BRFSS

2012

Arizona Behavioral Risk Factor Surveillance System Survey

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Front Cover Photograph

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Executive Summary

This report summarizes data on health-related quality of life, preventative practices, barriers to healthcare, health risk behaviors, beneficial health practices, and health conditions and limitations as reported by Arizonans. It compiles data from the 2012 Arizona Behavioral Risk Factor Surveillance System (BRFSS) survey, a state-wide landline and cellular telephone survey.

The BRFSS program provides a rich source of state-level public health data. These data are integral to fighting Arizona's public health Winnable Battles concerning health promotion, disease prevention, and intervention planning. Highlights from the 2012 BRFSS can be seen in **Table 1** (below).

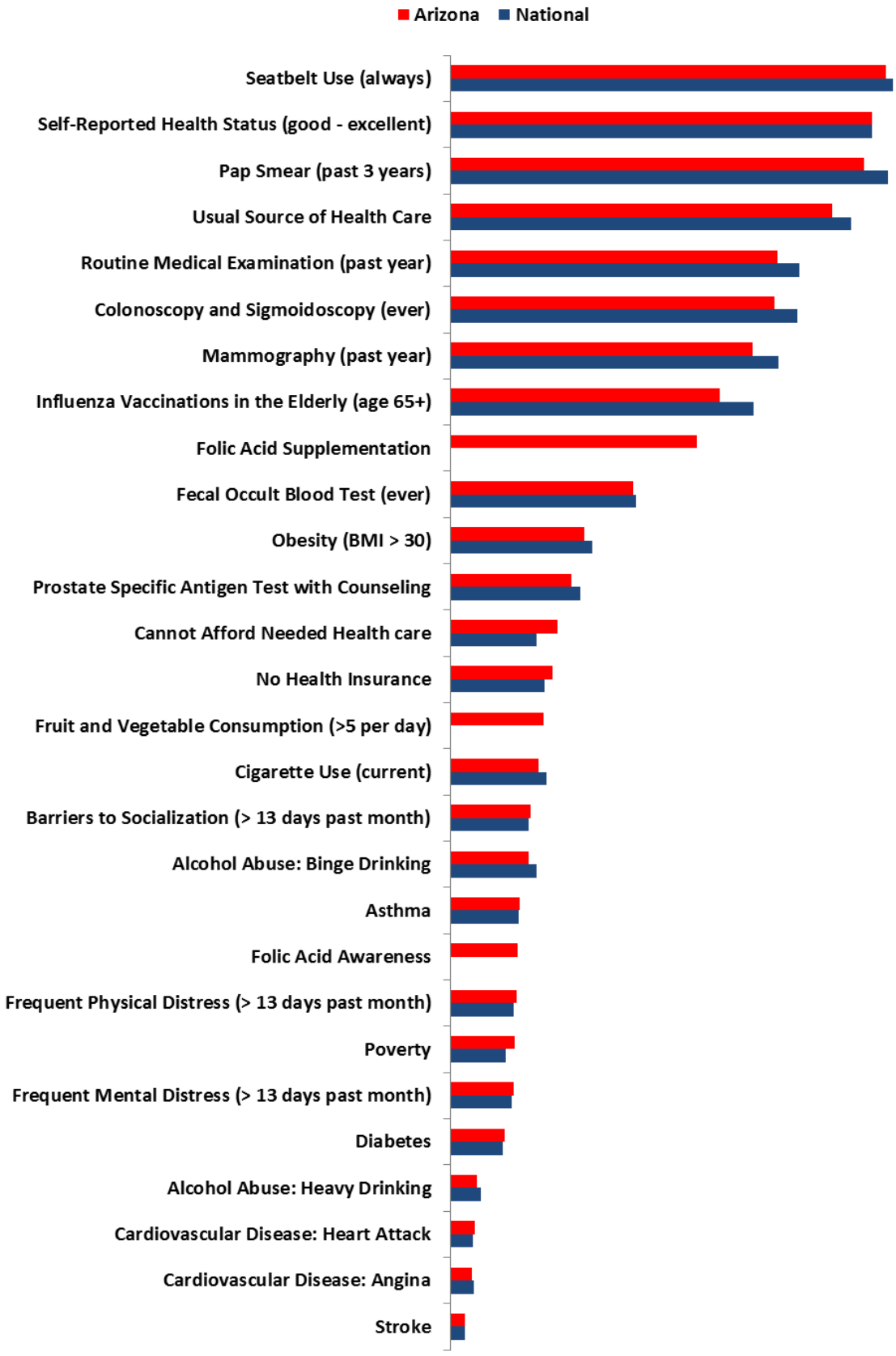
Table 1. Highlights from the 2012 Arizona and National Behavioral Risk Factor Surveillance System Survey.

Highlights of the 2012 Behavioral Risk Factors Survey		
Risk Factors	**Arizona (Percent)**	**National (Percent)**
Self-Reported Health Status (good, very good, & excellent)	81.9	81.9
Frequent Mental Distress (> 13 days past month)	12.3	12.0
Frequent Physical Distress (> 13 days past month)	12.9	12.4
Barriers to Socialization (> 13 days past month)	15.7	15.3
Routine Medical Examination (Past Year)	63.6	67.8
Influenza Vaccinations in the Elderly (Age 65+)	52.3	59.0
Fecal Occult Blood Test (Ever)	35.6	36.2
Colonoscopy and Sigmoidoscopy (Ever)	63.0	67.4
Mammography (Past Year)	58.7	63.8
Pap Smear (Past 3 Years)	80.5	85.1
Prostate Specific Antigen Test with Counseling	23.5	25.2
Poverty	12.5	10.8
No Health Insurance	19.9	18.4
Cannot Afford Needed Health care	20.9	16.8
Usual Source of Health care	74.2	77.9
Seatbelt Use (Always)	84.7	86.0
Cigarette Use (Current)	17.1	18.8
Alcohol Abuse: Heavy Drinking	5.1	5.9
Alcohol Abuse: Binge Drinking	15.3	16.8
Folic Acid Supplementation	47.9	Not Asked
Folic Acid Awareness	13.1	Not Asked
Fruit and Vegetable Consumption (>5 per day)	18.1	Not Asked
Asthma	13.5	13.2
Cardiovascular Disease: Heart Attack	4.8	4.4
Cardiovascular Disease: Angina	4.1	4.5
Stroke	2.9	2.9
Obesity (BMI >30)	26.0	27.7
Diabetes	10.6	10.1

The BRFSS is comprised of three parts:

- **The core component consists of three areas**
  - The fixed core is made up of standard questions that are asked by every state
  - The rotating core is a set of biennial questions
  - The emerging core are experimental questions (up to 5 a year) that are asked to determine their potential use
- **Optional CDC modules are sets of questions that focus on a specific topic**
  - If a state elects to use an optional CDC module, it must use the entire module without modification
- **State added questions are generated by potential stakeholders**
  - The questions must be validated and approved by both the Arizona BRFSS Coordinator and the CDC

Figure 1. Highlights from the 2012 BRFSS.



Introduction

Background

The BRFSS is a collaborative project between the Centers for Disease Control and Prevention (CDC) and the 50 states and U.S. territories. The BRFSS was initiated in 1982, with 15 states collecting surveillance data on risk behaviors through monthly telephone interviews. Over time, the number of states participating in the survey increased so that by 2001, 50 states, the District of Columbia, Puerto Rico, Guam, and the Virgin Islands were included in the BRFSS. Currently, the BRFSS collects more than 400,000 adult interviews each year with 7,306 collected in Arizona alone. State health departments use in-house interviewers or contract with telephone call centers or universities to administer BRFSS surveys. The Arizona BRFSS contract is awarded by a request for proposal. The use of competitive sealed bidding was deemed inadequate due to the complex requirements that needed to be evaluated that were not solely based on cost such as the necessity for oral or written discussions with Offerors regarding experience, method of approach, and the ability to provide Offerors the opportunity to revise their proposals by submitting final proposal revisions. The 2012 BRFSS was administered by ICF International.

Alignment with the Arizona Department of Health Services Mission and Strategic Map

The Arizona Department of Health Services (ADHS) operates numerous programs dedicated to the improvement of public health outcomes for all of Arizona. The Department's vision is to promote "Health and Wellness for all Arizonans." To accomplish this vision, ADHS has developed a strategic map (see page 5) with five strategic priorities:

- Impact Arizona's Winnable Battles (Section A)
- Integration of Physical and Behavioral Health Services (Section B)
- Promote and Protect Public Health and Safety (Section C)
- Strengthen Statewide Public Health System (Section D)
- Maximize ADHS Effectiveness (Section E)

Within these broad strategic priorities, there are key elements that accentuate "winnable public health battles." The BRFSS survey provides Arizona with a tool to monitor health status as well as assess public health interventions and programs. At the beginning of each section of the 2012 BRFSS Annual Report, there are call-out boxes that illustrate potential linkages between the data collected and ADHS' strategic map.

Changes to the 2012 AZ BRFSS Annual Report

The 2012 BRFSS Annual Report has undergone a complete layout change. At the beginning of each section a description of the data elements is presented. Each subsection is two pages (front and back) that includes trend data, county and regional information (presented as a map and bar chart), and a table of respondent demographics. The table layout has changed from previous years. The table contains the percent and its confidence interval. The tables containing frequencies, weighted frequencies, and percentages are located in the Appendix in the order presented in the report. Throughout the text, there are tables generated from the Arizona Hospital Discharge Database. These tables were generated using the first nine diagnosis fields, all six of the e-code fields, or the diagnosis-related group (DRG) unless stated otherwise. The description of each table contains the ICD-9 codes and/or the DRGs used in their generation.

Future Directions

In 2011, the CDC implemented a methodological change in how BRFSS data are weighted. Specifically, the weighting method changed from Post-Stratification to Iterative Proportional Fitting (see the 2011 Annual BRFSS Report for more details). In addition to the change in weighting, cellular phones were incorporated into the sample. Thus, BRFSS data reported here include respondents contacted via landline and cellular phones. As technology progresses so too will the BRFSS. One anticipated change is to increase cell phone participants by changing the screening process. Currently, if a cell phone respondent receives a call from a BRFSS interviewer, and they have a landline, they are excluded from the survey. This eliminates a large number of willing cell phone respondents. The CDC has proposed a fully overlapping sample. This method would include all willing adults who are contacted regardless of whether it is a cell phone or landline. The only exclusion would be individuals contacted on a business line. In addition to the new weighting methodology and the inclusion of cell phones, the BRFSS has undertaken studies assessing the use of web and mail questionnaires and the use of address-based sampling to obtain clinical anthropometric measurements.

Introduction

The BRFSS in Comparison

The BRFSS is the largest telephone survey conducted in the United States and its territories. As the BRFSS grows and improves its methodology, the number of requests for localized health analysis increases. In response to the growing demand, the CDC analyzes BRFSS data for metropolitan and micropolitan statistical areas (MMSA). The analysis of Arizona MMSAs includes Nogales, Phoenix-Mesa-Scottsdale, Sierra Vista-Douglas, Tucson, and Yuma. Any further analysis will require combining BRFSS data across multiple years, and/or harmonizing across surveys. There are many other surveys currently sponsored by the U.S. government and its agencies, many of which have questions that overlap with the BRFSS. The structure of the questions found within commonly merged datasets is displayed in **Table 2** (below).

Table 2. The BRFSS in comparison to other surveys.

Comparison of Surveys				
	Census	**BRFSS**	**NHANES**	**HINTS**
Participant Selection	All U.S. households are required to participate	Random digit dialing	Participants are selected based off Census information	Stratified sample of addresses were selected from the Marketing Systems Group.
Data Collection Techniques	Questionnaire sent in the mail and direct interviews from Census workers	Telephone survey, with Computer Assisted Telephone Interviewing (CATI) system, and mail	Anthropometric measurements, blood and urine samples are gathered by health professionals. Interviews are done in person at the participant's home.	Random digit dials and address-based sampling surveys
Data Gathered	• Number of people living in a housing unit • Housing unit type • Telephone number • Name • Gender • Date of birth • Race and ethnicity • Other residences	Demographic data asked annually: • Race and ethnicity • Gender • Income • Martial status • Educational achievement • Working status • Household size ***Other Health Indicator Questions are developed by the CDC. Each state has the ability to generate questions to assess its specific needs.***	• Anemia • Cardiovascular disease • Diabetes • Environmental exposures • Eye diseases • Hearing loss • Infectious diseases • Kidney disease • Nutrition • Obesity • Oral health • Osteoporosis • Physical fitness and physical functioning • Reproductive history and sexual behavior • Respiratory disease (asthma, chronic bronchitis, emphysema) • Sexually transmitted diseases • Vision • Anthropometrics	• Breast cancer • Cancer communication • Cancer perceptions and knowledge • Cervical cancer • Colon cancer • Demographics • Food and medical • Products information • Health communication • Health services • Health status • Internet use • Lung cancer • Medical research • Medical records • Numeracy • Nutrition and physical activity • Patient-provider communication • Prostate Cancer • Risk Perceptions • Skin Cancer • Skin Protection • Social Networks • Tobacco Use
Sample Size	Current U.S. housing Units = 132,312,404	2011 National=475,687 2011 Arizona=7,306	2009-2010 Survey=9,338	2007 Survey=7,674
Collection Interval	Every 10 years	Annual	Starting in 1999 NHANES began gathering data annually. However, data are only presented in two-year intervals.	The current HINTS data set began collecting in October of 2011, and will be completed in April of 2014.

ADHS Mission

To promote, protect, and improve the health and wellness of individuals and communities in Arizona

ADHS Vision

Health and Wellness for all Arizonans

Arizona Department of Health Services Strategic Map: 2012-2015

Achieve Targeted Improvements in Public Health Outcomes

	A	B	C	D	E
	Impact Arizona's Winnable Battles	**Integrate Physical and Behavioral Health Services**	**Promote and Protect Public Health and Safety**	**Strengthen Statewide Public Health System**	**Maximize ADHS Effectiveness**
1	Promote Nutrition and Physical Activity to Reduce Obesity	Sustain Engagement and Support of Stakeholders	Implement Strategies to Promote Non-Violent Behavior	Build Awareness of Public Health Value	Implement Agency-wide Workforce Development
2	Reduce Tobacco Use and Substance Abuse	Develop Innovative Strategies for Integration	Address Quality of Care Issues and Public Health Risks	Strengthen Existing Public Health Infrastructure	Leverage Technologies to Achieve Results
3	Reduce Healthcare Associated Infections and Readmissions	Establish Needed Infrastructure	Prepare for and Respond to Public Health Emergencies	Engage Existing and Build New Partnerships	Measure Performance to Drive Continuous Improvement
4	Reduce Suicides	Implement and Sustain Integration	Provide a Safety Net of Services and Community Support	Address Public Health Workforce Needs	Improve Internal Policy Development and Implementation
5	Reduce Teen Pregnancy	Demonstrate Impact on Co-Occurring Conditions	Promote Healthy and Safe Community Environments	Achieve Public Health Accreditation	Fulfill Statutory, Regulatory and Operational Requirements
F	**Implement Best Practices**				
G	**Align Resources with Key Priorities**				

Health-Related Quality of Life

Health-related quality of life (HRQoL) has a broad definition. HRQoL research potentially can incorporate physical activity, amount of time spent at work, physical health, mental health, emotional health, and personality questions.[2] The CDC has created a manual on using the BRFSS to assess HRQOL. The methodology utilizes self-reported health status, mental health, physical health, and inhibited socialization due to poor health. The assessment of HRQoL using BRFSS data is as follows[3]:

Self-reported health status (variable – GENHLTH)

Convert into a binary variable where good to excellent health is a positive outcome; poor and fair health is a negative outcome

Frequent Mental Distress (variable – MENTHLTH)

Generate a binary variable where reporting 14 or more days of poor mental health is a negative outcome

Frequent Physical Distress (variable – PHYSHLTH)

Generate a binary variable where reporting 14 or more days of poor physical health is a negative outcome

Barriers to Socialization (variable – POORHLTH)

Generate a binary variable where reporting 14 or more days of poor physical or mental health prevented daily activities

Number of Unhealthy Days

Calculated variable, which is the sum of poor physical health days and poor mental health days. The variable is capped at 30 days

- The majority of Arizonans report zero unhealthy days. However, the second largest category is reporting 30 unhealthy days (see **Figure 2**)

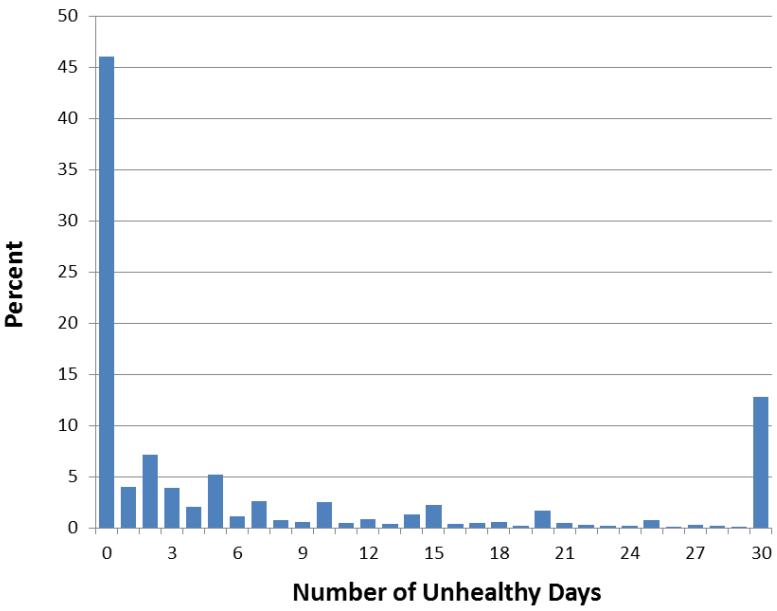


Figure 2. Percent of Arizonans reporting unhealthy days in the 2012 BRFSS.

Strategic Map Link

Health Related Quality of Life is an umbrella term. By collecting data on self-reported health status, mental distress, physical distress, and barriers to socialization the BRFSS is providing Arizona with a tool to evaluate nutrition, physical activity, numerous chronic and infectious diseases, and hospital readmissions.
The aforementioned indicators are all part of Arizona's Winnable Battles as outlined in A1 and A3 of the ADHS Strategic Map.
(See Page 5)

2 "Medical Outcomes Study: 36-Item Short Form Survey Instrument." *36-Item Short Form Survey Instrument*. N.p., n.d. Web. 12 Sept. 2013
3 Centers for Disease Control and Prevention. Measuring Healthy Days. Atlanta, Georgia: CDC, November 2000.

Health-Related Quality of Life
Self-Reported Health Status

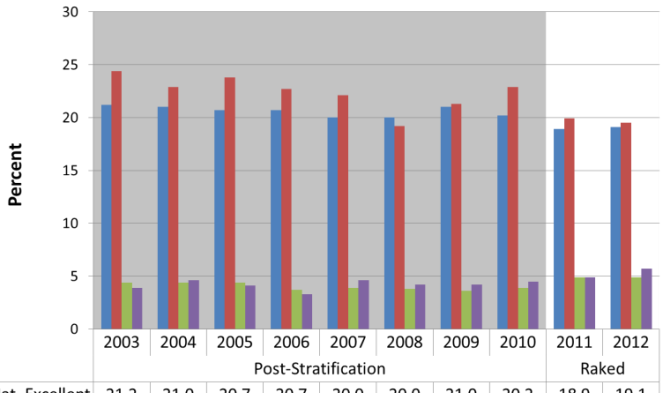
Self-reported health status is one of the most frequently assessed health perceptions in epidemiological research.[4] As a health-related quality of life indicator it is a multi-dimensional concept that is related to physical, mental, emotional, and social health.[5] It has proven to be a more dominant predictor of mortality and morbidity than many objective measures of health.[6]

Research has shown that an individual's self-rated health has a relationship to mortality that is independent of their objective health status (Physician's assessment).[4] Self-rated health status also has been shown to be a significant predictor for the onset of coronary heart disease, diabetes, stroke, lung disease, and arthritis. The charges for acute care in Arizona totaled more than $1.4 billion in 2012 (See **Table 3**).[7]

2012 Arizona Disease Burden (HDD)	
Diabetes	$179,949,670
Coronary Heart Disease	$548,930,904
Stroke	$656,398,453
Lung Disease	$19,776,984
Arthritis	$5,397,983
Total	**$1,410,453,994**

Table 3. Hospital discharges from 2012 that contain the following DRGs 637, 638, and 639 for Diabetes; 302, 303, 231, 232, 233, 234, 235, and 236 for Coronary Heart Disease; 196, 197, and 198 for interstitial lung diseases; and 548, 549, and 550 for Septic Arthritis. The following ICD-9 codes were used to identify stroke patients: 434.00, 434.01, 434.10, 434.90, and 434.91.

According to the 2012 BRFSS 19.5% of Arizonans reported that they had excellent health, ~.4% more than the national percentage. However, 5.7% of Arizonans reported poor health, which is ~.8% more than the national percentage (See **Figure 3A**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Nat. Excellent	21.2	21.0	20.7	20.7	20.0	20.0	21.0	20.2	18.9	19.1
AZ Excellent	24.4	22.9	23.8	22.7	22.1	19.2	21.3	22.9	19.9	19.5
Nat. Poor	4.4	4.4	4.4	3.7	3.9	3.8	3.6	3.9	4.9	4.9
Az Poor	3.9	4.6	4.1	3.3	4.6	4.2	4.2	4.5	4.9	5.7

Figure 3A. Arizona and National 2003-2012 BRFSS respondents self-reported health status. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

According to the 2012 BRFSS, 81.9% of Arizonans reported that their health was good, very good, or excellent. The national prevalence is 81.9% as well. However, when looking at the other states in the nation, Arizona falls in the second-lowest category for the percent of respondents reporting good to excellent health (see **Figure 3B**).

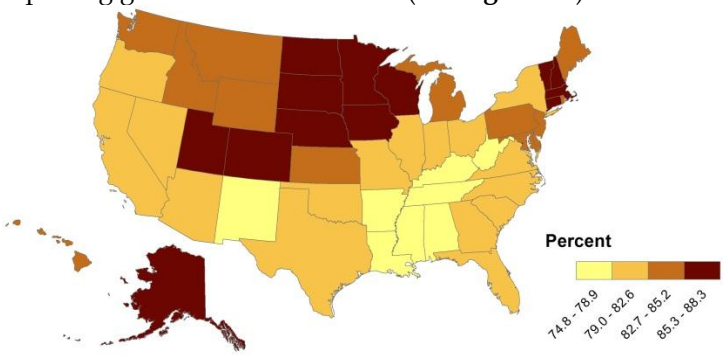


Figure 3B. Percent of BRFSS respondents reporting Good to Excellent Health by state (natural breaks).

Although Arizona fell into the second lowest category when compared to the other states in the nation, the distribution of self-reported health status was very similar to the nation as a whole (see **Figure 3C**).

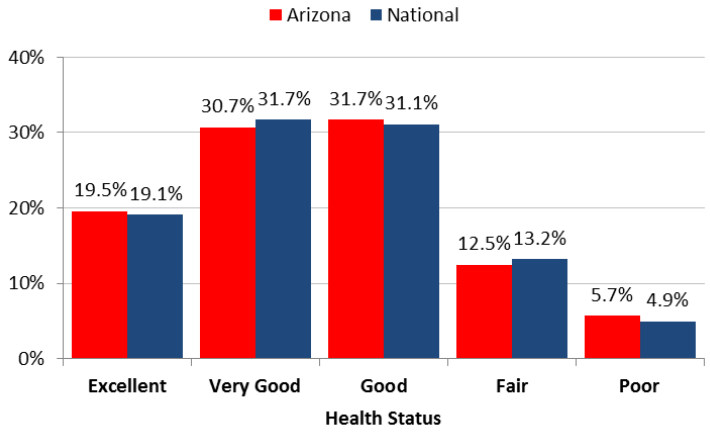


Figure 3C. Arizona and National 2012 BRFSS respondents' self-reported health status.

The percentage of men and women who responded that their health was good, very good, or excellent is relatively similar, 82.3% and 81.5% respectively. The distribution of self-reported health status also was quite similar when stratified by gender (See **Figure 3D**).

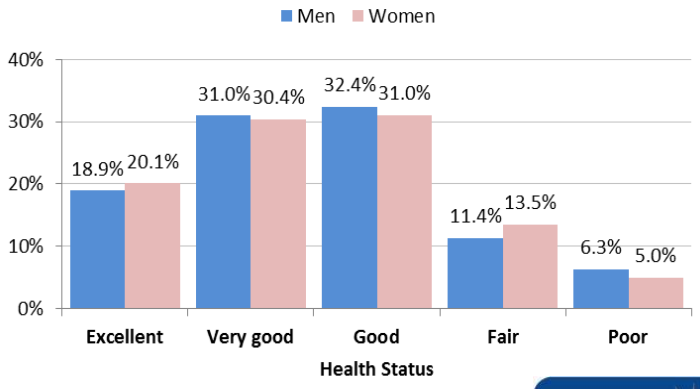


Figure 3D. Arizona and National 2012 BRFSS respondents' self-reported health status stratified by gender.

4. Mossey, Jana M. Self-Rated Health:A Predictor of Mortality Among the Elderly.
5 Ferrans CE. Definitions and conceptual models of quality of life. In: Lipscomb J, Gotay CC, Snyder C, editors. Outcomes assessment in cancer. Cambridge, England: Cambridge University; 2005. p. 14–30.
6. Idler EL, Benyamini Y. Self-rated heath and mortality: A review of twenty-seven community studies. J Heath Soc Behav 1997; 38:21-37.
7. Latham K, Peek CW. Self-rated health and morbidity onset among late midlife U.S. adults. J Gerontol B Psychol Sci Soc Sci. 2013 Jan;68(1):107-16.

Arizona Department of Health Services

Health-Related Quality of Life
Self-Reported Health Status

Arizonans Reporting Good to Excellent Health in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**81.9**	**80.4**	**83.4**
National	**81.9**	**81.7**	**82.1**
Sex			
Male	82.3	80.1	84.5
Female	81.5	79.5	83.5
Age			
18-24	91.3	87.4	95.3
25-34	88.8	85.3	92.3
35-44	83.4	79.4	87.4
45-54	77.9	73.9	81.8
55-64	75.1	71.3	78.9
65+	76.9	74.5	79.2
Marital Status			
Married	83.5	81.4	85.5
Divorced	75.3	71.3	79.3
Widowed	72.3	68.1	76.4
Separated	68.5	56.6	80.3
Never Married	84.7	81.2	88.1
Unmarried Couple	83.4	76.4	90.3
Educational Attainment			
Less than High School	66.5	60.6	72.3
High School Graduate/GED	80.2	77.3	83.0
Some College/Tech School	84.1	81.9	86.3
College Grad	90.8	89.1	92.5
Employment Status			
Employed for wages	90.6	88.8	92.4
Self-employed	87.6	82.5	92.6
Out of work	75.6	69.3	81.9
Homemaker	78.7	73.3	84.0
Student	91.3	85.0	97.5
Retired	78.9	76.4	81.4
Unable to Work	30.4	23.2	37.5
Income			
<$25,000	69.9	66.6	73.2
$25,000-$34,999	82.1	77.2	87.0
$35,000-$49,999	84.5	81.0	87.9
$50,000-$74,999	90.6	87.7	93.5
$75,000+	93.7	91.9	95.5
Race/Ethnicity			
White Non-Hispanic	84.0	82.5	85.5
Black	77.8	69.2	86.4
Asian/PI	94.0	89.4	98.6
American Indian	80.4	72.8	88.0
Other	83.9	76.4	91.4
Hispanic	75.9	71.8	79.9

The table to the left displays the distribution of the prevalence of Arizona adults who responded that their health status was good, very good, or excellent. The data is broken down by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were more likely to report good to excellent health if they

- Were between the ages of 18 and 24
- Were never married
- Were a college graduate
- Were a student
- Had an income greater than $75,000 a year
- Were Asian or Pacific Islander

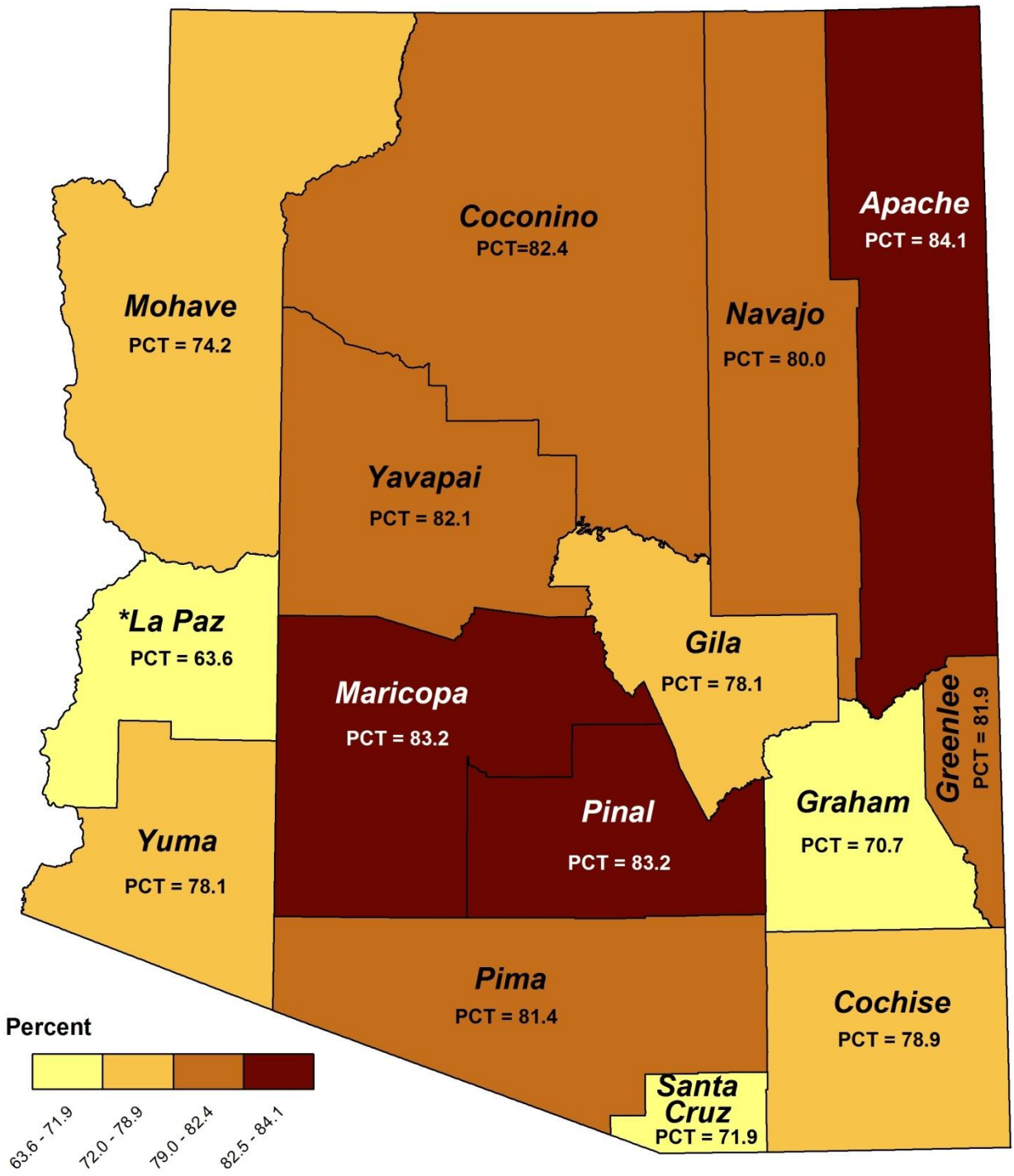
In 2012, Asians/Pacific Islanders were the most likely to report that their health was good to excellent, at 94.0%. A similar proportion (93.7%) of individuals who earned $75,000 or more annually reported good to excellent health.

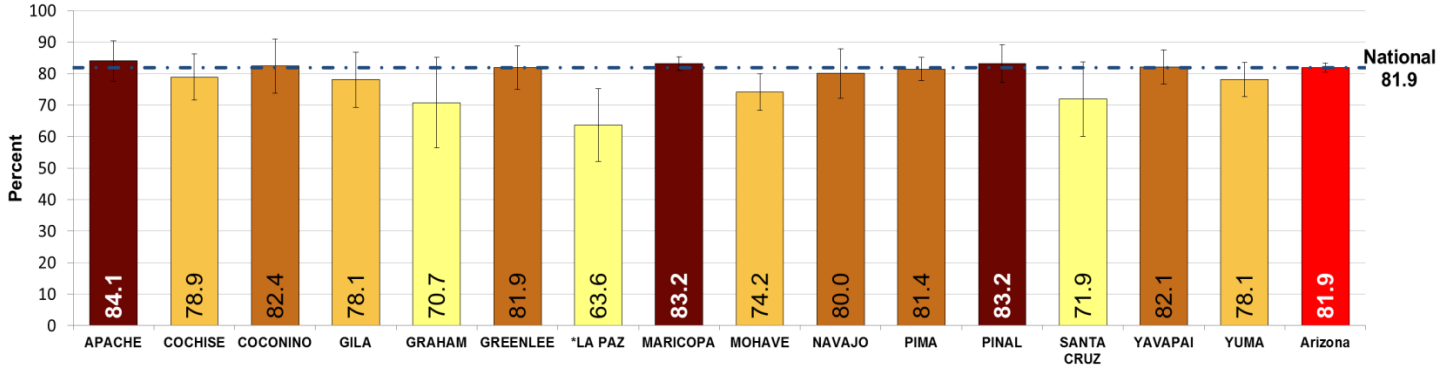
Respondents were least likely to report that their health status was good to excellent if they

- Were between the ages of 55 and 64
- Were separated
- Had less than a high school education
- Were unable to work
- Earned less than $25,000 a year
- Were Hispanic

In 2012, individuals who were unable to work were the least likely to report that their health was good to excellent, at 30.4%.

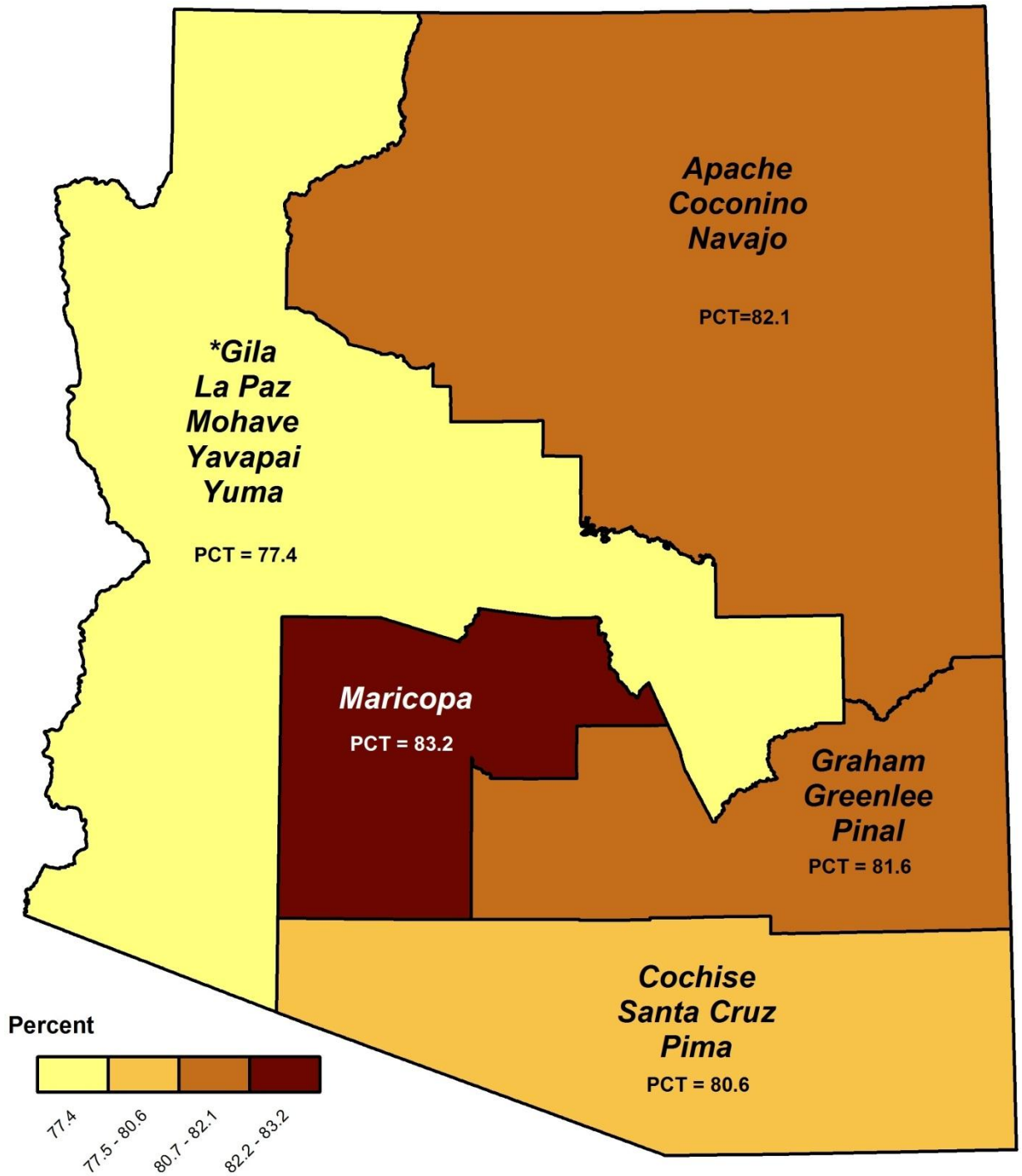
Percentage of Arizonans Reporting Good to Excellent Health by County, 2012

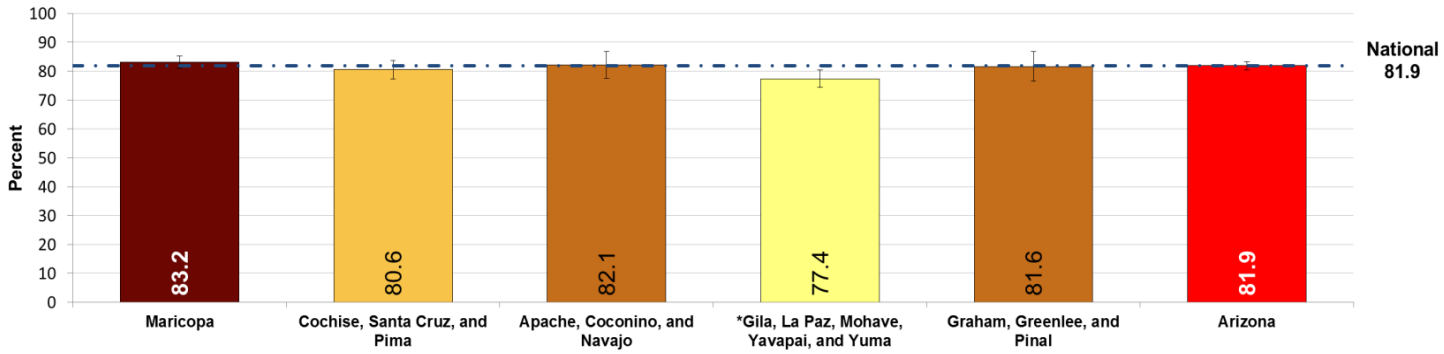




*Indicates that the county has a significantly lower percentage of respondents reporting good to excellent health than the overall state percentage.

Percentage of Arizonans Reporting Good to Excellent Health by Region, 2012

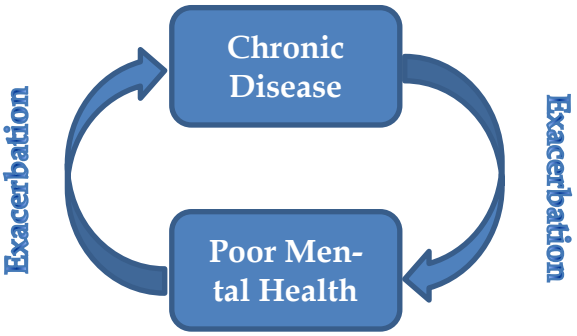




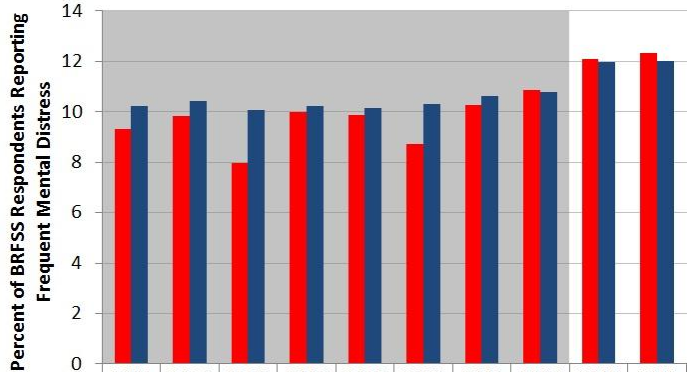
*Indicates that the region has a significantly lower percentage of respondents reporting good to excellent health than the overall state percentage.

Health-Related Quality of Life
Frequent Mental Distress

By 2020, depression is projected to be the second leading cause of global disease burden. Research has shown that depression and other mental health conditions are associated with an increased prevalence of chronic diseases. The association is a complex self-propagating interrelationship between chronic disease and mental illness.[8] For example, an individual may initially suffer from a chronic disease and then develop a mental health condition (i.e. depression), which would exacerbate the initial condition. Another individual could suffer from a mental illness, which could precipitate a chronic disease, and fall into the cycle of disease and mental health exacerbation.



The BRFSS has a depression and anxiety optional module. However, it is not consistently included in the Arizona/National survey. Researchers have developed and accepted an alternative method of evaluating mental illness, Frequent Mental Distress (FMD). FMD is defined as 14 days or more of poor mental health within the past 30 days.[9] Historically, Arizona has a similar prevalence of FMD when compared to the nation (see **Figure 4A**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	9.3	9.8	8.0	10.0	9.9	8.7	10.3	10.9	12.1	12.3
National	10.2	10.4	10.1	10.2	10.1	10.3	10.6	10.8	12.0	12.0

Figure 4A. Arizona and National 2003-2012 BRFSS prevalence of reporting FMD. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

According to the 2012 BRFSS, 12.3% of Arizonans reported that they suffered from FMD; the national prevalence is 12.0%. When looking at the other states in the nation, Arizona falls in the second-highest category for the percent of respondents reporting FMD (see **Figure 4B**).

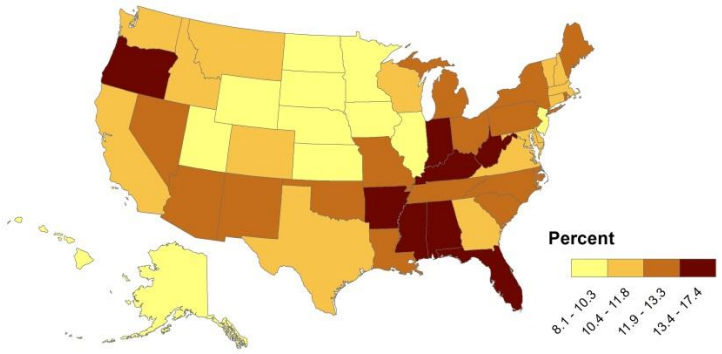


Figure 4B. Percent of BRFSS respondents reporting FMD by state (natural breaks).

The Arizona BRFSS reveals that prevalence of FMD is consistently higher in current smokers when compared to their nonsmoking counter parts (see **Figure 4C**).

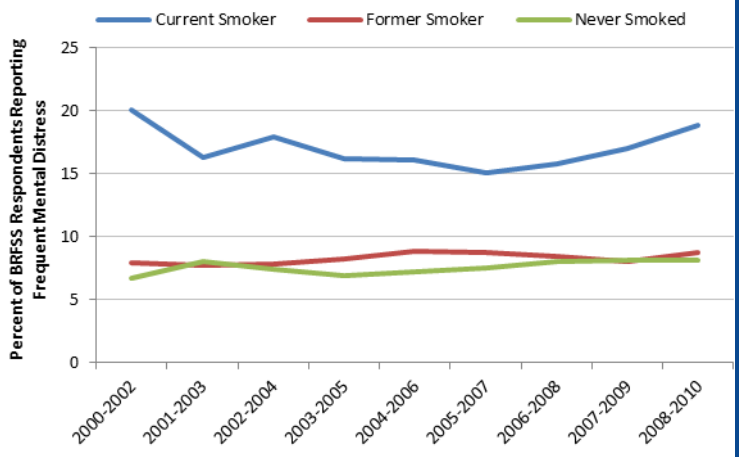


Figure 4C. Arizona 2000-2010 BRFSS three year rolling averages of individuals reporting FMD by smoking status.

The prevalence of FMD is consistently higher in households with an income less than $25,000 a year (see **Figure 4D**).

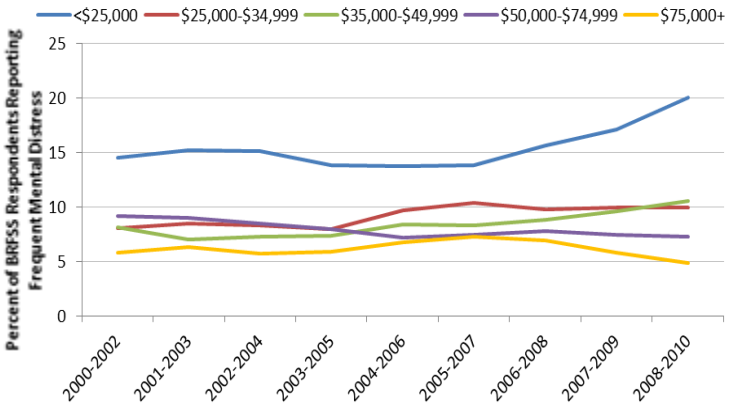


Figure 4D. Arizona 2000-2010 BRFSS three year rolling averages of individuals reporting FMD by income.

8. Chapman DP, Perry GS, Strine TW. The vital link between chronic disease and depressive disorders. Prev Chronic Dis. 2005 Jan;2(1):A14. Epub 2004 Dec 15.
9. Al-Nsour M, Zindah M, Belbeisi et al. Frequent Mental Distress, Chronic Conditions, and Adverse Health Behaviors in the Behavioral Risk Factor Surveillance Survey, Jordan, 2007. Prev Chronic Dis 2013;10:130030.

Arizona Department of Health Services

Health-Related Quality of Life
Frequent Mental Distress

Arizonans Reporting Frequent Mental Distress in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**12.3**	**11.0**	**13.7**
National	**12.0**	**11.8**	**12.2**
Sex			
Male	11.3	9.3	13.3
Female	13.4	11.5	15.2
Age			
18-24	17.8	12.0	23.6
25-34	12.9	9.4	16.4
35-44	12.0	8.7	15.4
45-54	13.4	10.4	16.3
55-64	13.1	10.5	15.8
65+	6.9	5.5	8.2
Marital Status			
Married	0.7	6.6	9.3
Divorced	1.7	13.0	19.8
Widowed	1.6	9.5	15.8
Separated	5.6	15.5	37.4
Never Married	2.0	13.9	21.9
Unmarried Couple	3.4	6.1	19.4
Educational Attainment			
Less than High School	18.2	13.2	23.1
High School Graduate/GED	14.3	11.6	17.1
Some College/Tech School	12.5	10.2	14.8
College Grad	6.3	4.8	7.8
Employment Status			
Employed for wages	9.1	7.2	10.9
Self-employed	5.1	2.7	7.4
Out of work	19.0	13.4	24.6
Homemaker	11.7	7.1	16.4
Student	17.2	8.4	26.1
Retired	6.7	5.2	8.2
Unable to Work	45.7	37.9	53.6
Income			
<$25,000	20.9	17.9	24.0
$25,000-$34,999	11.8	8.0	15.6
$35,000-$49,999	9.7	6.0	13.3
$50,000-$74,999	7.0	4.4	9.6
$75,000+	5.7	3.4	8.0
Race/Ethnicity			
White Non-Hispanic	11.2	9.7	12.6
Black	13.9	6.4	21.4
Asian/PI	4.5	0.0	9.2
American Indian	12.6	6.7	18.6
Other	12.6	6.0	19.1
Hispanic	15.5	11.9	19.1

The table to the left displays the distribution of the prevalence of Arizona adults who responded that they suffered 14 or more days of poor mental health, in the 30 days prior. The data are reported by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were less likely to report suffering from frequent mental distress if they

- Were age 65 or older
- Were married
- Were a college graduate
- Were self-employed
- Earned $75,000 a year or more
- Were Asian or Pacific Islander

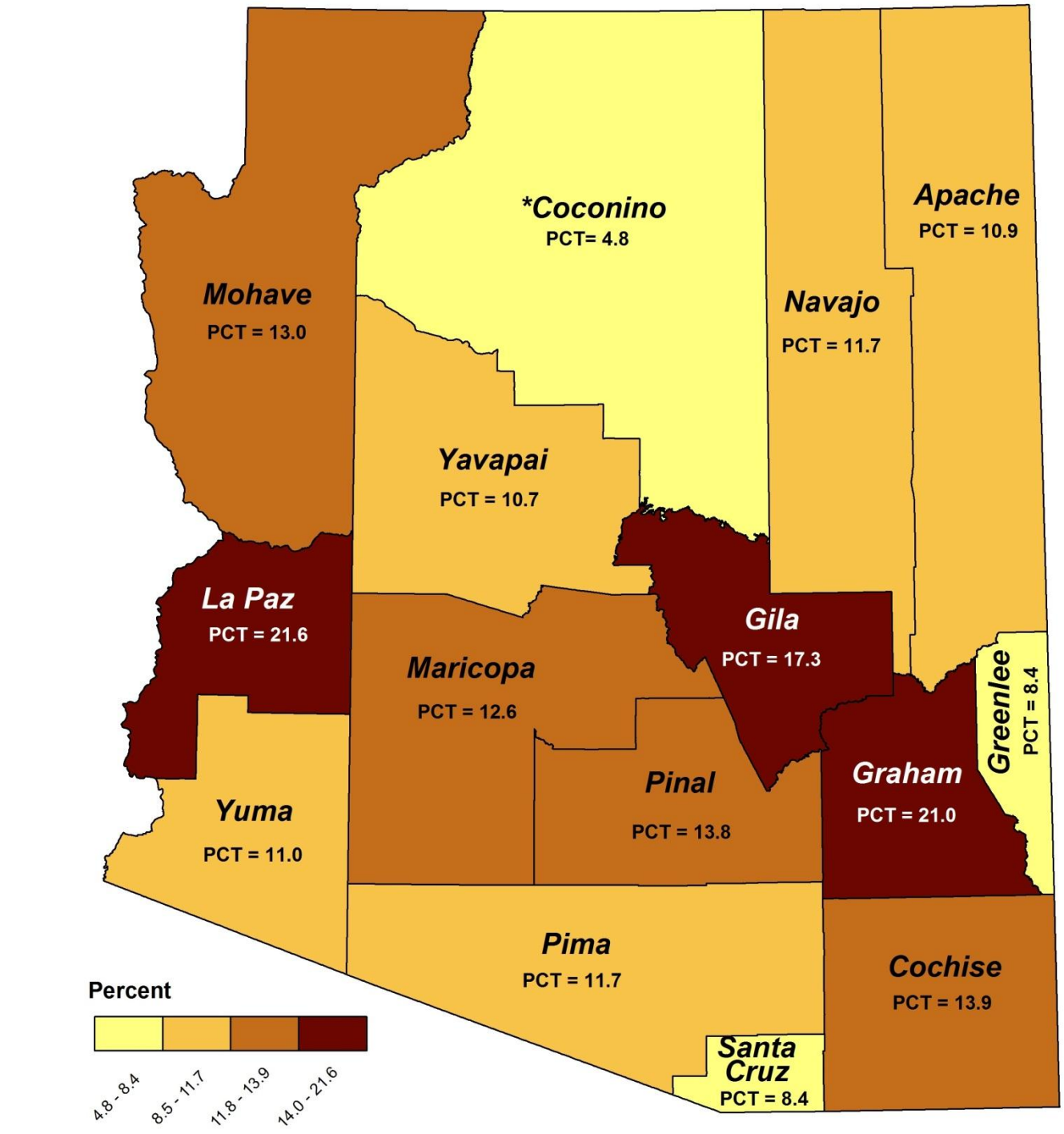
In 2012, individuals who were married or were college graduates were the least likely to report suffering from frequent mental distress, at .7% and .8% respectively.

