveness. It is also a way to demonstrate your accountability for taxpayer money.

Please use this guide to help grantees collect meaningful and reliable data. It will help them and it will enable MISRGO to compile all the data to demonstrate the effectiveness of the program across grantees in a cumulative manner.

Contact Information

Contact Dr. David Fetterman at prodavidf@yahoo.com or Linda Delaney at info@pmaworld.com if you have any questions or suggestions.

Appendix A

The State Tobacco Activities Tracking and Evaluation (STATE) System relies on The Behavioral Risk Factor Surveillance System data. It provides detailed information about tobacco use in each State including gender, ethnicity, age, and education. This data is useful when targeting specific populations and needing data to track program effectiveness in comparison to state trends.

The screenshot displays the CDC State Tobacco Activities Tracking and Evaluation (STATE) System interface. The top navigation bar includes links for 'CDC Home', 'Search', and 'Health Topics A-Z'. The main header identifies the system as the 'National Center For Chronic Disease Prevention and Health Promotion State Tobacco Activities Tracking and Evaluation (STATE) System', with links for 'Home', 'Help', and 'Contact Us'. A left-hand navigation menu lists various report types and help sections. The central 'Detailed Report' section provides instructions for generating a report: 1. Select a Topic and click **GO**. 2. Select a Measure and click **GO**. 3. Select a State and Year and click **Submit**. Below these instructions is a form with four dropdown menus: 'Topic' (Behaviors - Cigarette Use), 'Measure' (Current Smoking (Adults) - BRFSS), 'State' (Arkansas), and 'Year' (2003). Each dropdown menu has a 'Go' button next to it, and a 'Submit' button is located at the bottom of the form. The page is dated 'Printed on: 12/2/2005'. At the bottom of the form, the selected report title is displayed: 'Current Smoking (Adults) - BRFSS Arkansas 2003'.

Figure CDC State Tobacco Activities Tracking and Evaluation (STATE) System.

Appendix B – Smoking Rates by County

Prevalence of Smoking and Spit Tobacco/Snuff Use by County
Arkansas 2001, 2002 and 2003

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Montgomery	24.55	7.28
Nevada	22.24	7.10
Newton	29.62	9.35
Ouachita	22.01	7.01
Perry	23.11	4.29
Phillips	28.93	7.31
Pike	20.64	8.22
Poinsett	31.66	5.76
Polk	24.27	11.59
Pope	31.48	9.83
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Pulaski	22.88	4.25
Randolph	31.97	5.70
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