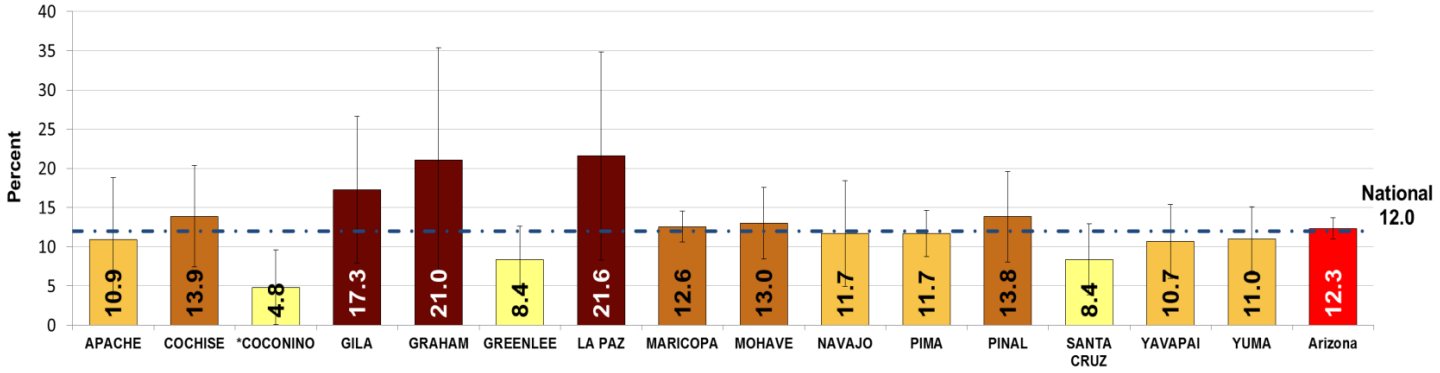
Respondents were more likely to report suffering from frequent mental distress if they

- Were between the ages of 18 and 24
- Were separated
- Did not have a high school diploma
- Were unable to work
- Had an income less than $25,000 a year
- Were Hispanic

In 2012, individuals who were unable to work were the most likely to report suffering from frequent mental distress, at 45.7%. As income decreased, the percentage of individuals reporting frequent mental distress increased.

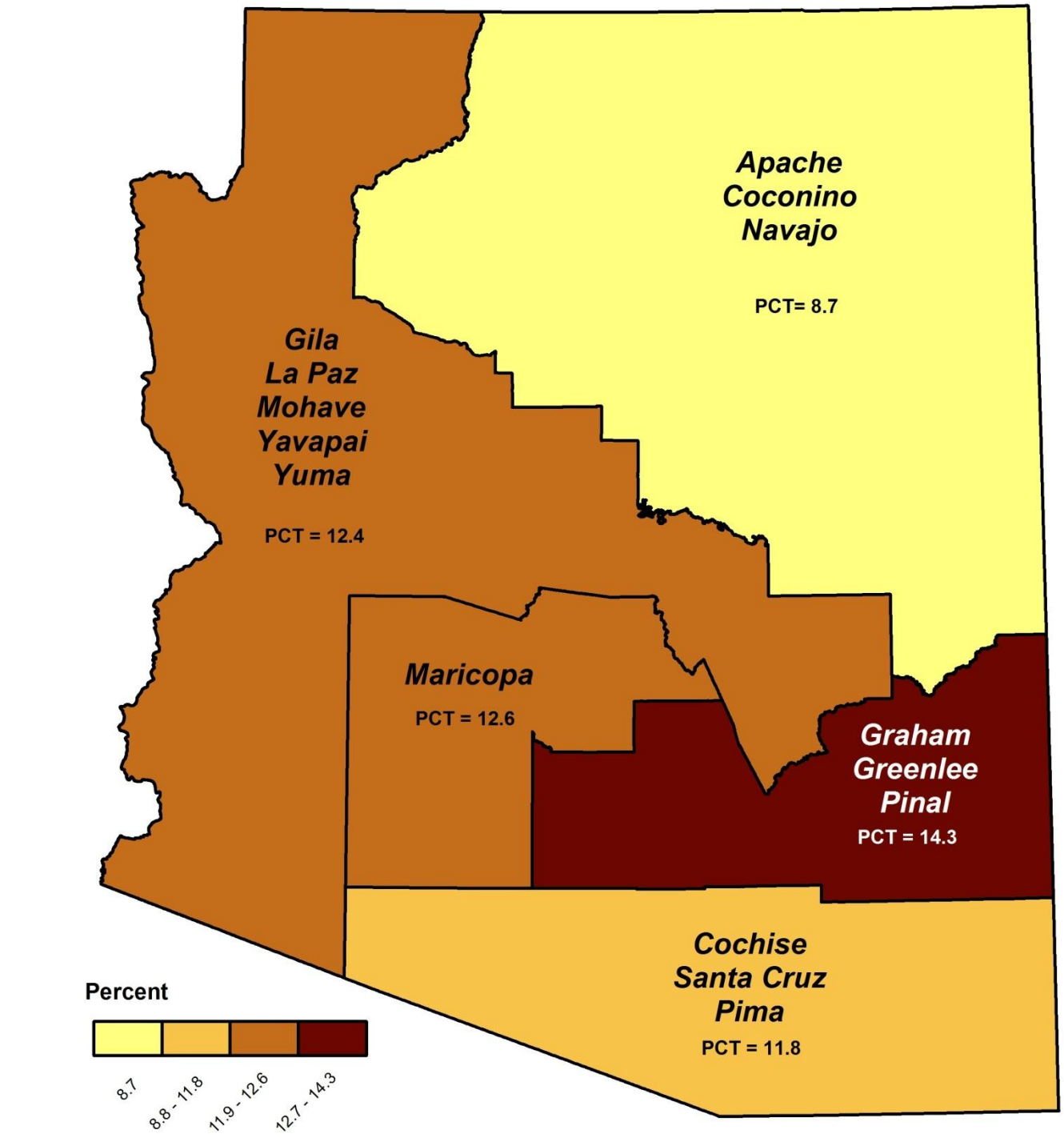
Percentage of Arizonans Reporting Frequent Mental Distress by County, 2012

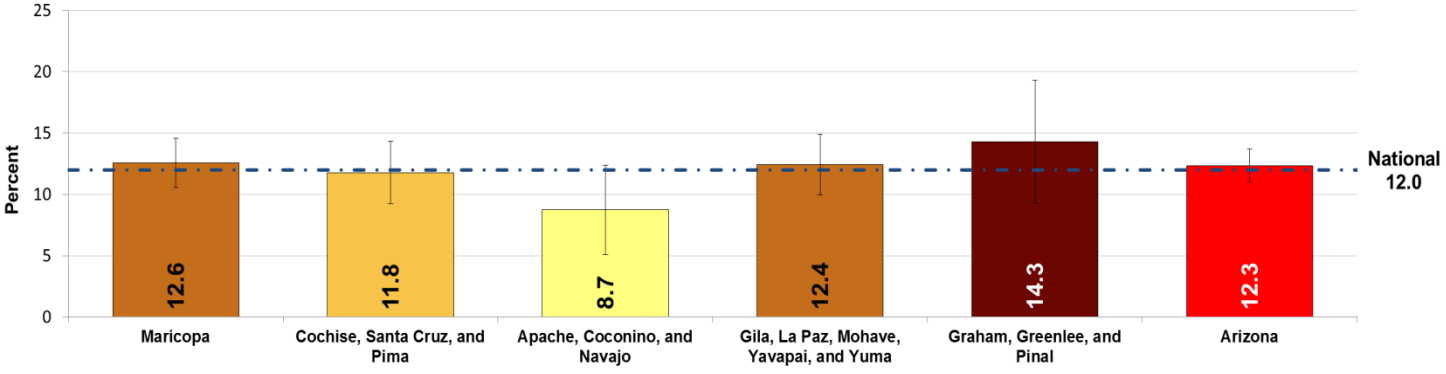




*Indicates that the county has a significantly lower percentage of respondents reporting frequent mental distress than the overall state percentage.

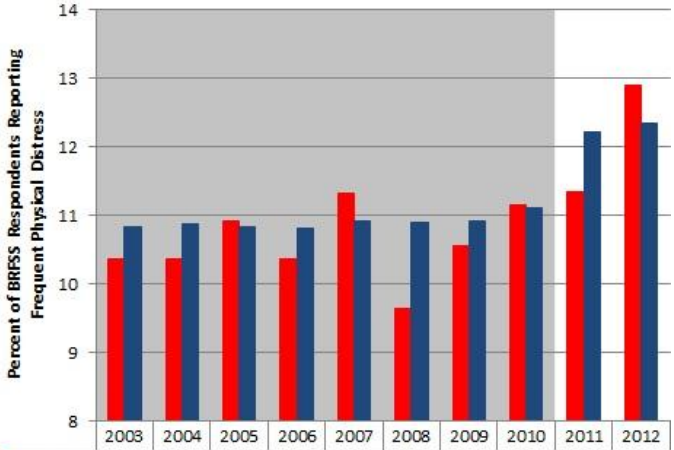
Percentage of Arizonans Reporting Frequent Mental Distress by Region, 2012





Health-Related Quality of Life
Frequent Physical Distress

Frequent physical distress (FPD) is defined as suffering 14 or more physically unhealthy days in the 30 days prior. FPD also has been associated with both being underweight and obese. Obesity and being underweight both increase the risk of morbidity and mortality. Being underweight increases the risk of mortality. Being obese increases the risk of having heart disease, hypertension, diabetes, arthritis, and some cancers.[10] Furthermore, FPD has been associated with increased risky behaviors, such as drinking and smoking in women of child-bearing age.[11] According to the 2012 BRFSS, the prevalence of FPD was 12.9% for Arizona, and 12.4% for the nation (see **Figure 5A**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	10.4	10.4	10.9	10.4	11.3	9.6	10.6	11.2	11.4	12.9
National	10.8	10.9	10.8	10.8	10.9	10.9	10.9	11.1	12.2	12.4

Figure 5A. Arizona and National 2003-2012 BRFSS prevalence of reporting FPD. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

Although Arizona's FPD prevalence was higher than the nation, it did not fall into the highest category when doing a nationwide comparison. When looking at all the states in the nation, Arizona falls in the second-highest category for the percent of respondents reporting FPD (see **Figure 5B**).

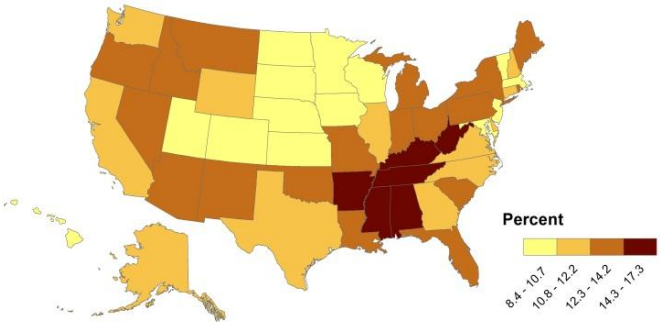
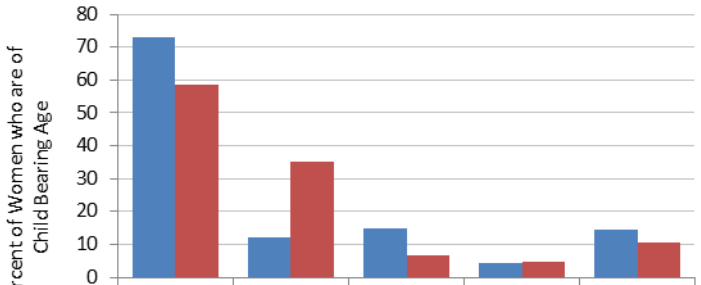


Figure 5B. Percent of BRFSS respondents reporting FPD by state (natural breaks).

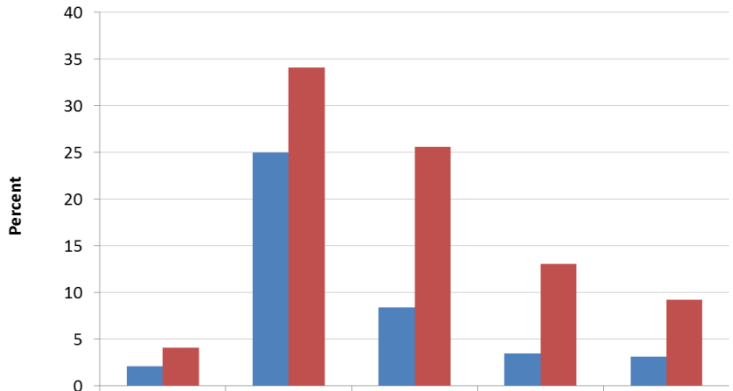
The 2012 Arizona BRFSS results are in agreement with the current literature on FPD and the behaviors of women who are of child-bearing age with the exception of binge drinking (see **Figure 5C**). Women who reported FPD were almost 2.93 times more likely to report that they were current smokers when compared to women who did not report FPD. When looking at drinking status, women who reported FPD were about as likely to be heavy drinkers as were women who did not report FPD (4.7% and 4.4%, respectively).



	Never	Current	Former	Heavy Drinker	Binge Drinker
Not FPD	73.1	12.0	14.9	4.4	14.5
FPD	58.4	35.0	6.6	4.7	10.6

Figure 5C. AZ BRFSS 2012 data assessing frequent physical distress and risky behaviors such as alcohol consumption and cigarette smoking in women of child bearing age.

The 2012 Arizona BRFSS indicates that individuals with FPD were more likely to report being underweight or obese (see **Figure 5D**). Furthermore, the chronic diseases associated with obesity were significantly higher in those reporting FPD. In some instances the prevalence of disease is more than three times higher when compared to those who did not report FPD. For example, the prevalence of heart attacks was 3.74 times higher in individuals reporting FPD. With the current structure of the BRFSS questionnaire, it is not possible to ascertain whether the person had FPD prior to the chronic condition, or if the chronic condition caused their FPD.



	Underweight	Obese	Diabetics	Heart Attack	Hypertension
Not FPD	2.1	25.0	8.4	3.5	3.1
FPD	4.1	34.1	25.6	13.1	9.3

Figure 5D. AZ BRFSS 2012 data assessing frequent physical distress, body mass index categories, and conditions associated with being overweight/obese.

10 Ford ES, Moriarty DG, Zack MM, Mokdad AH, Chapman DP. Self-reported body mass index and health-related quality of life: findings from the Behavioral Risk Factor Surveillance System. Obes Res. 2001 Jan;9(1):21-31.
11. Ahluwalia IB, Mack KA, Mokdad A. Mental and physical distress and high-risk behaviors among reproductive-age women. Obstet Gynecol. 2004 Sep;104(3):477-83.

Arizona Department of Health Services

Health-Related Quality of Life
Frequent Physical Distress

Arizonans Reporting Frequent Physical Distress in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**12.9**	**11.6**	**14.2**
National	**12.4**	**12.2**	**12.5**
Sex			
Male	12.8	10.8	14.8
Female	13.0	11.3	14.7
Age			
18-24	5.0	2.4	7.6
25-34	9.4	6.2	12.5
35-44	11.8	8.1	15.4
45-54	15.7	12.1	19.2
55-64	19.2	15.6	22.7
65+	15.2	13.2	17.1
Marital Status			
Married	12.4	10.6	14.3
Divorced	20.1	16.3	23.8
Widowed	14.8	11.6	18.0
Separated	24.9	14.4	35.4
Never Married	9.6	6.9	12.3
Unmarried Couple	10.6	5.1	16.1
Educational Attainment			
Less than High School	21.1	15.9	26.4
High School Graduate/GED	14.1	11.5	16.6
Some College/Tech School	11.9	10.0	13.8
College Grad	7.9	6.4	9.4
Employment Status			
Employed for wages	6.9	5.3	8.5
Self-employed	5.5	2.9	8.1
Out of work	15.5	10.1	20.9
Homemaker	12.4	8.3	16.4
Student	4.4	1.0	7.7
Retired	13.9	11.8	16.1
Unable to Work	62.6	55.0	70.2
Income			
<$25,000	19.2	16.3	22.1
$25,000-$34,999	14.9	10.1	19.7
$35,000-$49,999	9.2	6.6	11.7
$50,000-$74,999	9.9	6.7	13.2
$75,000+	6.9	4.8	9.0
Race/Ethnicity			
White Non-Hispanic	12.5	11.1	13.9
Black	14.5	7.4	21.7
Asian/PI	4.9	0.0	10.3
American Indian	10.7	5.6	15.8
Other	16.4	8.5	24.4
Hispanic	15.2	11.7	18.7

The table to the left displays the distribution of the prevalence of Arizona adults who responded that they suffered 14 or more days of poor physical health, in the 30 days prior. The data are broken down by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were less likely to report suffering from frequent physical distress if they:

- Were between the ages of 18 and 24
- Were never married
- Were a college graduate
- Were a student
- Earned $75,000 a year or more
- Were Asian or Pacific Islander

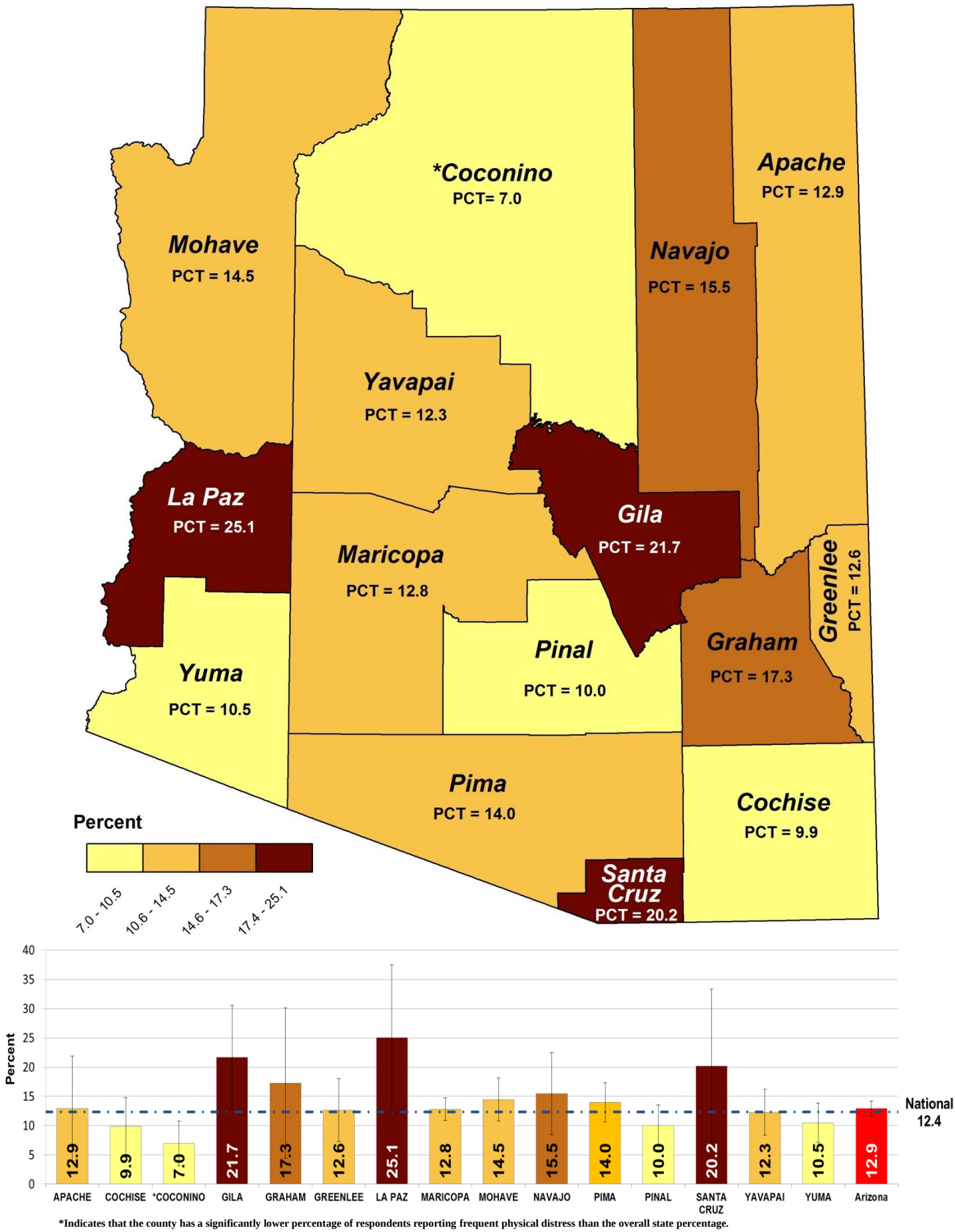
In 2012, individuals who were students or Asian/Pacific Islanders were the least likely to report suffering from frequent physical distress, at 4.4% and 4.9% respectively.

Respondents were more likely to report suffering from frequent physical distress if they:

- Were between the ages of 55 and 64
- Were separated
- Did not have a high school diploma
- Were unable to work
- Had an income less than $25,000 a year
- Reported their race as other

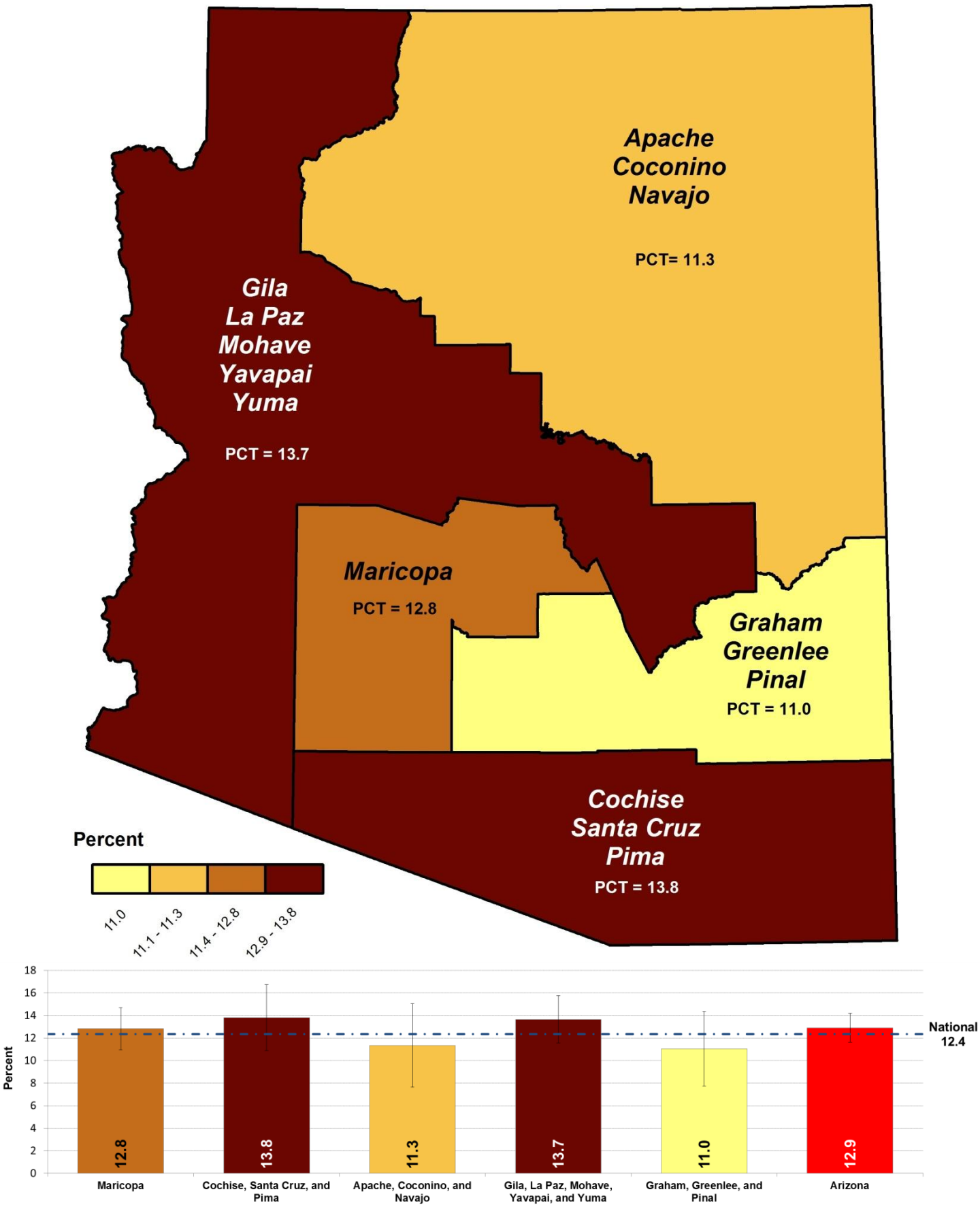
In 2012, individuals who were unable to work were the most likely to report suffering from frequent physical distress, at 62.6%. As education decreased, the percentage of individuals reporting frequent physical distress increased.

Percentage of Arizonans Reporting Frequent Physical Distress by County, 2012



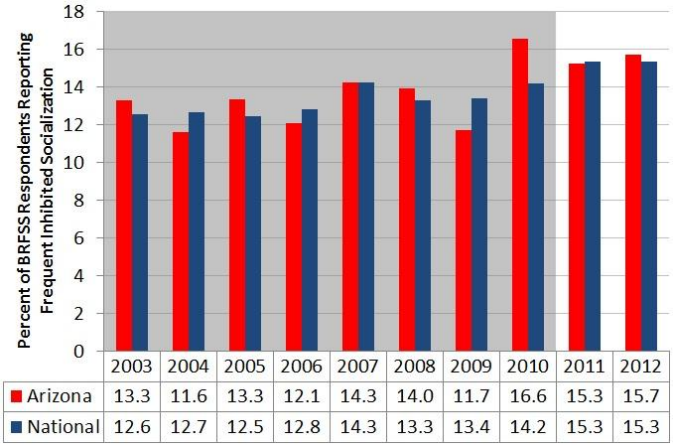
*Indicates that the county has a significantly lower percentage of respondents reporting frequent physical distress than the overall state percentage.

Percentage of Arizonans Reporting Frequent Physical Distress by Region, 2012



Health-Related Quality of Life
Barriers to Socialization

Socialization plays a significant role in public health. Research has shown that individuals who have the fewest social ties have an increased risk of mortality. Furthermore, the number of social relationships is inversely related to all-cause mortality.[12] The risk of mortality was more than twice as high among men and women with the fewest social ties compared to those with the most social ties.[13] The BRFSS questionnaire asks if a person's activities were inhibited due to poor physical or mental health. To assess socialization, people were classified as inhibited socially if they reported 14 or more days of limited activities due to health, within the 30 days prior. The data from the 2012 BRFSS indicates that Arizonans have a similar rate of reporting inhibited socialization when compared to the national percentage (see **Figure 6A**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	13.3	11.6	13.3	12.1	14.3	14.0	11.7	16.6	15.3	15.7
National	12.6	12.7	12.5	12.8	14.3	13.3	13.4	14.2	15.3	15.3

Figure 6A. Arizona and National 2003-2012 BRFSS prevalence of reporting inhibited socialization. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

When looking at all the states in the nation, Arizona falls in the second highest category for percent of respondents reporting inhibited socialization (see **Figure 6B**).

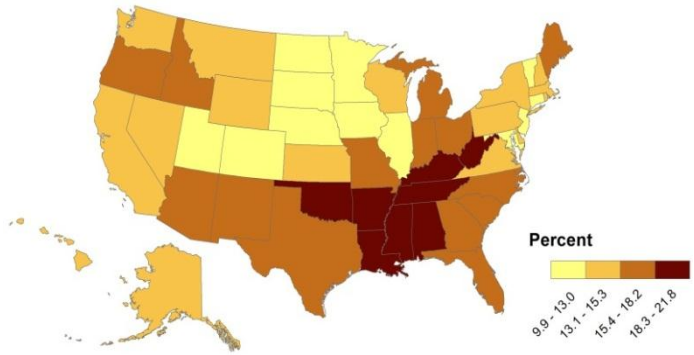


Figure 6B. Percent of BRFSS respondents reporting their health interfering with their ability to socialize by state (natural breaks).

According to the 2012 AZ BRFSS, individuals who reported health problems interfering with their ability to socialize were less likely to be married and were more likely to have smoked in their lifetime, when compared to individuals whose socialization was not inhibited. However, they were less likely to engage in excessive alcohol consumption (see **Figure 6C**).

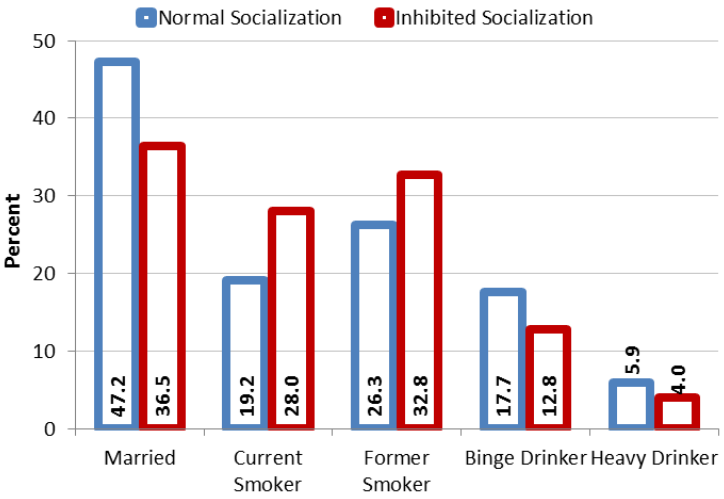


Figure 6C. AZ BRFSS 2012 data assessing socialization on marital status, smoking, and drinking behaviors.

The 2012 BRFSS data shows that average household size for individuals who are socially inhibited due to their health is 2.8. Individuals whose socialization is not inhibited by their health have a household size of 3. Although the household sizes are similar, the percentage of individuals reporting chronic conditions is higher in those that report their health inhibits their ability to socialize. The disease category that has the highest number of respondents reporting inhibited socialization is gout, arthritis, lupus or fibromyalgia. It is important to note that not all individuals reporting chronic diseases are reporting that they are socially inhibited (see **Figure 6D**).

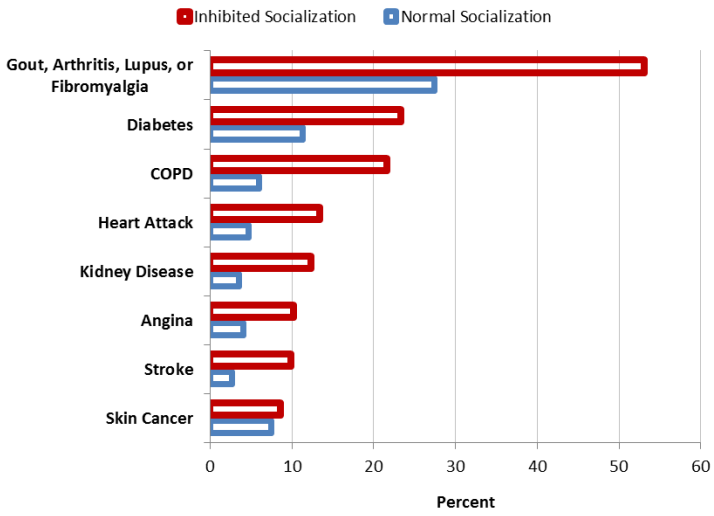


Figure 6D. AZ BRFSS 2012 data assessing socialization and skin cancer, COPD, kidney disease, gout, arthritis, lupus, fibromyalgia, diabetes, Heart attack, angina, and strokes.

12 Broadhead WE, Blazer DG, George LK, Tse CK. Depression, disability days, and days lost from work in a prospective epidemiologic survey. JAMA. 1990 Nov 21;264(19):2524-8.
13 Umberson D, Montez JK. Social relationships and health: a flashpoint for health policy. J Health Soc Behav. 2010;51 Suppl:S54-66.

Arizona Department of Health Services

Arizonans Reporting Frequent Inability to Socialize Due to Poor Health in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**15.7**	**13.8**	**17.6**
National	**15.3**	**15.1**	**15.6**
Sex			
Male	15.9	12.8	18.9
Female	15.6	13.1	18.0
Age			
18-24	7.1	2.5	11.6
25-34	11.4	7.1	15.6
35-44	14.1	8.7	19.4
45-54	23.3	17.6	29.0
55-64	23.0	18.2	27.9
65+	15.1	12.6	17.6
Marital Status			
Married	12.6	10.0	15.2
Divorced	24.5	19.4	29.6
Widowed	19.2	14.3	24.2
Separated	28.9	15.0	42.9
Never Married	13.9	9.6	18.2
Unmarried Couple	20.5	10.6	30.4
Educational Attainment			
Less than High School	24.8	17.7	32.0
High School Graduate/GED	15.0	11.8	18.2
Some College/Tech School	15.9	12.8	19.0
College Grad	8.6	6.6	10.5
Employment Status			
Employed for wages	6.4	4.1	8.6
Self-employed	8.3	3.5	13.1
Out of work	22.9	15.0	30.7
Homemaker	8.7	3.9	13.5
Student	4.3	0.0	8.6
Retired	14.7	11.9	17.5
Unable to Work	62.7	54.7	70.7
Income			
<$25,000	25.5	21.5	29.6
$25,000-$34,999	17.5	9.9	25.1
$35,000-$49,999	8.6	5.1	12.1
$50,000-$74,999	10.4	5.9	14.9
$75,000+	6.3	3.9	8.8
Race/Ethnicity			
White Non-Hispanic	15.1	13.1	17.0
Black	20.9	9.3	32.5
Asian/PI	6.6	0.0	16.7
American Indian	13.3	3.2	23.4
Other	18.5	8.2	28.9
Hispanic	17.2	12.1	22.3

Health-Related Quality of Life Barriers to Socialization

The table to the left displays the distribution of the prevalence of Arizona adults who responded that they suffered 14 or more days of poor physical or mental health inhibiting daily function, in the 30 days prior. The data are broken down by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were less likely to report suffering from frequent inhibited socialization if they

- Were between the ages of 18 and 24
- Were married
- Were a college graduate
- Were a student
- Earned $75,000 a year or more
- Were Asian or Pacific Islander

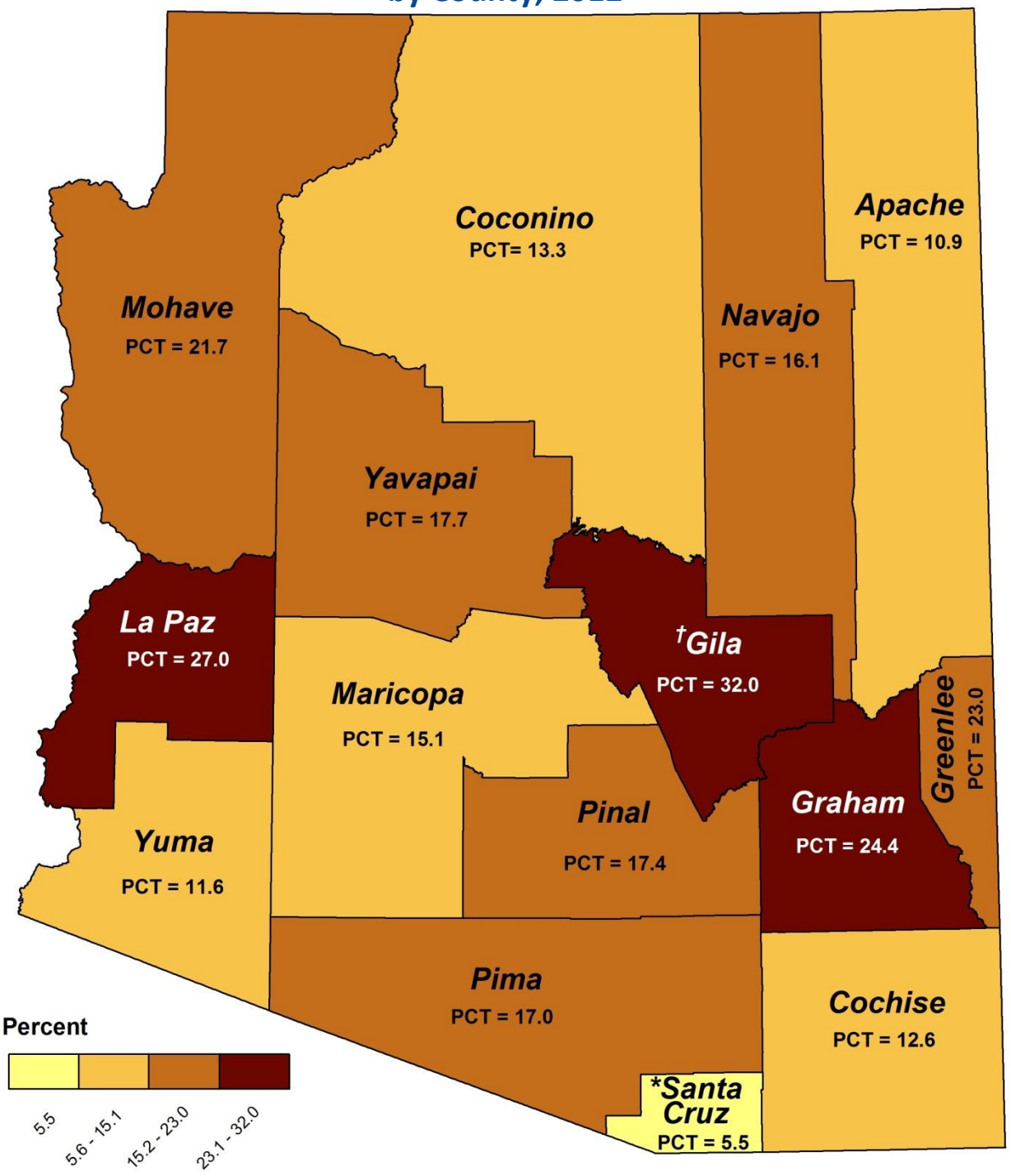
In 2012, individuals who reported their employment status as students were the least likely to report frequent inhibited socialization, at 4.3%.

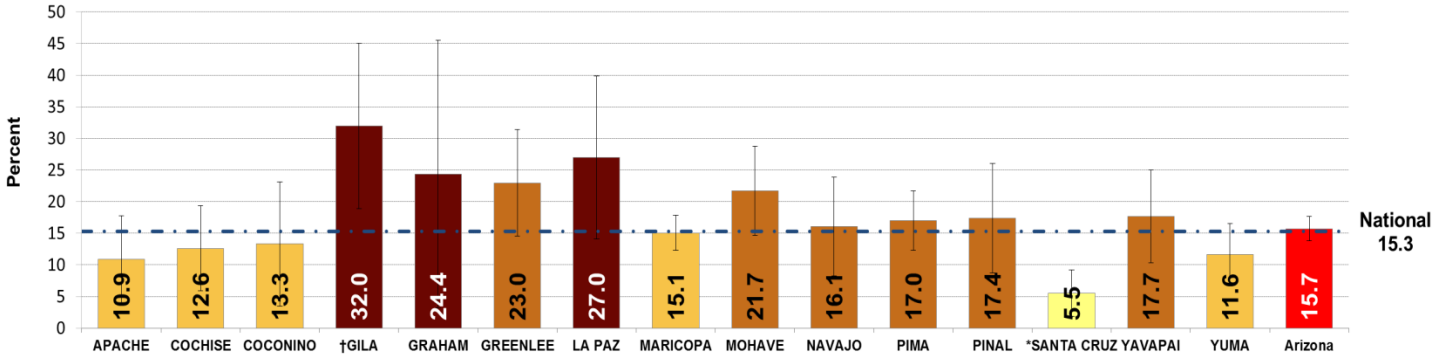
Respondents were more likely to report suffering from frequent inhibited socialization if they

- Were between the ages of 45 and 54
- Were separated
- Did not have a high school diploma
- Were unable to work
- Had an income less than $25,000 a year
- Reported their race as Black

In 2012, individuals who reported their employment status as unable to work were the most likely to report frequent inhibited socialization, at 62.7%.

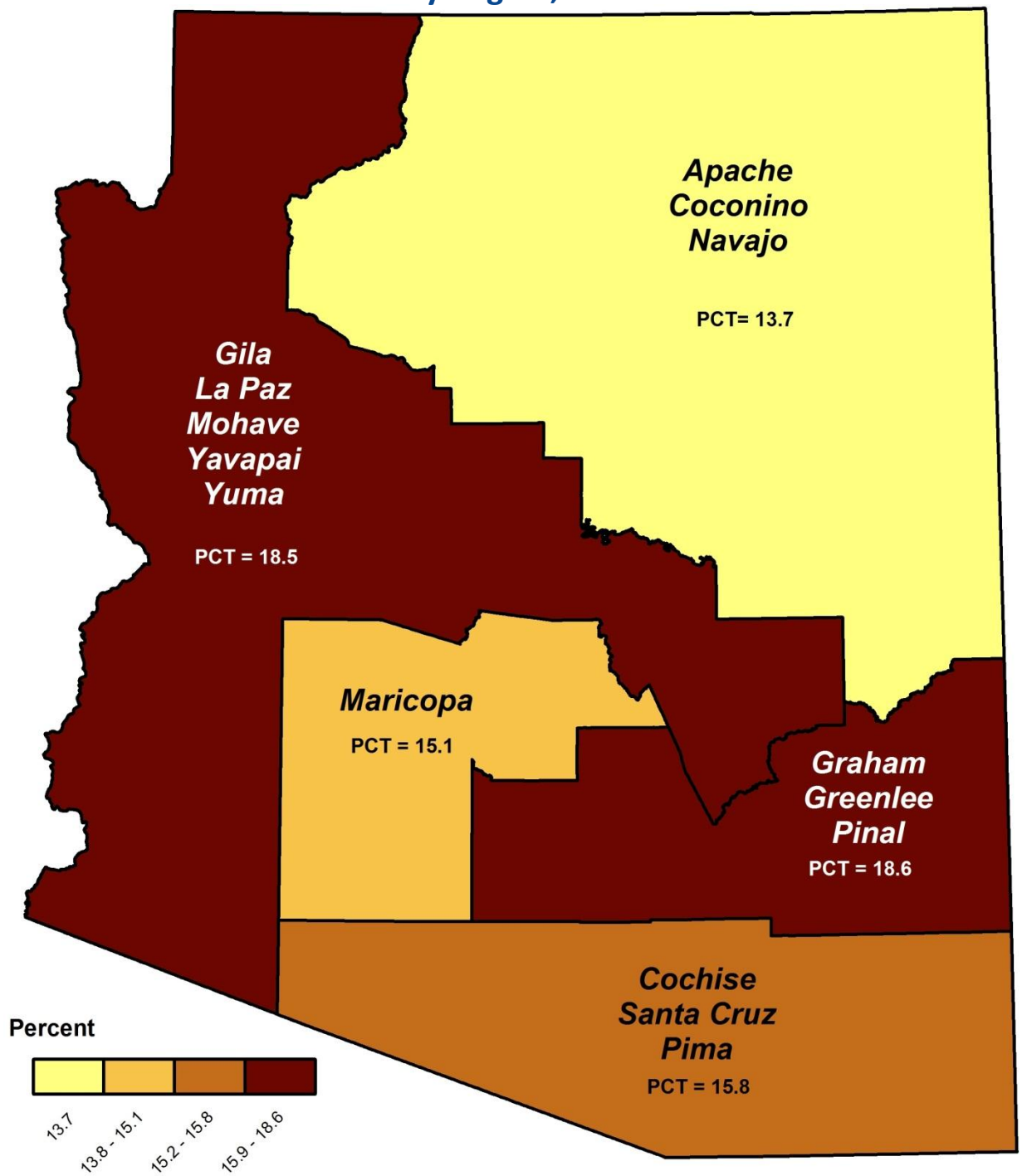
Percentage of Arizonans Reporting Frequent Inhibited Socialization by County, 2012

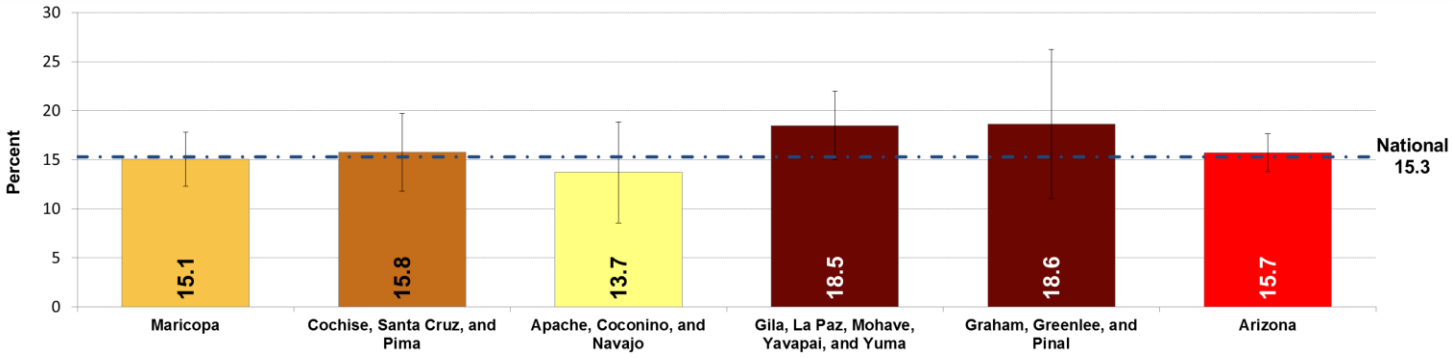




*Indicates that the county has a significantly lower percentage of respondents reporting frequent inhibited socialization than the overall state percentage.
†Indicates that the county has a significantly higher percentage of respondents reporting frequent inhibited socialization than the overall state percentage.

Percentage of Arizonans Reporting Frequent Inhibited Socialization by Region, 2012





Arizona Department of Health Services

Preventative Practices

Prevention is grouped into three levels: primary, secondary, and tertiary. Primary prevention is the practices aimed at preventing diseases from ever occurring. Vaccination is an example of primary prevention. Secondary prevention is used after the person develops a disease but before they exhibit symptoms. Cancer screening is considered secondary prevention. Lastly, tertiary prevention is targeted at individuals who already have symptoms of a disease. Administration of antibiotics is an example of tertiary prevention. This section of the 2012 BRFSS Annual Report focuses on primary and secondary prevention, including an analysis of the following:

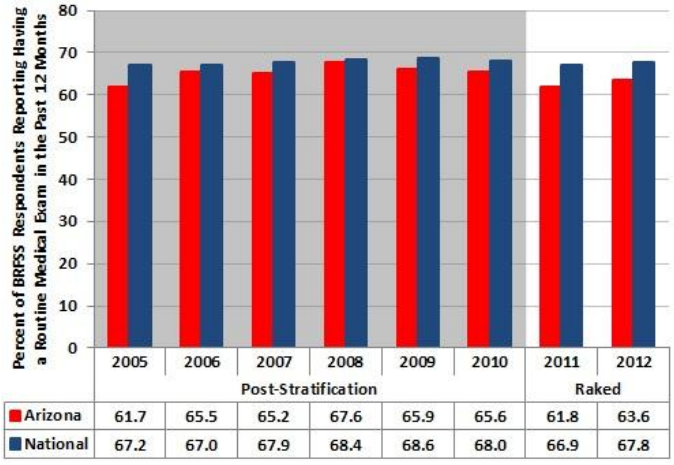
- **Routine Medical Examination (variable CHECKUP1)**—binary outcome where medical examinations within the past year is considered a positive outcome. If the respondent replies that his/her last medical exam was more than a year ago, he/she is categorized as a negative outcome.
- **Annual Influenza Vaccine (variable _FLSHOT5)**—binary outcome for individuals 65 years of age and older where influenza vaccinations within the last 12 months is considered a positive outcome. Individuals exceeding 12 months are considered a negative outcome.
- **Colorectal Cancer Screening**—The guidelines set by the United States Preventative Services Task Force recommends a secondary prevention regimen using annual fecal occult blood testing, sigmoidoscopy every five years, and a colonoscopy every ten years. The BRFSS survey has two questions that can be used to assess colorectal cancer screening**.**
    - **Fecal Occult Blood Test (variable BLDSTOOL**)—binary outcome where if an individual, 50 years of age and older, has ever had a fecal occult blood test, he/she is considered a positive outcome; if the respondent has never had a fecal occult blood test, he/she is considered a negative outcome.
    - **Sigmoidoscopy and Colonoscopy (variable HADSIGM3)**—binary outcome where if an individual, 50 years of age and older, has ever had a sigmoidoscopy or colonoscopy their response is considered a positive outcome; if they have never had a colonoscopy or sigmoidoscopy they are considered a negative outcome.
- **Women's Health**—women's reproductive preventive care can be broken down into two sections: breast cancer screening and cervical cancer screening.
    - **Mammography (variable HOWLONG)**—binary outcome where for women 40 years of age and older, having a mammogram in the past year is considered a positive outcome and having a mammogram over a year ago is considered a negative outcome.
    - **Cervical Cancer Screening**—cervical cancer is highly associated with human papillomavirus infections. Therefore, the assessment of the proper use of the human papillomavirus vaccine must be conducted (primary prevention) alongside the recommended pap smear screening regiment.
        - **Human Papillomavirus (variables HPVADVC2 and HPVADSHT)**—the BRFSS questionnaire asks if an individual has ever had a Human Papillomavirus vaccine and what dosage was received. Pertinent information on the vaccination is provided in this section's background information.
        - **Pap Smears (variable LASTPAP2)**— binary outcome where for women between the ages of 21 and 65, having a pap smear in the past three years is considered a positive outcome and a pap smear over three years ago is considered a negative outcome.
- **Men's Health**—the men's reproductive BRFSS questions have changed to incorporate how and when a man had a Prostate Specific Antigen test, and if he received the proper counseling on the risks and benefits of the test.
    - **Prostate Specific Antigen Testing (variables PCPSAAD1 and PCPSADI1)**—binary outcome assessing if an individual who had a Prostate Specific Antigen test received the appropriate counseling. Responses were considered positive if he received the appropriate counseling. If he did not, his responses were considered a negative outcome.

Strategic Map Link

By collecting data on routine medical exams, influenza vaccines, colorectal cancer screenings, and women's and men's reproductive health the BRFSS is providing Arizona with a tool to evaluate infectious diseases, hospital readmissions, and whether communities are healthy and safe.
The aforementioned indicators are outlined as A3 and C5 of the ADHS Strategic Map.

Preventative Practices
Routine Medical Examinations

Regular medical exams are a valuable tool in preventative care. Routine examinations can find problems early in their development, when treatment is more effective.[14] However, there is a growing discussion on what tests to include and how often an examination is necessary. Depending on age and gender the recommended frequency ranges from 1-5 years in healthy individuals.[15] To assess the utilization of health services, the shortest interval recommended for a routine medical examination was used (1 year). From 2005 to 2010 the percent of Arizonans reporting undergoing a routine medical exam in the past year was consistently lower than the U.S.. After the change in methodology, the percent of Arizonans reporting having a routine medical exam in the previous year was still lower than the national level (see **Figure 7A**).



	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	61.7	65.5	65.2	67.6	65.9	65.6	61.8	63.6
National	67.2	67.0	67.9	68.4	68.6	68.0	66.9	67.8

Figure 7A. Prevalence of Arizona and national BRFSS respondents who have had a routine medical exam within the past year. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

According to the 2012 BRFSS, 63.6% of Arizonans had a routine medical examination in the past year. The national prevalence is 67.8%. When looking at all the states in the nation, Arizona falls in the second lowest category for having a routine medical examination in the past year (see **Figure 7B**).

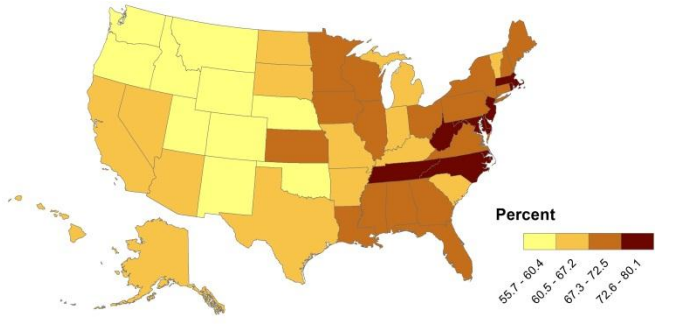


Figure 7B. Percent of BRFSS respondents who have had a routine medical exam in the past year (natural breaks).

14 "Regular Check-Ups Are Important." Centers for Disease Control and Prevention. Centers for Disease Control and Prevention, n.d. Web. 08 Oct. 2013. http://www.cdc.gov/family/checkup/.
15 Physical Exam Frequency: MedlinePlus Medical Encyclopedia." U.S. National Library of Medicine. U.S. National Library of Medicine, n.d. Web. 08 Oct. 2013. http://www.nlm.nih.gov/medlineplus/ency/article/002125.htm.

The lack of health insurance acts as a barrier to accessing health care. Uninsured people are more likely to report that they were unable to receive medical care, and are more likely to have poor health status.[16] According to the BRFSS data, regardless of weighting methodology, Arizonans without insurance were much less likely to have had a check-up in the past year, when compared to individuals who have insurance (see **Figure 7C**).

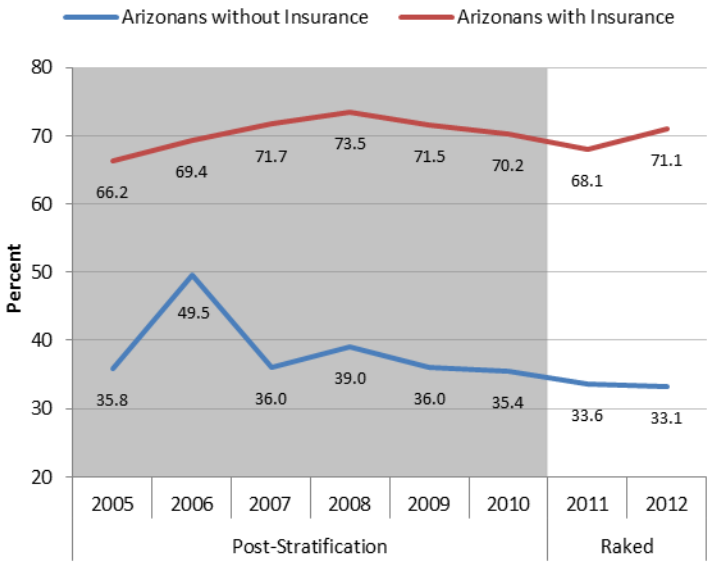


Figure 7C. Prevalence of Arizona respondents who have had a routine medical exam within the past year, stratified by insurance status. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

There has been much debate on the necessity of routine medical exams. However, that debate only involves healthy individuals. If a person suffers from a serious medical condition, it is advised that he/she see a medical professional regularly.[14] According to the 2012 Arizona BRFSS, the percent of individuals with chronic conditions (CC) who have a checkup once a year ranges from 67.8% to 83.0%, which is higher than Arizona's overall prevalence (see **Figure 7D**). Although individuals with CCs are more likely to have a routine medical exam within the past 12 months, when compared to Arizona as a whole, it still is not 100%. Routine medical examinations prevent the exacerbation of CCs and reduce the future cost of care.

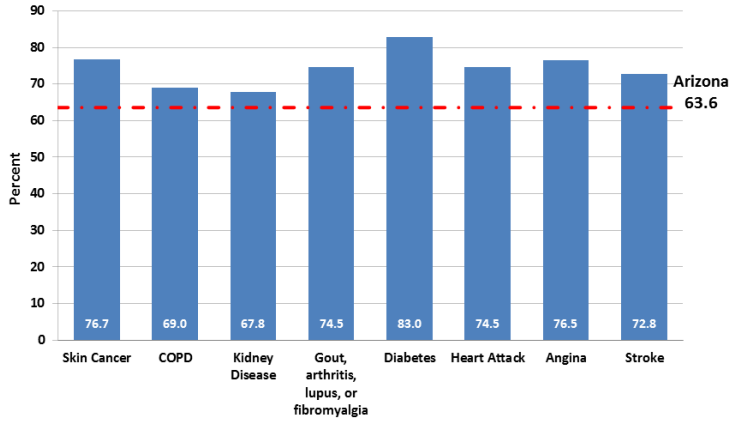


Figure 7D. Percent of Arizonans living with a CC who have seen a medical professional in the past year. The red dashed line is the overall percent of Arizonans who have had a routine medical exam in the last 12 months.

16 T. Bodenheimer, E. Chen and H.D. Bennett. Confronting The Growing Burden Of Chronic Disease: Can The U.S. Health Care Workforce Do The Job? Health Aff January/February 2009 vol. 28 no

Arizona Department of Health Services

Preventative Practices
Routine Medical Examinations

Arizonans Who Had a Checkup in the Past Year in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**63.6**	**61.7**	**65.5**
National	**67.8**	**67.5**	**68.1**
Sex			
Male	59.0	56.1	61.8
Female	68.1	65.6	70.5
Age			
18-24	57.5	51.0	64.1
25-34	53.5	48.3	58.8
35-44	55.9	50.7	61.1
45-54	62.4	57.9	66.8
55-64	67.6	63.9	71.2
65+	81.4	79.1	83.8
Marital Status			
Married	68.3	65.9	70.8
Divorced	62.4	57.9	66.9
Widowed	77.2	73.0	81.5
Separated	47.0	34.4	59.7
Never Married	56.1	51.4	60.8
Unmarried Couple	44.9	35.2	54.6
Educational Attainment			
Less than High School	54.3	48.0	60.6
High School Graduate/GED	63.9	60.2	67.6
Some College/Tech School	63.5	60.4	66.7
College Grad	69.2	66.4	72.1
Employment Status			
Employed for wages	60.8	57.8	63.8
Self-employed	54.2	47.5	60.8
Out of work	56.5	49.5	63.5
Homemaker	59.2	52.4	66.0
Student	61.4	51.3	71.4
Retired	79.1	76.4	81.7
Unable to Work	70.5	63.4	77.7
Income			
<$25,000	56.1	52.4	59.8
$25,000-$34,999	63.4	57.5	69.2
$35,000-$49,999	64.1	59.0	69.2
$50,000-$74,999	71.9	67.5	76.4
$75,000+	69.5	65.6	73.4
Race/Ethnicity			
White Non-Hispanic	64.9	62.8	66.9
Black	77.5	68.4	86.6
Asian/PI	75.1	63.4	86.9
American Indian	72.8	64.9	80.7
Other	61.6	50.3	72.9
Hispanic	56.3	51.7	61.0

The table to the left displays the distribution of the 2012 Arizona BRFSS respondents who have had a routine medical examination, in the past 12 months. The data is broken down by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were more likely to report that they had received a routine medical exam if they

- Were female
- Were 65 or older
- Were widowed
- Had graduated from college
- Were retired
- Were Black

When looking at race and ethnicity, Blacks had the highest percentage of respondents reporting a routine check-up in the past year, at 77.5%.

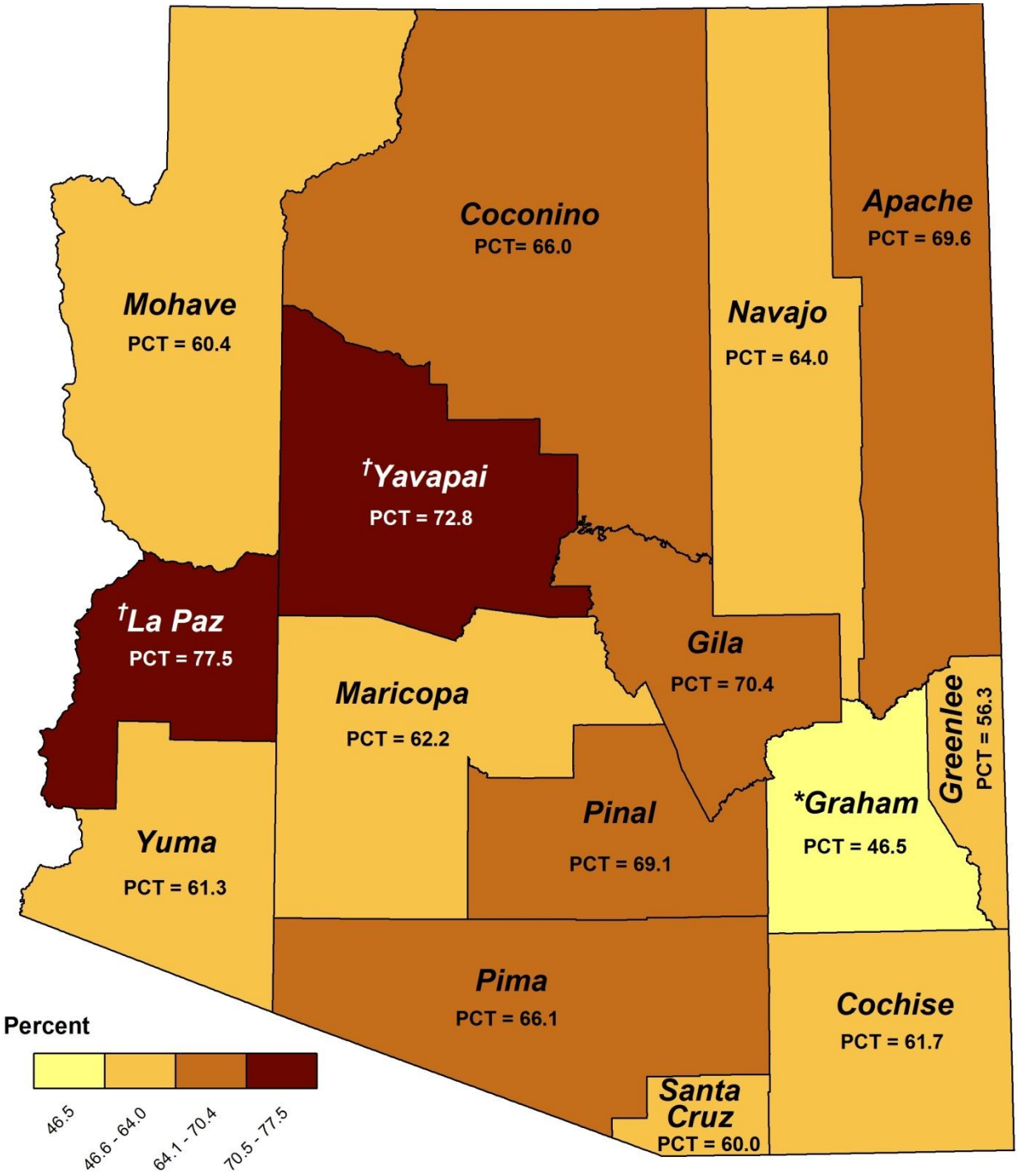
Respondents were less likely to report that they had received a routine medical exam if they

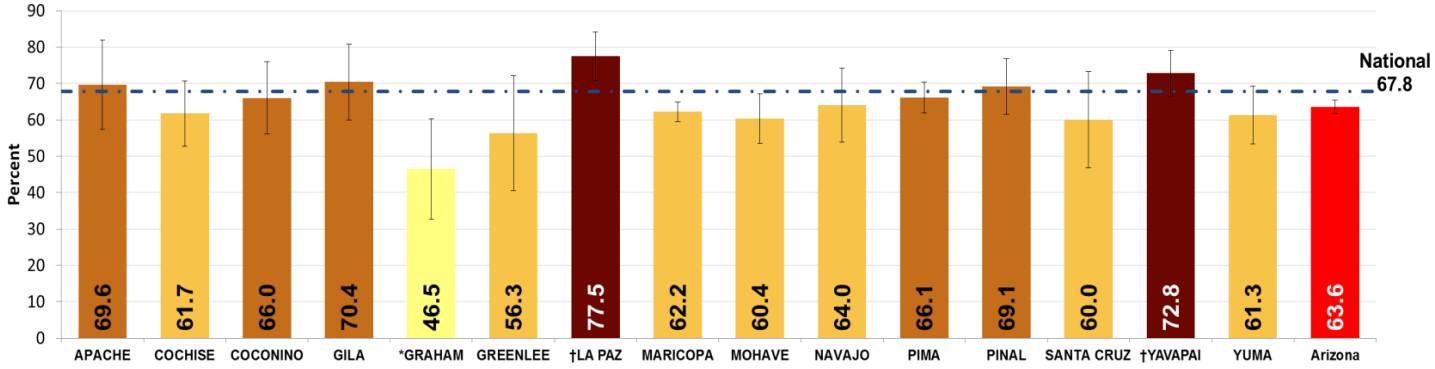
- Were male
- Were between the ages of 25 and 34
- Were part of an unmarried couple
- Had less than a high school diploma
- Were self-employed
- Had a household income of less than $25,000
- Were Hispanic

Individuals who reported that they were part of an unmarried couple were the least likely to have had a check-up within the last year, at 44.9%.

Arizona Department of Health Services

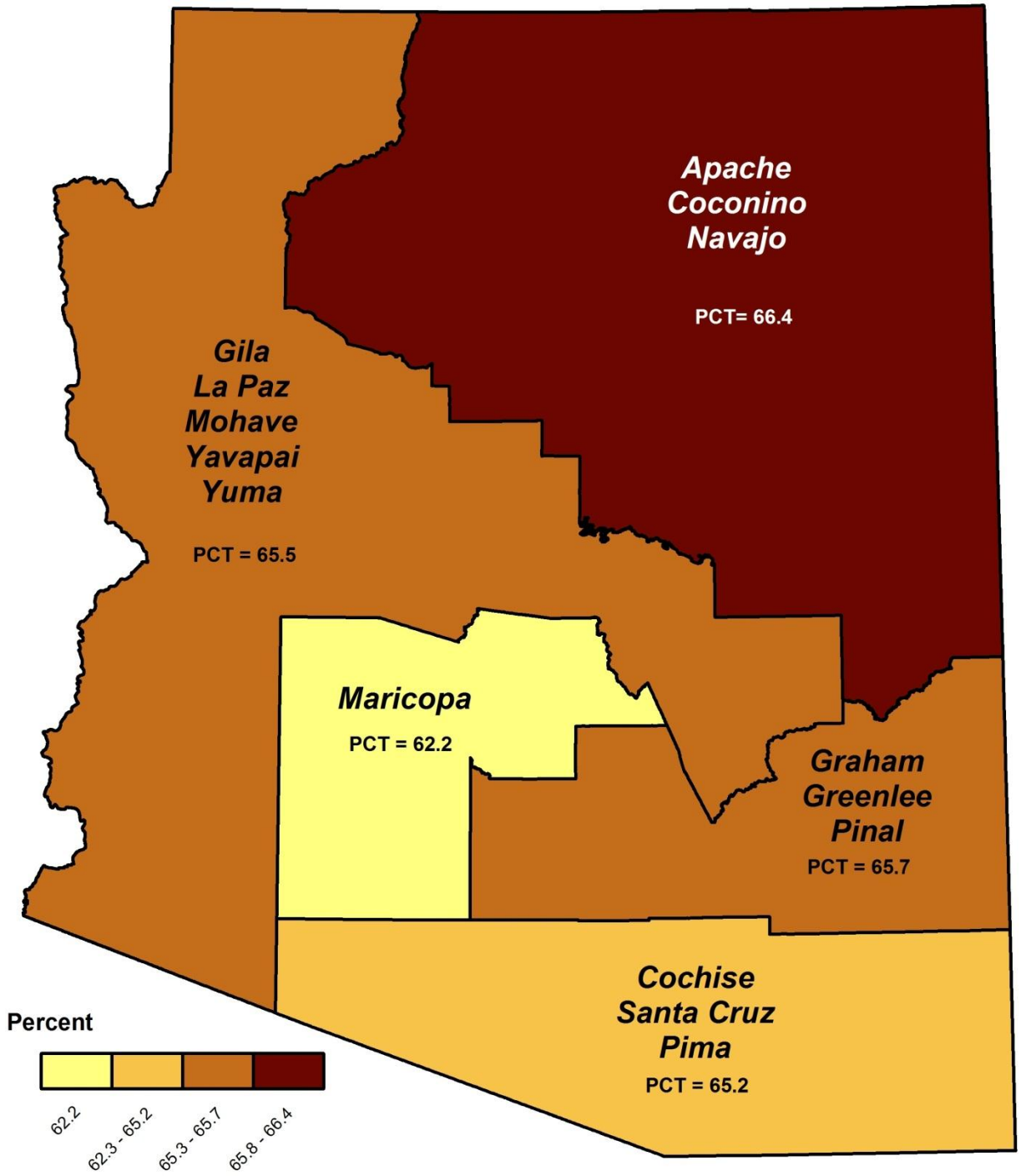
Percentage of Arizonans Who Had a Checkup in the Past Year by County, 2012

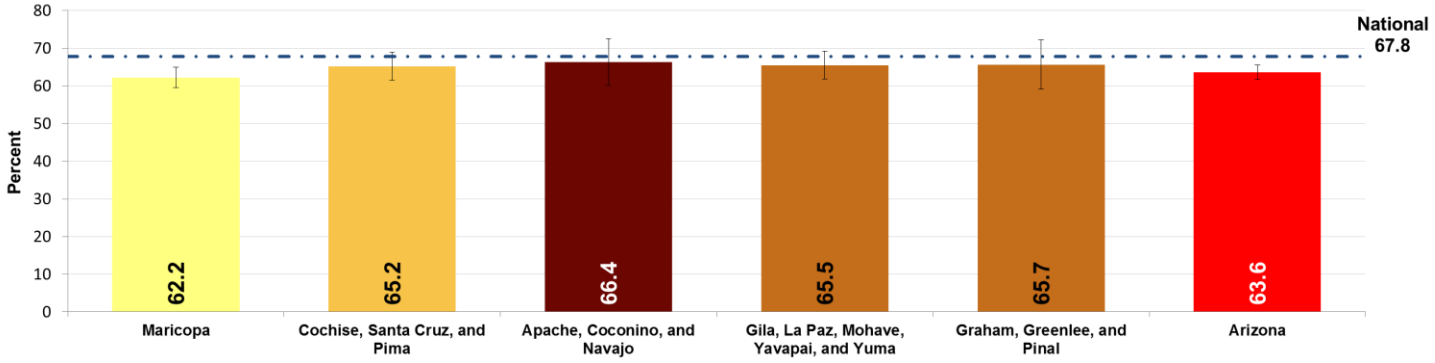




*Indicates that the county has a significantly lower percentage of respondents reporting a checkup in the past year than the overall state percentage.
†Indicates that the county has a significantly higher percentage of respondents reporting a checkup in the past year than the overall state percentage.

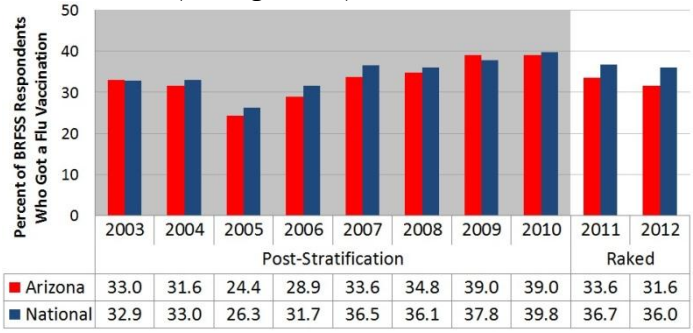
Percentage of Arizonans Who Had a Check-up in the Past Year by Region, 2012





Preventative Practices
Influenza Vaccinations

Since 1918, there have been four influenza (flu) pandemics, the most recent being the 2009-2010 H1N1 or "swine flu." The CDC estimates that 43 million to 89 million people contracted H1N1, during the 2009/2010 pandemic.[17] An analysis comparing the cost effectiveness of vaccination versus antiviral treatment of flu in working adults found that antiviral treatment was the most consistently cost-effective treatment for working adults.[18] However, the analysis did not take into consideration flu pandemics, herd immunity, or the possibility of drug resistant strains of the flu. When the 2009 H1N1 was discovered, it was resistant to two of the four available antivirals; at the end of the pandemic evolved strains were found that were resistant to three antivirals. For this reason, the CDC recommends annual flu vaccinations. According to the 2012 BRFSS ~31.6% of Arizonans had a flu vaccine in the last year, which was 4.4% lower than the national rate (see **Figure 8A**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	33.0	31.6	24.4	28.9	33.6	34.8	39.0	39.0	33.6	31.6
National	32.9	33.0	26.3	31.7	36.5	36.1	37.8	39.8	36.7	36.0

Figure 8A. Percent of Arizona and National BRFSS respondents who reported having a flu vaccine in the past year. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

Controlling the seasonal flu requires targeted campaigning. It is important to begin vaccination before high flu activity presents clinically. During the 2010-2011 flu cycle (the latest reliable estimate) BRFSS data show that individuals getting vaccinated are in fact doing so before flu-related hospitalizations increase (see **Figure 8B**). The reduction of flu-related hospitalizations requires increasing the number of people vaccinated.

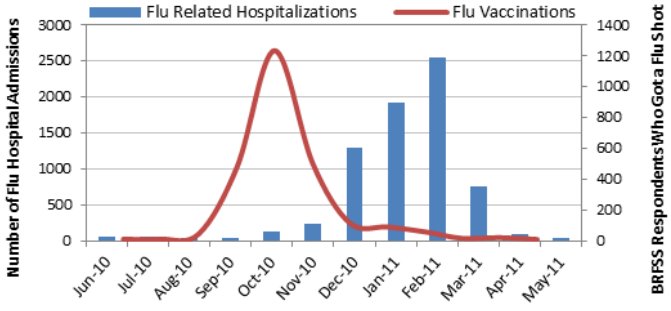


Figure 8B. BRFSS unweighted flu vaccination frequency and flu related hospital admissions by month (during the 2010-2011 flu cycle).

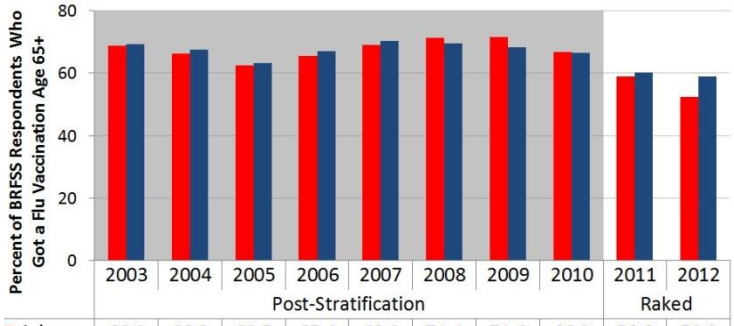
17 Centers for Disease Control and Prevention. "Key Facts About Seasonal Flu Vaccine." CDC, 07 Nov. 2013. Web. 12 Feb. 2014. <http://www.cdc.gov/flu/protect/keyfacts.htm>.
18 Nichol, K. The efficacy, effectiveness and cost-effectiveness of inactivated influenza virus vaccines. Vaccine 21 (2003) 1769–1775

During the 1958-1959 flu pandemic, it was discovered that the flu could cause pneumonia.[16] The combination of the flu and pneumonia increases the risk of mortality. In 2012, Arizona in-patient and emergency departments reported 504 hospitalizations due to combined flu and pneumonia with charges totaling more than $25 million (see **Table 4**).

Influenza Related Discharges With Pneumonia			
Age	**Number of Discharges**	**Charges**	**Average Length of Stay (Hours)**
<18	107	$3,139,477	89.3
18-24	26	$956,603	82.2
25-39	47	$3,024,608	125.6
40-54	70	$4,467,793	158.1
55-64	55	$4,072,442	179.8
65+	199	$9,368,118	131.2
Total	504	$25,029,041	-

Table 4. 2012 Hospital discharges containing ICD-9 codes: 487.0, 488.01, 488.11, and 488.81

Due to the potential co-occurrence of the flu and pneumonia, infection in high risk populations is of the utmost concern. Therefore, monitoring vaccination prevalence for individuals over the age of 65 is necessary. In 2012, 199 Arizonans over the age of 65 were hospitalized after presenting with both the flu and pneumonia; seven died in the hospital. The 2012 BRFSS data shows that 52.3% of Arizonans over the age of 65 reported having a flu vaccination within the past year, which was 6.7% lower than the national response (see **Figure 8C**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	68.9	66.2	62.5	65.4	69.0	71.4	71.6	66.9	58.8	52.3
National	69.2	67.6	63.3	67.1	70.2	69.5	68.3	66.5	60.2	59.0

Figure 8C. Percent of Arizona and National BRFSS respondents who reported having a flu vaccine in the past year. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

When compared to the other states in the nation, Arizona fell into the lowest category for individuals 65+ reporting a flu shot in the last 12 months (see **Figure 8D**).

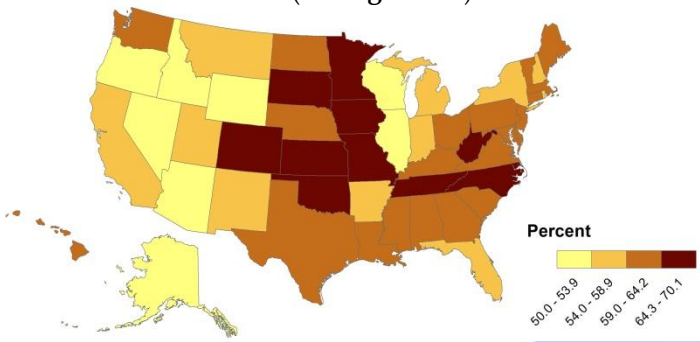


Figure 8D. Percent of BRFSS respondents 65 and older who had an influenza vaccination in the last 12 months (natural breaks).

Arizona Department of Health Services

Preventative Practices
Influenza Vaccinations

Arizonans 65 and Older Who Had a Flu Vaccine in the Last 12 Months in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**52.3**	**49.5**	**55.2**
National	**59.0**	**58.5**	**59.5**
Sex			
Male	51.7	47.2	56.2
Female	52.8	49.2	56.4
Marital Status			
Married	54.3	50.4	58.3
Divorced	52.8	44.8	60.8
Widowed	50.4	45.4	55.4
Separated	34.4	10.9	58.0
Never Married	41.1	25.9	56.3
Unmarried Couple	41.5	15.0	67.9
Educational Attainment			
Less than High School	35.7	26.5	44.9
High School Graduate/GED	49.9	44.5	55.3
Some College/Tech School	54.4	49.5	59.4
College Grad	57.7	53.2	62.3
Employment Status			
Employed for wages	45.1	35.1	55.1
Self-employed	47.5	33.6	61.3
Out of work	32.0	11.4	52.7
Homemaker	47.8	37.1	58.4
*Student	6.1	0.0	19.9
Retired	54.6	51.3	57.9
Unable to Work	51.8	37.3	66.4
Income			
<$25,000	39.9	34.7	45.1
$25,000-$34,999	58.2	50.5	65.8
$35,000-$49,999	54.6	47.2	62.0
$50,000-$74,999	54.9	46.9	62.8
$75,000+	60.2	52.8	67.6
Race/Ethnicity			
White Non-Hispanic	54.3	51.3	57.3
Black	45.2	21.6	68.8
Asian/PI	73.9	45.6	100.0
American Indian	50.4	25.5	75.3
Other	38.4	19.0	57.7
Hispanic	39.0	28.4	49.7

*Estimates are unreliable due to small sample size (n=1)

The table to the left displays the distribution of the 2012 Arizona BRFSS respondents, 65 and older, who had a flu vaccine in the past 12 months. The data are broken down by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were more likely to report that they had a flu vaccine in the past 12 months if they

- Were female
- Were married
- Had graduated from college
- Were retired
- Had an annual household income greater than $75,000+
- Were Asian or Pacific Islander

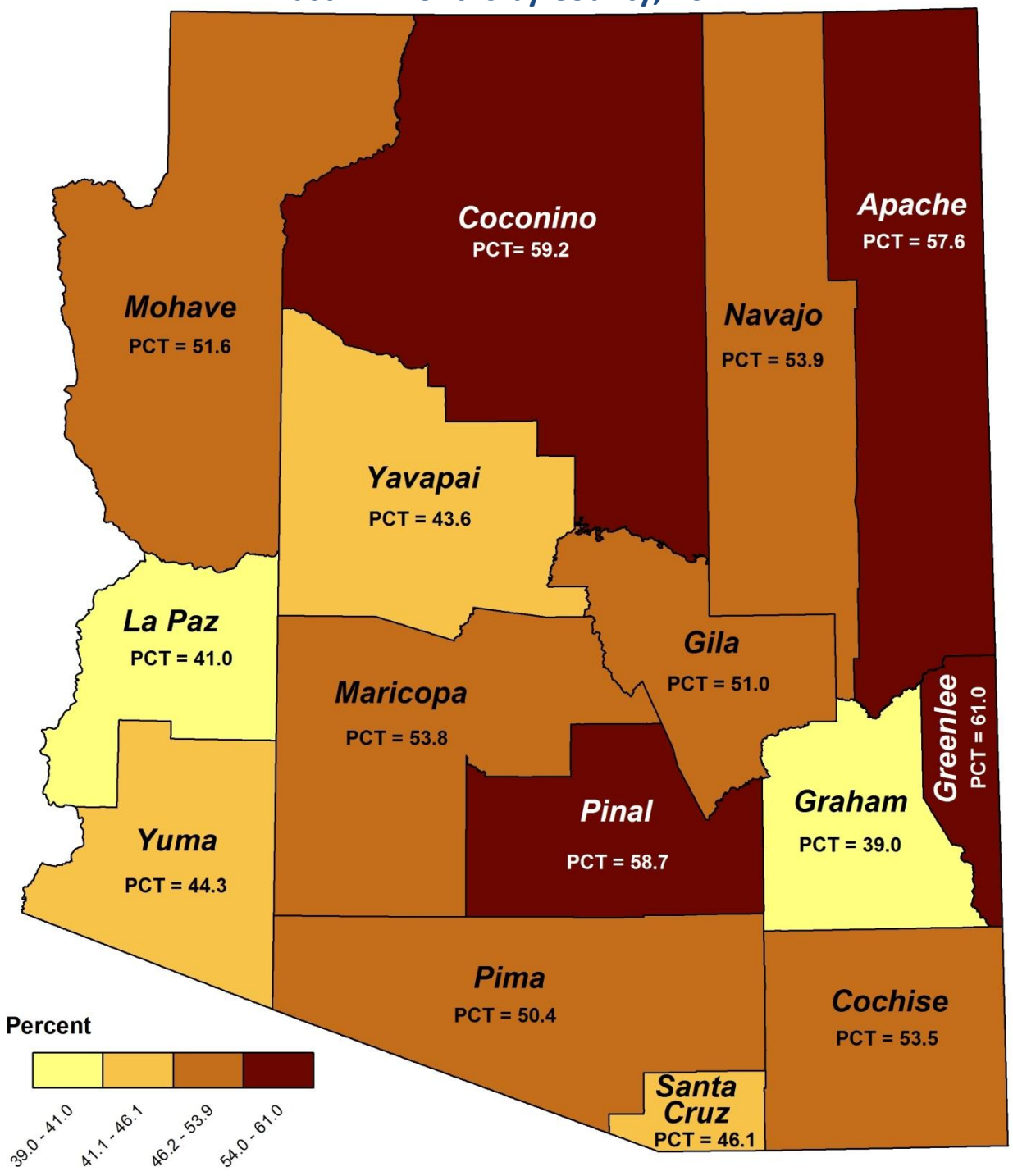
When looking at race and ethnicity, Asians and Pacific Islanders had the highest percentage of respondents reporting a flu vaccine in the past 12 months, at 73.9%.

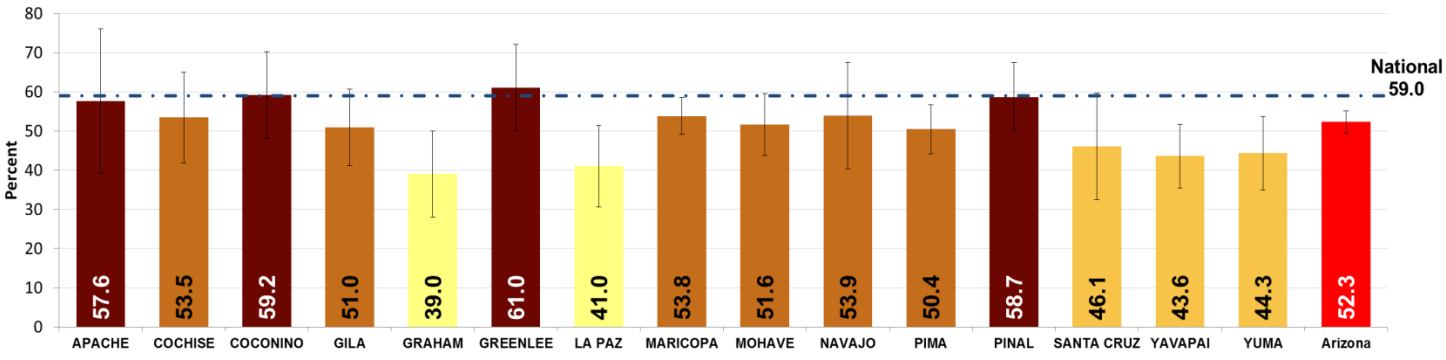
Respondents were less likely to report that they had a flu vaccine in the past 12 months if they

- Were male
- Were separated
- Had less than a high school diploma
- Were out of work (estimates for students were not reliable)
- Had a household income of less than $25,000
- Reported their race as other

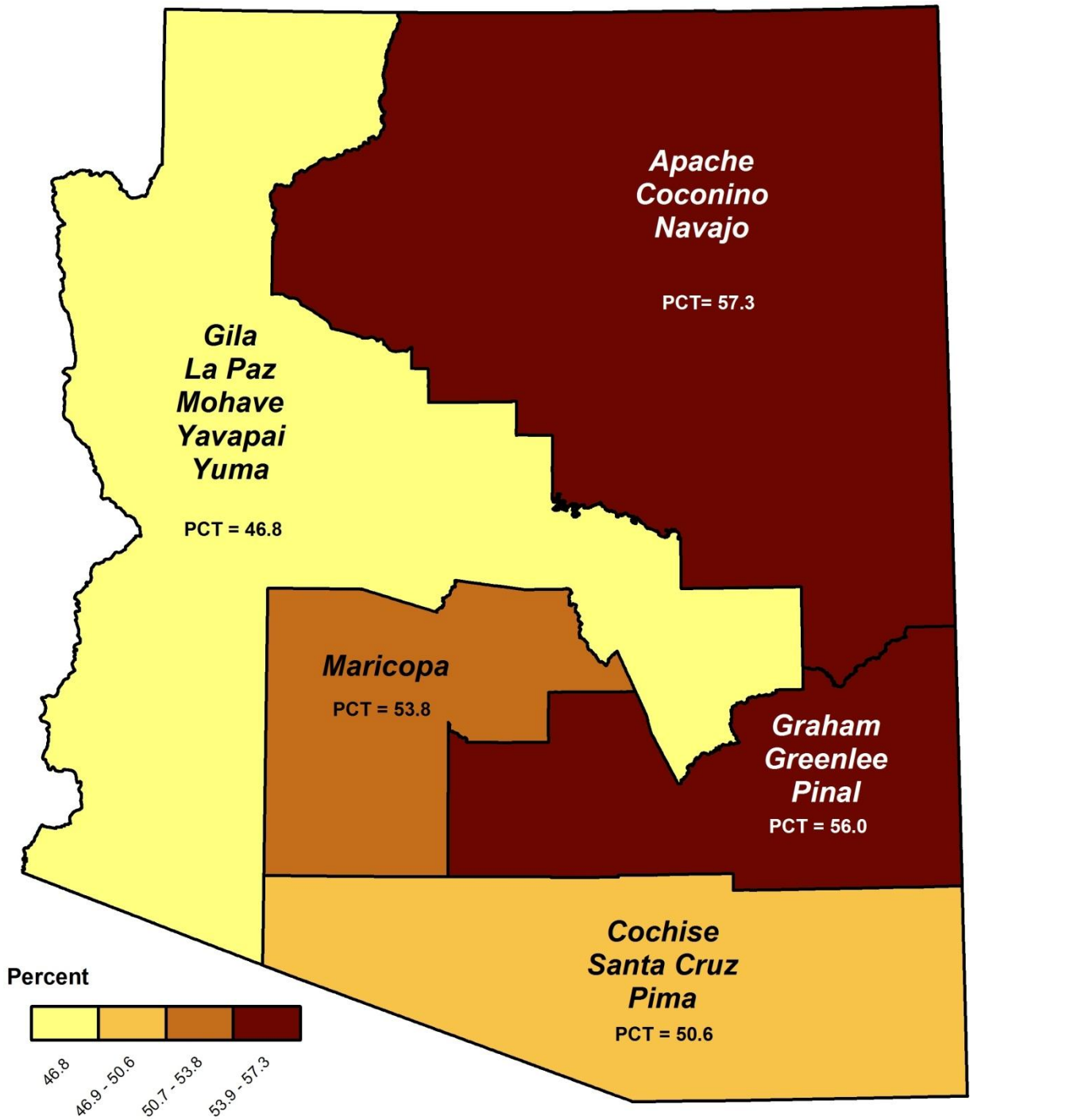
As household income decreased, so did the likelihood of having a flu vaccination within the past 12 months.

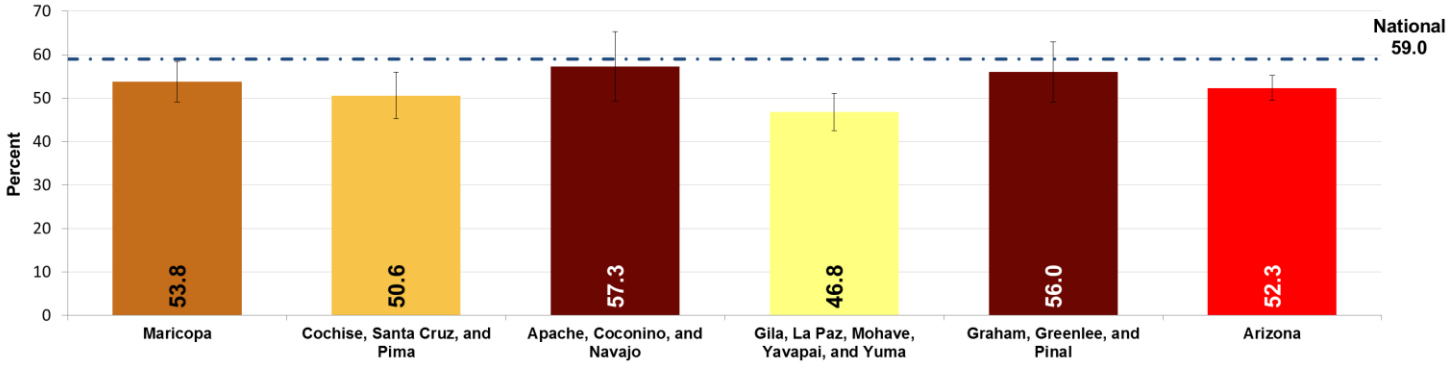
Percentage of Arizonans Age 65 or Older Who Had a Flu Vaccine in the Past 12 Months by County, 2012





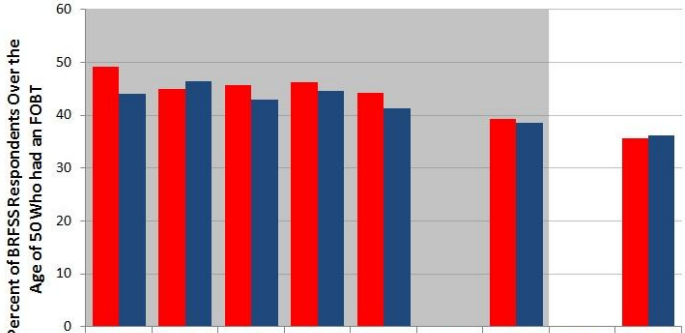
Percentage of Arizonans Age 65 or Older Who Had a Flu Vaccine in the Past 12 Months by Region, 2012





Preventative Practices
Fecal Occult Blood Test

Colorectal cancer is the third-most common type of non-skin cancer in both men and women. Patients who have early stages of colorectal cancer typically do not exhibit symptoms. Therefore, regular screening is the best prevention.[19] To screen for colon cancer, three types of tests are recommended by the United States Preventative Services Task Force (USPSTF): sigmoidoscopy, colonoscopy, and fecal occult blood testing (FOBT). The FOBT is a lab test that is used to check stool samples for hidden (occult) blood. A positive FOBT may indicate colon cancer or polyps in the colon.[20] The USPSTF currently recommends that individuals 50 to 75, who do not have a first-degree relative diagnosed with colorectal cancer, have an annual FOBT.[21] According to the 2012 BRFSS, ~35.6% of Arizonans over the age of 50 had a FOBT; the national percentage was ~36.2% (see **Figure 9A**).



	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	49.1	45	45.6	46.2	44.3	NA	39.3	NA	35.6
National	44.0	46.4	43.0	44.5	41.4	NA	38.5	NA	36.2

Figure 9A. Arizona BRFSS respondents over the age 50 who reported ever having a fecal occult blood test. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

Although Arizona had fewer respondents reporting having had an FOBT, compared to the other states in the nation, Arizona fell into the second-highest category for FOBT (see **Figure 9B**).

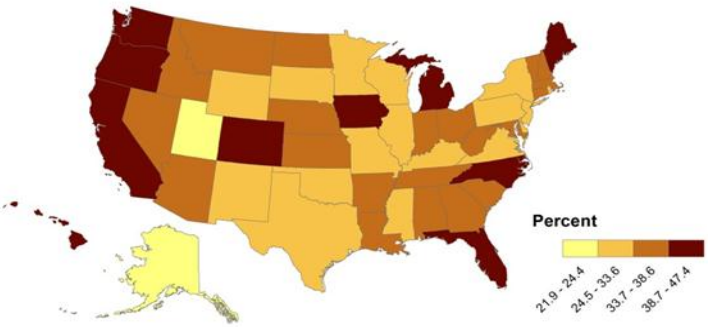


Figure 9B. Percent of BRFSS respondents who were 50 years old or older who reported having had a FOBT (natural breaks).

19 FA. Haggar, and R.P. Boushey. Colorectal Cancer Epidemiology: Incidence, Mortality, Survival, and Risk Factors. Clin Colon Rectal Surg. 2009 November; 22(4): 191–197.
20 Mayo Clinic. "Diseases and Conditions Colon Polyps." N.p., n.d. Web. 15 Jan. 2014. <http://www.mayoclinic.org/diseases-conditions/colon-polyps/basics/definition/con-20031957>
21 U.S. Preventive Services Task Force. "Screening for Colorectal Cancer." : U.S. Preventive Services Task Force Recommendation Statement. N.p., n.d. Web. 17 Jan. 2014. <http://www.uspreventiveservicestaskforce.org/uspstf08/colocancer/colors.htm>.

The FOBT is considered a noninvasive and cost-effective way to screen for colorectal cancer. The test can cost anywhere from $5 to $22. The tests are completed at home and then submitted to a lab for analysis. The optimal use of the FOBT is as part of a programmatic screening as suggested by the USPSTF. According to the 2012 BRFSS, 64.4% of Arizonans over the age of 50 have never had a FOBT. Of those who had an FOBT, only 27.5%of Arizonans and 29.5% nationally had the exam within a year. The majority of BRFSS respondents who reported an FOBT had it more than five years ago (see **Figure 9C**).

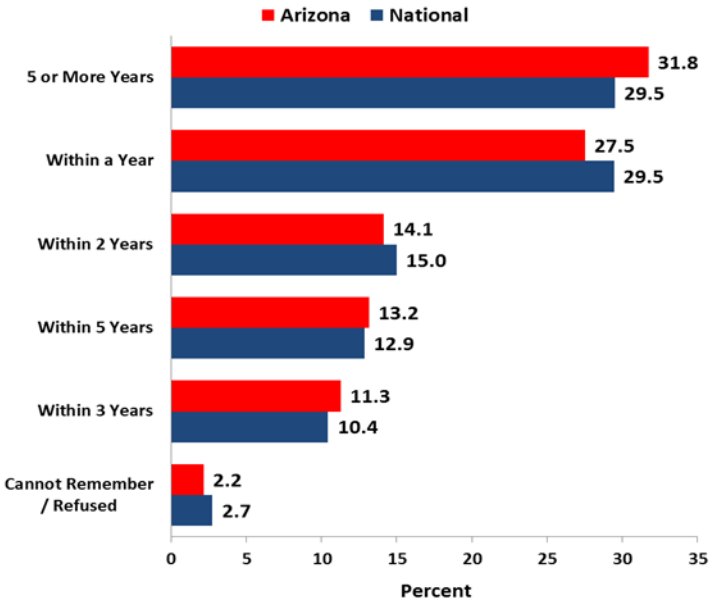


Figure 9C. Distribution of when 2012 BRFSS respondents last had an FOBT.

Colorectal cancer is associated with lifestyle factors such as being overweight or obese, alcohol consumption, low fruit and vegetable intake, and tobacco use.[2] According to the 2012 BRFSS, individuals who eat less than five servings of fruit and vegetables, who were former or current smokers, who are overweight or obese, and drink heavily are less likely to report having an FOBT (see **Figure 9D**). Medical advances have only offered slightly improved survival rates for patients who present with advanced colon cancer. Therefore, prevention, screening, and education should be the primary focus of colorectal cancer treatment.

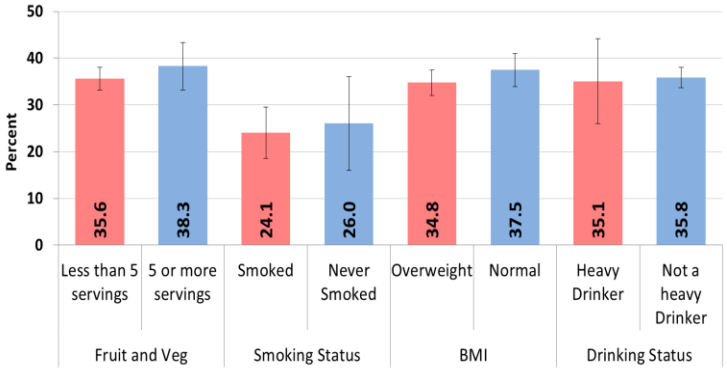


Figure 9D. Percent of Arizonans who have had an FOBT by colorectal cancer risk factors.

Arizona Department of Health Services

Preventative Practices
Fecal Occult Blood Test

Arizona Respondents Over 50 Years Old Who Had a Fecal Occult Blood Test in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**35.6**	**33.5**	**37.7**
National	**36.2**	**35.8**	**36.5**
Sex			
Male	34.3	31.1	37.5
Female	36.8	34.1	39.6
Age			
50-54	17.8	13.5	22.1
55-64	32.1	28.4	35.8
65+	47.3	44.4	50.2
Marital Status			
Married	36.9	34.0	39.7
Divorced	31.8	26.8	36.8
Widowed	43.4	38.7	48.1
Separated	16.5	5.8	27.1
Never Married	23.7	15.9	31.6
Unmarried Couple	37.5	21.7	53.3
Educational Attainment			
Less than High School	17.2	11.6	22.7
High School Graduate/GED	32.6	28.6	36.5
Some College/Tech School	41.2	37.4	44.9
College Grad	40.0	36.5	43.5
Employment Status			
Employed for wages	27.0	23.1	31.0
Self-employed	22.9	16.7	29.2
Out of work	25.6	17.6	33.6
Homemaker	42.7	34.5	50.8
Student	42.6	2.8	82.4
Retired	46.5	43.4	49.6
Unable to Work	28.6	20.8	36.3
Income			
<$25,000	30.8	26.8	34.9
$25,000-$34,999	30.7	24.8	36.6
$35,000-$49,999	42.5	36.6	48.3
$50,000-$74,999	39.0	33.3	44.6
$75,000+	36.7	31.9	41.5
Race/Ethnicity			
White Non-Hispanic	40.2	37.8	42.5
Black	35.8	19.4	52.1
Asian/PI	24.7	2.9	46.6
American Indian	21.5	9.9	33.2
Other	31.3	17.5	45.0
Hispanic	18.0	12.8	23.1

The table to the left displays the distribution of the prevalence of Arizonans over the age of 50 who ever had an FOBT. The data is broken down by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were more likely to report that they had ever had an FOBT if they

- Were over the age of 65
- Were widowed
- Had gone to college or a technical school
- Were retired
- Had an annual income between $35,000 and $49,999
- Were White Non-Hispanic

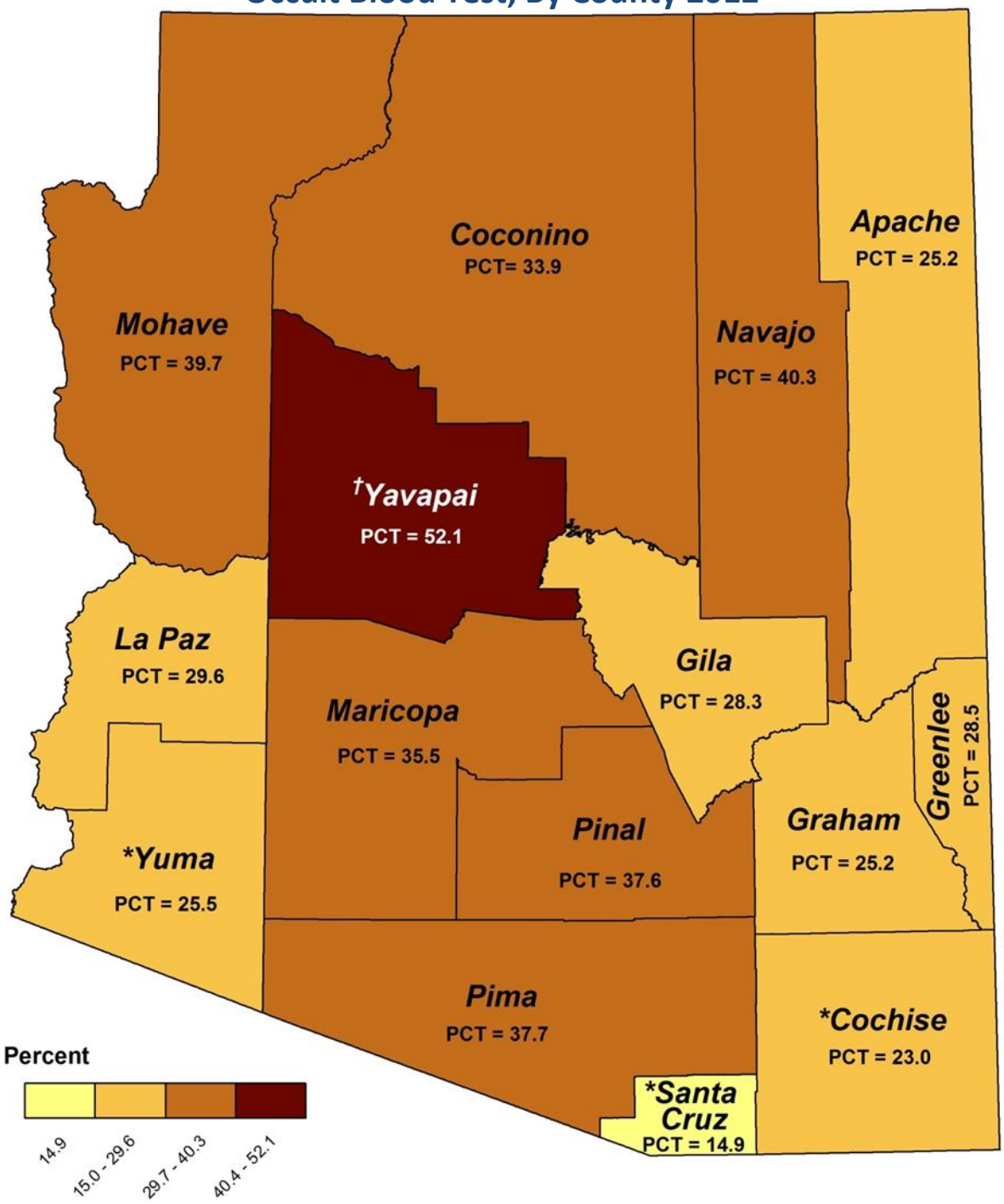
Individuals who were retired were the most likely to report that they had an FOBT in the past, at 46.5%.

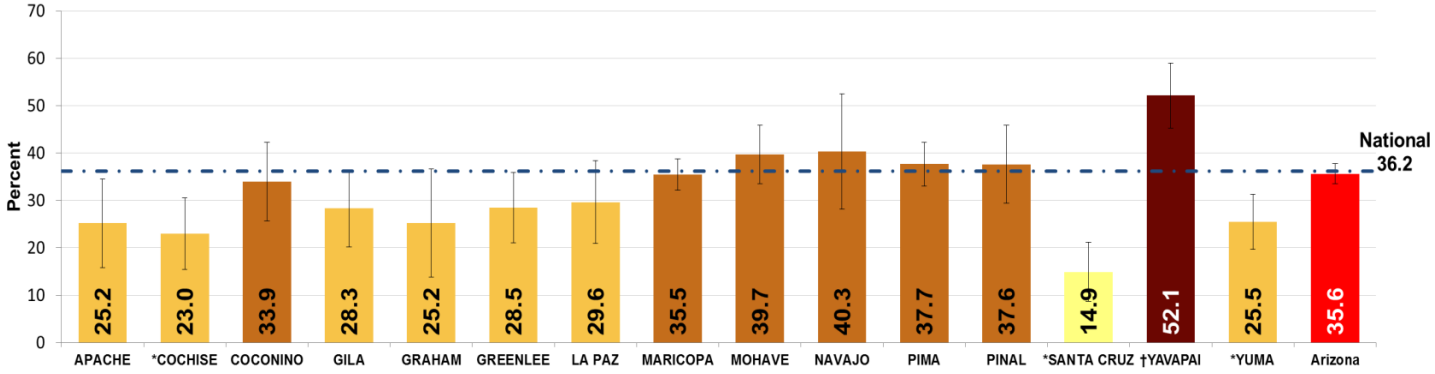
Respondents were less likely to report that they had ever had an FOBT if they

- Were between the ages of 50 and 54
- Were separated
- Had not graduated from high school
- Were self-employed
- Had an annual income less than $35,000
- Were Hispanic

Individuals who were separated were the least likely to report that they had a FOBT, at 16.5%.

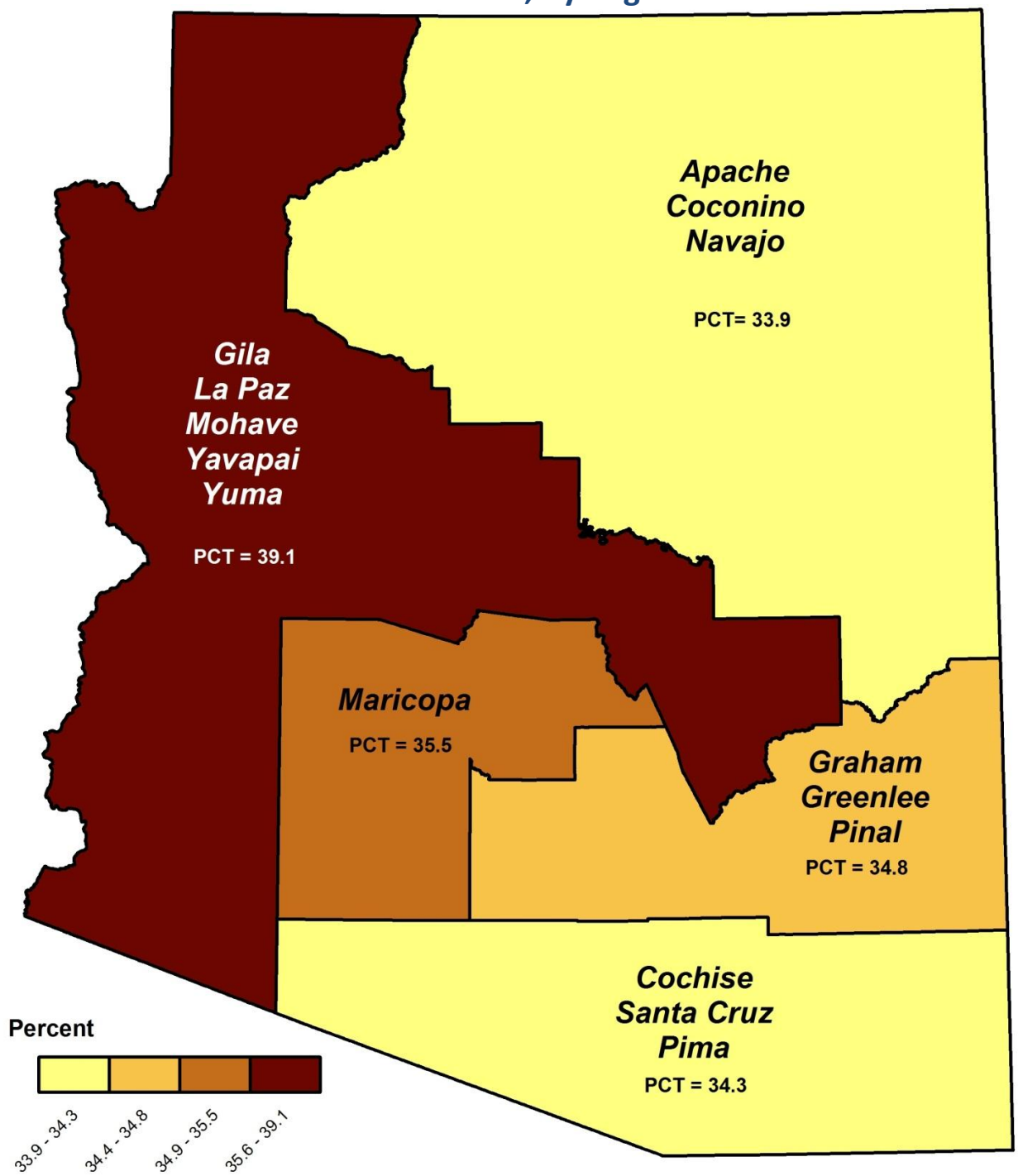
Percentage of Arizonans Over The Age Of 50 Who Had Fecal Occult Blood Test, By County 2012

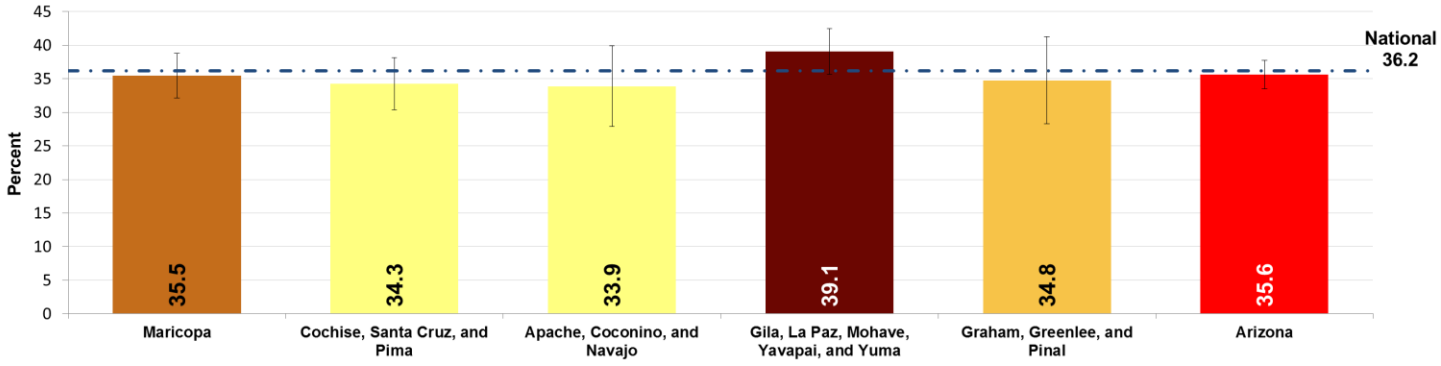




***Indicates that the county has a significantly lower percentage of respondents reporting ever having an FOBT than the overall state percentage.**
†Indicates that the county has a significantly higher percentage of respondents reporting ever having an FOBT than the overall state percentage.

Percentage of Arizonans Over The Age Of 50 Who Had Fecal Occult Blood Test, By Region 2012





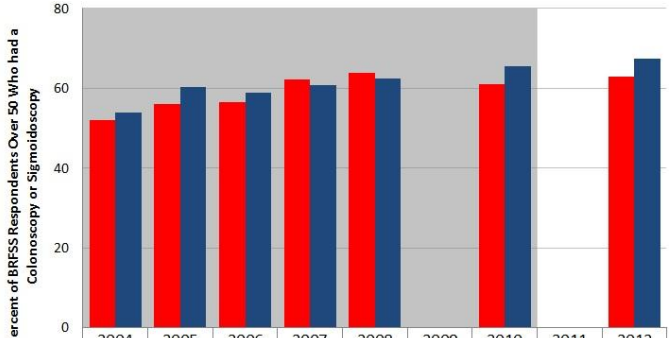
Preventative Practices
Colonoscopy and Sigmoidoscopy

In 2012, according to the Arizona hospital discharge database, there were 78 unique inpatient/emergency discharges that were associated with colorectal cancer (CRC). Eight of those died while admitted to the hospital. Eleven of the 78 discharges were released to hospice; hospice patients are expected to live six months or less. The total charges accumulated in 2012 were more than $6.2 million. The distribution of the discharges and their associated payer type are presented in the table below.

In Patient and Emergency Department Discharges Associated with Colorectal Cancer (n=78)			
Payer Type	**Number of Discharges**	**Average Charges**	**Total Charges**
Medicaid	6	$49,816	$298,894
Medicare	50	$78,692	$3,934,597
Other	4	$45,831	$183,322
Private Insurance	15	$97,375	$1,460,621
Self-Pay	3	$108,553	$325,658
Total	**78**	-	**$6,203,092**

Table 5. Inpatient and emergency department colorectal cancer discharges, 2012. ICD-9 codes used were: 153.0, 153.1, 153.2, 153.3, 153.4, 153.5, 153.6, 153.7, 153.8, 153.9, 154.0, 154.1.

To reduce mortality associated with CRC, programmatic screening that utilizes fecal occult blood tests, flexible sigmoidoscopy, and colonoscopy are recommended by the United States Preventative Services Task Force (USPSTF).[22] Research has shown that colonoscopies can reduce mortality related to CRC by 29%; sigmoidoscopy has been shown to reduce CRC related mortality by 26%.[23,24] According to the 2012 BRFSS, 63% of Arizonans over the age of 50 had a colonoscopy or sigmoidoscopy, 4.4% lower than the national rate (see **Figure 10A**).



	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	52.1	56	56.6	62.2	63.8	NA	61.1	NA	63
National	53.8	60.3	58.8	60.8	62.3	NA	65.6	NA	67.4

Figure 10A. Arizona and national BRFSS respondents over the age 50 who reported ever having a sigmoidoscopy or colonoscopy. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

When compared to the other states in the nation Arizona fell into the lowest category reporting having had a colonoscopy or sigmoidoscopy (see **Figure 10B**).

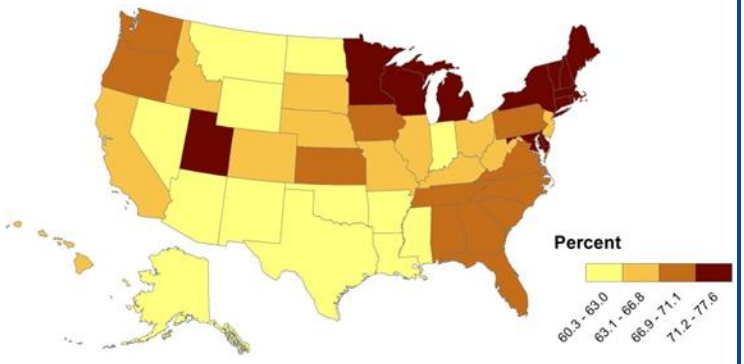


Figure 10B. Percent of BRFSS respondents who were 50 years old or older who reported having had a sigmoidoscopy or colonoscopy (natural breaks).

Stratification by colorectal risk indicates that individuals who eat less than five servings of fruit and vegetables per day, who were former or current smokers, who are overweight or obese, and drink heavily were less likely to report ever having a colonoscopy or sigmoidoscopy (see **Figure 10C**).

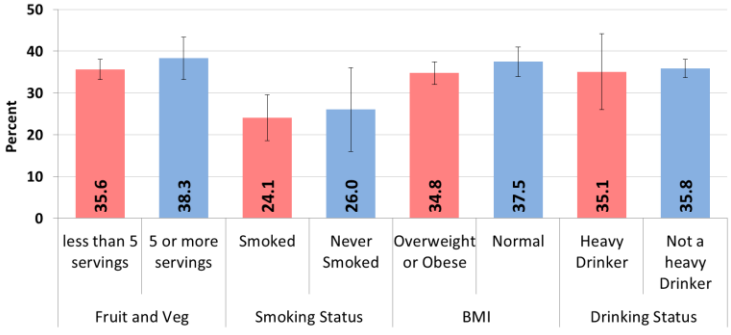


Figure 10C. Percent of Arizonans who had a Colonoscopy or Sigmoidoscopy by colorectal cancer risk factors.

Further analysis of the 2012 BRFSS data shows that only 55.2% of Arizonans over the age of 50 had either a sigmoidoscopy within the last 5 years, or a colonoscopy within the last ten years, the national response was 61.2%. The distribution of the Arizona and national respondents can be seen in **Figure 10D**.

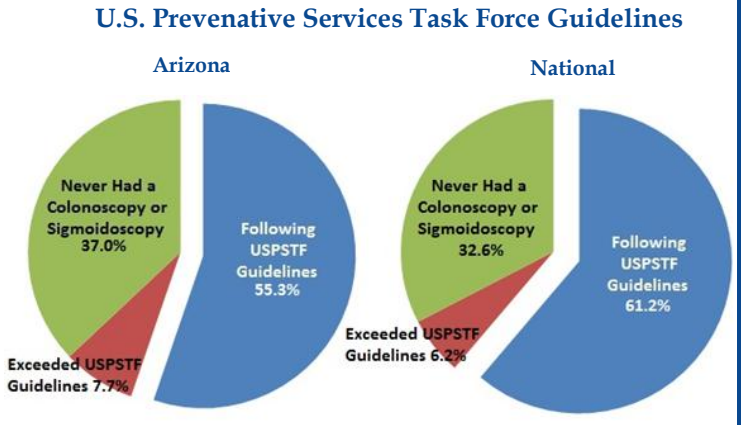


Figure 10D. Distribution of the 2012 Arizona and national BRFSS respondents over the age of 50 colonoscopy and sigmoidoscopy habits.

22 U.S. Preventive Services Task Force. "Screening for Colorectal Cancer." : U.S. Preventive Services Task Force Recommendation Statement. N.p., n.d. Web. 17 Jan. 2014. <http://www.uspreventiveservicestaskforce.org/uspstf08/colocancer/colors.htm>.
23 Singh H, et al. The reduction in colorectal cancer mortality after colonoscopy varies by site of the cancer. Gastroenterology. 2010 Oct;139(4):1128-37.
24 Schoen RE et al. Colorectal-cancer incidence and mortality with screening flexible sigmoidoscopy. N Engl J Med. 2012 Jun 21;366(25):2345-57

Arizona Department of Health Services

Preventative Practices
Colonoscopy and Sigmoidoscopy

Arizona Respondents Over 50 Years Old Who Had a Colonoscopy or Sigmoidoscopy in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**63.0**	**60.7**	**65.3**
National	**67.4**	**67.0**	**67.7**
Sex			
Male	61.6	58.0	65.3
Female	64.2	61.3	67.1
Age			
50-54	38.9	32.7	45.0
55-64	64.7	60.9	68.5
65+	73.9	71.3	76.6
Marital Status			
Married	66.0	63.0	69.1
Divorced	58.0	52.7	63.3
Widowed	66.4	61.9	71.0
Separated	46.3	29.9	62.6
Never Married	48.1	37.9	58.2
Unmarried Couple	59.1	42.0	76.2
Educational Attainment			
Less than High School	51.4	42.8	60.0
High School Graduate/GED	58.1	53.5	62.8
Some College/Tech School	63.6	59.7	67.4
College Grad	72.0	68.6	75.5
Employment Status			
Employed for wages	54.4	49.7	59.0
Self-employed	53.7	45.2	62.2
Out of work	46.1	36.6	55.5
Homemaker	55.8	47.4	64.2
Student	63.5	29.9	97.1
Retired	75.4	72.5	78.2
Unable to Work	63.9	54.9	72.9
Income			
<$25,000	54.6	49.9	59.4
$25,000-$34,999	65.2	58.5	72.0
$35,000-$49,999	67.4	61.5	73.3
$50,000-$74,999	70.5	65.1	76.0
$75,000+	68.0	62.7	73.3
Race/Ethnicity			
White Non-Hispanic	66.6	64.2	69.0
Black	62.1	44.7	79.4
Asian/PI	36.1	14.4	57.8
American Indian	36.8	22.8	50.8
Other	64.7	47.5	81.9
Hispanic	53.3	45.6	61.0

The table to the left displays the distribution of the prevalence of Arizonans over the age of 50 who ever had either a sigmoidoscopy or colonoscopy. The data is broken down by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were more likely to report that they had ever had either a colonoscopy or sigmoidoscopy if they

- Were over the age of 65
- Were widowed
- Had graduated from college
- Were retired
- Had an annual income between $50,000 and $74,999
- Were White Non-Hispanic

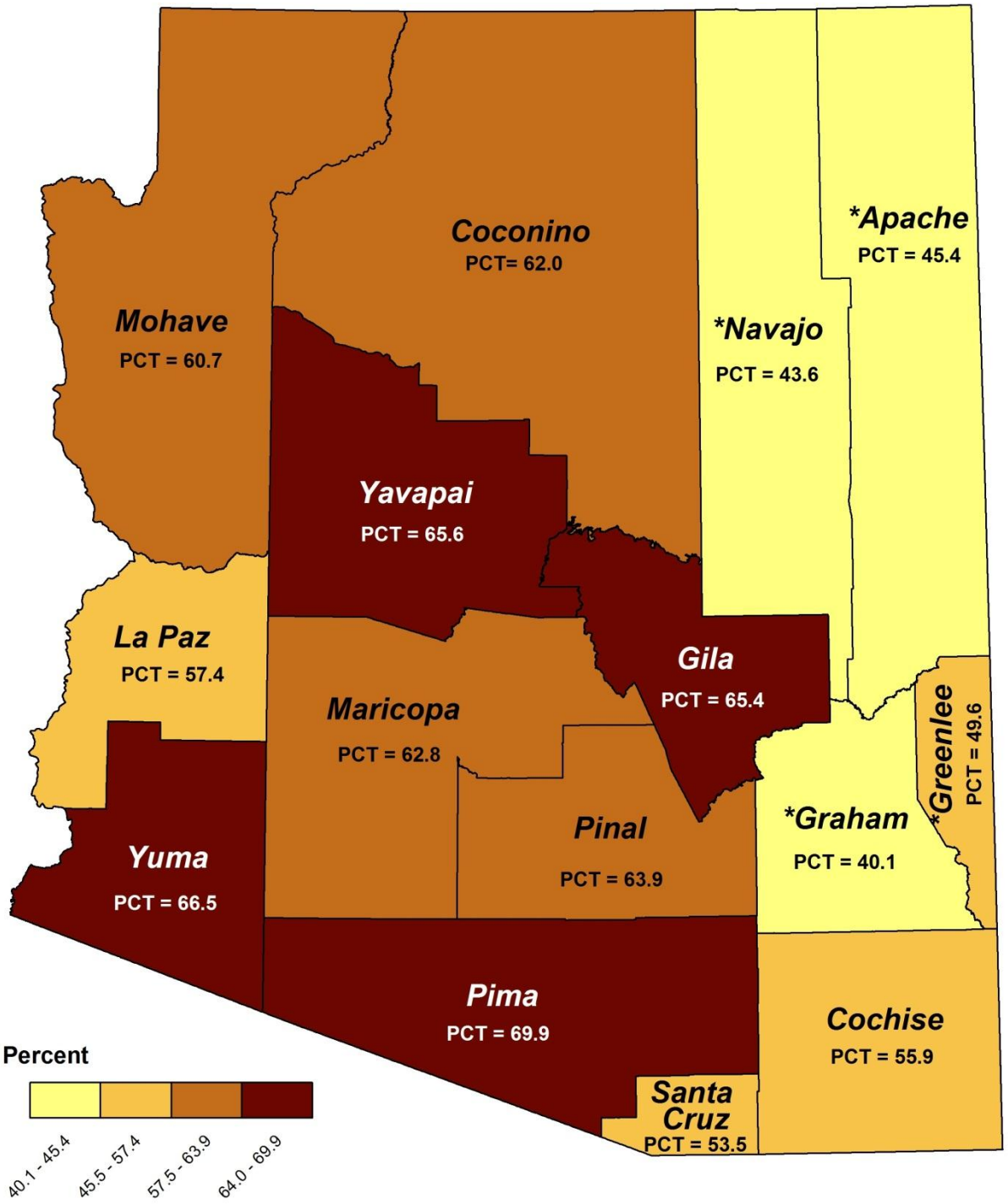
As educational attainment increased, the likelihood of reporting ever having a colonoscopy or sigmoidoscopy increased.

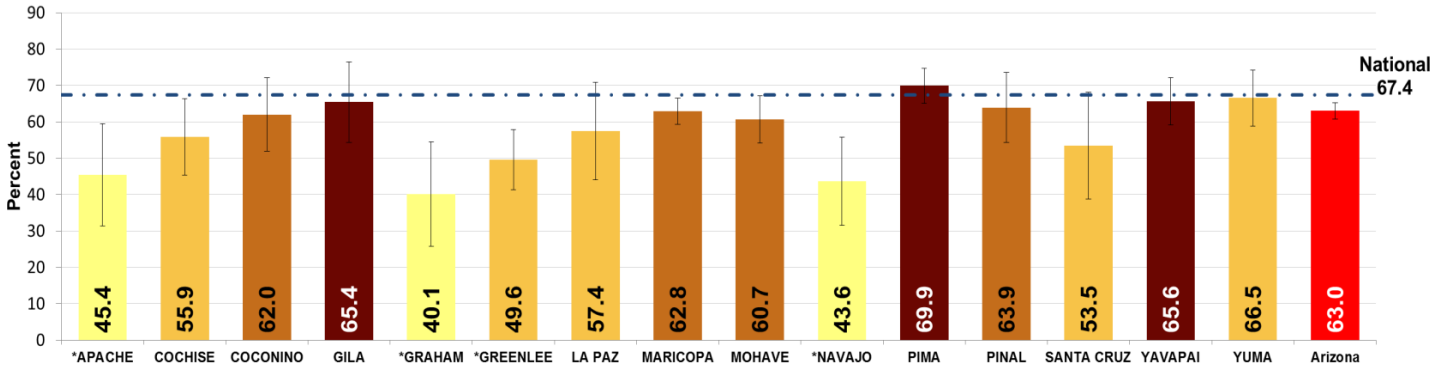
Respondents were less likely to report that they ever had either a colonoscopy or sigmoidoscopy if they

- Were between the ages of 50 and 54
- Were separated
- Had not graduated from high school
- Were out of work
- Had an annual income less than $25,000
- Were Asian/Pacific Islander or American Indian

Individuals who were Asian/Pacific Islander or American Indian were the least likely to report ever having either a colonoscopy or sigmoidoscopy, at 36.1% and 36.8% respectively.

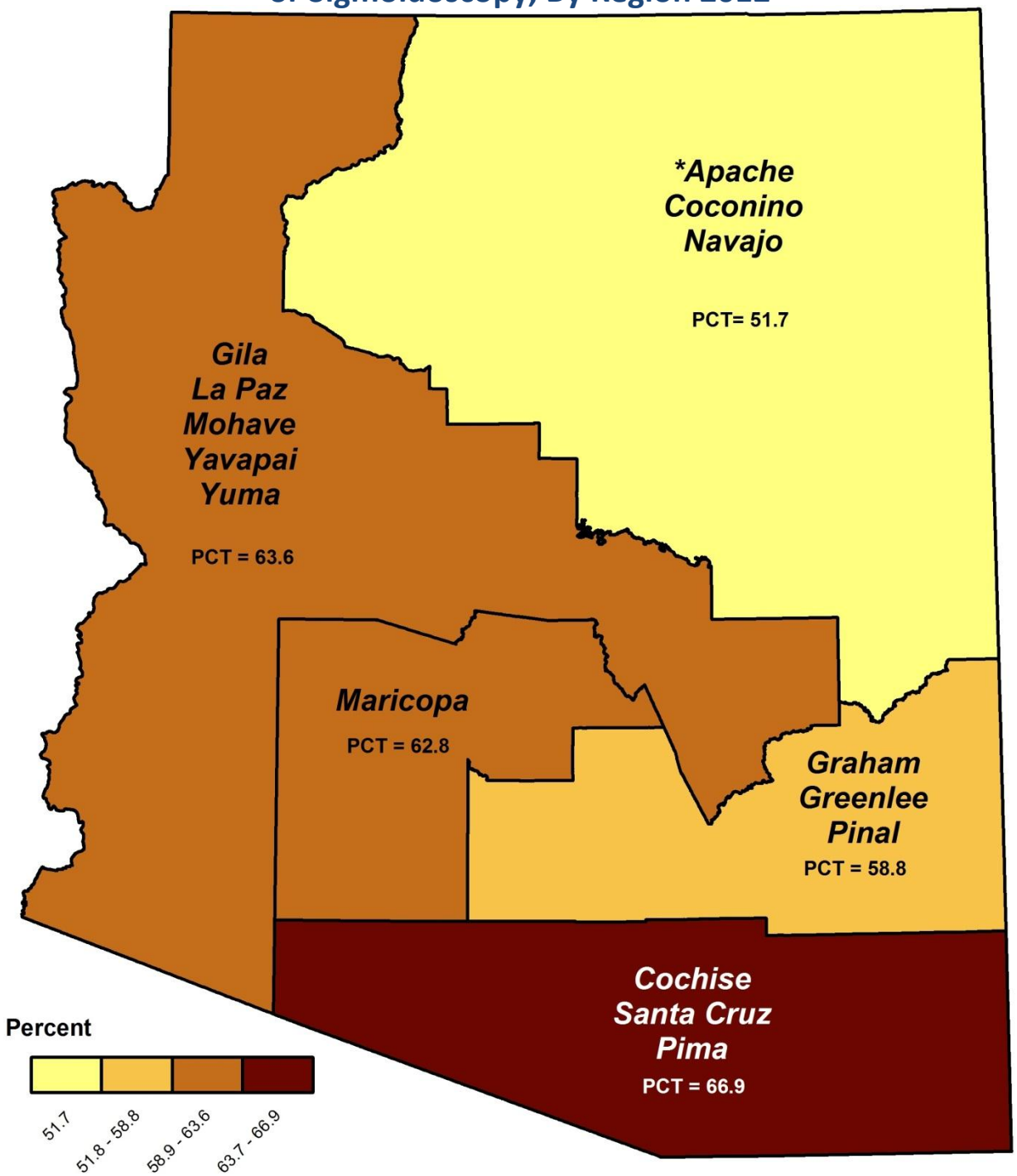
Percentage of Arizonans Over The Age Of 50 Who Had a Colonoscopy or Sigmoidoscopy, By County 2012

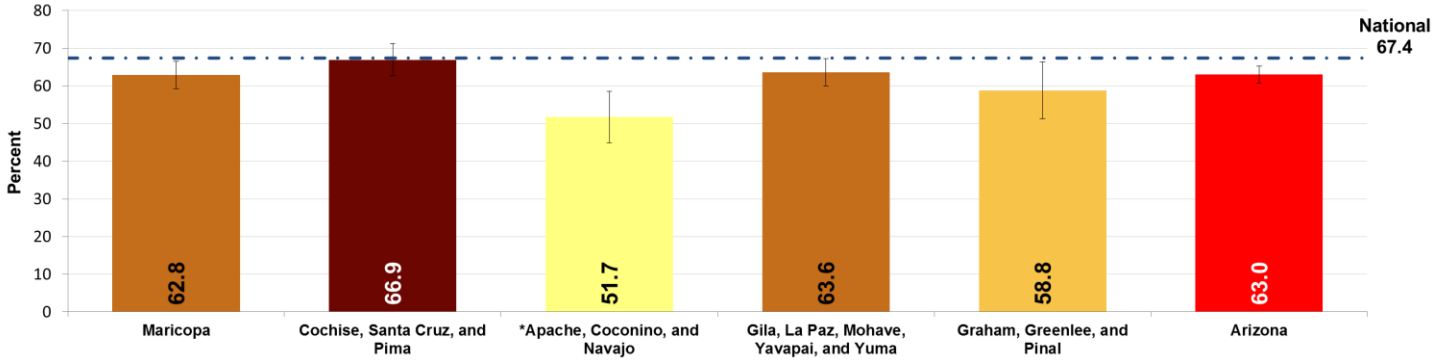




*Indicates that the county has a significantly lower percentage of respondents reporting ever having either a sigmoidoscopy or colonoscopy than the overall state percentage.

Percentage of Arizonans Over The Age Of 50 Who Had a Colonoscopy or Sigmoidoscopy, By Region 2012





***Indicates that the region has a significantly lower percentage of respondents reporting ever having either a sigmoidoscopy or colonoscopy than the overall state percentage.**

Preventative Practices
Women's Health: Mammography

In 2009, the U.S. Preventative Services Task Force (USPSTF) changed its mammogram recommendation in two ways. First, the age women should begin seeking mammograms was raised from 40 to 50. Second, they recommended that women have a mammogram once every two years instead of annually. Other groups, such as the American Cancer Society (ACS), continued to support annual mammograms for women 40 years and older.[25,26] The new USPSTF recommendation has faced much controversy. Many organizations state that the guidelines set by the USPSTF could cause a substantial degree of under-diagnosis.[27] The current USPSTF guidelines are less stringent than those set in the past; however, compliancy has not reached 100%. According to the 2012 BRFSS, 22.3% of Arizona women over the age of 50 failed to have a mammogram within the past two years. Nationally, the percent was 19.1% (see **Figure 11A**).

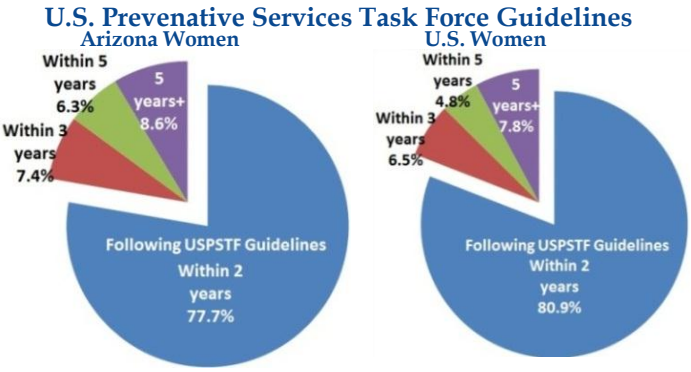


Figure 11A. Time since last mammogram for women 50 years and older.

According to the BRFSS, there has not been a statistically significant change in the proportion of women between the ages of 40 and 50 receiving an annual mammogram (see **Figure 11B**). However, due to the change in weighting methodology comparing data past 2010 is not possible. However, due the widespread support of annual mammograms for women who are 40 and older, continued monitoring of this population is necessary.

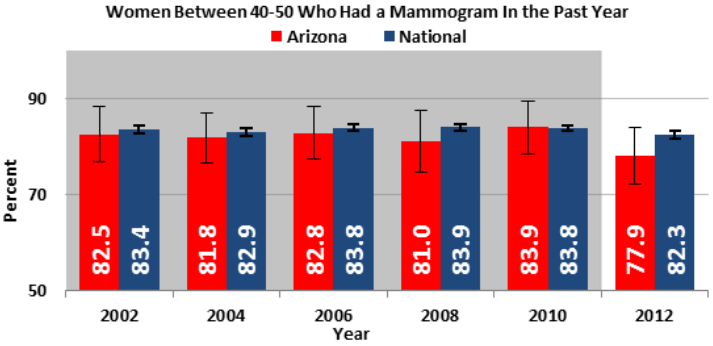


Figure 11B. Women between the ages of 40 and 50 who responded having had a mammogram in the past year. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

Each woman's risk of breast cancer is different. Family history, high penetrance genes, obesity, and exposure to radiation are risk factors that increase the odds of having breast cancer. To ensure that each woman is treated and tested appropriately, the USPSTF and other breast cancer awareness organizations promote an open dialog between women and their healthcare providers.[24,25] The BRFSS does not collect information on breast cancer awareness counseling. Until the module is revised, the more stringent guideline will be assessed. When looking at all the states in the nation, Arizona falls in the lowest category for female respondents over 40 reporting that they had a mammogram within the past year (see **Figure 11C**).

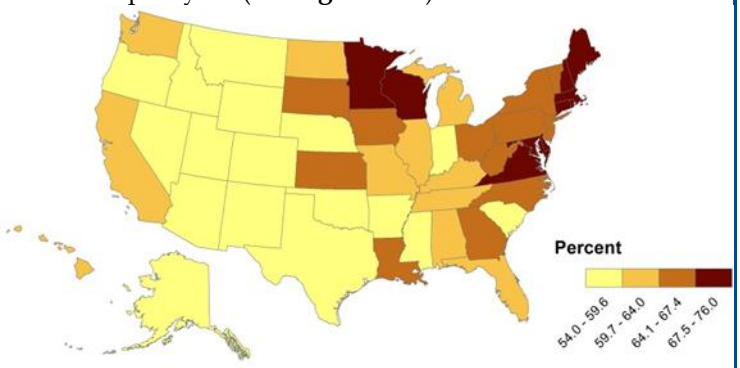


Figure 11C. AZ BRFSS 2012 female respondents 40 years and older who had a mammogram within the past 12 months (natural breaks).

According to the state cancer profile data provided by the National Cancer Institute (NCI), on average Arizona had 3,807 new cases of cancer a year (2006-2010).[28] Looking at 2012 hospitalizations, there were 1,151 (~30% of the average number of cases) different women who received care at an inpatient or emergency department, with a principle diagnosis of breast cancer. These women represent severe cases, as most breast cancer procedures (mastectomies, lumpectomies, and biopsies) are now handled in an outpatient setting. Four women died at the hospital, and 28 were transferred to hospice. The total charges amounted to more than $52 million. (see **Table 6**).

Arizona Inpatient and Emergency Department Hospitalizations with Principle Diagnosis of Breast Cancer (n=1,120)

	N	Total Charges	Died	Transferred to Hospice
Charity	1	$24,207	0	0
Medicaid	123	$5,388,822	0	8
Medicare	439	$15,834,331	2	14
Other	31	$1,303,321	0	0
Private Insurance	514	$28,370,482	2	4
Self-pay	43	$1,470,522	0	2
Total	**1151**	**$52,391,685**	**4**	**28**

Table 6 Inpatient and emergency department breast cancer discharges, 2012. ICD-9 codes used were: V10.3, 174.0, 174.1, 174.2, 174.3, 174.5, 174.6, 174.8, and 174.9.

25. Recommendations of the U.S. Preventive Services Task Force: Abstract (Guide to Clinical Preventive Services). September 2010. Agency for Healthcare Research and Quality, Rockville, MD.
26 "American Cancer Society Guidelines for the Early Detection of Cancer." American Cancer Society Guidelines for the Early Detection of Cancer. N.p., n.d. Web. 07 Nov. 2013. <cancer.org>
27 NCBI. U.S. National Library of Medicine, n.d. Web. 07 Nov. 2013. <http://www.ncbi.nlm.nih.gov/>.
28 "State Cancer Profiles Home Page." State Cancer Profiles. National Cancer Institute, n.d. Web. 13 Nov. 2013. <http://statecancerprofiles.cancer.gov/>.

Preventative Practices
Women's Health: Mammography

Arizona Women 40 Years+ Who Had a Mammogram In the Past Year In The 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**58.7**	**55.8**	**61.7**
National	**63.8**	**63.4**	**64.3**
Age			
40-44	52.1	40.1	64.2
45-54	51.3	44.7	57.9
55-64	64.4	59.2	69.5
65+	62.3	58.7	65.9
Marital Status			
Married	61.7	57.6	65.9
Divorced	56.0	49.8	62.2
Widowed	55.3	49.9	60.7
Separated	49.6	32.6	66.5
Never Married	55.5	43.1	68.0
Unmarried Couple	41.2	17.6	64.9
Educational Attainment			
Less than High School	50.7	39.9	61.4
High School Graduate/GED	55.1	49.3	60.8
Some College/Tech School	57.2	52.4	62.0
College Grad	69.0	64.6	73.4
Employment Status			
Employed for wages	56.0	50.5	61.6
Self-employed	57.6	46.1	69.0
Out of work	55.9	42.5	69.4
Homemaker	57.8	49.6	66.0
Student*	53.5	17.4	89.7
Retired	62.9	58.9	66.9
Unable to Work	61.5	50.9	72.0
Income			
<$25,000	50.4	44.7	56.1
$25,000-$34,999	50.9	41.1	60.6
$35,000-$49,999	62.2	54.8	69.6
$50,000-$74,999	66.4	58.1	74.7
$75,000+	66.3	59.7	73.0
Race/Ethnicity			
White Non-Hispanic	59.6	56.5	62.7
Black	61.8	38.0	85.7
Asian/PI	75.8	52.0	99.6
American Indian	45.1	28.9	61.3
Other	51.4	32.2	70.6
Hispanic	56.8	48.0	65.6

*Indicates an unreliable estimate due to small sample size (n ≤ 6).

The table to the left displays the distribution of the prevalence of Arizona women, 40 and older, who responded that they had a mammogram in the past 12 months. The data is broken down by age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were more likely to report having a mammogram in the past 12 months if they

- Were between the ages of 55 and 64
- Were married
- Were a college graduate
- Were retired
- Had a household income between $50,000 and$74,999
- Were Asian or Pacific Islander

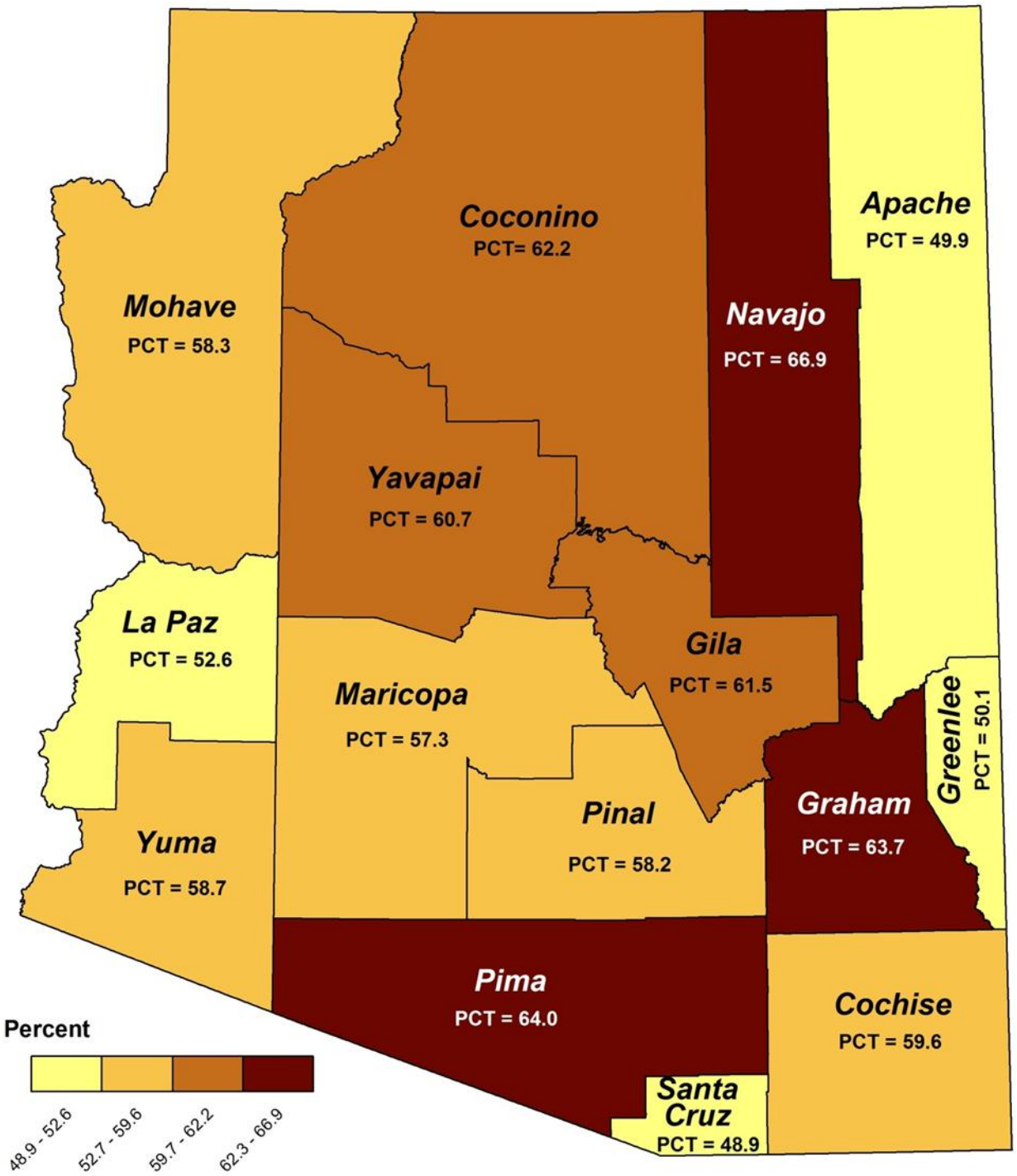
According to the 2012 BRFSS, women who reported their race as Asian or Pacific Islander were most likely to have had a mammogram in the past 12 months, at 75.8%.

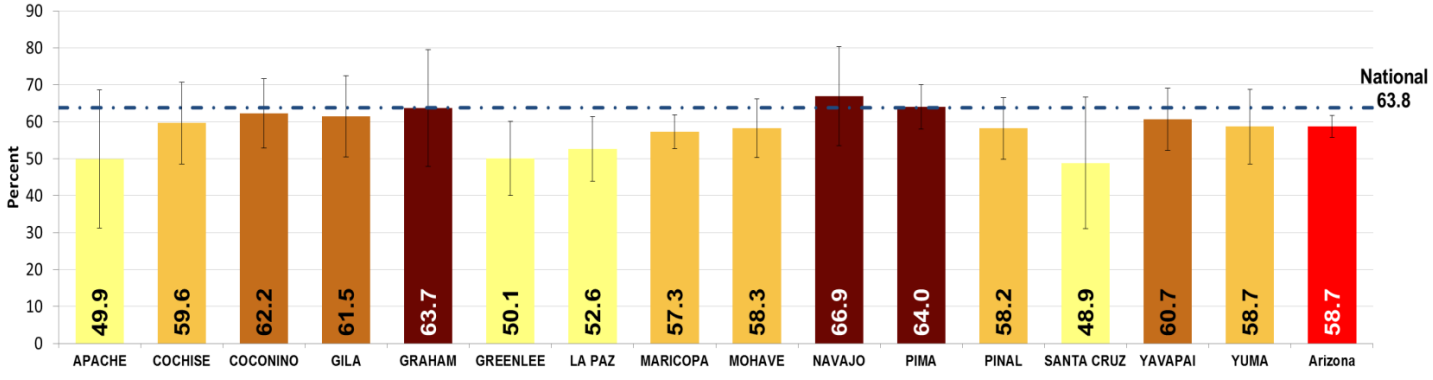
Respondents were less likely to report having a mammogram in the past 12 months if they

- Were between the ages of 45 and 54
- Were an unmarried couple
- Did not have a high school diploma
- Were out of work
- Had an income less than $25,000 a year
- Were American Indian

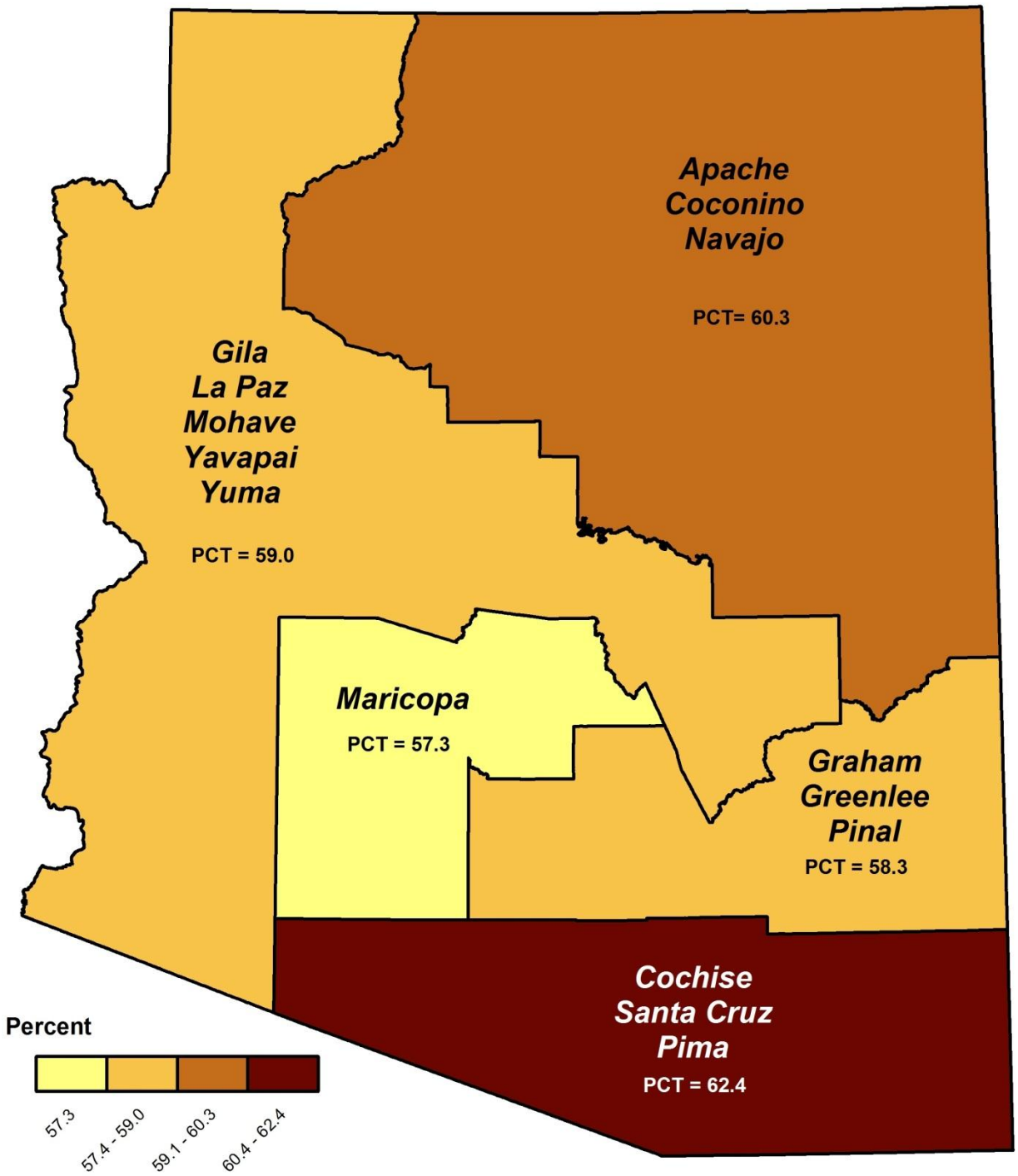
According to the 2012 BRFSS, women who reported their race as American Indian were the least likely to have had a mammogram in the past 12 months, at 45.1%.

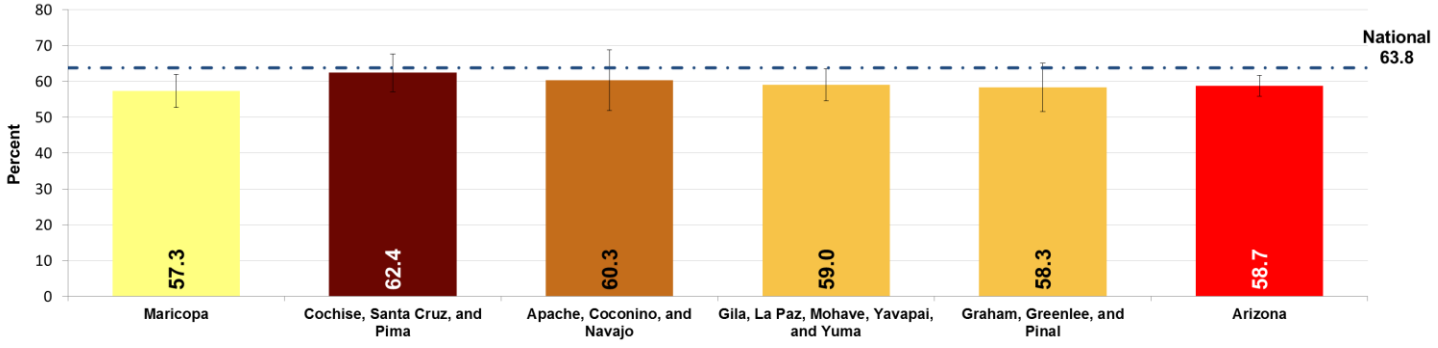
Percentage of Women 40+ Who Had a Mammogram In the Past Year by County, 2012





Percentage of Women 40+ Who Had a Mammogram In the Past Year by Region, 2012





Preventative Practices
Women's Health: Cervical Cancer Screening

Cervical cancer is the second-most common cancer in women. However, it is theoretically preventable.[29] Cervical cancer is the first cancer with a proposed necessary cause, the human papillomavirus (HPV). The term necessary cause implies that cervical cancer will not develop or progress without persistent HPV infection. In 2006, Gardasil was the first vaccine approved by the Food and Drug Administration (FDA) to prevent HPV. Three years later, Cervarix was approved by the FDA. The vaccines are licensed and considered safe and effective for females between the ages of 9 and 25. The CDC recommends vaccination for women between the ages of 11 and 25.[30] According to the 2012 BRFSS, only ~13.5 percent of Arizona women were vaccinated against HPV. Of those vaccinated, only ~59.2 percent received the full dose of three shots. The data shows that there is a gap in access to care. Women who are insured were more likely to receive the full dose when compared to their uninsured counterparts (see **Figure 12A**).

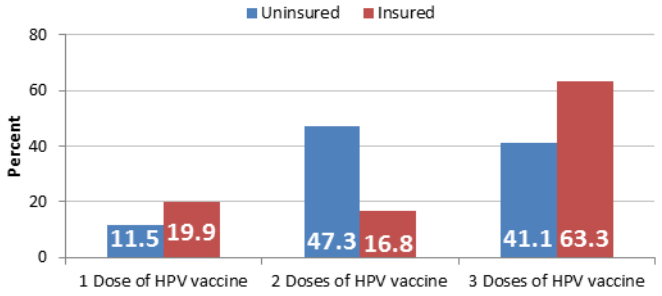


Figure 12A. Arizona women who received the HPV vaccine by dosage.

Although vaccines for HPV exist, they are only recommended for women under 25; therefore, pap smears must be part of a woman's health routine. In 2012, the United States Preventative Services Task Force (USPSTF) and the American Cancer Society (ACS) released new cervical cancer screening guidelines. These guidelines state that women between 21 and 65 should get a pap smear once every three years and once every five years if they receive HPV testing (see **Figure 12B**).

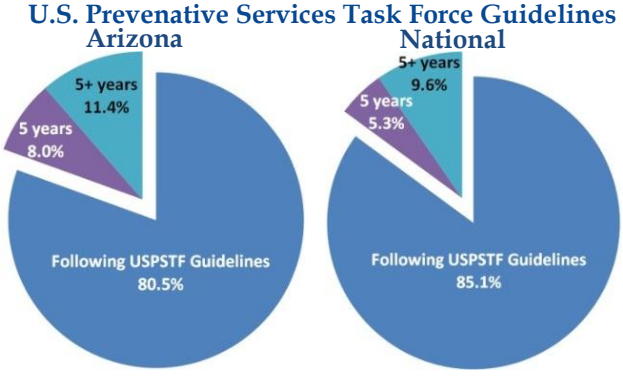
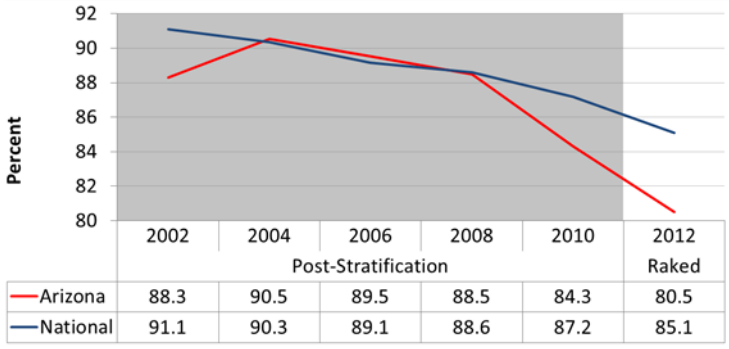


Figure 12B. Pap smear screening by USPSTF guidelines

29 "Cervical Cancer Screening." Centers for Disease Control and Prevention. CDC, 05 Sept. 2013. Web. 13 Jan. 2014. <http://www.cdc.gov/cancer/cervical/basic_info/screening.htm>.
30 "Vaccines, Blood & Biologics." Cervarix. FDA, n.d. Web. 13 Jan. 2014. <http://www.fda.gov/biologicsbloodvaccines/vaccines/approvedproducts/ucm186957.htm>.

The BRFSS data from 2002 through 2010 indicates that the percent of women between the ages of 21 and 65 who had a pap smear within 3 years has been decreasing. In 2012, only 80.5% of Arizona women between the ages of 21 and 65 had a pap smear within three years. The national prevalance was ~4.6% higher than Arizona, at 85.1% (see **Figure 12C**).



	2002	2004	2006	2008	2010	2012 Raked
Arizona	88.3	90.5	89.5	88.5	84.3	80.5
National	91.1	90.3	89.1	88.6	87.2	85.1

Figure 12C. Arizona and National 2002-2012 BRFSS female respondents between the ages of 21 and 65 who had a pap smear within three years. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

Although Arizona had fewer respondents following the USPTSF pap smear recommendations, it was not the lowest state in the nation. When compared across all the states, Arizona falls in the second-lowest category for following the USPSTF guidelines (see **Figure 12D**).

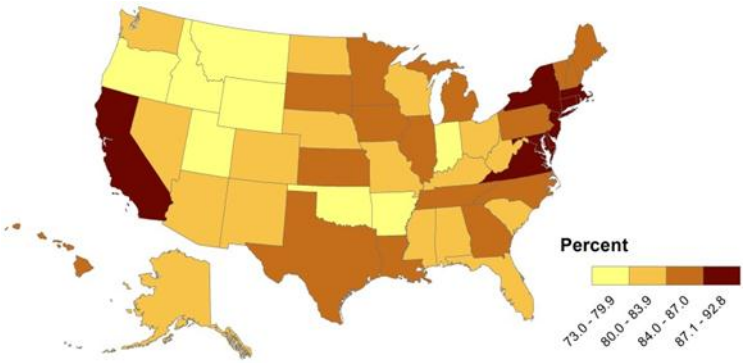


Figure 12D. Percent of female BRFSS respondents age 21 to 65 who reported having a Pap smear within the last three years (natural breaks).

Women who smoke especially should be diligent in their cervical cancer screening routine. Smoking has been established as an HPV cofactor for the development of cervical cancer, meaning women who smoke are at a higher risk of developing cervical cancer. However, women who currently smoke were the least likely to have a Pap smear within three years (see **Figure 12E**).

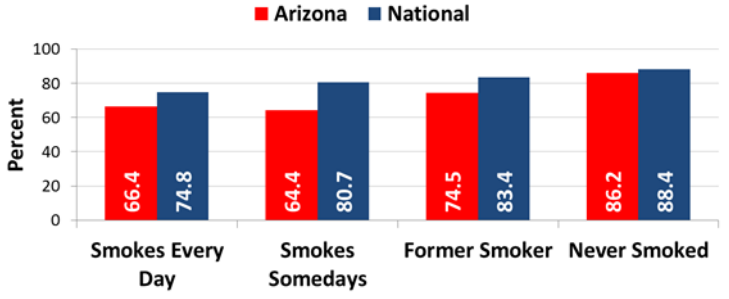


Figure 12E. Percent of female 2012 BRFSS respondents age 21 to 65 who reported having a Pap smear within three years by smoking status.

Arizona Department of Health Services

Preventative Practices
Women's Health: Cervical Cancer Screening

Arizona Women Between The Ages of 21 and 65 Who Had a Pap Smear Within The Last Three Years in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**80.5**	**77.9**	**83.2**
National	**85.1**	**84.8**	**85.4**
Sex			
Female	80.5	77.9	83.2
Age			
18-24	91.9	80.3	100.0
25-34	85.1	78.6	91.6
35-44	86.5	81.8	91.3
45-54	76.3	71.0	81.6
55-64	69.9	64.7	75.1
65	77.9	65.5	90.4
Marital Status			
Married	81.1	77.7	84.5
Divorced	76.5	71.0	82.0
Widowed	71.0	59.2	82.8
Separated	71.2	55.4	87.0
Never Married	81.3	72.9	89.6
Unmarried Couple	87.5	78.6	96.4
Educational Attainment			
Less than High School	81.9	73.4	90.3
High School Graduate/GED	75.6	69.5	81.6
Some College/Tech School	77.4	72.8	82.0
College Grad	88.8	86.3	91.3
Employment Status			
Employed for wages	84.6	81.4	87.9
Self-employed	80.9	72.8	89.0
Out of work	70.7	59.0	82.4
Homemaker	84.6	79.2	90.1
Student	79.7	55.6	100.0
Retired	69.6	60.5	78.6
Unable to Work	65.3	53.9	76.7
Income			
<$25,000	78.8	73.9	83.7
$25,000-$34,999	83.5	77.1	89.9
$35,000-$49,999	75.2	66.8	83.6
$50,000-$74,999	83.5	77.8	89.2
$75,000+	87.4	83.3	91.6
Race/Ethnicity			
White Non-Hispanic	80.0	77.1	82.9
Black	85.1	69.9	100.0
Asian/PI	96.9	91.0	100.0
American Indian	72.9	59.6	86.1
Other	87.5	73.7	100.0
Hispanic	81.5	75.1	87.8

The table to the left displays the distribution of the prevalence of Arizona women between the ages of 21 and 65 who had a pap smear within the past three years. The data are broken down by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were more likely to report that they had a pap smear within three years if they

- Were between the ages of 18 and 24
- Were part of an unmarried couple
- Had graduated from college
- Were a homemaker or employed for wages
- Had an annual income greater than $75,000
- Were Asian or Pacific Islander

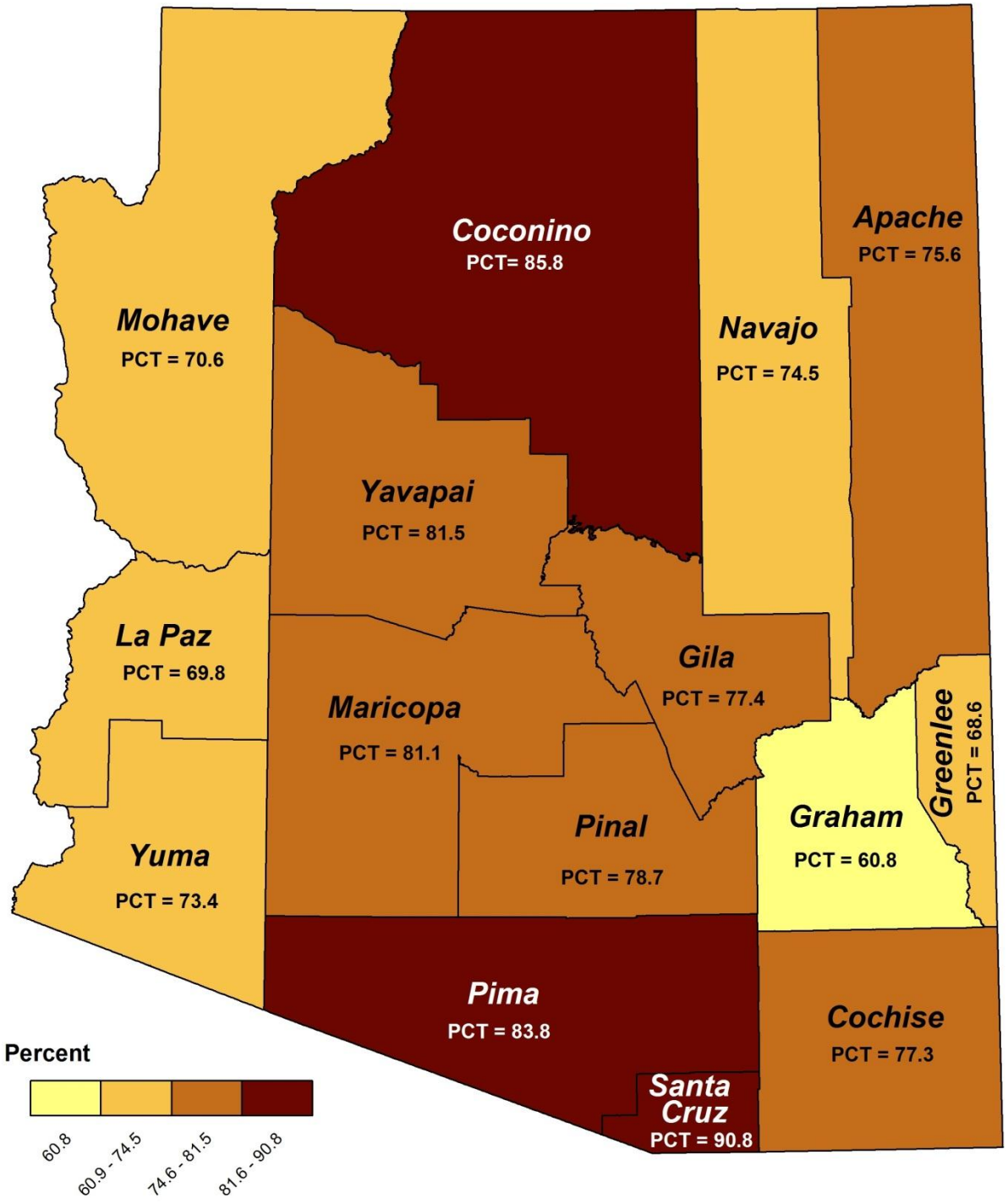
Women who reported that they were Asian or Pacific Islander were the most likely to report having a pap smear in the past three years, at 96.9%.

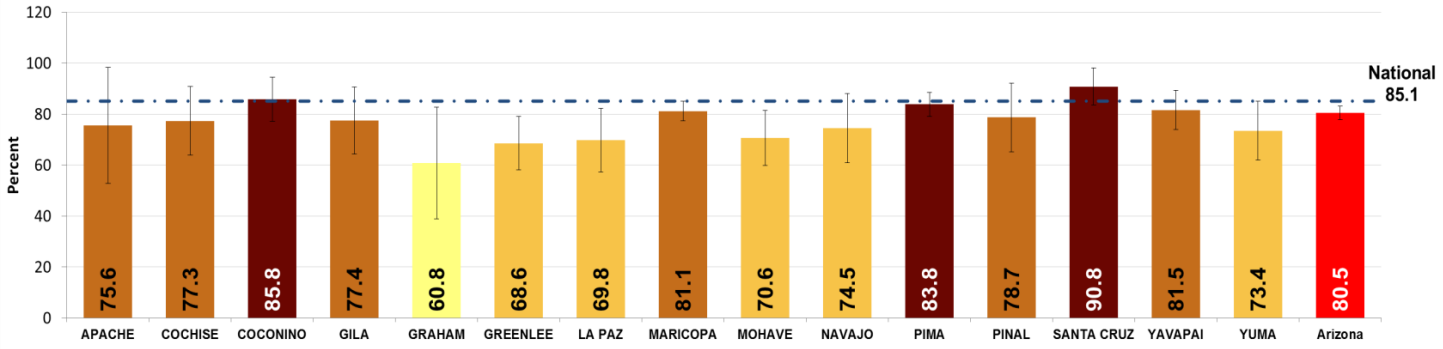
Respondents were less likely to report that they had a pap smear within three years if they

- Were between the ages of 55 and 64
- Were widowed
- Had a high school diploma but did not attend college
- Were unable to work
- Had an annual income between $35,000 and $49,999
- Were American Indian

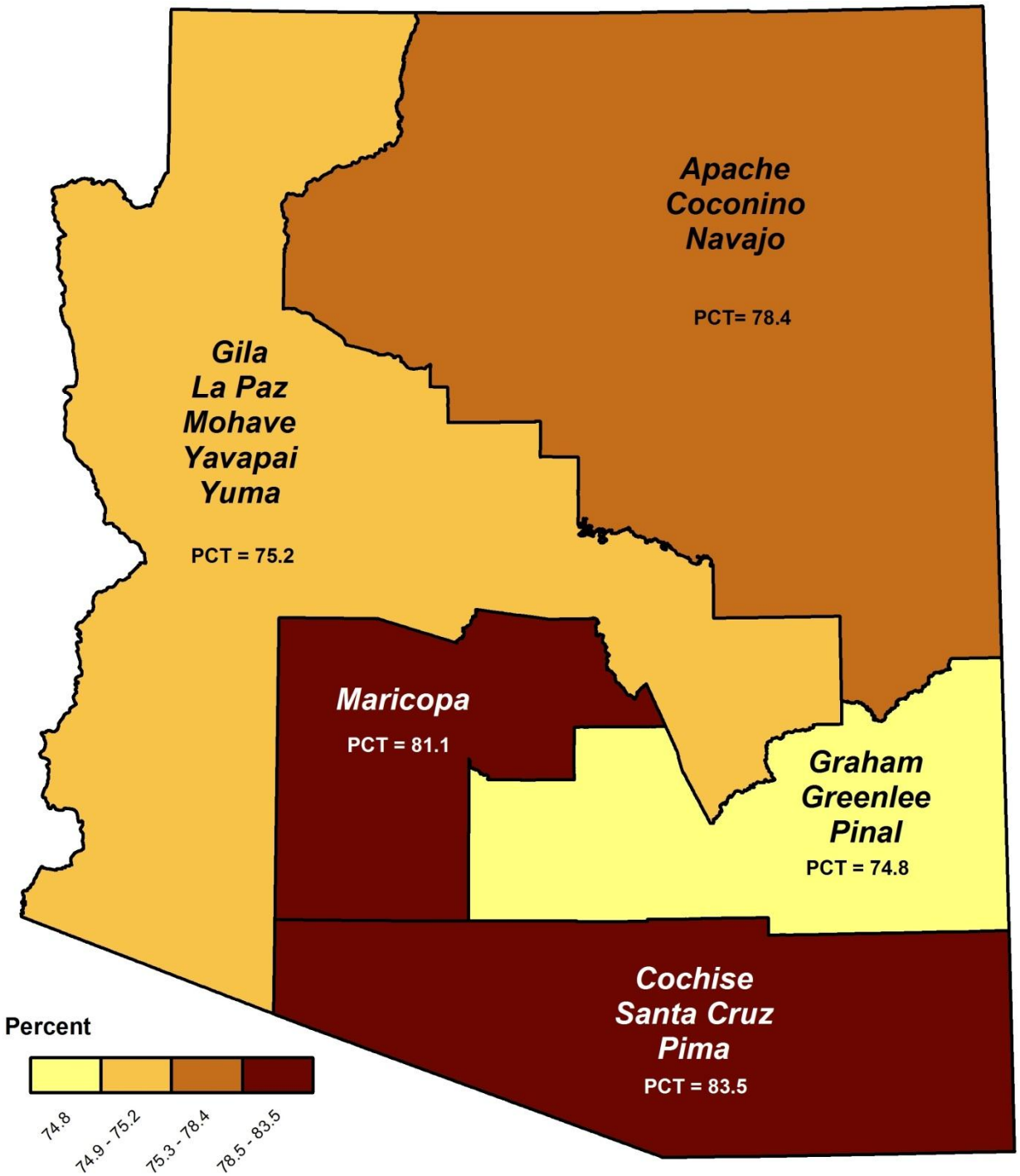
Women who reported that they were unable to work were the least likely to report having a pap smear in the past three years, at 65.3%.

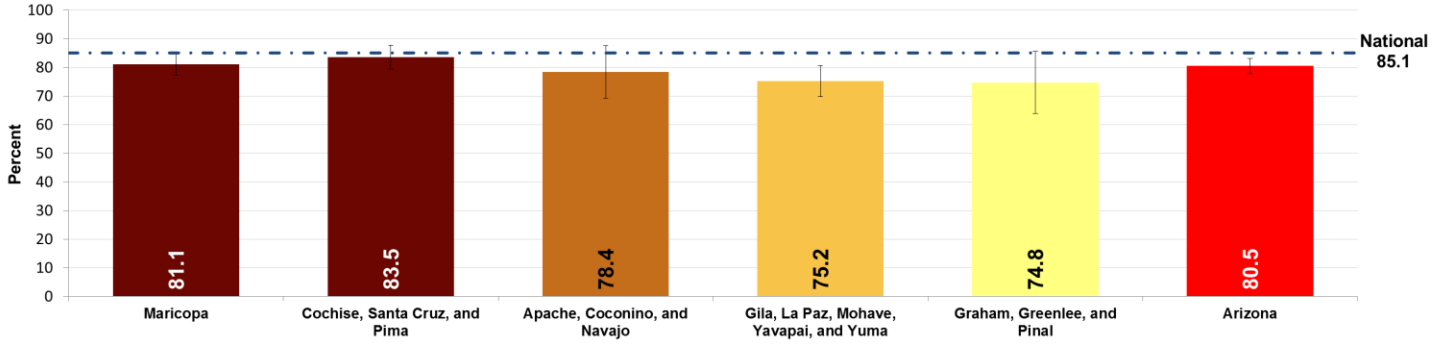
Percentage of Arizona Women Between The Ages of 21 and 65 Who Had a Pap Smear Within Three Years, By County 2012





Percentage of Arizona Women Between The Ages of 21 and 65 Who Had a Pap Smear Within Three Years, By Region 2012





Preventative Practices
Men's Health: Prostate Specific Antigen Test

In 2012, there were 1,640 inpatient and emergency department discharges of men over the age of 40 who had a primary diagnosis of prostate cancer. Seven of them died in the hospital. The total charges were more than $86 million. The average length of stay ranged from 1.7 to 2.2 days and the average length of stay increased as the age category increased (see **Table 7**).

Inpatient and Emergency Department Discharges with a Principle Diagnosis of Prostate Cancer

	Discharges	Died	Charges	Average Length of Stay (Days)
40-54	225	0	$12,455,333	1.7
55-69	969	2	$52,651,490	1.8
70+	446	5	$21,257,196	2.2
Total	**1,640**	**7**	**$86,364,019**	**-**

Table 7. Men age 40 and older who visited an emergency room or inpatient facility and had had a primary diagnosis containing the following ICD-9 code: 185.

Currently, there are two methods to test for prostate cancer: the digital rectal exam and the Prostate Specific Antigen (PSA) Test. The PSA has become a major topic of discussion in cancer screening. The U.S. Preventative Services Task Force (USPSTF) recommends against the use of the PSA.[31] While other organizations such as the American Urological Association (AUA) recommends that men between the ages of 55 to 69 consider PSA screening after talking to their physician about the risk and benefits of the procedure.[32] This disconnect has emerged due to the large number of false positives, which lead to needless biopsies for tumors that are benign or extremely slow growing. The risks associated with biopsies are infection, blood in semen, difficulty urinating, and bleeding at the site.[33] Although, the USPSTF discourages the use of the PSA, they advise doctors to counsel patients who request a PSA about the risk and benefits associated with the test.[30] However, according to the 2012 BRFSS, 54.7% of men over the age of 40 were recommended a PSA and only 25% were informed about the risk and benefits (see **Figure 13A**).

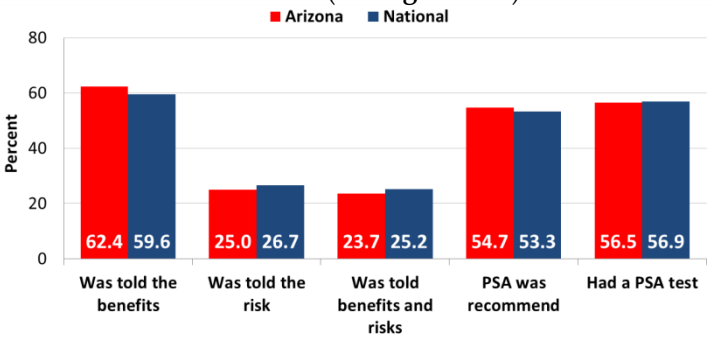


Figure 13A. Arizona and National responses to the 2012 BRFSS prostate cancer screening module .

A major risk associated with prostate biopsies is infection, which then leads to acute prostatitis. In men over the age of 50, acute prostatitis is associated with having a benign prostatic hyperplasia commonly referred to as an enlarged prostate. As men get older it is common for their prostate to continue growing. More than half of the men over the age of 60 will experience complications due to an enlarged prostate, and approximately 90% of men over the age of 70 will experience complications. Furthermore, men with enlarged prostates will have elevated blood level of PSA. As men grow older, their blood PSA levels will increase for numerous reasons that are unrelated to prostate cancer resulting in more false positives PSA tests.[31] The issue is then compounded by the reason men are undergoing a PSA test. According to the 2012 BRFSS, approximately 69.2-69.7% of men over the age of 40 had a PSA during a routine examination (see **Figure 13B**).

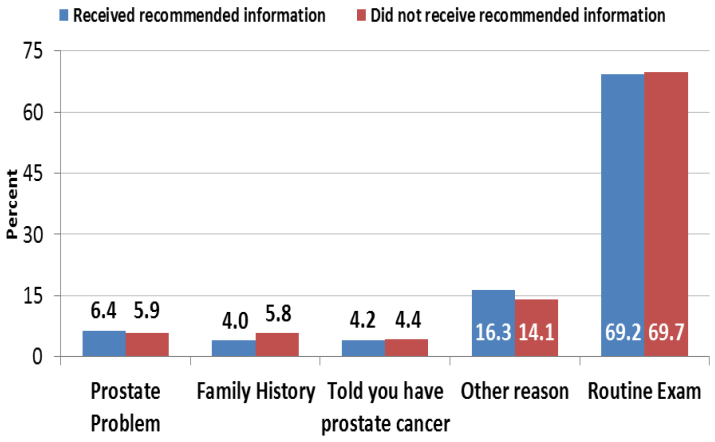


Figure 13B. Distribution of why men had a PSA test in the 2012 BRFSS.

When looking at PSA test status Arizona and the U.S. have a prevalence that differs by only .4% (see **Figure 13A**). However, when looking at the percent of men who had a PSA but received the recommended counseling, Arizona had few respondents reporting they received the recommended counseling. Only 23.5% of Arizona men who had a PSA received the recommended counseling, which was 1.7% lower than the national level of 25.2%. Arizona falls in the second-lowest category for respondents reporting they had a PSA test and were counseled on the benefits and risks of the exam by a health professional (see **Figure 13C**).

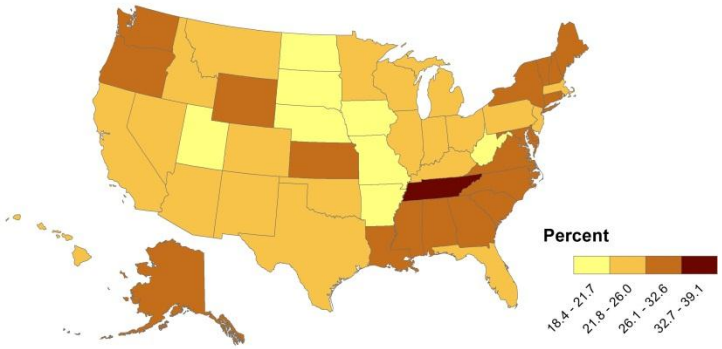


Figure 13C. Percent of BRFSS respondents who reported that they had a PSA and received counseling on both the benefits and risk of the PSA (natural breaks).

31 Recommendations of the U.S. Preventive Services Task Force: Abstract (Guide to Clinical Preventive Services). September 2010. Agency for Healthcare Research and Quality, Rockville, MD.
32 "Detection of Prostate Cancer: American Urological Association." *Detection of Prostate Cancer: American Urological Association*. N.p., n.d. Web. 23 Oct. 2013. <http://www.auanet.org/>
33 Ehdaie B, Vertosick E, Spaliviero M, et al. The Impact of Repeat Biopsies on Infectious Complications in Men with Prostate Cancer on Active Surveillance. J Urol. 2013 Sep 6. pii: S0022-5347(13)

Arizona Department of Health Services

Preventative Practices
Men's Health: Prostate Specific Antigen Test

Arizona Men Who Had a PSA, and Had a Medical Professional Tell Them About Its Benefits and Risks, in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**23.5**	**20.6**	**26.3**
National	**25.2**	**24.7**	**25.6**
Age			
45-54	21.2	15.0	27.5
55-64	27.1	21.8	32.5
65+	28.2	23.9	32.5
Marital Status			
Married	24.8	21.1	28.6
Divorced	22.9	16.1	29.7
Widowed	25.5	16.1	34.9
Separated*	3.9	0.0	10.7
Never Married	19.9	11.0	28.7
Unmarried Couple	25.1	9.3	40.9
Educational Attainment			
Less than High School	22.4	11.5	33.4
High School Graduate/GED	17.9	13.2	22.5
Some College/Tech School	25.4	20.1	30.7
College Grad	25.8	21.7	29.8
Employment Status			
Employed for wages	22.0	17.2	26.8
Self-employed	18.9	11.6	26.2
Out of work	15.9	7.0	24.7
Homemaker*	11.5	0.0	34.2
Student*	32.0	0.0	85.8
Retired	29.2	24.7	33.7
Unable to Work	24.6	11.7	37.4
Income			
<$25,000	23.6	17.3	30.0
$25,000-$34,999	19.6	12.4	26.9
$35,000-$49,999	27.1	19.1	35.1
$50,000-$74,999	23.4	16.6	30.2
$75,000+	26.8	21.0	32.5
Race/Ethnicity			
White Non-Hispanic	22.9	20.1	25.8
Black	31.4	13.3	49.6
Asian/PI*	18.2	0.0	41.2
American Indian	25.8	1.4	50.2
Other	38.4	11.1	65.7
Hispanic	22.7	14.2	31.2

*Indicates an unreliable estimate due to small sample size (n=1-4).

The table to the left displays the distribution of the 2012 Arizona BRFSS respondents who had PSA and had a medical professional tell them about benefits and risk of the PSA. The data are broken down by age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were more likely to report that they had received counseling on the benefits and risks of a PSA if they

- Were widowed
- Were 65 or older
- Had graduated from college
- Were retired
- Had a household income between $35,000-$49,999
- Were Black

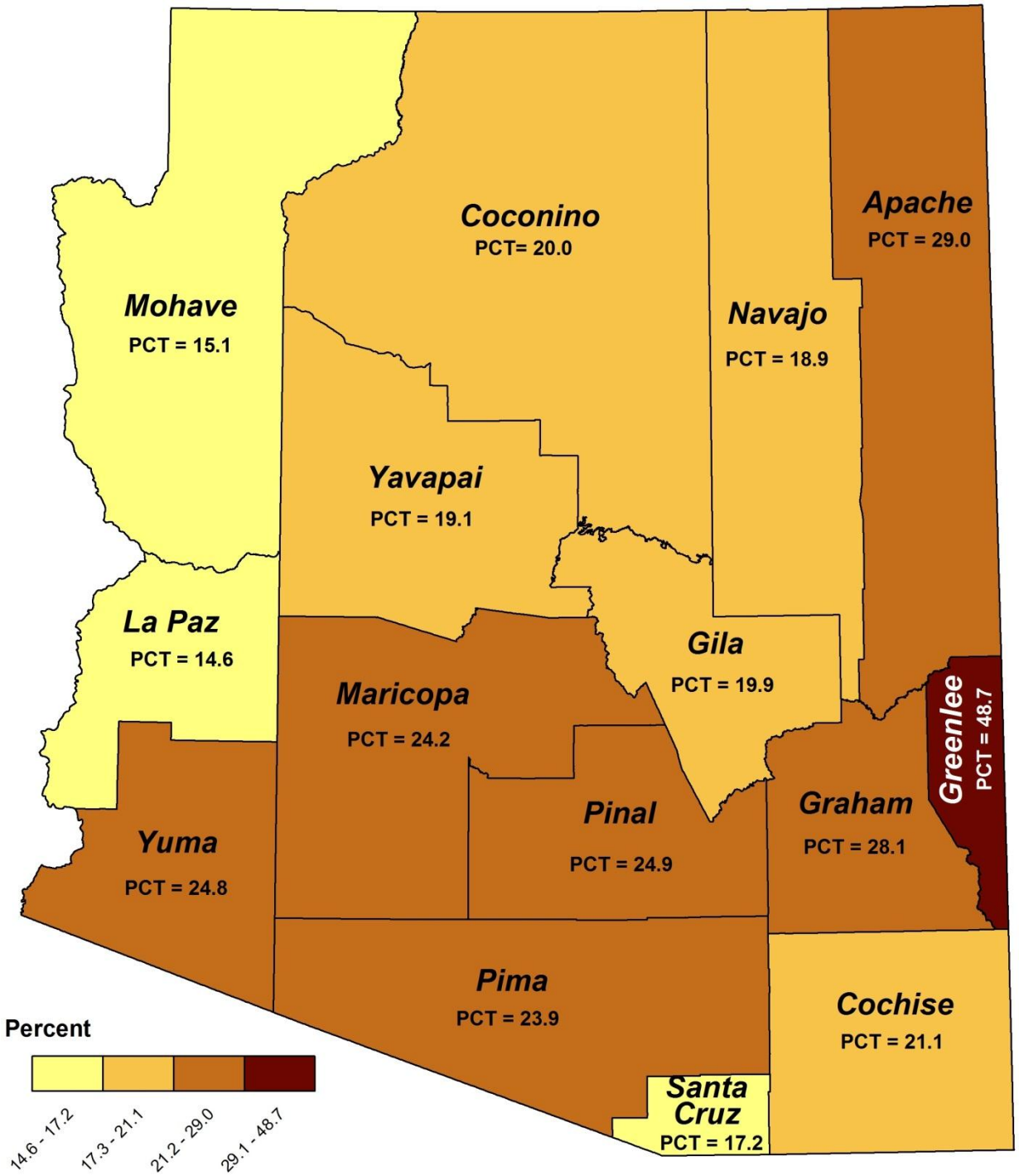
If an individual's race was other or Black, he was more likely to receive information about both the risks and benefits of the PSA. The cell counts are small, 12 and 13 respectively, so the estimates are not very reliable.

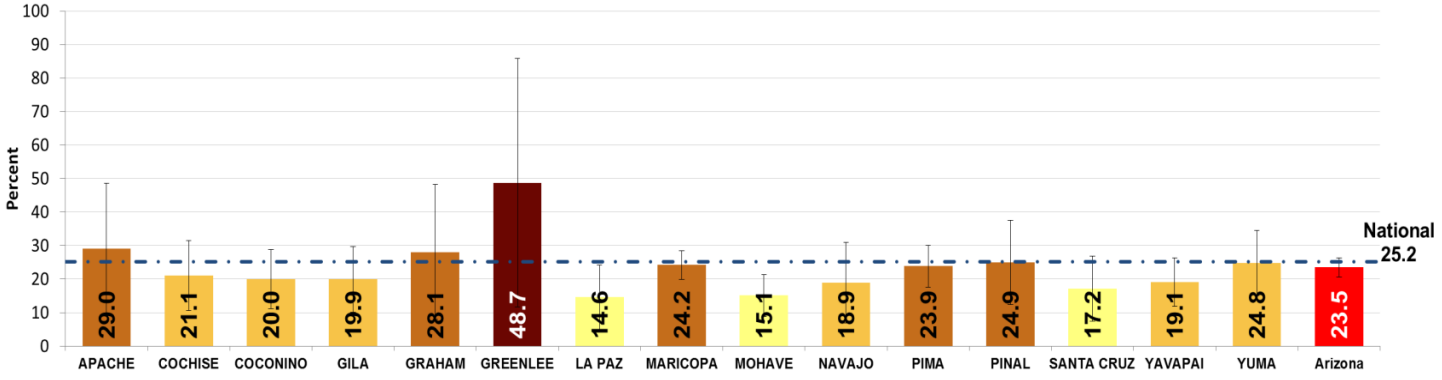
Respondents were less likely to report that they had received counseling on the benefits and risks of a PSA if they

- Were between the ages of 45 and 54
- Were never married
- Had graduated from high school or had a GED
- Were out of work
- Had a household income between $25,000 and $34,999
- Were Hispanic

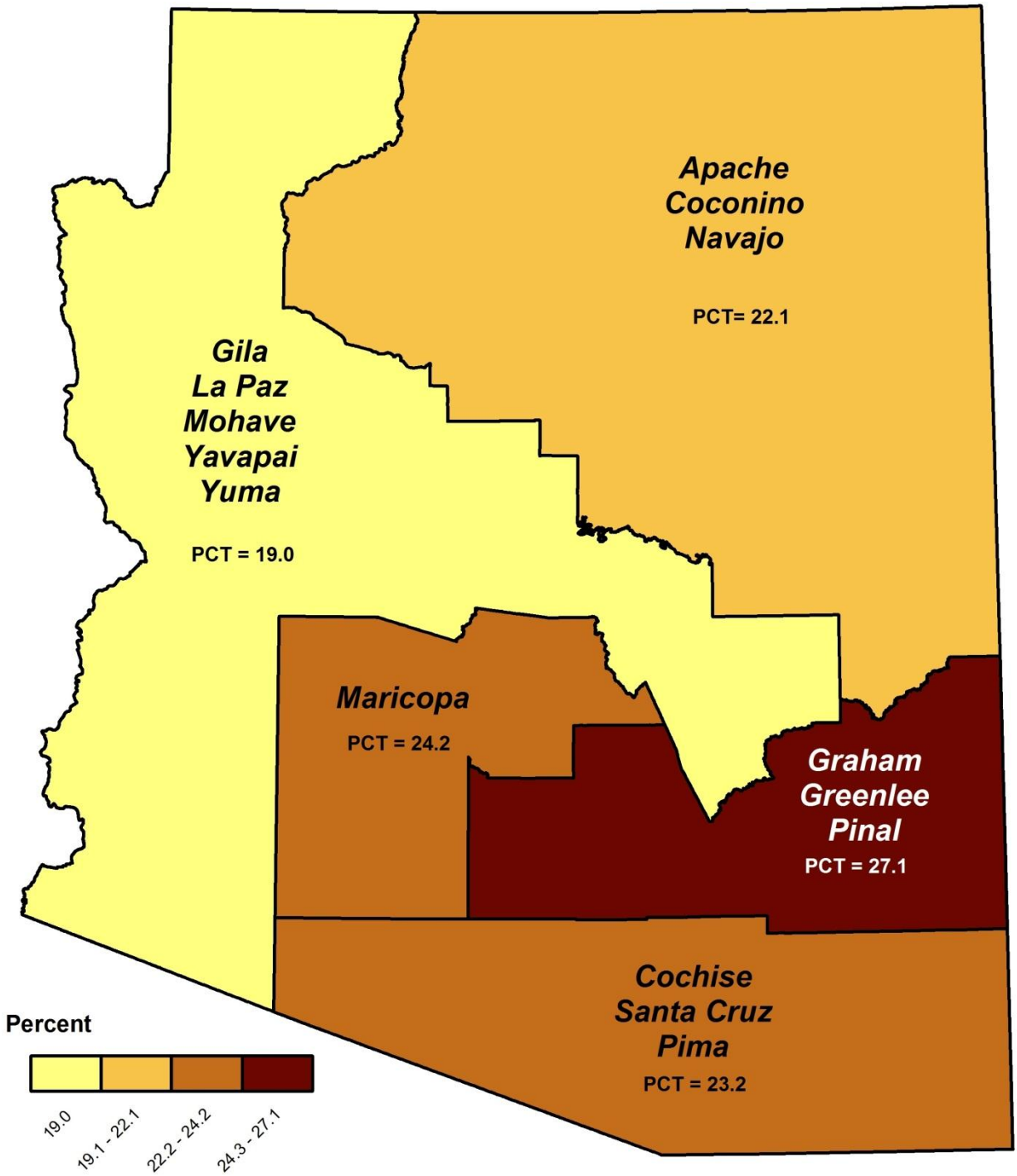
If an individual's highest education attainment was a high school diploma or GED, he was less likely to receive information about both the risks and benefits of the PSA.

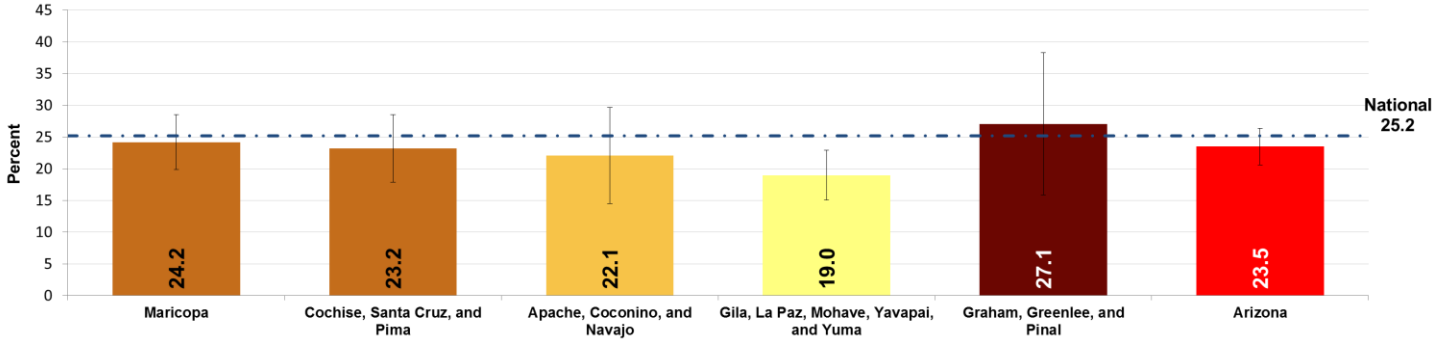
Percentage of Arizona Men Age 40+ Who Had a PSA, and Had a Medical Professional Tell Them About its Benefits and Risks, 2012 (County)





Percentage of Arizona Men Age 40+ Who Had a PSA, and Had a Medical Professional Tell Them About its Benefits and Risks, 2012 (County)





Arizona Department of Health Services

Barriers to Healthcare

Starting in 2014, the United States enters a new healthcare model. The move is spearheaded by the implementation of the Patient Protection and Affordable Care Act (ACA). Under the ACA, Medicaid coverage is expanded to include individuals/households with incomes less than the 133% of the federal poverty level. Furthermore, refundable tax credits will be available to all Americans with incomes between the 100 and 400 percent poverty line. Continued monitoring of barriers to healthcare will provide the feedback needed to assess Arizona's efforts in providing services and care for its population. This section of the 2012 BRFSS Annual Report will include analysis of the following:

- **Poverty (variable calculated from INCOME2 NUMMEN NUMWOMEN and CHILDREN) -** binary outcome where household size and income are based off the 133% federal poverty line.
- **Health Insurance Status (variable HLTHPLN1) -** binary outcome where having insurance is considered a positive outcome. If the respondent replied that he/she did not have insurance, this is categorized as a negative outcome.
- **Cannot Afford Needed Health Care (variable MEDCOST) -** binary outcome where being able to afford needed healthcare is a positive outcome. If the respondent replied that he/she could not afford needed healthcare, this is categorized as a negative outcome.
- **Usual Source of Care (variable PERSDOC2) -** binary outcome where responses of having a usual healthcare provider is a positive outcome. If the respondent replies that he/she does not have a usual healthcare provider, this is categorized as a negative outcome.

Strategic Map Link

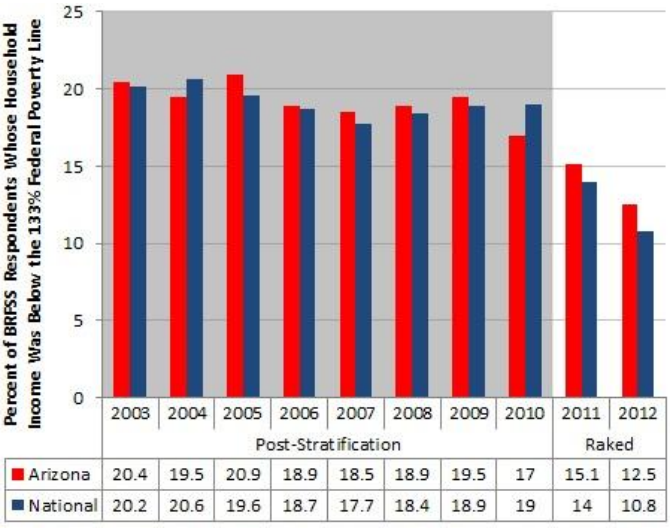
By collecting data on poverty, insurance status, the ability to afford needed healthcare, and if respondents have a usual source of care the BRFSS is providing Arizona with a tool to evaluate if its programs are providing a safety net of services and community support, and tools to improve policy development and implementation.

The aforementioned indicators are all part of Arizona's Winnable Battles as outlined in C4 of the ADHS Strategic Map.

(See Page 5)

Barriers to Healthcare
Poverty

Globally there are approximately 1.2 billion people living in extreme poverty (less than a dollar a day).[34] While poverty exists in the U.S., it is very rare to find extreme poverty in the U.S. In the U.S. poverty is based on income and the size of the household. Research has shown that individuals who live in poverty have worse health outcomes when compared to their non-impoverished counterparts. This trend remains true when making within-country analysis as well as global analysis.[35] To create a poverty assessment, BRFSS income data and household size was set on the 133% poverty scale assigned by the U.S. census bureau.[36] Historically, the percent of individuals who were classified as living below the poverty line has fluctuated. According to the 2012 BRFSS, 12.5% of Arizonans live with household incomes below the 133% federal poverty line, which was 2.3% higher than the national level (see **Figure 14A**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	20.4	19.5	20.9	18.9	18.5	18.9	19.5	17	15.1	12.5
National	20.2	20.6	19.6	18.7	17.7	18.4	18.9	19	14	10.8

Figure 14A. Arizona and National 2000-2010 BRFSS three year rolling averages of individuals who are living in poverty.

When looking at all the states in the nation, Arizona falls in the second-highest category for percent of impoverished respondents (see **Figure 14B**).

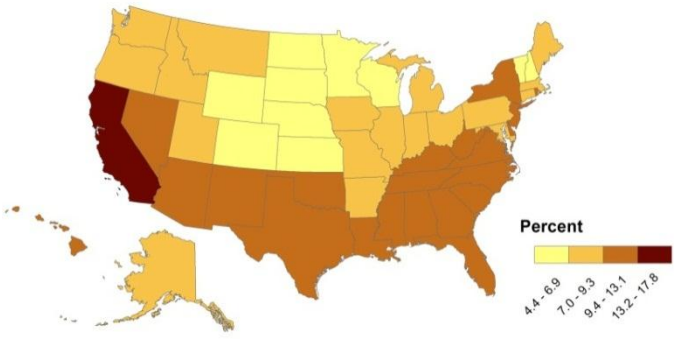


Figure 14B. Percent of 2012 BRFSS respondents living in poverty (natural breaks).

The 2012 Arizona BRFSS data shows that most chronic conditions do not vary much in prevalence when looking at those who live in poverty and those who do not. The exception is diabetes. Impoverished individuals were much more likely to report a diabetes diagnosis than their non-impoverished counterpart (see **Figure 14C**).

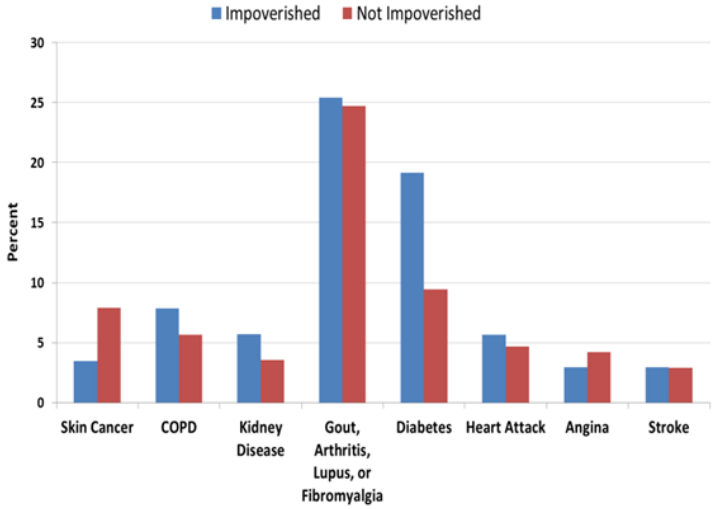


Figure 14C. AZ BRFSS 2012 data assessing poverty status and chronic diseases.

When assessing the impact of poverty it is important to stratify the data. When looking at Arizona as a whole, individuals who are living in poverty and do not have insurance only contribute to 8.1%-10.8% of the overall population. Likewise, uninsured individuals who earn above the poverty line only contribute to 7.1%-9% of the total population. The numbers do not seem to be very different in this context. However, upon stratification by poverty status, the data shows that more than 30% of individuals who earn below the 133% poverty line do not have insurance. Approximately 10% of those who earn above the poverty line report that they do not have insurance (see **Figure 14D**).

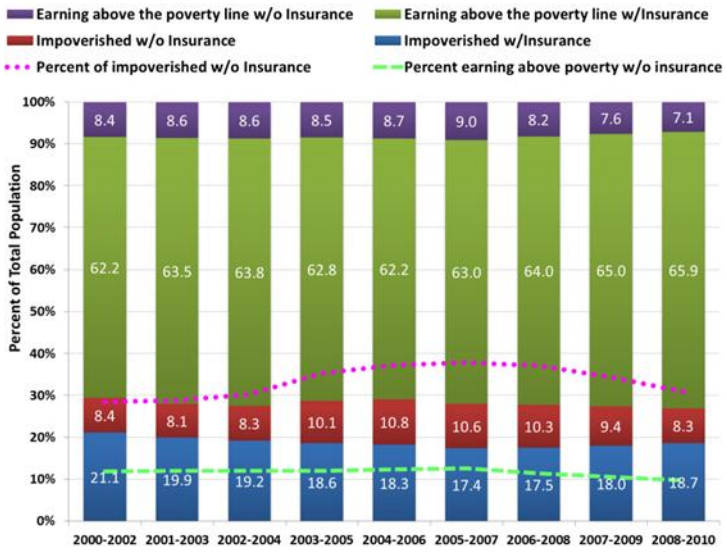


Figure 14D. Arizona 2000-2010 BRFSS three year rolling averages of individuals' insurance status by poverty status.

34"Poverty and Health." *WHO*. 2013. Web. 18 Sept. 2013. <http://www.who.int/hdp/poverty>.
35Adam Wagstaff. Poverty and health sector inequalities. Bull World Health Organ. 2002; 80(2).
36 2013 Federal Poverty Guidelines." *Federal Poverty Guidelines*. Web. 18 Sept. 2013. <http://www.familiesusa.org/resources/tools-for-advocates/guides/federal-poverty-guidelines.html>.

Arizona Department of Health Services

Barriers to Healthcare
Poverty

Arizonans Who Are Living In Poverty in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**12.5**	**10.8**	**14.0**
National	**10.8**	**10.6**	**11.1**
Sex			
Male	10.5	8.2	12.7
Female	14.5	12.1	16.8
Age			
18-24	9.9	4.6	15.2
25-34	13.0	8.9	17.0
35-44	19.4	14.5	24.4
45-54	12.7	9.0	16.5
55-64	12.8	8.9	16.6
65+	6.1	4.7	7.6
Marital Status			
Married	10.6	8.4	12.7
Divorced	11.5	8.2	14.8
Widowed	9.8	6.5	13.1
Separated	20.4	10.6	30.2
Never Married	15.0	11.0	19.1
Unmarried Couple	19.5	9.2	29.7
Educational Attainment			
Less than High School	35.2	28.2	42.2
High School Graduate/GED	13.8	10.7	16.8
Some College/Tech School	8.2	6.0	10.4
College Grad	4.1	2.4	5.9
Employment Status			
Employed for wages	8.1	5.9	10.3
Self-employed	12.9	7.1	18.7
Out of work	23.0	16.3	29.8
Homemaker	24.9	17.6	32.3
Student	7.1	0.7	13.5
Retired	6.5	4.5	8.6
Unable to Work	33.9	25.0	42.8
Income			
<$25,000	31.0	27.5	34.5
$25,000-$34,999	7.8	3.0	12.6
$35,000-$49,999	3.0	0.3	5.6
$50,000-$74,999	.	.	.
$75,000+	.	.	.
Race/Ethnicity			
White Non-Hispanic	6.2	4.9	7.4
Black	18.5	8.4	28.7
Asian/PI	7.0	0.0	16.1
American Indian	22.7	13.8	31.7
Other	12.3	1.7	22.8
Hispanic	25.9	21.2	30.6

The table to the left displays the distribution of the prevalence of Arizona adults living in poverty. Poverty is a calculated variable. The data are broken down by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were less likely to report that they were living on wages below poverty if they

- Were male
- Were 65 or older
- Were widowed
- Had graduated from college
- Were retired
- Were non-Hispanic whites

Households that had incomes that were $50,000 or greater were not large enough to qualify any of the respondents as living in poverty.

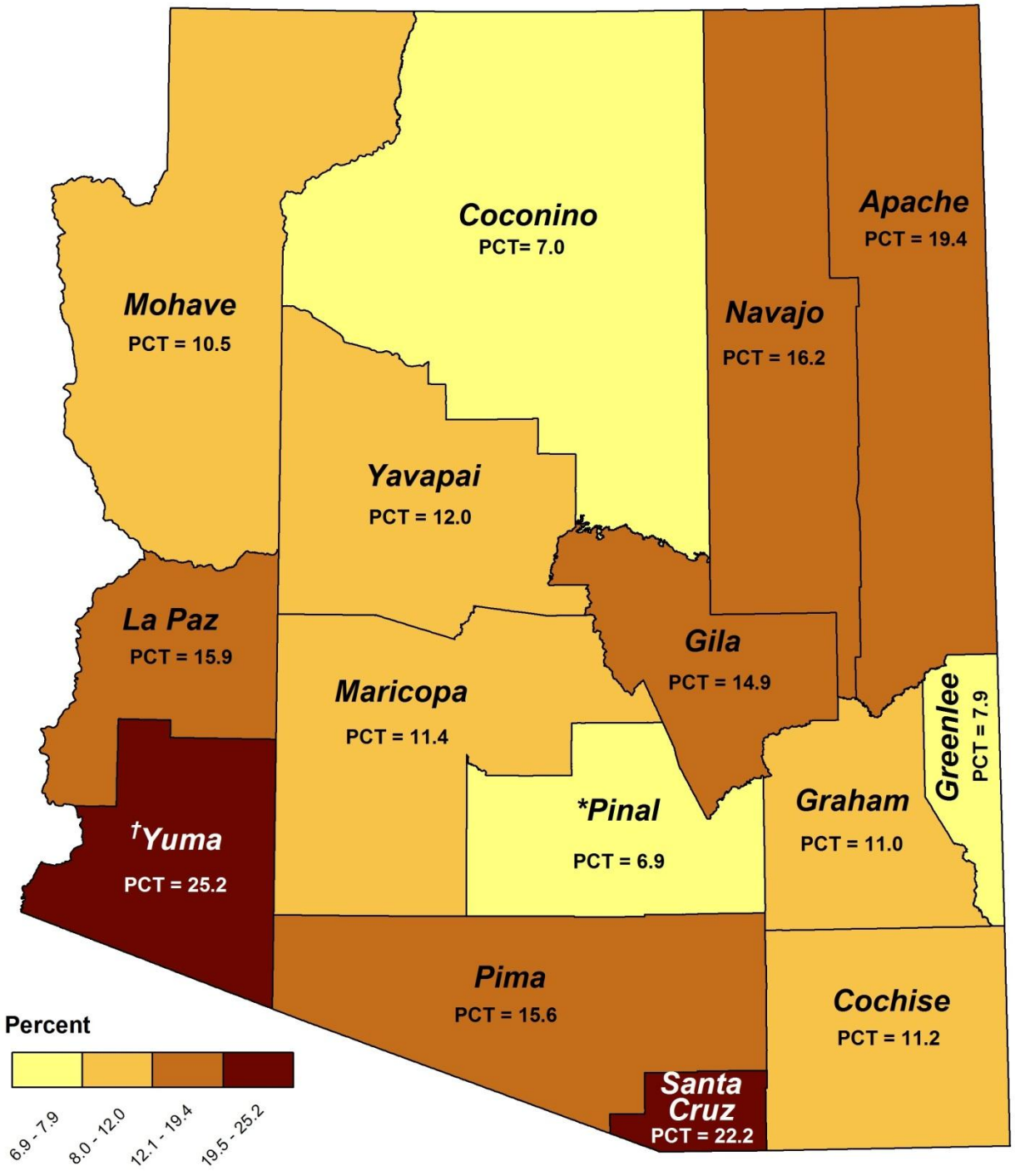
Respondents were more likely to report that they were living on wages below poverty if they

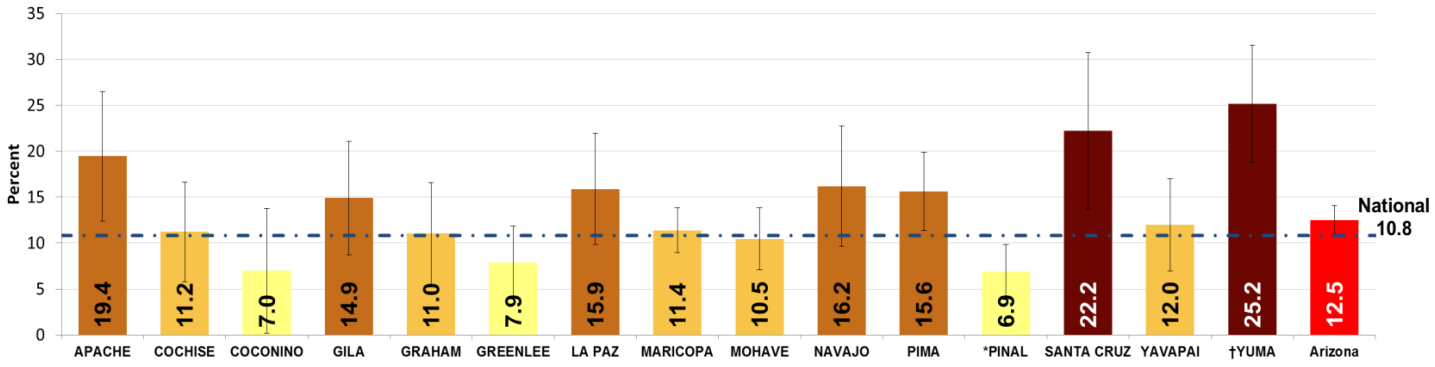
- Were female
- Were between the ages of 35 and 44
- Were separated
- Had less than a high school diploma
- Were unable to work
- Were Hispanic

In 2012, individuals who were unable to work were the most likely to report that they were living on wages below the poverty line, at 33.9%. This was more than ten percent higher than individuals who were out of work.

Arizona Department of Health Services

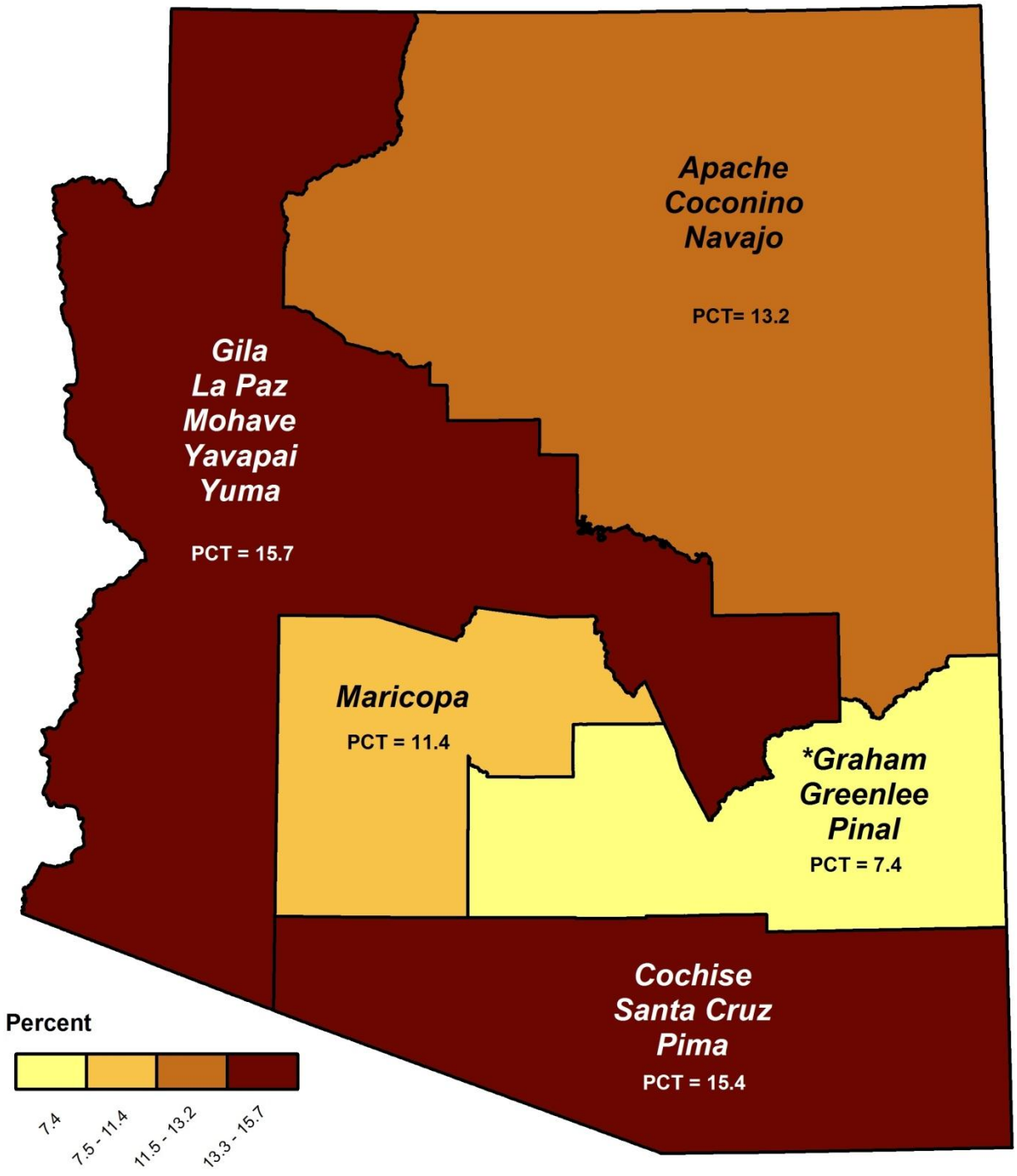
Percentage of Arizonans Who Are Living In Poverty by County, 2012

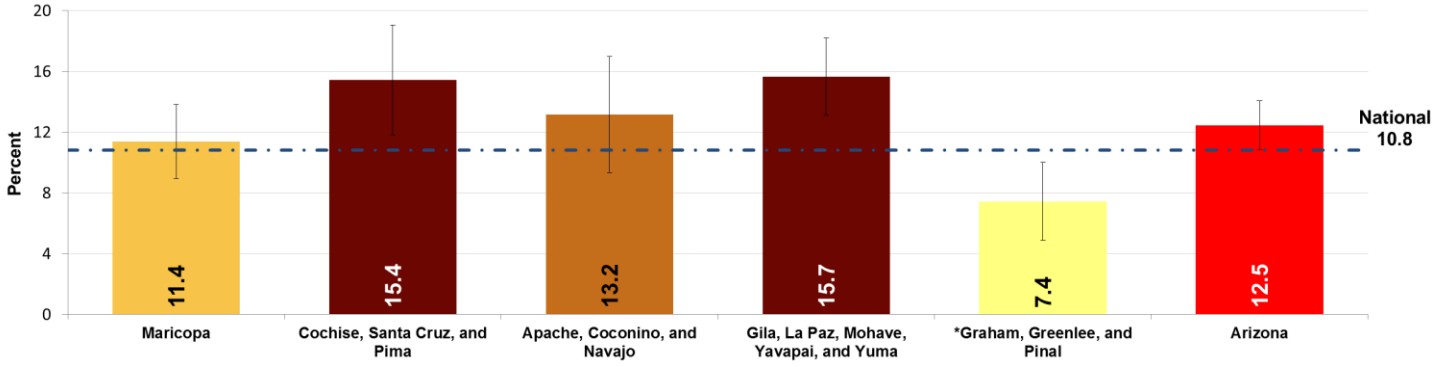




*Indicates that the county has a significantly lower percentage of respondents reporting living in poverty than the overall state percentage.
†Indicates that the county has a significantly higher percentage of respondents reporting living in poverty than the overall state percentage.

Percentage of Arizonans Who Are Living In Poverty by Region, 2012





*Indicates that the region has a significantly lower percentage of respondents reporting living in poverty than the overall state percentage.

Barriers to Healthcare
No Health Insurance

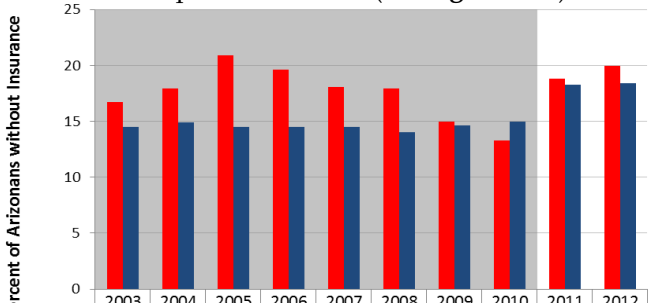
On May 23, 2010, the Patient Protection and Affordable Care Act (ACA) was passed by Congress and signed into law by the President. This was followed by a number of lawsuits that challenged the law's constitutionality. The cases were merged into the *National Federation of Independent Business et al.* v. *Sebelius, Secretary of Health and Human Services, et al.* On June 28, 2012, the Supreme Court made its final decision to uphold the healthcare law. One of the key functions of the law is to expand the scope of Medicaid and the number of individuals the state must cover. In the past, Medicaid was to provide assistance to pregnant women, children, needy families, the blind, the elderly, and the disabled in obtaining medical care. Under the ACA, Medicaid will provide coverage to adults with income up to the 133% federal poverty line.[37] In 2012, there was nearly 2.9 million in patient and emergency department discharges amounting in charges of more than $38.8 billion (see **Table 8**). Uninsured individuals accounted for 8.5% of the hospitalizations and accrued charges over 3.3 billion dollars (sum of Charity and Self-Pay payer statuses).

2012 Inpatient and Emergency Hospital Discharges

	Number of Discharges	Total Charges	Average Length of Stay (Hours)
Charity	8,043	$162,199,472	53.1
Medicaid	906,894	$7,188,985,159	22.8
Medicare	683,946	$16,476,874,086	55.2
Private Insurance	908,091	$11,925,995,969	29.9
Self-Pay	387,360	$3,145,393,384	17.5
Total	**2,894,334**	**$38,899,448,070**	-

Table 8. Inpatient and emergency department discharges by payer type, 2012.

According to the 2012 BRFSS, approximately 19.9% of Arizonans do not have insurance, which is 1.5% more than the national percent. The data collected predates the implementation of the the ACA. Therefore, 2011, 2012, and 2013 can be used to esblish a baseline to measure the impact of the ACA (see **Figure 15A**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	16.7	17.9	20.9	19.6	18.1	17.9	15.0	13.3	18.8	19.9
National	14.5	14.9	14.5	14.5	14.5	14.0	14.6	15.0	18.3	18.4

Figure 15A. Arizona and National 2002-2012 BRFSS respondents who reported that they did not have insurance. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

When compared to the other states in the nation, Arizona falls in the second-highest category for percent of respondents who reported that they did not have health insurance (see **Figure 15B**).

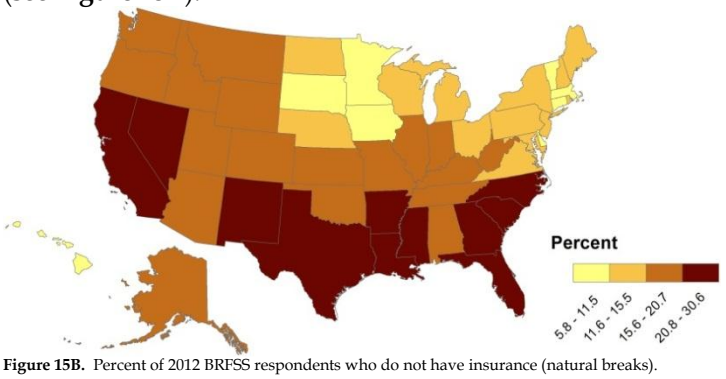


Figure 15B. Percent of 2012 BRFSS respondents who do not have insurance (natural breaks).

Research has shown that African Americans and Hispanics who were uninsured were less likely to obtain needed medical care than their White counterparts.[38] Furthermore, they are much more likely to report being uninsured. Historically, Arizona BRFSS data indicates that Hispanics and American Indians were much more likely to be uninsured when compared to their White counterparts. African Ameri-cans were more likely to be uninsured. However, the difference was at most approximately 5%, whereas the Hispanics and American Indians were 3-4 times more likely to report not having insurance (see **Figure 15C**).

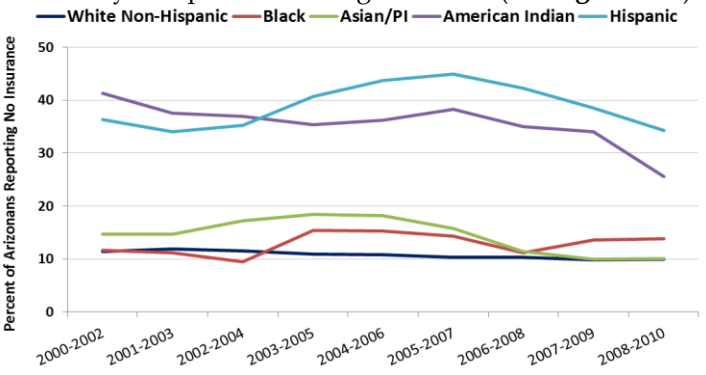


Figure 15C. Arizona 2000-2010 BRFSS three year rolling averages of individuals reporting no insurance by race.

When assessing insurance status it is often necessary to exclude the elderly from analysis as individuals 65 and older qualify for Medicare. According to the 2012 census projections, White Non-Hispanics make up 57.1% of Arizona's population. However, they only comprise 40.2% of the uninsured population, indicating a racial disparity (see **Figure 15D**).

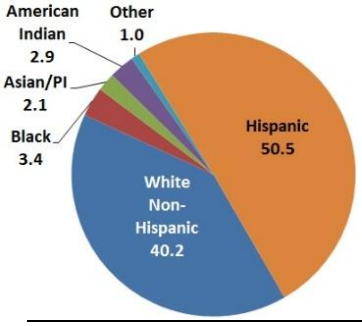


Figure 15D. The distribution of uninsured respondents of the 2012 Arizona BRFSS by race/ethnicity (weighted percent).

37 National Federation of Independent Business et al. v. Sebelius, Secretary of Health and Human Services, et al, 567 U.S. 1 (2012).

38 Lillie-Blanton M, Hoffman C. The role of health insurance coverage in reducing racial/ethnic disparities in health care. Health Aff (Millwood). 2005 Mar-Apr;24(2):398-408 Accessed February 20, 2014.

Arizona Department of Health Services

Barriers to Healthcare
No Health Insurance

Arizonans Who Reported That They Did Not Have Health Insurance in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**19.9**	**18.3**	**21.6**
National	**18.4**	**18.1**	**18.7**
Sex			
Male	20.8	18.3	23.3
Female	19.1	16.8	21.4
Age			
18-24	26.1	20.2	32.1
25-34	30.1	25.1	35.2
35-44	25.6	21.0	30.3
45-54	21.3	17.6	24.9
55-64	18.4	14.9	21.8
65+	1.7	1.0	2.4
Marital Status			
Married	14.7	12.7	16.7
Divorced	20.6	16.8	24.4
Widowed	8.7	5.1	12.3
Separated	28.3	15.6	41.1
Never Married	28.4	23.9	32.9
Unmarried Couple	32.6	23.4	41.9
Educational Attainment			
Less than High School	40.9	34.5	47.3
High School Graduate/GED	24.7	21.4	28.0
Some College/Tech School	15.3	12.9	17.6
College Grad	8.2	6.5	9.9
Employment Status			
Employed for wages	17.6	15.2	20.0
Self-employed	34.4	27.5	41.3
Out of work	45.0	37.9	52.1
Homemaker	30.3	23.5	37.0
Student	15.0	7.4	22.6
Retired	3.5	2.1	4.9
Unable to Work	15.6	9.4	21.8
Income			
<$25,000	35.5	31.8	39.2
$25,000-$34,999	22.7	17.4	28.0
$35,000-$49,999	14.2	10.4	18.0
$50,000-$74,999	8.1	5.2	11.0
$75,000+	3.7	2.1	5.4
Race/Ethnicity			
White Non-Hispanic	13.2	11.6	14.7
Black	17.5	9.1	25.9
Asian/PI	12.5	3.4	21.6
American Indian	16.7	10.0	23.3
Other	13.6	6.3	20.9
Hispanic	37.5	32.9	42.1

The table to the left displays the distribution of the prevalence of Arizona adults reporting that they did not have health insurance. The data are broken down by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were less likely to report that they were uninsured if they

- Were female
- Were 65 or older
- Were widowed
- Had graduated from college
- Were retired
- Were Asian/Pacific Islander

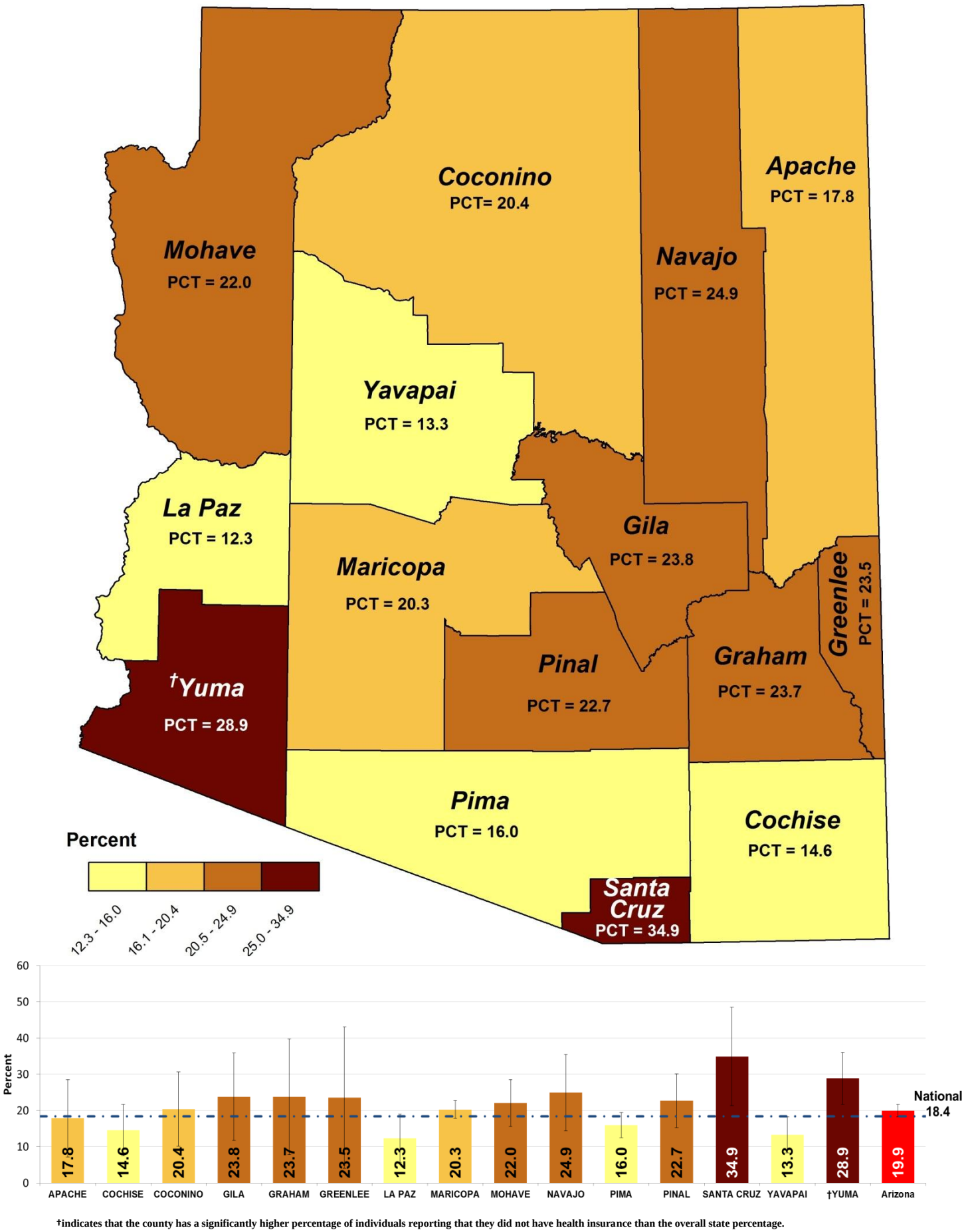
As educational attainment and household income increased the likelihood of respondents being uninsured decreased.

Respondents were more likely to report that they were uninsured if they

- Were male
- Were between the ages of 25 and 34
- Were unmarried
- Had less than a high school diploma
- Were out of work
- Were Hispanic

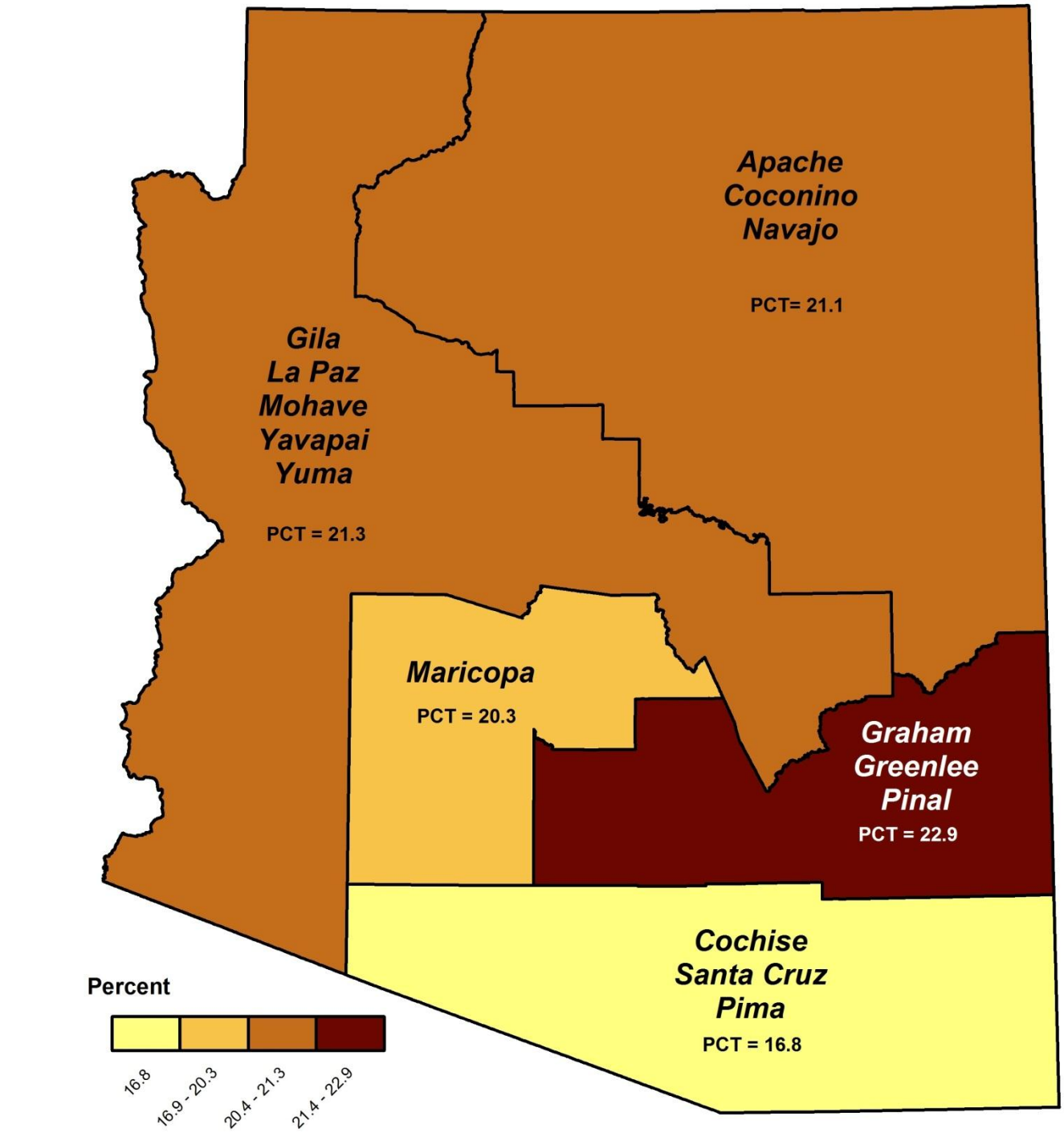
In 2012, individuals who were out of work were the most likely to report that they were uninsured, at 45.0%.

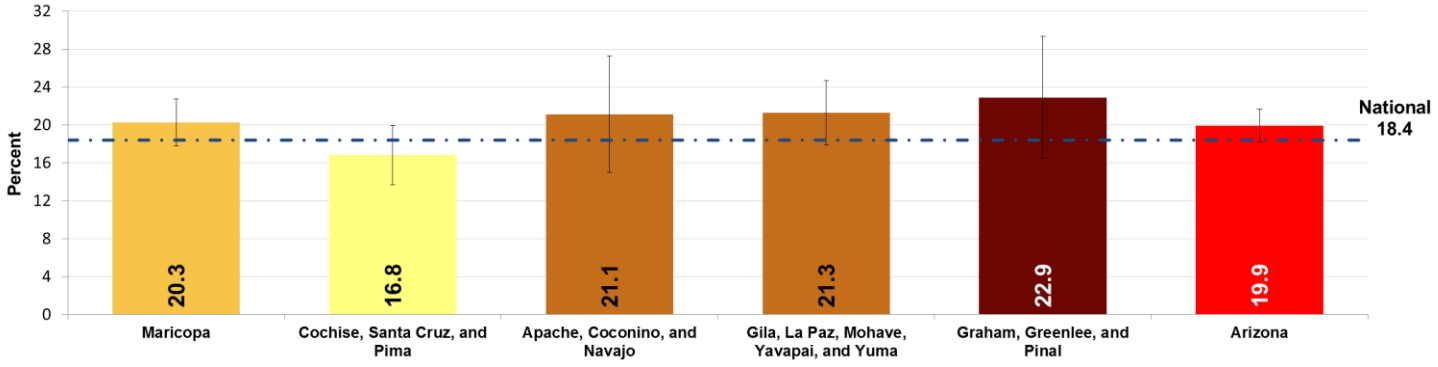
Percentage of Arizonans Who Are Uninsured by County, 2012



†indicates that the county has a significantly higher percentage of individuals reporting that they did not have health insurance than the overall state percentage.

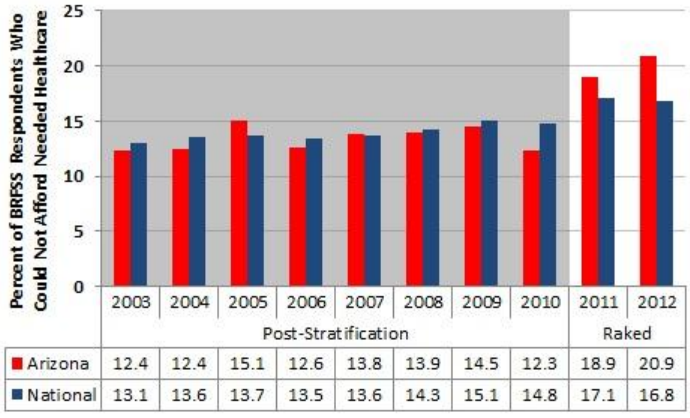
Percentage of Arizonans Who Are Uninsured by Region, 2012





Barriers to Healthcare
Could Not Afford Healthcare

When people lack health insurance or sufficent coverage, or their fincanial situation takes a downturn, they may forgo needed medical tests and therapies. The issue with electing to forgo needed medical care has many ethical and clinical implications. Often, symptoms of one disease will overlap with another, and to assure that the treatment coincides with the disease, tests are necessary. Barriers to care associated with cost places an ethical dilemma on healthcare professionals: do they treat the patient's symptoms, provide substandard services, deny care outright, or commit fraud by adjusting billing records? Patients will often request their providers treat their symptoms, as it is more affordable. However, by treating the patient's symptoms, the provider may delay the diagnosis of a more serious disease or condition.[39] The inability to seek or receive appropriate medical care creates a strain on the medical system for both patients and providers. According to the 2012 BRFSS, 20.9% of Arizonans could not afford needed medical care; which was 4.1% higher than the national prevalence (see **Figure 16A**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
	Post-Stratification								Raked	
Arizona	12.4	12.4	15.1	12.6	13.8	13.9	14.5	12.3	18.9	20.9
National	13.1	13.6	13.7	13.5	13.6	14.3	15.1	14.8	17.1	16.8

Figure 16A. Arizona and National 2002-2012 BRFSS respondents who reported that they could not afford needed medical care. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible

When compared to the other states that make up the nation, Arizona falls in the highest category for percent of respondents who reported that they could not afford needed medical care (see **Figure 16B**).

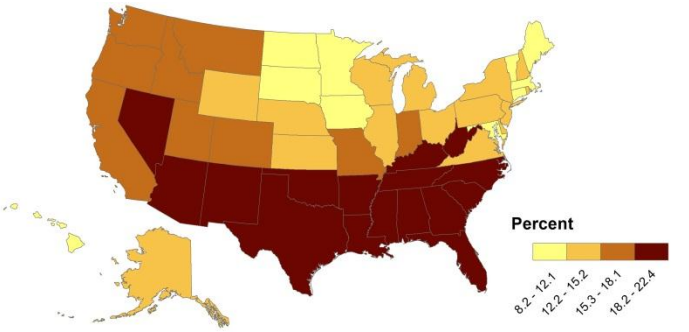


Figure 16B. Percent of 2012 BRFSS respondents who could not afford needed health care (natural breaks).

Research has shown that families are more likely to be unable to pay their medical bills. Families are defined as a group of two or more related individuals living in the same housing unit. Analysis of family units is important due to the shared impact of taking on financial risks.[40] The combined data from the 2011 and 2012 Arizona BRFSS shows an increasing trend of being unable to afford needed medical care for households of two to five, after which the trend begins to decrease. The national data shows an increasing trend of being unable to afford needed healthcare for households of two to seven and greater, although there was a slight decrease from three to four (see **Figure 16C**).

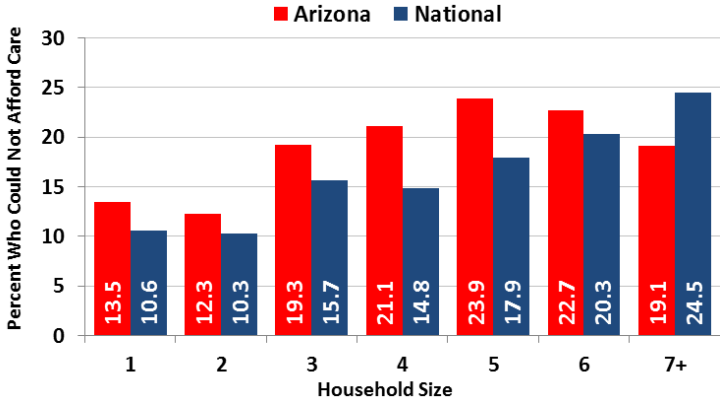


Figure 16C. Arizona and National BRFSS respondents who reported that they were unable to afford needed medical care by household size, 2011-2012.

In addition to household size, its composition plays a significant role in the ability to afford needed medical care. The BRFSS data only provides information on the gender of the guardian. It is not possible to differentiate the familial relationship (BRFSS data cannot differentiate father from uncle, mother from aunt, etc). However, the BRFSS information on family composition still offers insight on potential disparties. Nationally, single individuals were the least likely to report being unable to afford medical care, followed by traditional families (families that have one male adult and one female adult in the housing unit), single male guardians, and single female guardians. The national and Arizona BRFSS data indicates that single female guardians were the most vulnerable population because they were the most likely to report being unable to afford needed medical care (see **Figure 16D**).

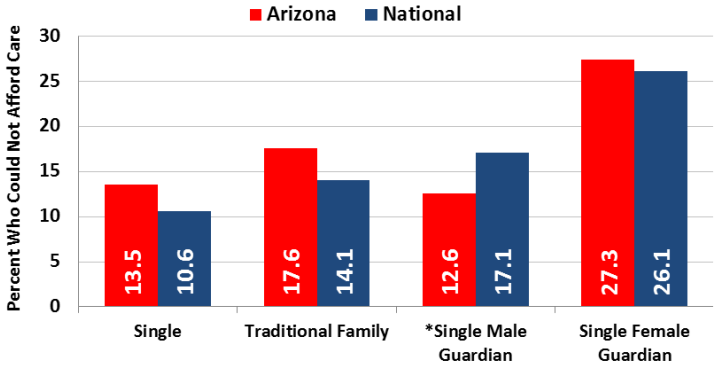


Figure 16D. Arizona and National BRFSS respondents who reported that they were unable to afford needed medical care by household composition, 2011-2012.

*The Arizona estimate for Single Male Guardian is unreliable due to small sample size (n=11).

39 Saul Weiner, MD. **"I Can't Afford That!"** Dilemmas in the Care of the Uninsured and Underinsured. J Gen Intern Med. 2001 June; 16(6): 412–418. doi: 10.1046/j.1525-1497.2001.016006412.x

40 Cohen R, Kirzinger W. Financial Burden of Medical Care: A Family Perspective. NCHS Data Brief. No. 142 January 2014.

Arizona Department of Health Services

Arizonans Who Could Not Afford Needed Medical Care in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**20.9**	**19.1**	**22.7**
National	**16.8**	**16.5**	**17.0**
Sex			
Male	17.9	15.4	20.3
Female	24.0	21.4	26.6
Age			
18-24	23.2	17.0	29.4
25-34	29.5	24.5	34.5
35-44	23.8	18.9	28.7
45-54	22.7	18.7	26.6
55-64	20.1	16.3	23.9
65+	6.6	5.2	8.1
Marital Status			
Married	17.6	15.2	19.9
Divorced	23.3	19.5	27.2
Widowed	14.3	9.7	18.8
Separated	35.9	21.7	50.0
Never Married	24.9	20.4	29.4
Unmarried Couple	29.2	19.1	39.2
Educational Attainment			
Less than High School	36.0	29.0	43.0
High School Graduate/GED	24.5	20.8	28.2
Some College/Tech School	18.3	15.6	20.9
College Grad	12.3	10.0	14.6
Employment Status			
Employed for wages	18.2	15.7	20.7
Self-employed	28.0	20.8	35.1
Out of work	38.3	30.7	45.9
Homemaker	27.5	20.5	34.6
Student	19.6	11.3	27.9
Retired	7.5	5.4	9.7
Unable to Work	35.6	27.3	43.9
Income			
<$25,000	35.3	31.7	38.9
$25,000-$34,999	24.5	19.1	29.9
$35,000-$49,999	18.8	14.4	23.2
$50,000-$74,999	10.6	7.1	14.0
$75,000+	5.9	3.8	8.0
Race/Ethnicity			
White Non-Hispanic	16.0	14.2	17.7
Black	33.2	21.3	45.0
Asian/PI	17.5	4.8	30.1
American Indian	14.0	7.9	20.0
Other	22.5	13.2	31.8
Hispanic	32.1	27.4	36.9

Barriers to Healthcare
Could Not Afford Healthcare

The table to the left displays the distribution of Arizonans who could not afford needed health care. The data are broken down by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were less likely to report that they were unable to afford needed medical care if they

- Were male
- Were 65 or older
- Were widowed
- Had graduated from college
- Were retired
- Were American Indian

Individuals whose household income was $75,000 or greater were the least likely to report being unable to afford needed medical care, at 5.9%.

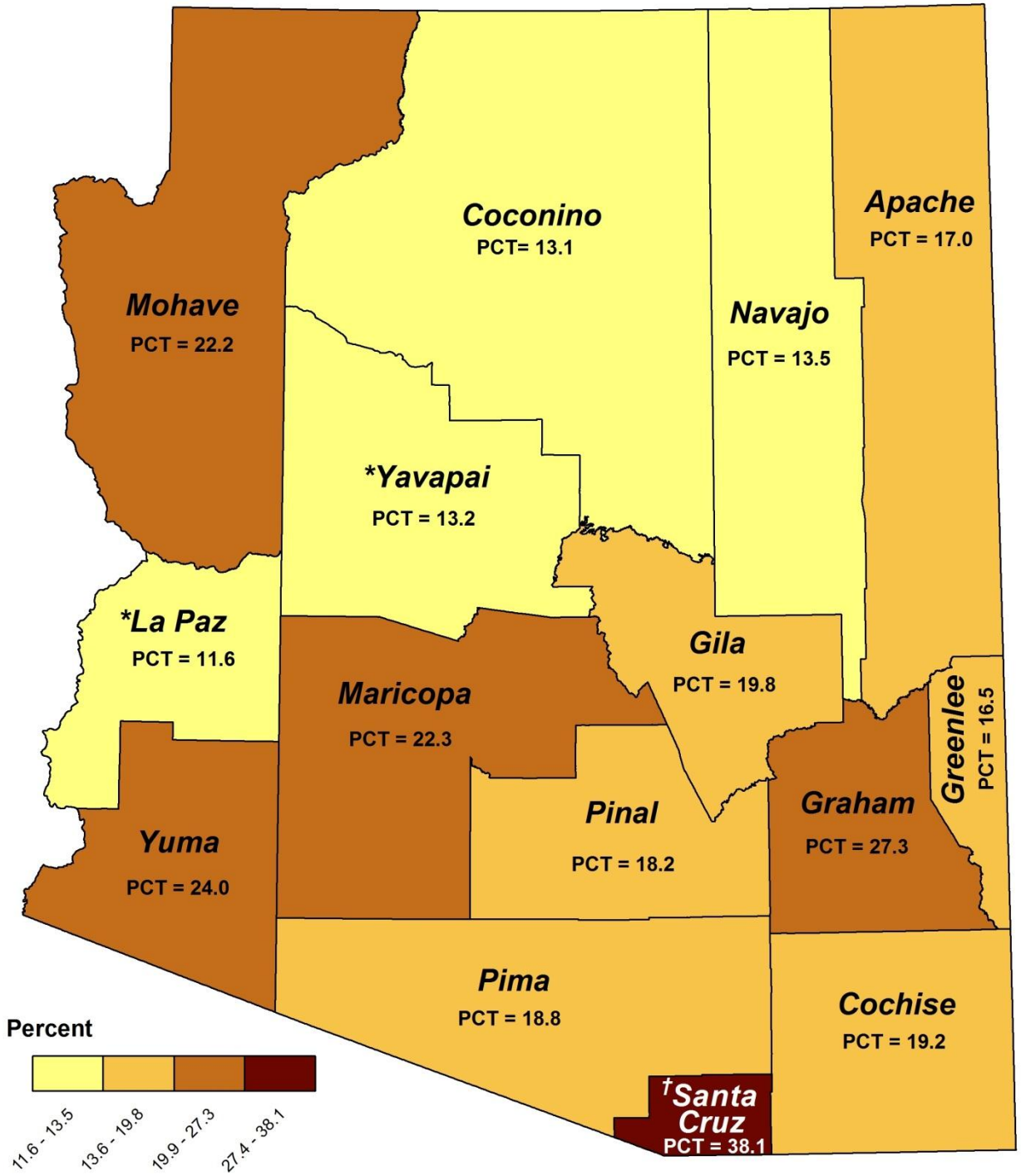
Respondents were more likely to report that they were unable to afford needed medical care if they

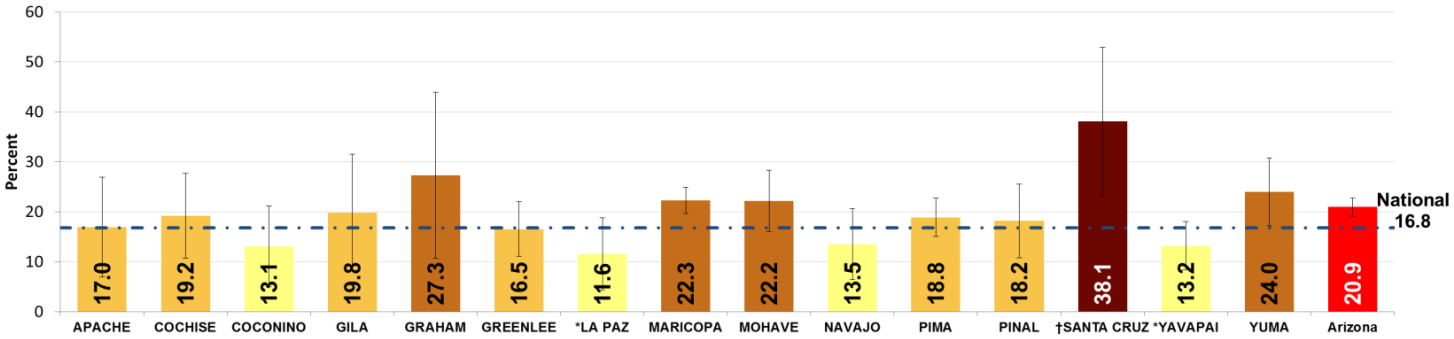
- Were female
- Were between the ages of 25 and 34
- Were separated
- Had less than a high school diploma
- Were out of work
- Had a household income of less than $25,000
- Were Black

In 2012, individuals who were unable to work were the most likely to report that they were living on wages below the poverty line, at 33.9%. This was more than ten percent higher than individuals who were out of work.

Arizona Department of Health Services

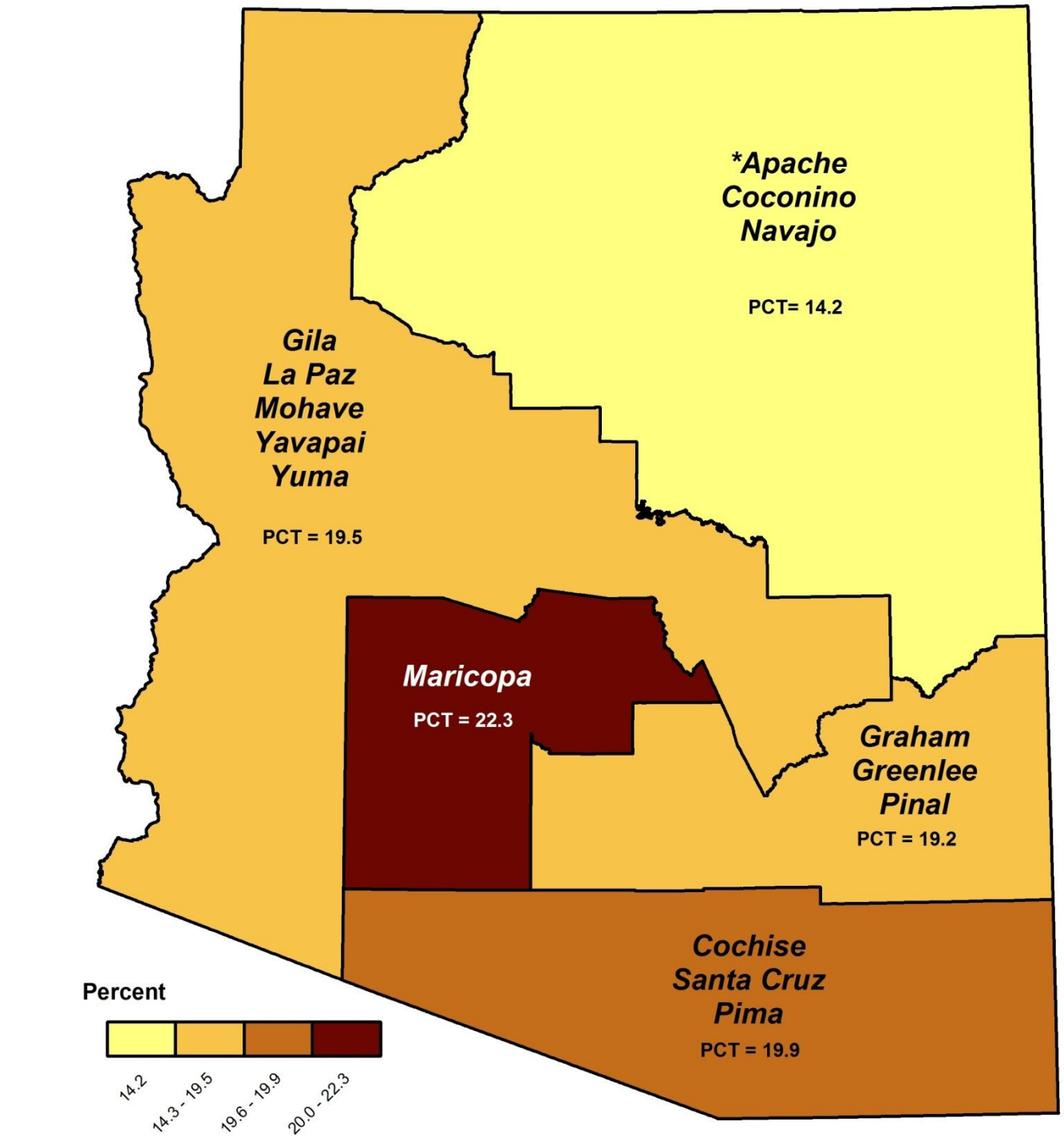
Percentage of Arizonans Who Could Not Afford Needed Health Care by County, 2012

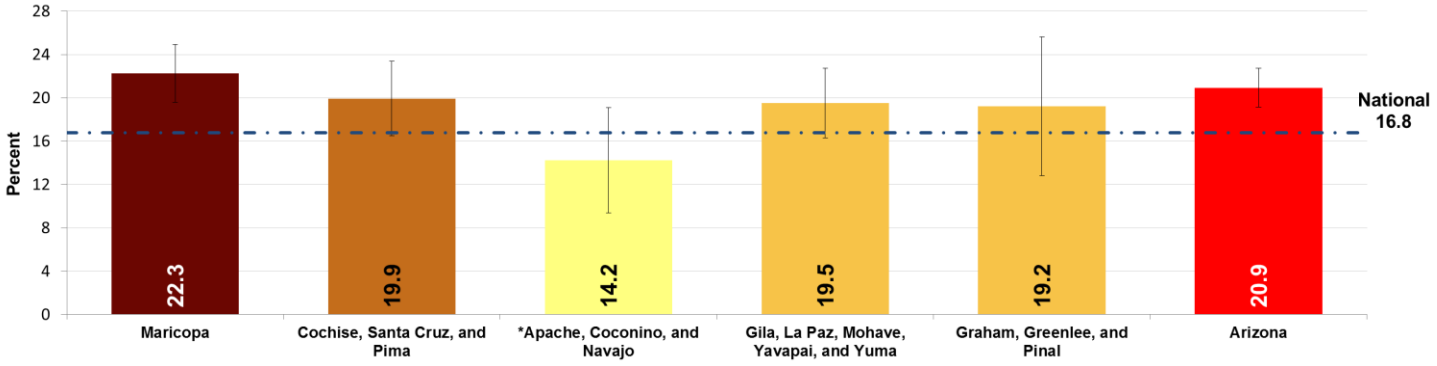




*indicates that the county has a significantly lower percentage of individuals reporting that they could not afford needed medical services than the overall state percentage.
†indicates that the county has a significantly higher percentage of individuals reporting that they could not afford needed medical services than the overall state percentage.

Percentage of Arizonans Who Could Not Afford Needed Health Care by Region, 2012

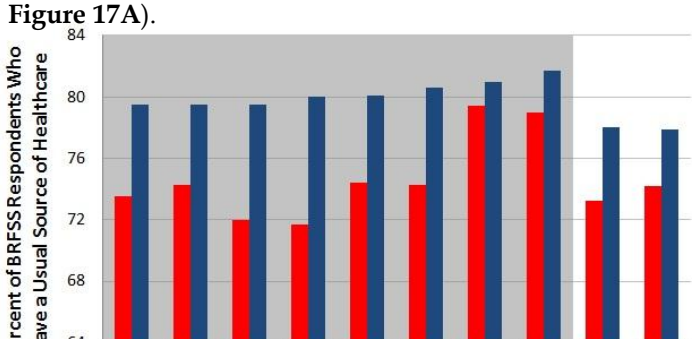




*indicates that the region has a significantly lower percentage of individuals reporting that they could not afford needed medical services than the overall state average.

Barriers to Healthcare
Usual Source of Healthcare

The Committee on Quality of Healthcare in America and the Institute of Medicine recommended that health care organizations offer customization of care based on patient needs and become able to anticipate the needs of the patient rather than reacting to medical events.[41] To do this, healthcare professionals and patients must build a long-term and trusting relationship. Everyone should have a primary care provider (PCP). PCPs are an individual's main healthcare practioner who offers non-emergency care. PCPs can be doctors, physician assistants, or nurse practitioners. PCPs provide preventative care, teach and promote healthy lifestyle choices, and identify and treat common medical conditions.[42] Historically, Arizonans were less likely to have a usual source of healthcare when compared to the nation as a whole. In 2012, 74.2% of Arizonans reported that they had a usual source of healthcare, which was 3.7% lower than the overall reponse in the U.S. (see **Figure 17A**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	73.5	74.3	72	71.7	74.4	74.3	79.4	79	73.2	74.2
National	79.5	79.5	79.5	80	80.1	80.6	81	81.7	78	77.9

Figure 17A. Arizona and National 2002-2012 BRFSS respondents who reported that they had a usual source of health care. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible

When compared to other states in the nation, Arizona falls in the second-lowest category for percent of respondents who reported they had a usual source of healthcare (see **Figure 17B**).

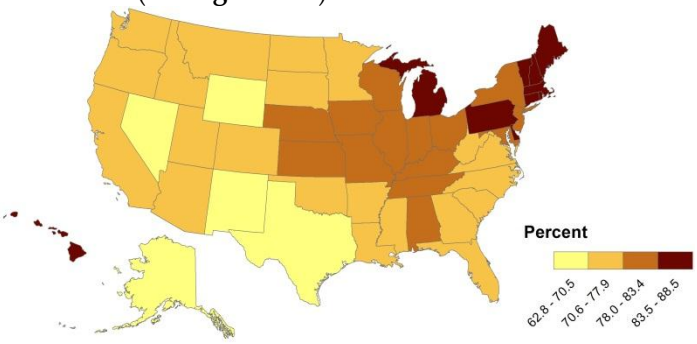


Figure 17B. Percent of 2012 BRFSS respondents who have a usual source of health care (natural breaks).

The services physicians provide are not identical. There are many different specialties in medicine. Likewise an individual may need to see more than one physician. To assess availability of healthcare, the distribution of how many providers an individual usually sees is just as important as whether or not they have a usual source of care. According to the 2012 BRFSS, 68.9% of Arizonans had one provider that was their usual source of care, and 5.3% said they had two or more. In both instances it was lower than the national prevalence (see **Figure 17C**).

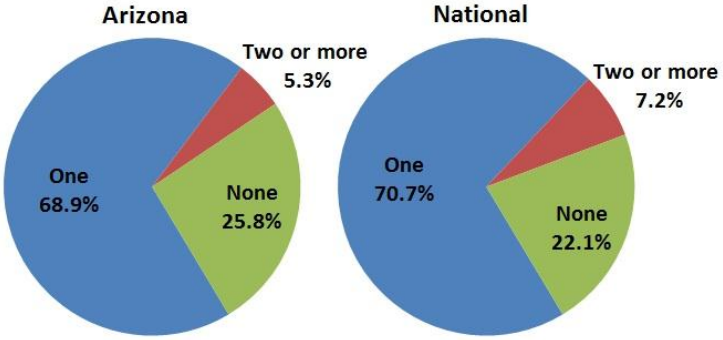


Figure 17C. Distribution of the number of providers respondents see as a usual source of health care in the 2012 Arizona and National BRFSS

The ability to speak and associate with a medical professional on a regular basis is a luxury that has many barriers such as cost, availability, insurance status, and time. According to the historic BRFSS (years 2006-2010) individuals who were impoverished, were uninsured, or were American Indian or Hispanic had a significantly lower prevalence of reporting a usual source of healthcare, when compared to the state prevalence. (see **Figure 17D**).

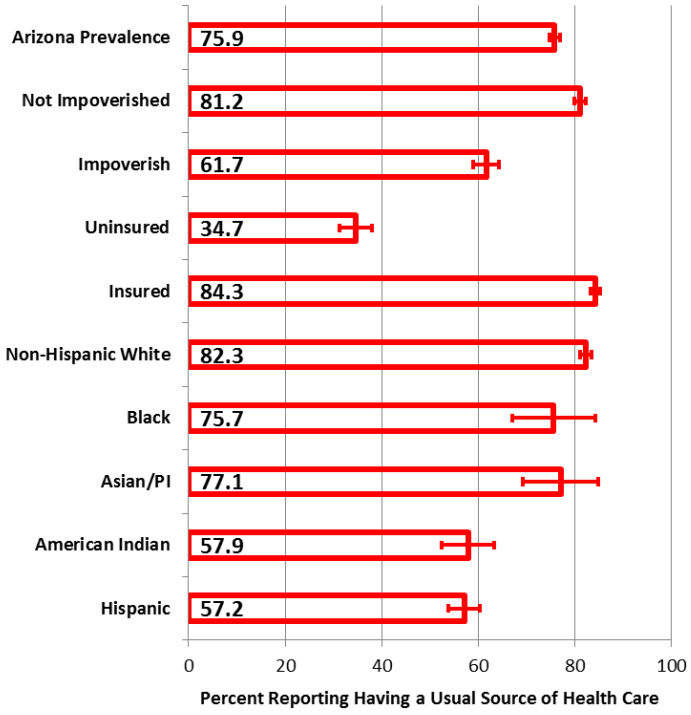


Figure 17D. Historic BRFSS (years 2006-2010) percent reporting a usual source of health care by insurance status, poverty status, and race/ethnicity.

41 National Research Council. Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, DC: The National Academies Press, 2001

42 "Choosing a Primary Care Provider" Medline Plus. U.S. National Library of Medicine, 12 Aug. 2011. Web. 26 Feb. 2014. <http://www.nlm.nih.gov/medlineplus/ency/article/001939.htm>

Arizona Department of Health Services

Barriers to Healthcare
Usual Source of Healthcare

Arizonans Who Had a Usual Source of Healthcare in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**74.2**	**72.5**	**76.0**
National	**77.9**	**77.6**	**78.2**
Sex			
Male	68.7	66.0	71.5
Female	79.5	77.3	81.8
Age			
18-24	55.1	48.6	61.7
25-34	59.7	54.5	64.8
35-44	72.1	67.5	76.7
45-54	76.5	72.8	80.3
55-64	84.6	81.9	87.3
65+	92.2	90.5	93.8
Marital Status			
Married	80.8	78.8	82.8
Divorced	74.2	70.1	78.3
Widowed	88.9	85.2	92.5
Separated	67.9	54.6	81.1
Never Married	62.8	58.2	67.4
Unmarried Couple	53.9	44.0	63.8
Educational Attainment			
Less than High School	63.2	57.1	69.3
High School Graduate/GED	71.9	68.5	75.4
Some College/Tech School	75.4	72.5	78.3
College Grad	82.3	79.8	84.8
Employment Status			
Employed for wages	71.7	68.9	74.4
Self-employed	68.9	62.3	75.4
Out of work	61.4	54.5	68.2
Homemaker	75.8	69.8	81.7
Student	57.0	46.5	67.5
Retired	91.4	89.5	93.2
Unable to Work	87.7	83.1	92.2
Income			
<$25,000	65.5	61.9	69.1
$25,000-$34,999	68.8	63.0	74.6
$35,000-$49,999	76.7	72.2	81.2
$50,000-$74,999	83.5	79.8	87.2
$75,000+	84.3	81.1	87.6
Race/Ethnicity			
White Non-Hispanic	80.2	78.4	81.9
Black	81.4	72.4	90.4
Asian/PI	72.1	59.0	85.3
American Indian	63.9	55.0	72.9
Other	77.2	67.8	86.7
Hispanic	61.3	56.8	65.9

The table to the left displays the distribution of the prevalence of Arizona adults who have a usual source of health care. The data are broken down by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were more likely to report that they had a usual source of health care if they

- Were female
- Were 65 or older
- Were widowed
- Had graduated from college
- Were retired
- Had a household income greater than $75,000
- Were Black

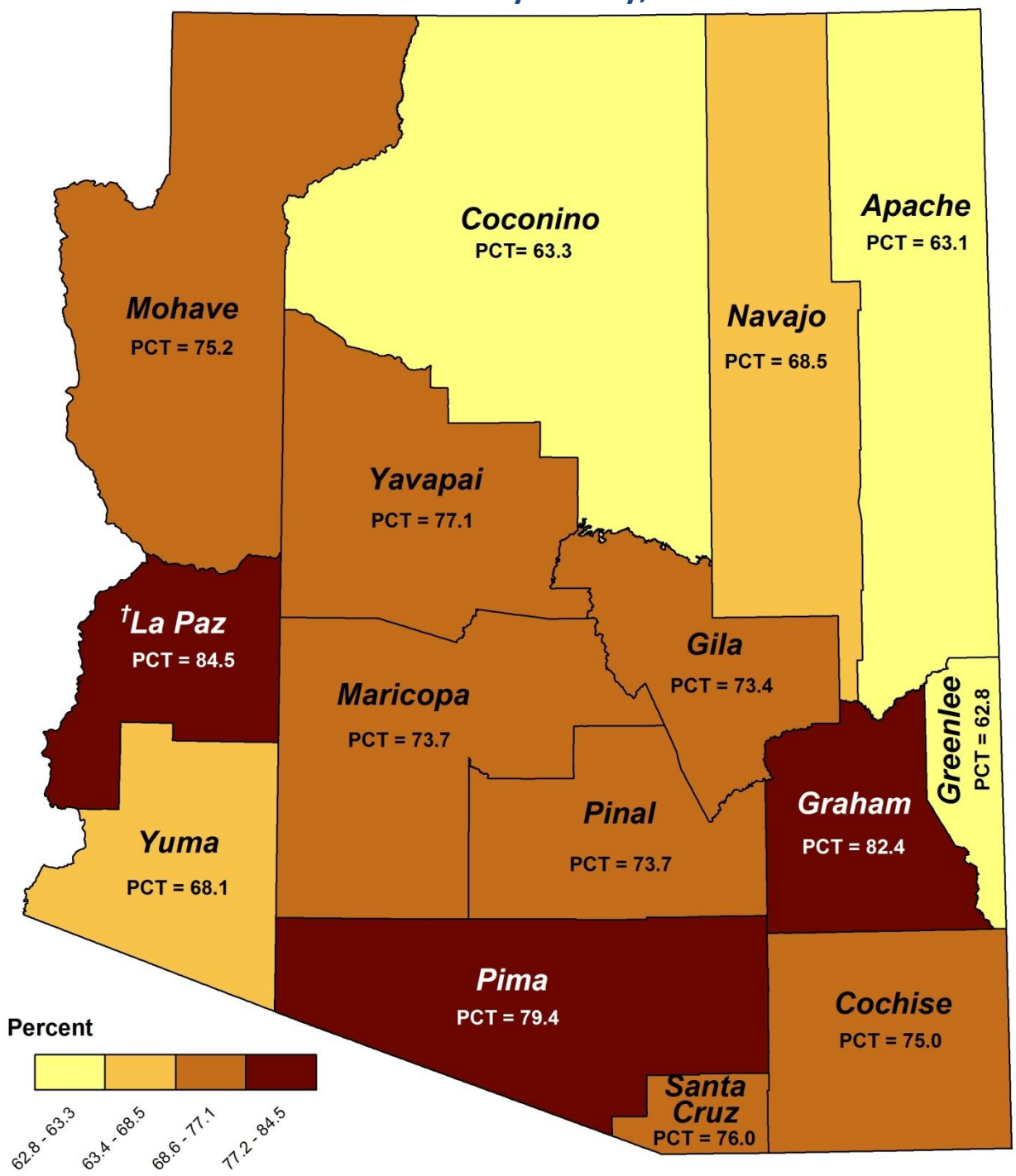
As household income increased so did the likelihood of reporting having a usual source of health care.

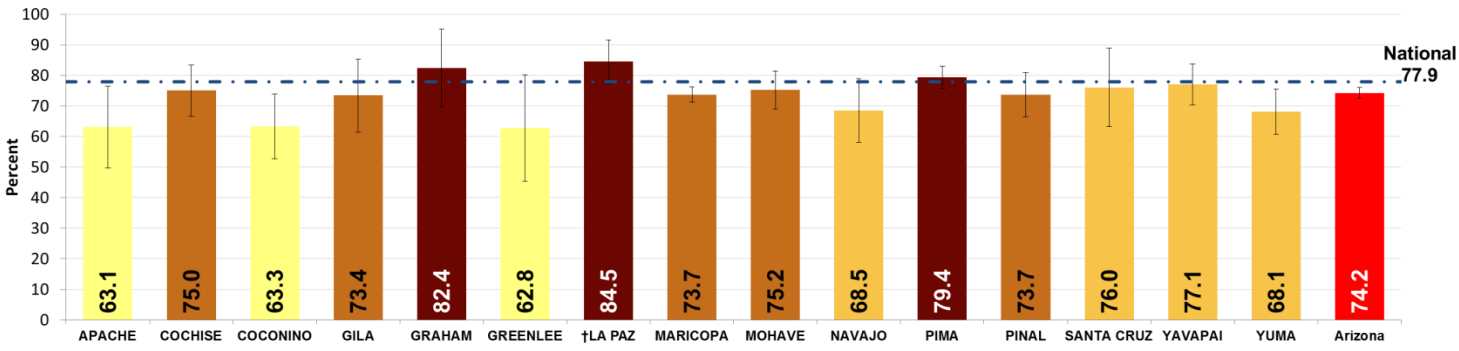
Respondents were less likely to report that they had a usual source of health care if they

- Were male
- Were between the ages of 18 and 24
- Were an unmarried couple
- Had less than a high school diploma
- Were out of work
- Had a household income less than $25,000
- Were Hispanic

In 2012, Arizonans who were between the ages of 18 and 24 were the least likely to report that they had a usual source of health care, at 55.1%.

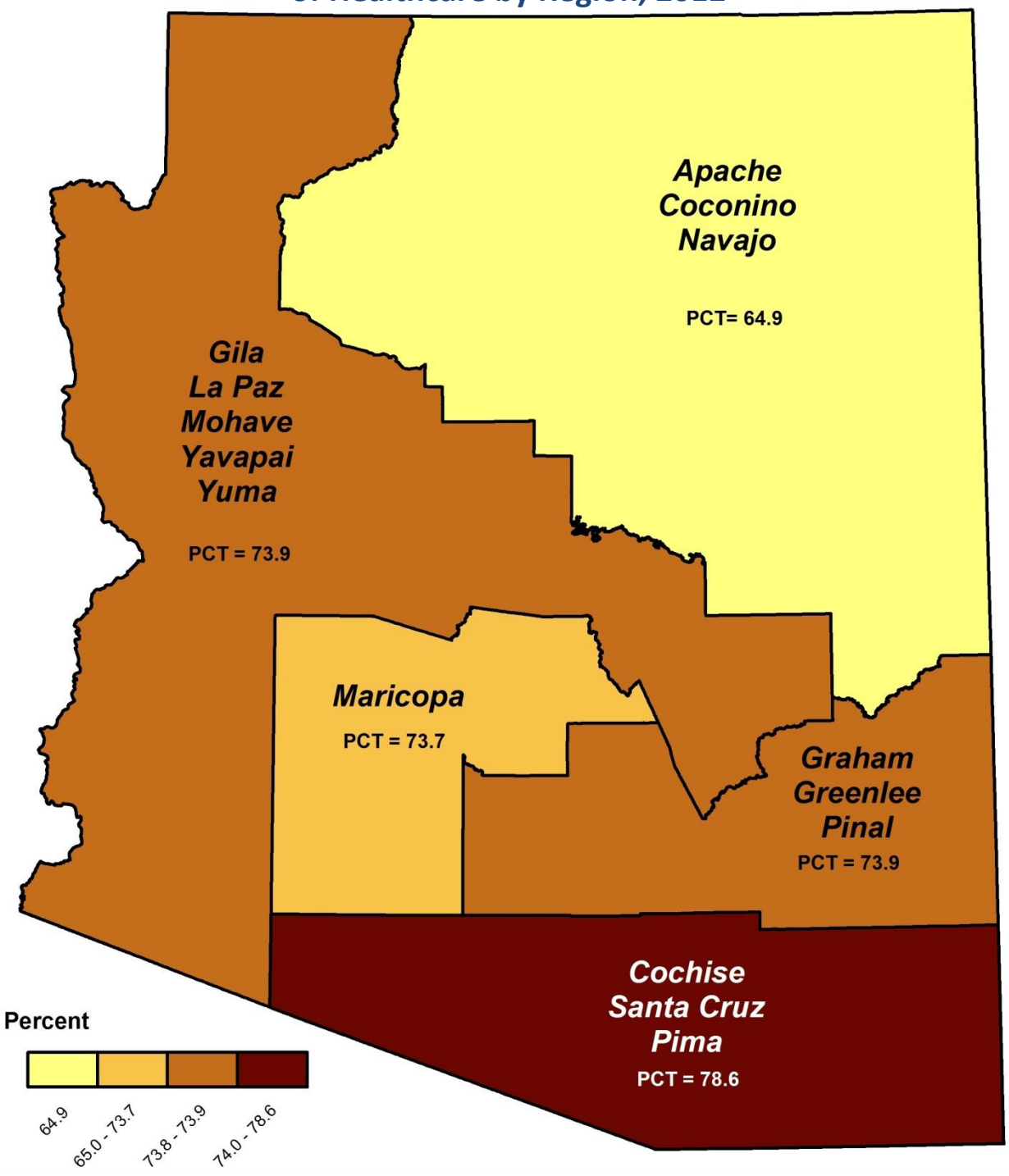
Percentage of Arizonans Who Reported Having a Usual Source of Healthcare by County, 2012

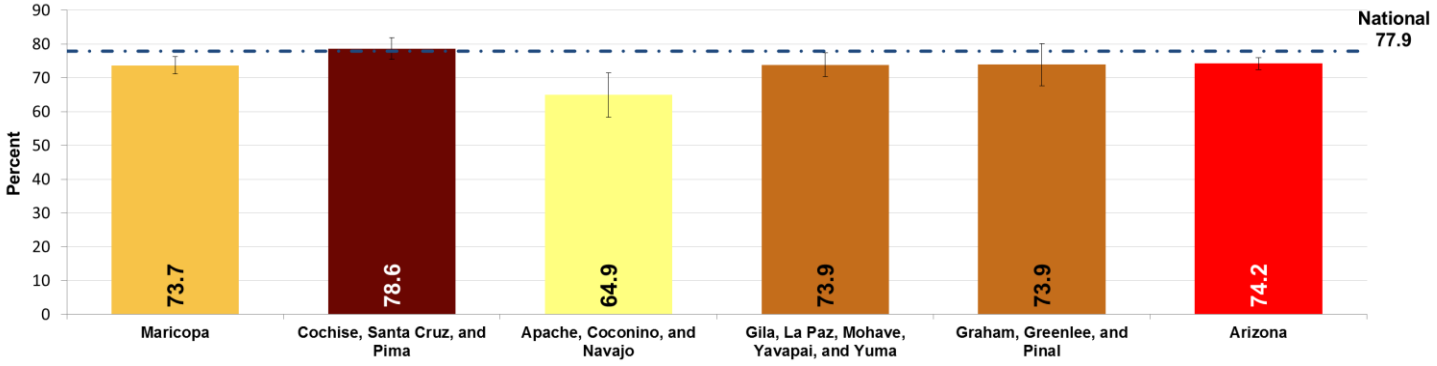




†indicates that the county has a significantly higher percentage of individuals reporting having a usual source of care than the overall state percentage.

Percentage of Arizonans Who Reported Having a Usual Source of Healthcare by Region, 2012





Health Risks Behaviors

Certain activities or behaviors increase the risk of mortaility and morbidity. Promotion of sessation programs, awareness, and policy changes will help reduce the impact of these behaviors. Many programs and policies have been enacted to reduce the burden associated with participating in these risky behaviors. Continued monitoring of these behaviors will provide Arizona with a tool to assess the impact of these programs and policies. The Health Risks and Behaviors Section of the 2012 Arizona BRFSS section include an analysis of the following:

- **Seat Belt Use (variable SEATBELT) -** binary outcome where always wearing a seat belt is a positive outcome; anything other than always wearing a seat belt is a negative outcome.
- **Cigarette Smoking (variable _RFSMOK3) -** binary outcome where former and never smokers are considered a positive outcome. If the respondent is a current smoker, he/she is categorized is a negative outcome.
- **Alcohol Abuse: Heavy Drinking (variable _RFDRHV4) -** binary outcome where adult men who have more than two drinks a day, and women who have more than one drink per day are a negative outcome. If the respondent drinks less than the aforementioned amount or does not drink at all, he/she is considered a positive outcome.
- **Alcohol Abuse: Binge Drinking (variable _RFBING5) -** binary outcome where if a person drinks more than five drinks on at least one occasion in the past 30 days, he/she is considered a negative outcome. If the respondent has not consumed five or more drinks on one occasion, he/she is classified as a positive outcome.

Strategic Map Link

By collecting data on seat belt use, smoking status, heavy drinking, and binge drinking, the BRFSS is providing Arizona with a tool to evaluate if its programs are effectively improving internal policy development and implementation, and reducing tobacco and substance use.

The aforementioned indicators are all part of Arizona's Winnable Battles as outlined in A2 and E4 of the ADHS Strategic Map.

(See Page 5)

Health Risks Behaviors
Seat Belt Use

Motor vehicle crashes are the leading cause of death for people between the ages of 5 and 34. It is estimated that seat belts can reduce the number of deaths and serious injuries by 50%.[43] In 2012, there were 57,661 inpatient and emergency department discharges in Arizona due to motor vehicle accidents; 326 individuals died in the hospital. The majority of the hospitalizations were individuals who were drivers or passengers in a motor vehicle, followed by motorcyclists (see **Figure 18A**).

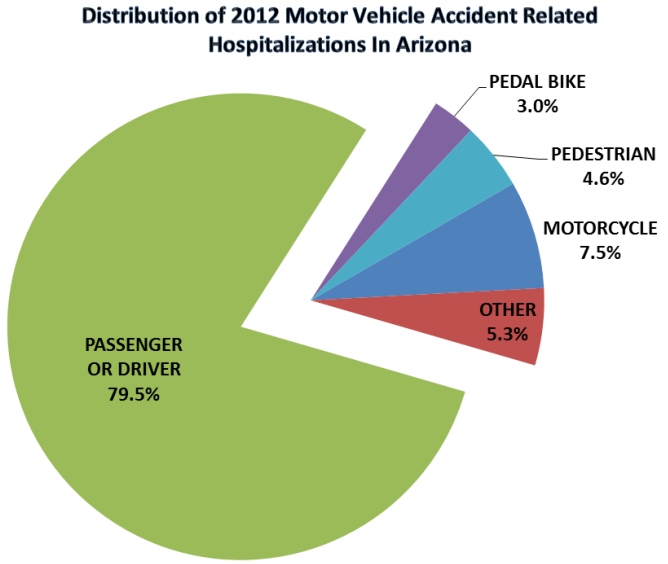


Figure 18A. Distribution of 2012 inpatient and emergency department hospitalizations in Arizona due to motor vehicle accidents. Generated using ICD-9 codes E810.0 to E819.9.

Individuals who were hospitalized as a passenger or driver of a vehicle contributed to 45,856 discharges, which was 79.5% of the discharges related to motor vehicle accidents, and 156 deaths. The visits accounted for more than $576 million worth of charges, and had an average length of stay ranging from 10.2 hours to 23 hours. For drivers under the age of 18, there were 8 deaths and 1,060 discharges. They accounted for more than $13 million in charges. The average length of stay was 13 hours (see **Table 9**).

Inpatient and Emergency Department Discharges of Motor Vehicle Accidents Where the Driver or Passenger Was Injured

	Number of Visits	Died	Charges	Average Length of Stay (Hours)
Under 18	6,713	16	$61,835,166	10.2
Driver <18	1,060	8	$13,603,682	13.0
18 to 24	9,680	29	$115,083,528	11.5
25 to 39	12,595	25	$141,201,702	11.9
40 to 54	8,915	30	$116,459,221	14.7
55+	7,953	56	$141,490,641	23.0
Total	**45,856**	**156**	**$576,070,258**	**-**

Table 9. Inpatient and emergency department visits (2012) that contain the following ICD-9 Codes: E810.0, E810.1. E811.0, E811.1; E812.0, E812.1, E813.0. E813.1, E814.0, E814.1, E815.0, E815.1, E816.0, E816.1, E817.0, E817.1, E818.0, E818.1, E819.0 and E819.1.

43 Centers for Disease Control. "Adult Seat Belt Use." CDC Vital Signs.CDC, 04 Jan. 2011. Web. 26 Feb. 2014. <http://www.cdc.gov/vitalsigns/SeatBeltUse/>.

Historically the BRFSS has asked a seat belt useage question biennially since 2006. However, in 2011 seat belt usage has become part of the annual core questionnaire. In 2012, 84.7% of Arizonans would always wear their seat belt when they drove or rode in a car, which was 2.1% lower than the national response (see **Figure 18B**).

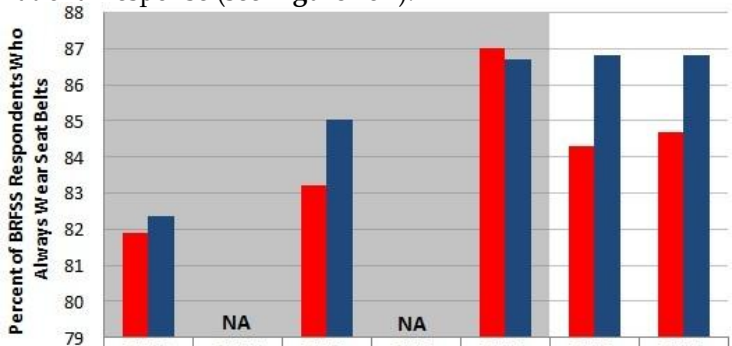


Figure 18B. Arizona and National 2006-2012 BRFSS respondents who reported that they always wore a seatbelt when they drove or rode in a car. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

Although, Arizonans reported always wearing a seat belt at a lower rate than the national response, it fell into the second highest category for percent of respondents reporting that they always wore a seatbelt when compared to all the states in the nation (see **Figure 18C**).

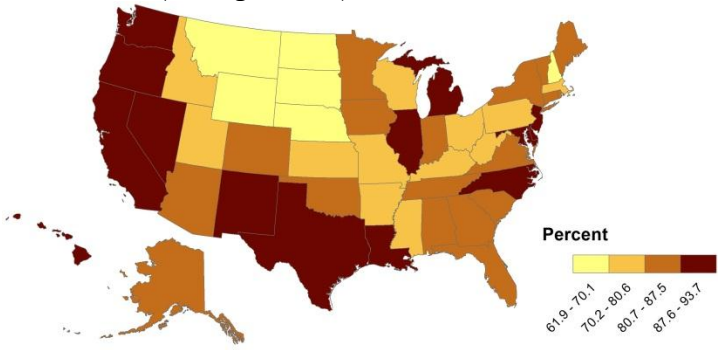


Figure 18C. Percent of 2012 BRFSS respondents who always wear seatbelts (natural breaks).

The distribution of national prevalance may be due to the nature of the seatbelt laws. States with primary seat belts laws allow police officers to stop vehicles solely for seatbelt violations. In states with secondary seatbelt laws, such as Arizona, an officer must have another reason to stop the vehicle (see **Figure 18D**).[44]

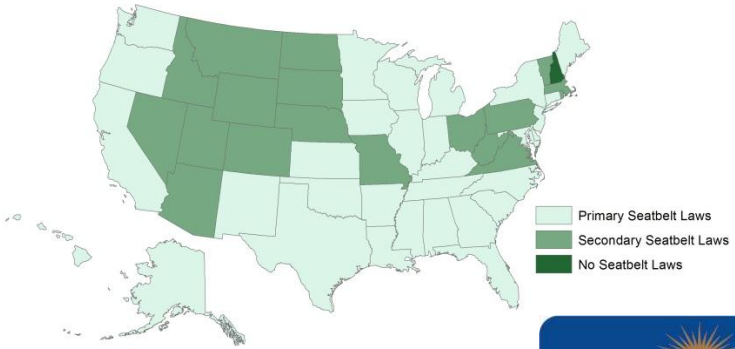


Figure 18D. National Highway Safety Laws.

44 "Safety Belts." Safety Belt Use Laws. N.p., n.d. Web. 28 Feb. 2014.

Arizona Department of Health Services

Health Risks Behaviors
Seat Belt Use

Arizonans Who Always Wear Seatbelts When Driving or Riding In a Car in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**84.7**	**83.2**	**86.2**
National	**86.0**	**13.8**	**14.2**
Sex			
Male	81.6	79.3	84.0
Female	87.7	85.9	89.5
Age			
18-24	75.1	69.2	81.0
25-34	79.7	75.3	84.1
35-44	84.4	80.6	88.2
45-54	86.6	83.5	89.6
55-64	89.8	87.6	92.0
65+	90.3	88.7	92.0
Marital Status			
Married	88.9	87.3	90.5
Divorced	84.1	80.6	87.7
Widowed	90.9	87.9	93.9
Separated	68.7	56.2	81.1
Never Married	75.7	71.5	79.9
Unmarried Couple	85.5	78.2	92.8
Educational Attainment			
Less than High School	79.5	74.1	84.8
High School Graduate/GED	82.7	79.8	85.7
Some College/Tech School	85.3	83.0	87.7
College Grad	89.2	87.2	91.3
Employment Status			
Employed for wages	84.3	82.0	86.6
Self-employed	82.6	77.6	87.5
Out of work	80.0	73.8	86.3
Homemaker	86.7	82.4	90.9
Student	83.7	75.4	92.0
Retired	91.1	89.5	92.6
Unable to Work	79.4	72.2	86.5
Income			
<$25,000	80.4	77.3	83.5
$25,000-$34,999	82.5	77.8	87.1
$35,000-$49,999	84.3	80.3	88.3
$50,000-$74,999	86.3	82.7	89.9
$75,000+	90.3	87.9	92.6
Race/Ethnicity			
White Non-Hispanic	86.8	85.3	88.3
Black	80.8	70.9	90.7
Asian/PI	90.7	82.7	98.6
American Indian	73.2	62.8	83.7
Other	83.6	73.7	93.5
Hispanic	80.5	76.7	84.3

The table to the left displays the distribution of Arizonans who always wear a seatbelt when driving or riding in a car. The data are broken down by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were more likely to report that they always wore seatbelts if they

- Were female
- Were 65 or older
- Were widowed
- Had graduated from college
- Were retired
- Had a household income greater than $75,000
- Were Asian or Pacific Islander

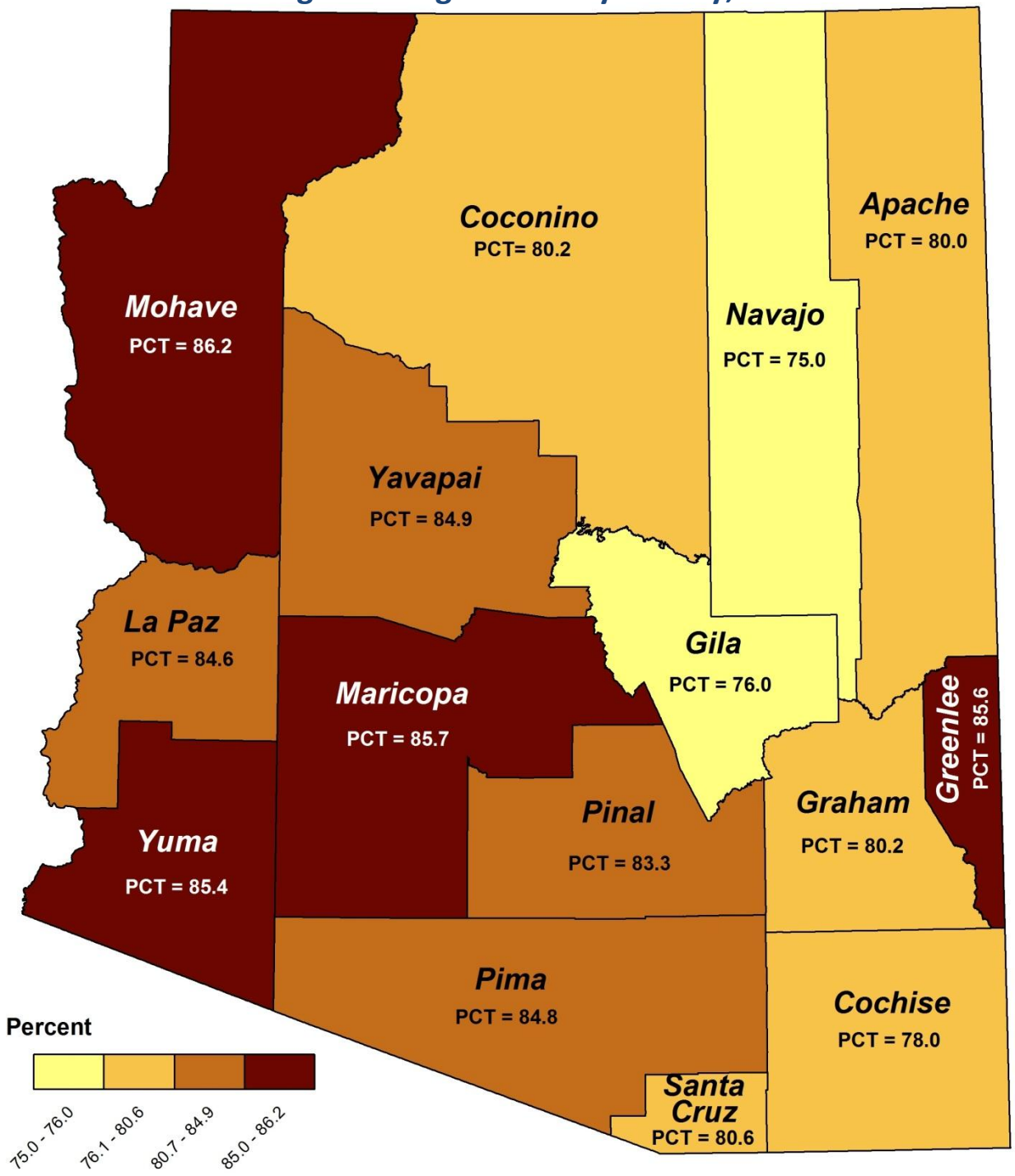
Of all employment categories, retired individuals were the most likely to report always wearing a seatbelt, at 91.1%.

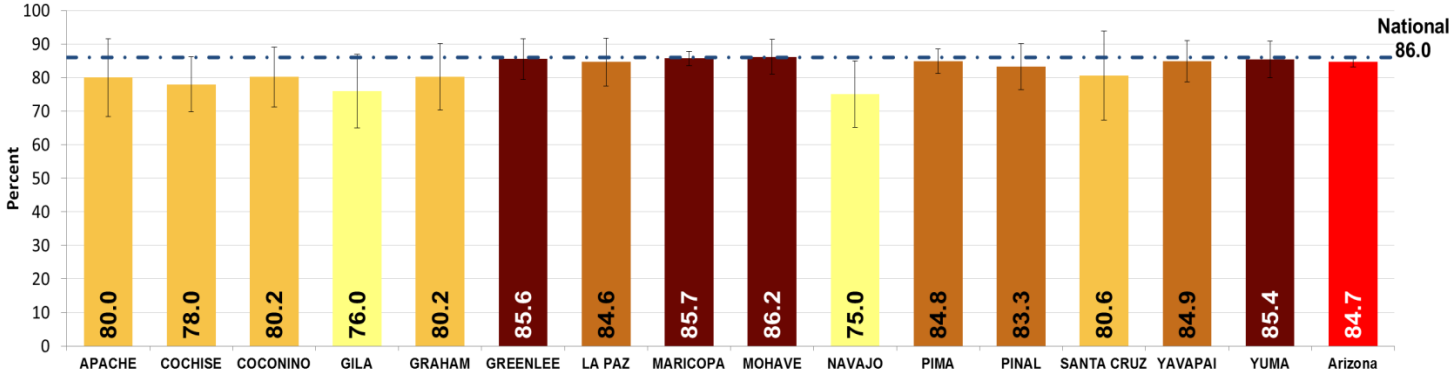
Respondents were less likely to report that they always wore seatbelts if they

- Were male
- Were between the ages of 18 and 24
- Were separated
- Had less than a high school diploma
- Were unable to work
- Had a household income less than $25,000
- Were American Indian

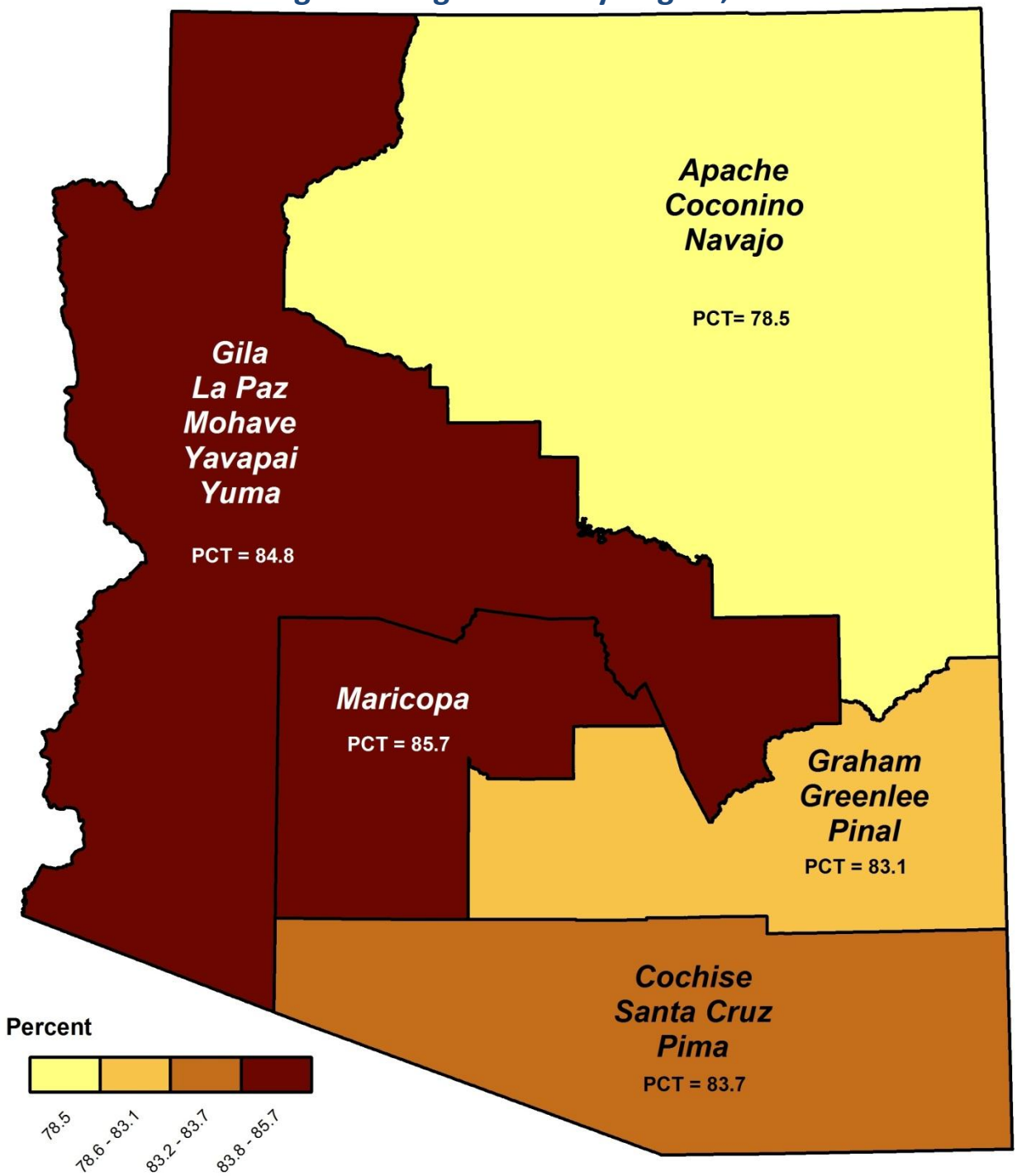
Of all racial/ethnic groups, American Indians were the least likely to report always wearing a seatbelt, at 73.2%.

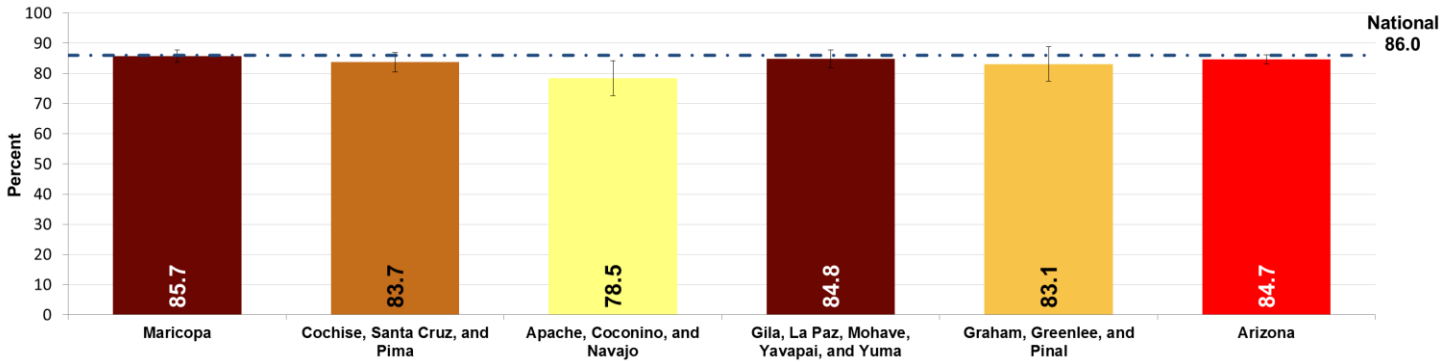
Percentage of Arizonans Who Reported Always Wearing a Seatbelt When Driving or Riding In a Car by County, 2012





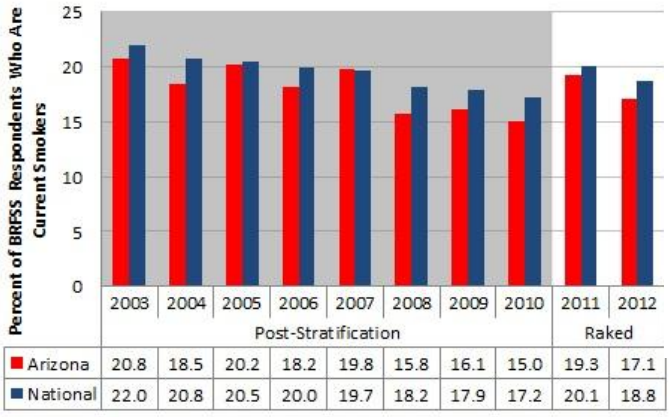
Percentage of Arizonans Who Reported Always Wearing a Seatbelt When Driving or Riding In a Car by Region, 2012





Health Risks Behaviors
Cigarette Smoking

In 1964, the United States Surgeon General released the *Smoking and Health: Report of the Advisory Committee of the Surgeon General of the Public Health Service.* The Advisory Committee's findings were that cigarette smoking is associated with a 70% higher all-cause mortality rate in men. It was a cause of lung cancer and laryngeal cancer in men and it was a probable cause of lung cancer in women. In response to the report, the U.S. Congress passed the *Federal Cigarette Labeling and Advertising Act of 1965* and the *Public Health Cigarette Smoking Act of 1969,* which required health warnings on the packaging and banned broadcast advertising.[45] Since the 1964 report, the Surgeon General's reports have established a long list of health consequences and diseases caused by tobacco use and exposure; and many programs have been implemented to prevent use and encourage cessation. Continued monitoring of tobacco use is a core component of the BRFSS. In 2012, 17.1% of Arizonans reported that they currently smoke, which was 1.7% lower than the national prevalence (see **Figure 19A**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	20.8	18.5	20.2	18.2	19.8	15.8	16.1	15.0	19.3	17.1
National	22.0	20.8	20.5	20.0	19.7	18.2	17.9	17.2	20.1	18.8

Figure 19A. Arizona and National 2003-2012 BRFSS respondents who reported that they were current smokers. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible

When comparing Arizona to all the states in the U.S. the data shows that Arizona falls into the second lowest category reporting current cigarette use (see **Figure 19B**).

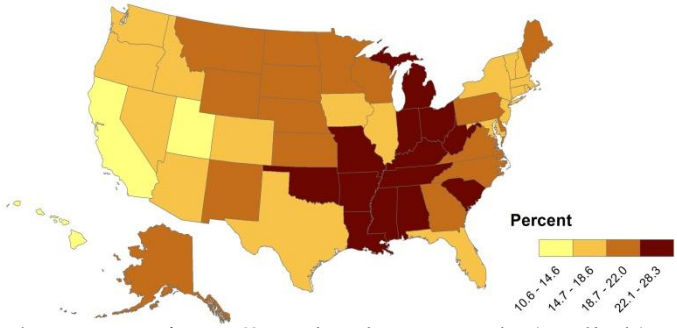


Figure 19B. Percent of 2012 BRFSS respondents who are current smokers (natural breaks).

45 U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress. A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014. Corrections on January 2014.

Due to the nature of the BRFSS, follow-up data are not available. Quitting is a difficult process and an individual may quit smoking and then relapse in the future. Therefore, it is important to document the distribution of smoking status. Although, the percent of Arizonans who were current smokers was lower than the nation as a whole, the percent of individuals who never smoked was .5% lower than the nation (see **Figure 19C**).

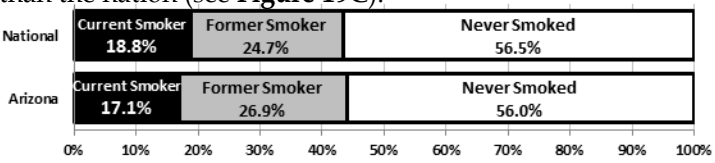


Figure 19C. Distribution of smoking status in the 2012 BRFSS.

Current research has established many more causal linkages between smoking and diseases/chronic conditions. In the 2014 Surgeon General's Advisory Committee's report on the *Health Consequences of Smoking*, the current research assessed by the committee established that ten additional diseases are caused by smoking (see **Figure 19D**).[44]

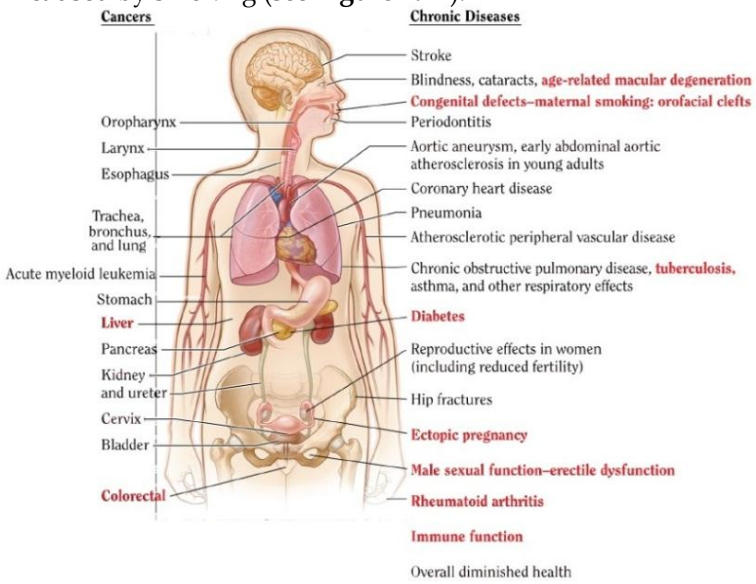


Figure 19D. Taken from the *United States Surgeon General's Report on the Health Consequences of Smoking, 2014,* in red are new diseases the current research has shown smoking to cause.[44]

Research has shown that people who smoke are 15 to 30 times more likely to get lung cancer. Therefore, monitoring lung cancer is of the utmost importance. In 2012, there were 8,854 hospitalizations for trachea, bronchus, and lung cancer, resulting in 422 individuals dying in the hospital and charges more than $380 million (see **Table 10**).

Inpatient and Emergency Department Discharges Related to Trachea, Bronchus, and Lung Cancer

	Number of Discharges	Died	Charges	Average Length of Stay (Days)
Charity	19	3	$1,595,166	10.4
Medicaid	630	24	$26,987,165	4.5
Medicare	6029	273	$263,089,044	4.5
Private Insurance	1675	95	$73,818,209	4
Self-Pay	309	14	$14,929,053	4.6
Other	192	13	$9,446,888	4.1
Total	**8854**	**422**	**$389,865,525**	-

Table 10. Inpatient and emergency department visits (2012) that contain the following ICD-9 Codes: 162.0, 162.2-162.5, 162.8, and 162.9

Arizona Department of Health Services

Health Risks Behaviors
Cigarette Smoking

Arizonans Who Reported That They Are Current Smokers in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**17.1**	**15.6**	**18.6**
National	**18.8**	**18.5**	**19.0**
Sex			
Male	19.6	17.2	21.9
Female	14.7	12.9	16.4
Age			
18-24	18.9	13.4	24.4
25-34	21.1	16.6	25.6
35-44	16.7	13.1	20.2
45-54	18.6	15.4	21.8
55-64	19.2	16.2	22.2
65+	9.5	7.7	11.3
Marital Status			
Married	11.5	9.9	13.2
Divorced	27.7	23.6	31.8
Widowed	13.5	10.3	16.7
Separated	29.6	18.7	40.5
Never Married	20.1	16.3	23.9
Unmarried Couple	29.2	19.9	38.5
Educational Attainment			
Less than High School	20.7	15.7	25.8
High School Graduate/GED	22.9	19.7	26.1
Some College/Tech School	17.1	14.7	19.5
College Grad	8.5	6.8	10.3
Employment Status			
Employed for wages	15.9	13.7	18.1
Self-employed	18.3	12.7	23.9
Out of work	30.2	23.6	36.8
Homemaker	10.8	7.1	14.5
Student	16.1	7.7	24.5
Retired	10.6	8.6	12.6
Unable to Work	32.1	25.3	38.8
Income			
<$25,000	22.3	19.3	25.4
$25,000-$34,999	20.3	15.8	24.9
$35,000-$49,999	18.1	14.2	22.0
$50,000-$74,999	13.0	9.4	16.5
$75,000+	10.0	7.2	12.8
Race/Ethnicity			
White Non-Hispanic	18.2	16.4	19.9
Black	24.1	15.2	32.9
*Asian/PI	3.7	0.0	7.7
American Indian	20.4	12.6	28.3
Other	20.1	11.8	28.4
Hispanic	14.3	10.9	17.8

*Indicates an unreliable estimate due to small sample (n=6)

The table to the left displays the distribution of Arizonans who are current smokers. The data are broken down by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were less likely to report that they currently smoked if they

- Were female
- Were 65 or older
- Were married
- Had graduated from college
- Were retired
- Had a household income greater than $75,000

Individuals who were Asian or Pacific Islander were the least likely to report that they were currently smokers. However, the estimate is unreliable and should not be used as the sample size was six.

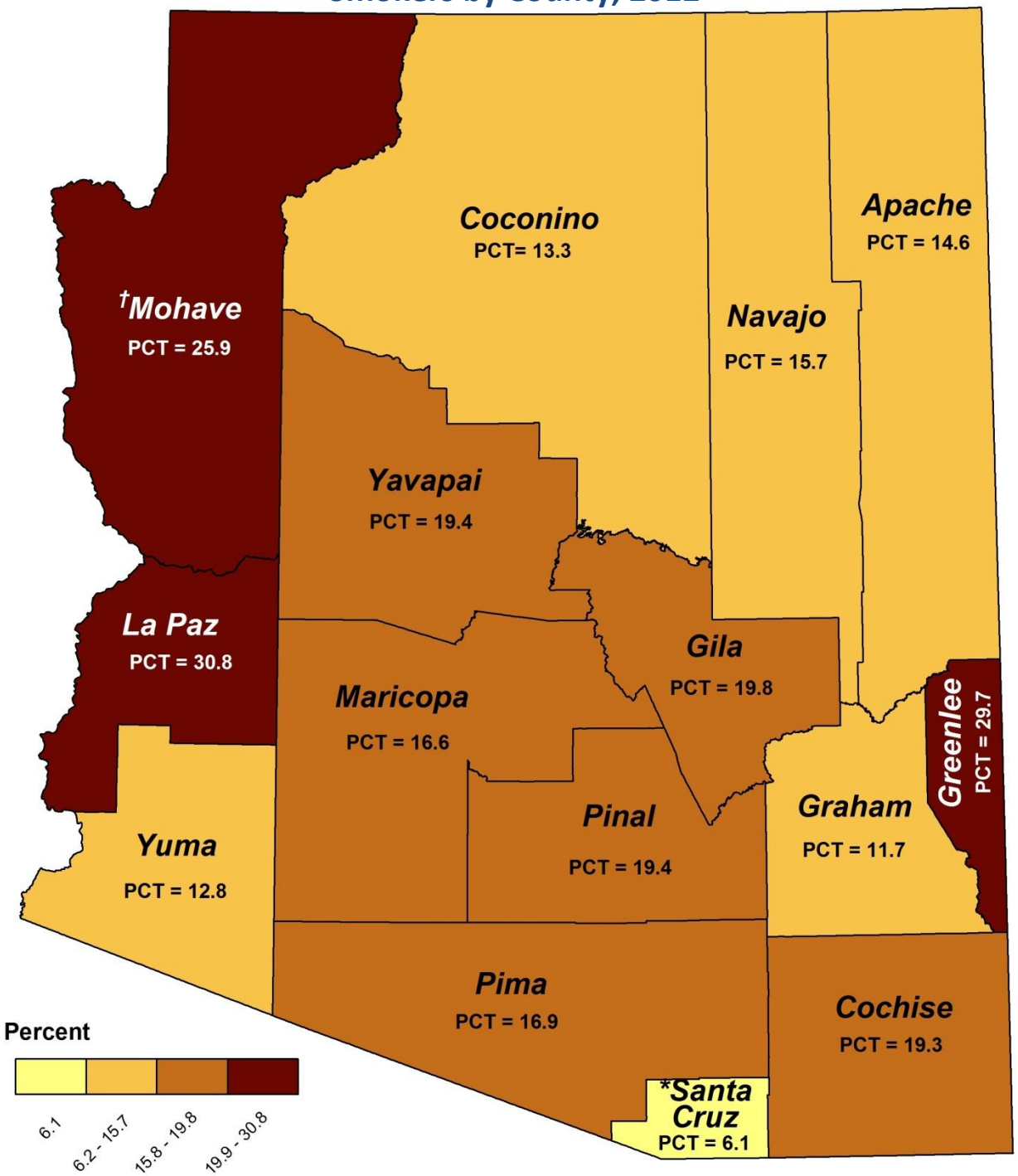
Respondents were more likely to report that they currently smoked if they

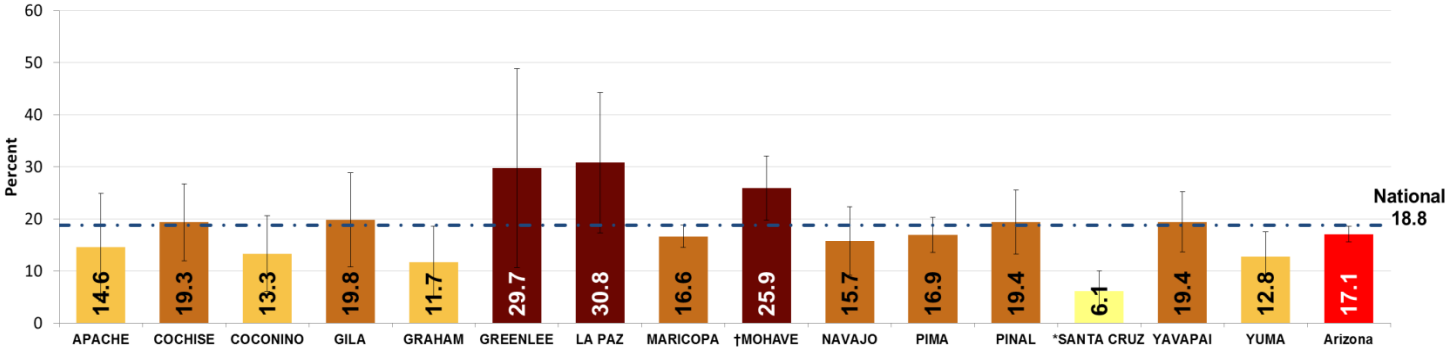
- Were male
- Were between the ages of 25 and 34
- Were separated
- Had a high school diploma or GED
- Were unable to work
- Had a household income less than $25,000
- Were Black

As household income decreased, the likelihood of being a current smoker increased. This is of special interest due to the rising cost associated with smoking.

Arizona Department of Health Services

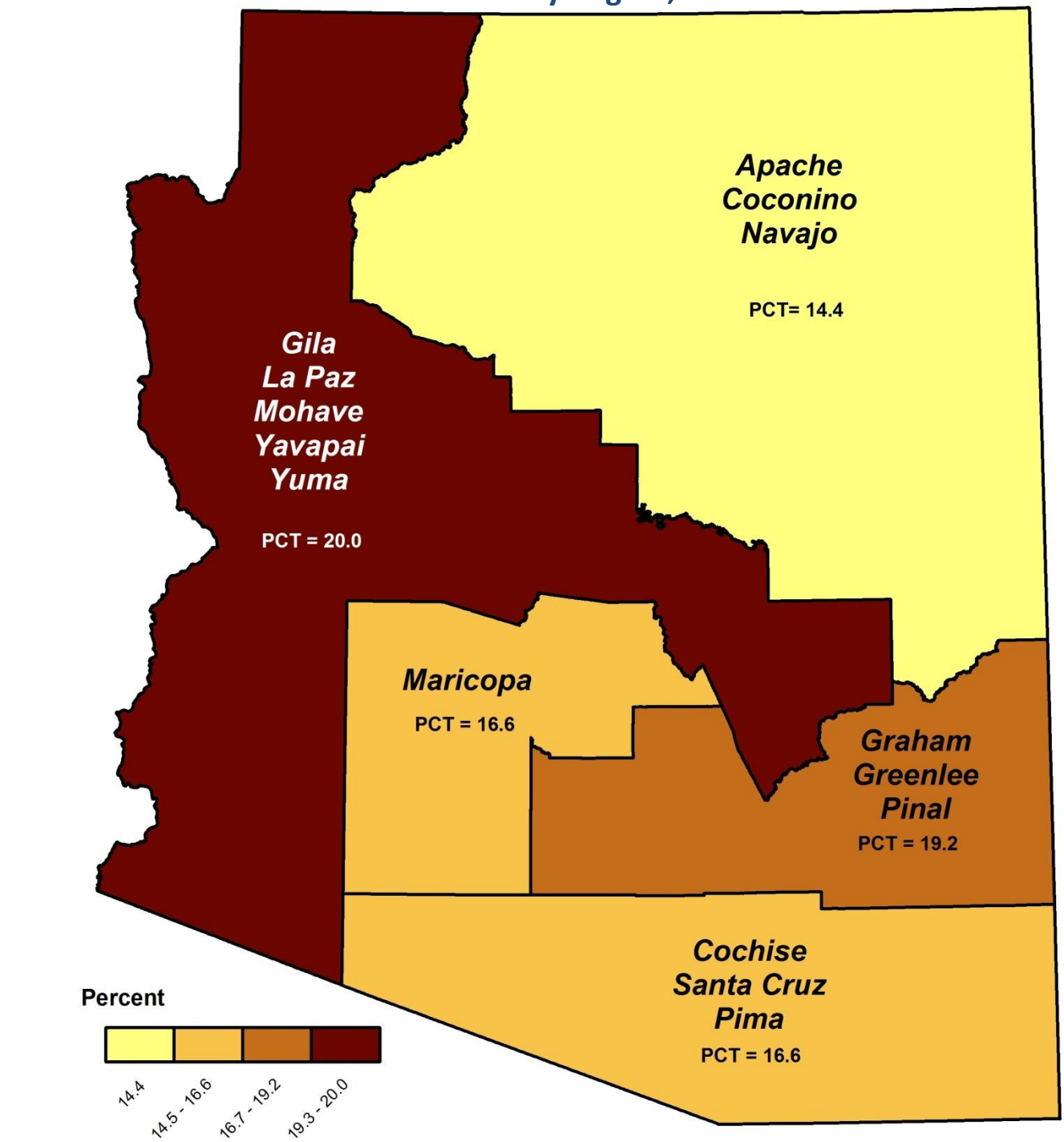
Percentage of Arizonans Who Reported That They Were Current Smokers by County, 2012

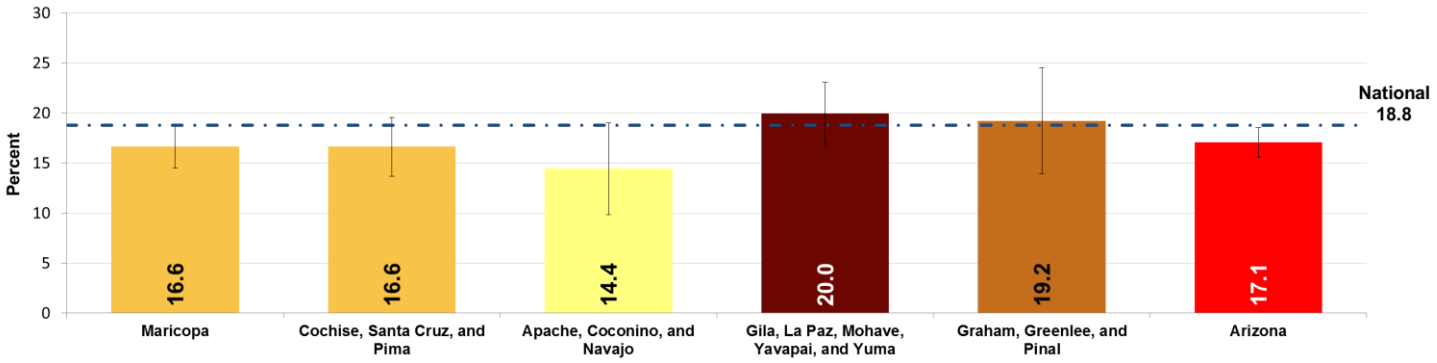




*indicates that the county has a significantly lower percentage of individuals reporting current cigarette use than the overall state percentage.
†indicates that the county has a significantly higher percentage of individuals reporting current cigarette use than the overall state percentage.

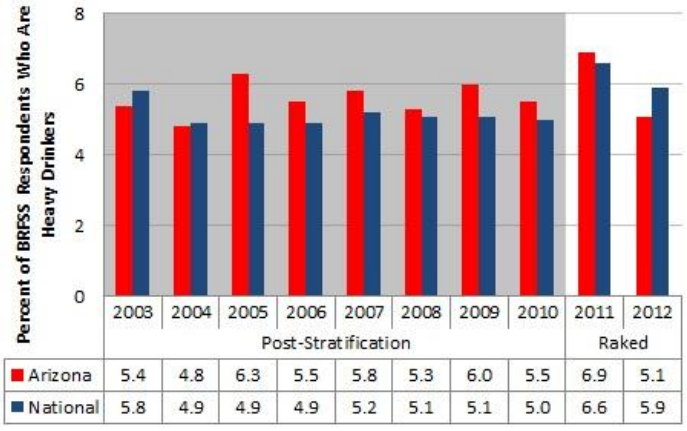
Percentage of Arizonans Who Reported That They Were Current Smokers by Region, 2012





Health Risks Behaviors
Alcohol Abuse: Heavy Drinking

In adults, alcohol use can be beneficial or detrimental to health. Research has shown that moderate daily consumption of alcohol, in middle-aged and older adults reduces the likelihood of cardiovascular events, all-cause mortality, and helps keep cognitive function intact as a person ages. However, moderate alcohol consumption also has been associated with increased risk of breast cancer, violence, drowning, injuries from falls, and motor vehicle crashes. Exceeding moderate alcohol consumption (heavy drinking) provides no health benefit. Heavy drinking has been associated with increased body mass index, impaired cognitive functioning (both long term and short term), liver disease, hypertension, stroke, Type 2 diabetes, injury, and violence. Heavy drinking is defined as having more than two drinks a day for men and more than one serving a day in women. [46] According to the 2012 BRFSS, Arizona had a lower percent of individuals who responded that they were heavy drinkers when compared to the nation as a whole, 5.1% and 5.9% respectively (see **Figure 20A**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	5.4	4.8	6.3	5.5	5.8	5.3	6.0	5.5	6.9	5.1
National	5.8	4.9	4.9	4.9	5.2	5.1	5.1	5.0	6.6	5.9

Figure 20A. Arizona and National 2003-2012 BRFSS respondents who were classified as heavy drinkers as per CDC guidelines. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

When comparing Arizona to all the states in the U.S. the data shows that Arizona falls into the second-lowest category for reporting heavy alcohol consumption (see **Figure 20B**).

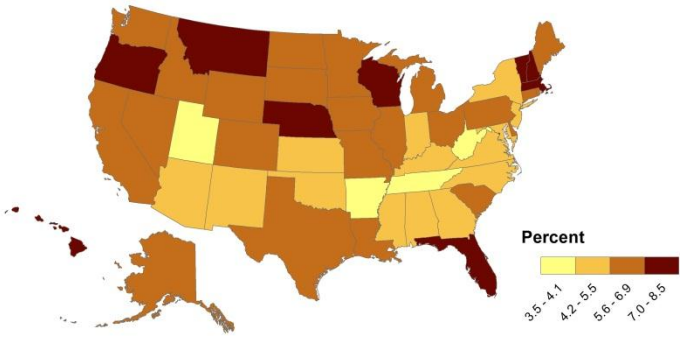


Figure 20B. Percent of 2012 BRFSS respondents who were classified as heavy drinkers as per CDC guidelines (natural breaks).

It is estimated that one in four individuals who are heavy drinkers already have alcohol dependence or abuse tendencies.[47] Hospitalizations related to alcohol are broken into three categories: alcohol abuse, alcohol dependence, and alcohol-induced disorders. The categories were created under the assumption that alcohol use in the absence of dependence has a variety of unique effects on health. According to the 2012 hospital discharge data, there were 83,393 discharges that were related to alcohol abuse or dependence. Of those, 129 died in the hospital. Furthermore, 1,963 of the patients were in a motor vehicle crash. The total charges associated with alcohol abuse and dependence was more than $1.2 billion, with the average length of stay ranging from 1.5 to 2.6 days (see **Table 11**). It is important to note that the percent of crash-related discharges was highest in patients between the ages of 18 to 24, and 6.1% of alcohol abuse or dependence discharges were related to a motor vehicle accident. The numbers provided by the hospital data demonstrate the impact that heavy drinking can make.

Inpatient and Emergency Department Alcohol Abuse and Dependency Related Discharges

	Discharges	Crash Related	Charges	Average Length of Stay (Days)
Under 18	2,093	47 (2.2%)	$17,829,319	2.5
18 to 24	8,112	494 (6.1%)	$88,769,416	1.5
25 to 39	21,648	721 (3.3%)	$265,992,007	1.8
40 to 55	31,328	460 (1.5%)	$441,497,187	2.1
55+	20,212	241 (1.2%)	$422,229,126	2.6
Total	**83,393**	**1,963 (2.3%)**	**$1,236,317,055**	**-**

Table 11. Inpatient and emergency department discharges (2012) that contained the following ICD-9 codes: 303.00-303.03, 303.90-303.93, and 305.00-305.03.

Furthermore, excessive alcohol consumption affects brain function and alters associated chemical and hormonal systems that are known to be involved in the development of many common medical disorders. Psychiatric complaints are often the first problems for which alcoholic patients seek out treatment.[46] In 2012, 12,773 hospitalizations had discharges that were related to alcohol-induced psychoses. Furthermore, the discharges were predominantly related to withdrawal: 92.7% (n=11,840) of the alcohol induced psychoses were related to withdrawal (see **Figure 20C**).

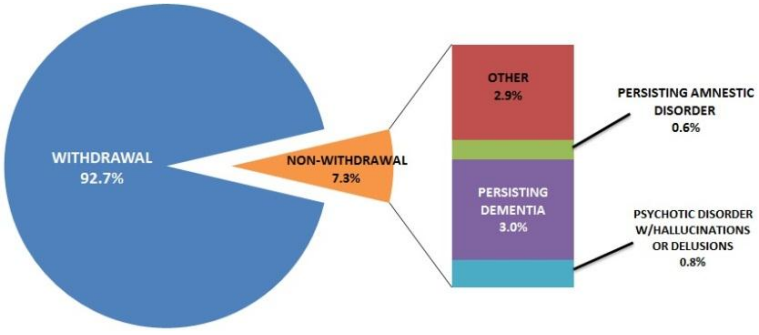


Figure 20C. Inpatient and emergency department discharges (2012) containing ICD-9 codes: 291.0-291.5. 291.81, 291.82 291.89, and 291.9

46 U.S. Department of Agriculture and U.S. Department of Health and Human Services. In: Dietary Guidelines for Americans, 2010. Chapter 3 – Foods and Food Components to Reduce. 7th Edition, Washington, DC: U.S. Government Printing Office; 2010, p. 30–32.

47. Shivani R. Goldsmith J, Anthenelli R. Alcoholism and Psychiatric Disorders: Diagnostic Challenges. NIH Publications, 2002. http://pubs.niaaa.nih.gov/publications/arh26-2/90-98.htm

Health Risks Behaviors
Alcohol Abuse: Heavy Drinking

Arizonans Who Reported That They Are Heavy Drinkers in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**5.1**	**4.3**	**5.9**
National	**5.9**	**5.7**	**6.0**
Sex			
Male	5.4	4.0	6.8
Female	4.8	3.8	5.8
Age			
18-24	6.7	3.5	9.8
25-34	5.5	2.9	8.0
35-44	4.1	2.5	5.8
45-54	4.6	2.6	6.6
55-64	6.1	4.3	8.0
65+	4.2	3.1	5.2
Marital Status			
Married	4.6	3.7	5.6
Divorced	3.2	1.8	4.6
Widowed	4.3	1.9	6.7
*Separated	3.3	0.0	7.0
Never Married	7.2	4.7	9.6
Unmarried Couple	5.5	2.0	9.1
Educational Attainment			
Less than High School	3.8	1.0	6.6
High School Graduate/GED	5.0	3.4	6.5
Some College/Tech School	5.0	3.8	6.3
College Grad	6.3	4.5	8.0
Employment Status			
Employed for wages	5.6	4.2	7.0
Self-employed	7.7	3.4	12.0
Out of work	4.7	1.9	7.5
Homemaker	2.2	0.9	3.5
Student	5.0	0.8	9.3
Retired	4.8	3.6	6.0
Unable to Work	3.8	1.2	6.4
Income			
<$25,000	4.0	2.5	5.5
$25,000-$34,999	8.7	5.4	12.0
$35,000-$49,999	5.0	3.3	6.8
$50,000-$74,999	5.6	3.1	8.1
$75,000+	5.4	3.7	7.2
Race/Ethnicity			
White Non-Hispanic	5.6	4.7	6.5
*Black	1.7	0.0	4.0
*Asian/PI	3.5	0.0	10.0
American Indian	3.6	1.2	6.1
Other	6.5	1.7	11.4
Hispanic	4.5	2.4	6.7

*Indicates an unreliable estimate due to small sample (n=2-5)

The table to the left displays the distribution of Arizonans who are heavy drinkers. The data are broken down by sex, age categories, marital status, educational attainment, employment status, income, and race.

Respondents were less likely to report that they were heavy drinkers if they

- Were female
- Were between the ages of 35 and 44
- Were divorced
- Had less than a high school education
- Were homemaker
- Had a household income less than $25,000

Individuals who were Black were the least likely to report that they were heavy drinkers. However, the estimate is unreliable and should not be used as the sample size was two.

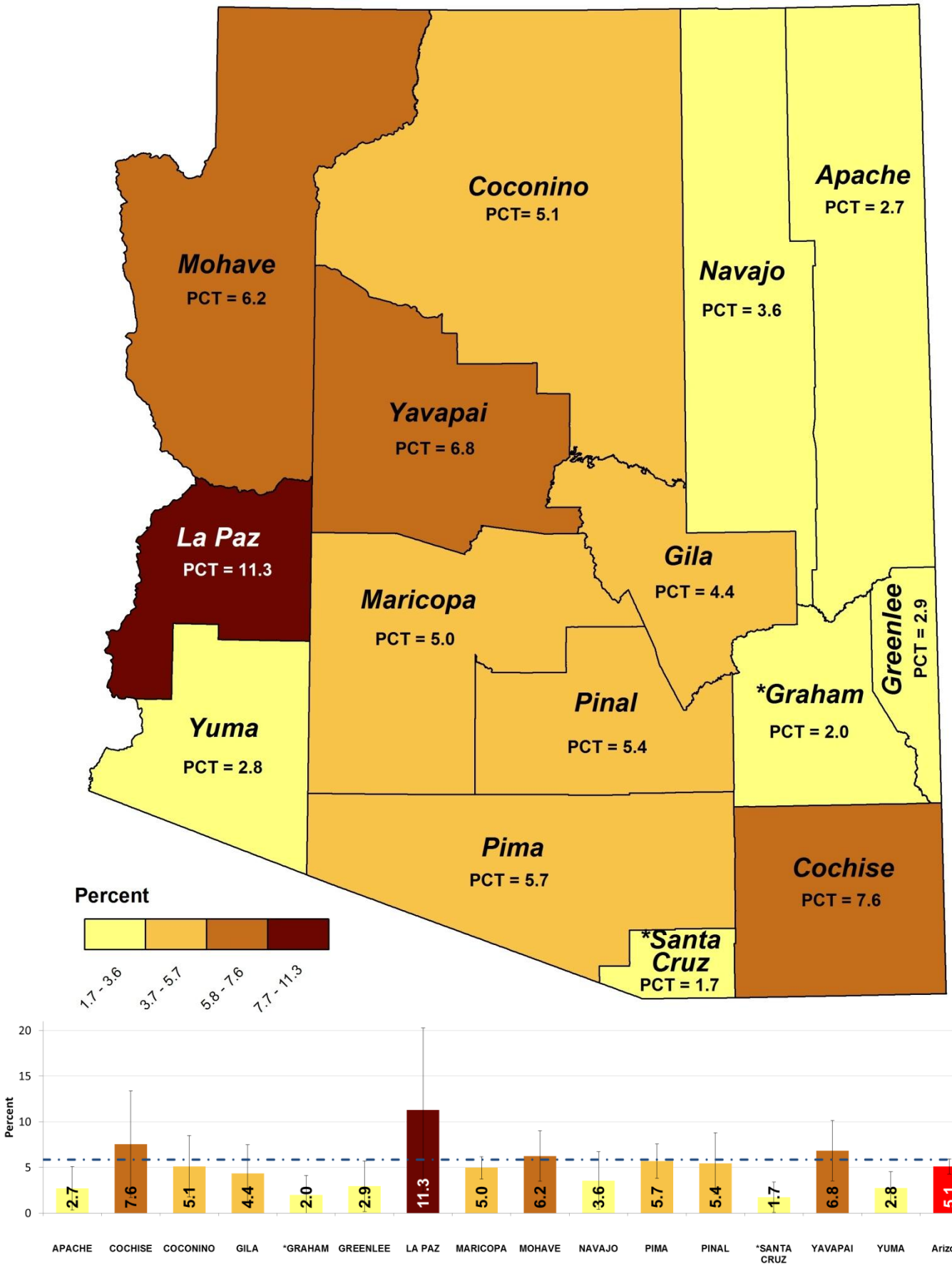
Respondents were more likely to report that they were heavy drinkers if they

- Were male
- Were between the ages of 18 and 24
- Were never married
- Were a college graduate
- Were self-employed
- Had a household income between $25,000 and $34,999
- Reported their race as other

Individuals who were self employed were the most likely to report that they were heavy drinkers, at 7.7%.

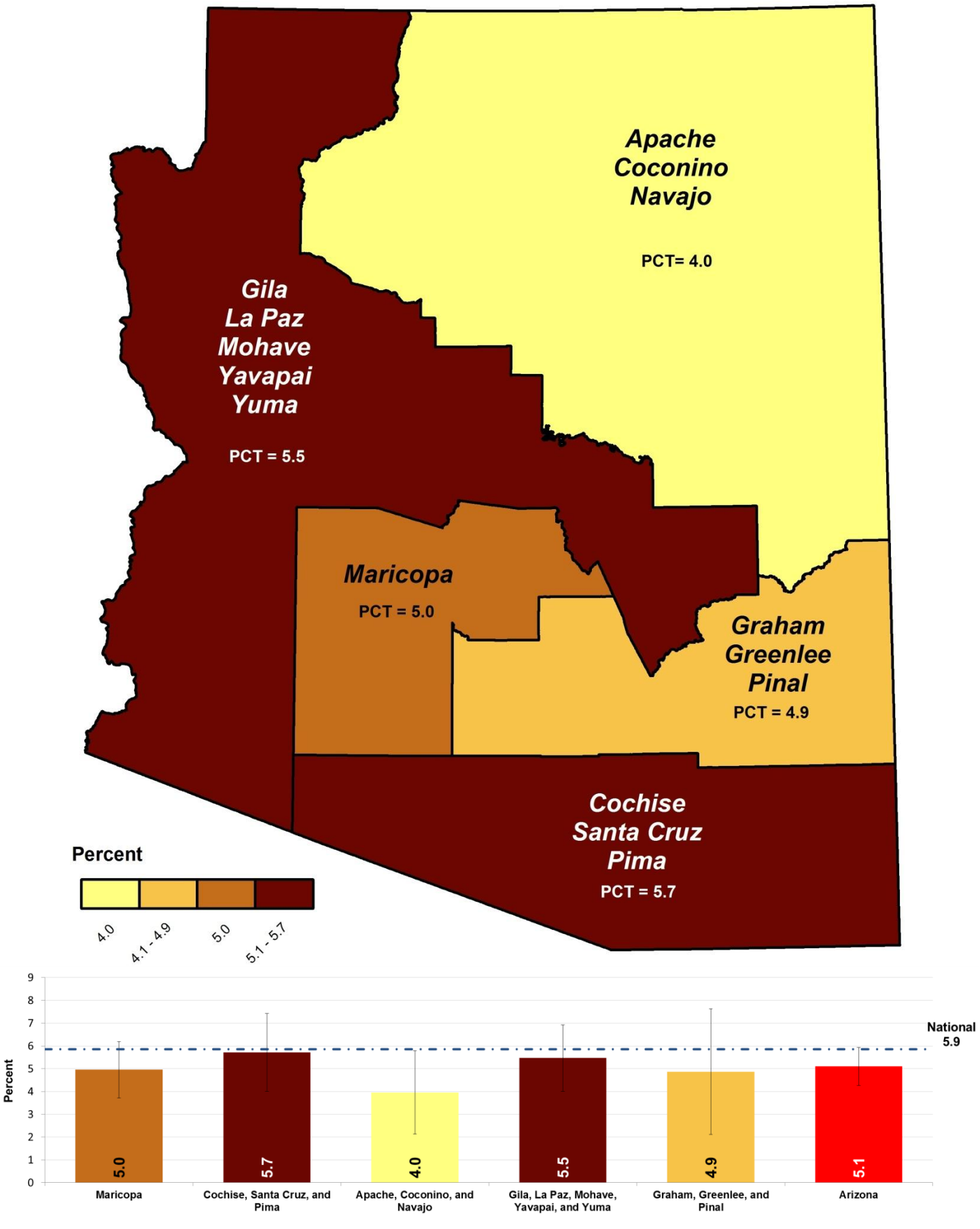
Arizona Department of Health Services

Percentage of Arizonans Who Were Heavy Drinkers by County, 2012



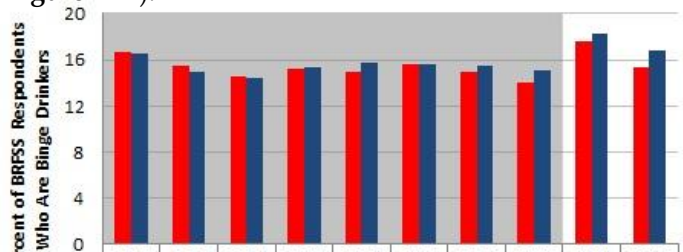
***indicates that the county has a significantly lower percentage of individuals reporting heavy drinking than the overall state percentage.**

Percentage of Arizonans Who Were Heavy Drinkers by Region, 2012



Health Risks Behaviors
Alcohol Abuse: Binge Drinking

Binge drinking is defined as having five or more drinks on one occasion. It is the most common form of drinking in the U.S. It is estimated that 1 in 6 adults binge drink about three to four times a month. Furthermore, it is a common risk behavior among all stages of life.[48] Historically, Arizonans were less likely to report binge drinking when compared to the nation. After the methodology change Arizona continued to report a lower prevalence of binge drinking, when compared to the nation (see **Figure 21A**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	16.6	15.5	14.5	15.2	14.9	15.6	14.9	14.0	17.6	15.3
National	16.5	14.9	14.4	15.4	15.7	15.6	15.5	15.1	18.3	16.8

Figure 21A. Arizona and National 2003-2012 BRFSS respondents who responded that they participate in binge drinking as per CDC guidelines. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

When comparing Arizona to the nation, the data shows that Arizona falls into the second-lowest category for reporting participating in binge drinking (see **Figure 21B**). Furthermore, Arizona fell into the second lowest category for average largest number of drinks consumed by binge drinkers on an occasion (see **Figure 21C**).

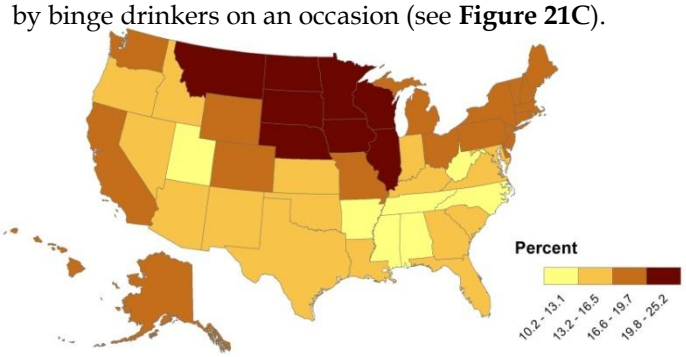


Figure 21B. Percent of 2012 BRFSS respondents who were classified as binge drinkers as per CDC guidelines.

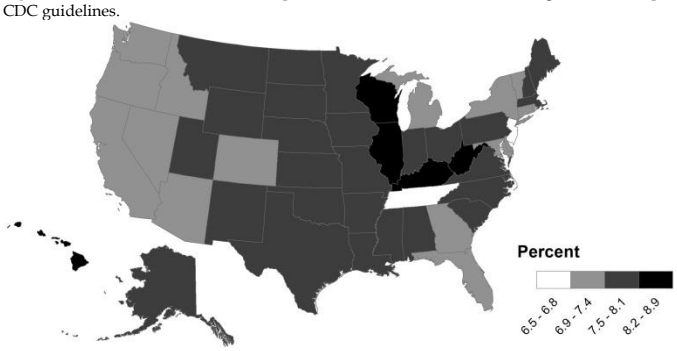


Figure 21C. Average largest number of drinks consumed by binge drinkers in the 2012 BRFSS.

48 Bouchery EE, Harwood HJ, Sacks JJ, Simon CJ, Brewer RD. Economic costs of excessive alcohol consumption in the United States, 2006External Web Site Icon. Am J Prev Med 2011;41:516–24.

In addition, Arizonans who binge drink, on average, would do so less often when compared to U.S. binge drinkers. The trend remained true regardless of gender. However, if men binge drink, on average, they would do it more often than women (see **Figure 21D**).

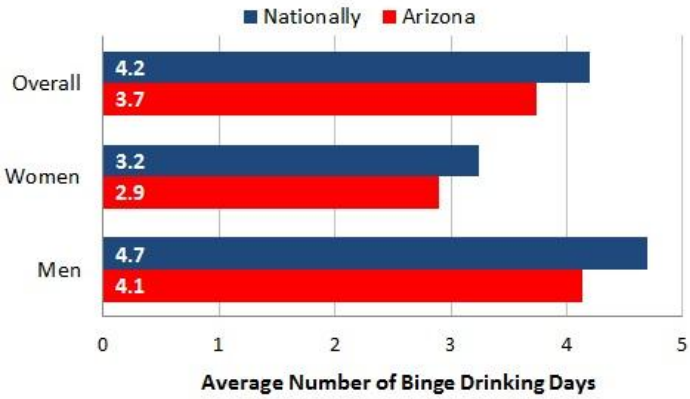


Figure 21D. Average number of days binge drinkers would participate in binge drinking in the 2012 Arizona and National BRFSS.

The latest research on the economic cost of excessive alcohol consumption was published on data collected in 2006. Nationally, the estimated impact of alcohol consumption was $746 per person, most of which can be attributed to binge drinking; totaling more than $170.7 billion (direct and indirect cost). Binge drinking has been associated with alcohol poisoning, high blood pressure and cardiovascular diseases, and liver diseases.[47] In 2012, there were five hospitalizations that were associated with alcohol poisoning, 318 alcoholic cardiomyopathies, 147 alcoholic polyneuropathies, and 10,350 discharges associated with alcohol induced liver disease. Research also has shown that more than a third of women who participate in risky patterns of alcohol consumption (i.e. binge drinking) will continue their behavior during pregnancy.[49] Alcohol consumption during pregnancy can cause miscarriages, still births, and fetal alcohol syndrome. Fetal alcohol syndrome is a lifelong affliction that is 100% preventable. If a woman does not consume alcohol during her pregnancy, her child cannot develop fetal alcohol syndrome. In 2012, there were 123 hospitalizations associated with fetal alcohol syndrome. The total charges associated with alcohol-related conditions were more than $340 million, with an average length of stay ranging from 3.0 to 6.9 days (see **Table 12**).

Hospitalization and Alcohol Related Conditions			
	Discharges	**Charges**	**Average Length of Stay (Days)**
Fetal Alcohol Syndrome	123	$3,081,230	6.9
Alcohol Poisoning	5	$34,200	3.0
Alcoholic Cardiomyopathy	318	$18,760,062	5.0
Alcoholic Polyneuropathy	147	$5,497,255	4.7
Alcohol Induced Liver Disease	10,350	$313,138,014	3.5
Total	**10,943**	**$340,510,761**	-

Table 12. Inpatient and emergency department discharges (2012) that contained the following ICD-9 codes: 760.71, 357.5, 425.5, 535.3, and 571.0-571.3.

49. Anderson AE, Hure AJ, Forder PM, Powers J, Kay-Lambkin FJ, Loxton DJ. Risky drinking patterns are being continued into pregnancy: a prospective cohort study. PLoS One. 2014 Jan 15;9(1).

Arizona Department of Health Services

Health Risks Behaviors
Alcohol Abuse: Binge Drinking

Arizonans Who Reported That They Participate in Binge Drinking in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**15.3**	**13.8**	**16.8**
National	**16.8**	**16.6**	**17.1**
Sex			
Male	21.1	18.6	23.7
Female	9.7	8.2	11.2
Age			
18-24	26.7	20.5	32.8
25-34	21.9	17.6	26.1
35-44	19.6	15.6	23.5
45-54	11.9	9.2	14.6
55-64	11.9	9.1	14.7
65+	3.7	2.8	4.6
Marital Status			
Married	11.6	9.9	13.3
Divorced	15.5	11.8	19.2
Widowed	5.1	2.4	7.7
Separated	11.6	4.5	18.7
Never Married	26.0	21.8	30.2
Unmarried Couple	17.5	10.1	24.8
Educational Attainment			
Less than High School	12.3	7.7	16.9
High School Graduate/GED	17.5	14.5	20.6
Some College/Tech School	15.0	12.5	17.5
College Grad	15.4	12.9	17.8
Employment Status			
Employed for wages	20.9	18.4	23.5
Self-employed	13.3	9.1	17.5
Out of work	18.4	12.6	24.2
Homemaker	4.8	2.2	7.4
Student	24.4	15.0	33.8
Retired	5.9	4.2	7.7
Unable to Work	9.5	5.2	13.8
Income			
<$25,000	16.7	13.7	19.7
$25,000-$34,999	17.9	12.8	23.1
$35,000-$49,999	17.6	13.4	21.8
$50,000-$74,999	15.5	11.6	19.3
$75,000+	15.2	12.3	18.1
Race/Ethnicity			
White Non-Hispanic	14.6	13.0	16.2
*Black	9.2	3.2	15.3
*Asian/PI	10.8	2.0	19.6
American Indian	19.8	10.4	29.2
Other	15.2	6.3	24.1
Hispanic	17.9	14.1	21.7

The table to the left displays the distribution of Arizonans who participated in binge drinking. The data are broken down by sex, age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were less likely to report that they participated in binge drinking if they

- Were female
- Were 65 or older
- Were widowed
- Had less than a high school education
- Were homemakers
- Had a household income greater than $75,000

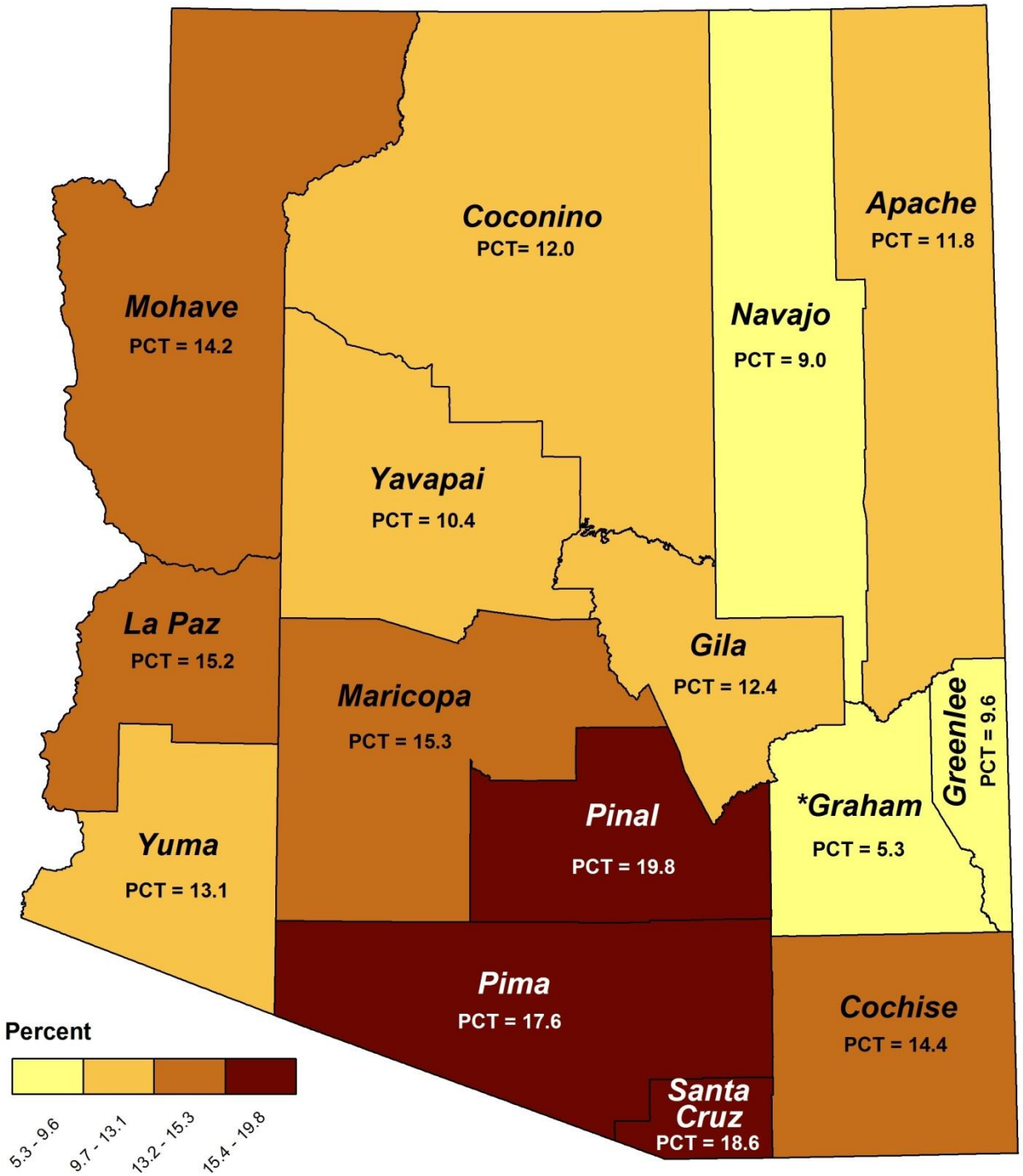
Individuals who were 65 and older were the least likely to report that they participated in binge drinking, at 3.7%.

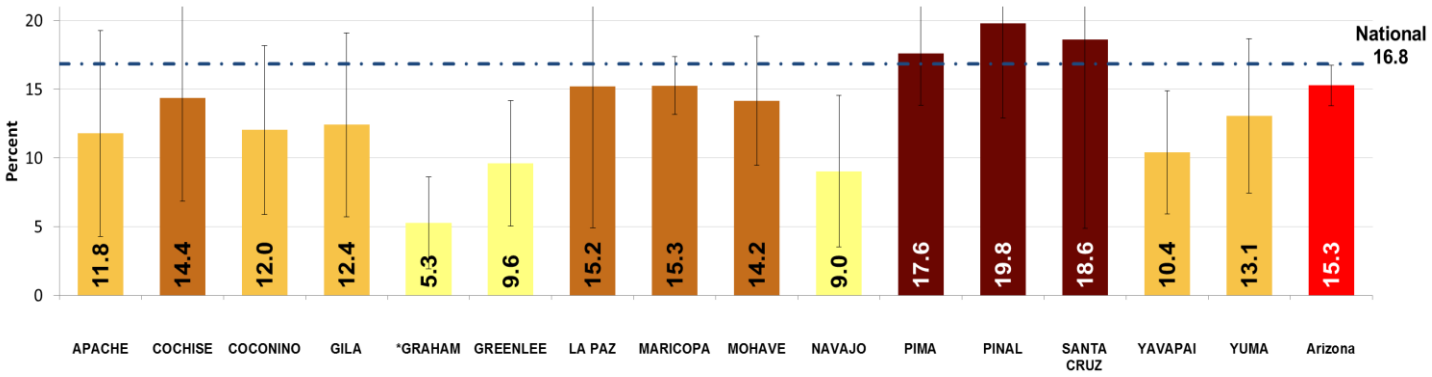
Respondents were more likely to report that they participated in binge drinking if they

- Were male
- Were between the ages of 18 and 24
- Were never married
- Graduated high school or had a GED
- Were students
- Had a household income between $25,000 and $34,999

Individuals who were between the ages of 18 and 24 were the most likely to report that they participated in binge drinking, at 26.7%.

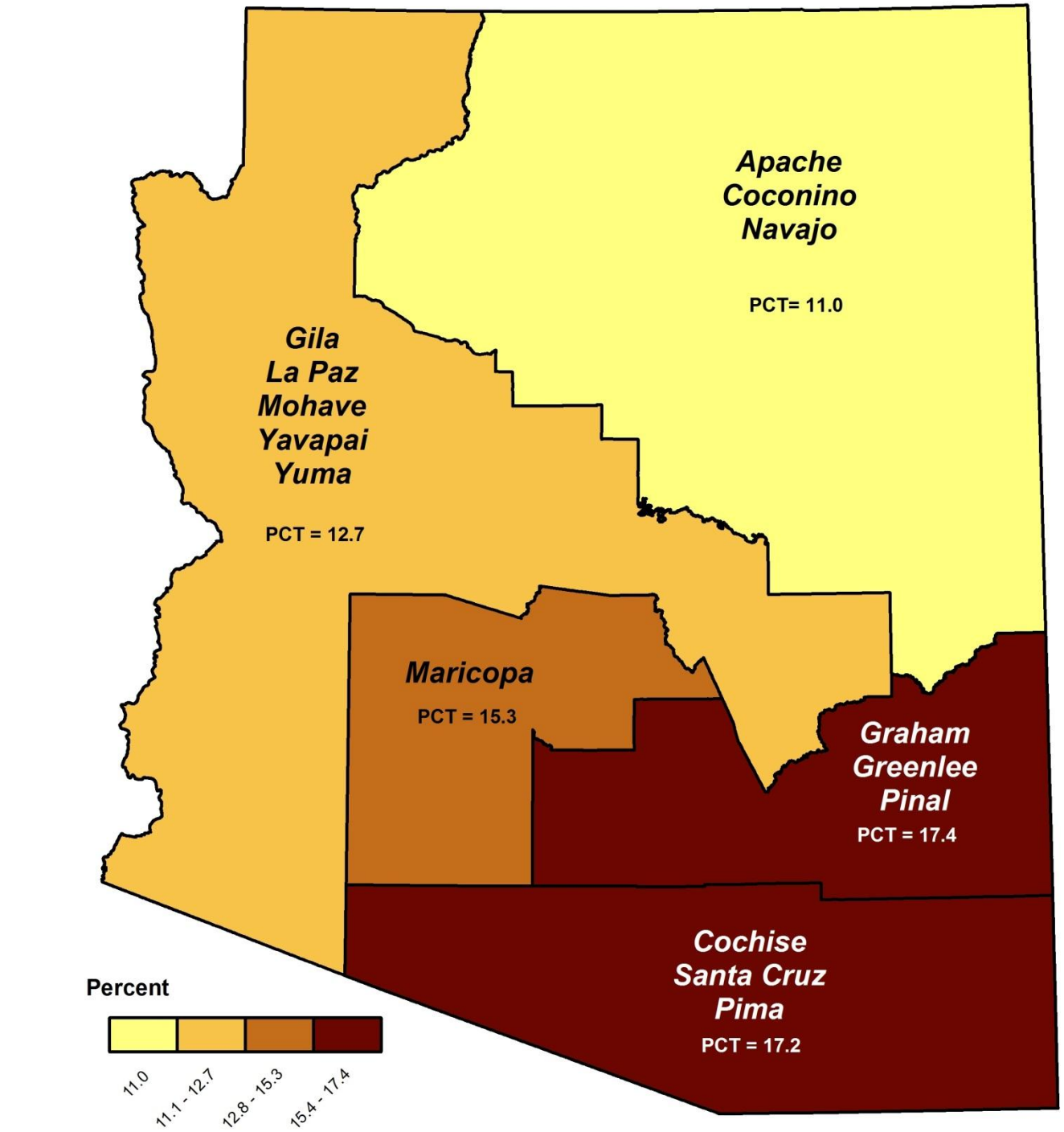
Percentage of Arizonans Who Participated in Binge Drinking by County, 2012

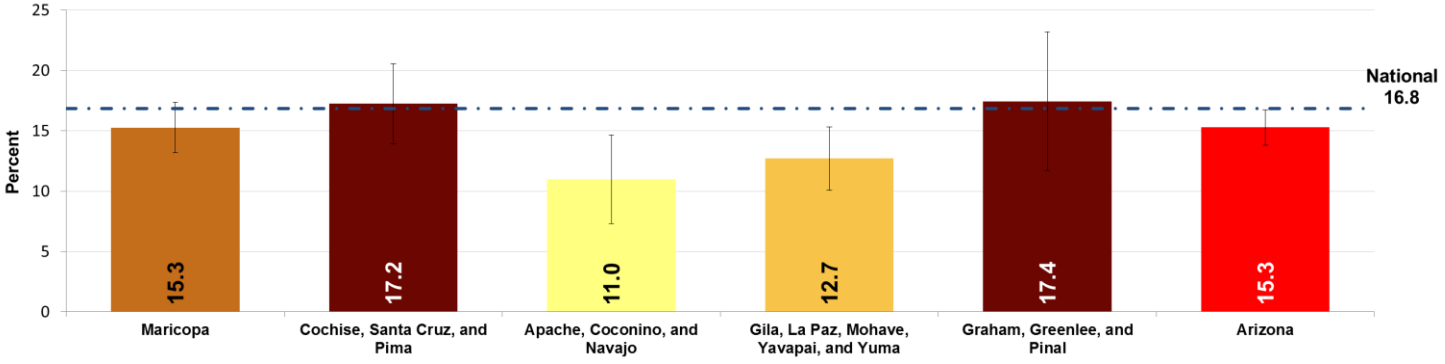




*indicates that the county has a significantly lower percentage of individuals reporting that they participated in binge drinking than the overall state percentage.

Percentage of Arizonans Who Participated in Binge Drinking by Region, 2012





Arizona Department of Health Services

Beneficial Health Practices

Certain practices decrease the risk of morbidity and mortality. Programs promoting awareness and policy changes will benefit the community as a whole. Continued monitoring of these practices will provide Arizona with a tool to assess the impact of these programs and policies. The Beneficial Health Practices Section of the 2012 Arizona BRFSS section include an analysis of the following:

- **Folic Acid Use (variable AZ5_1) -** binary outcome where women who take a folic acid supplement are considered a positive outcome. Women who do not take folic acid are considered a negative outcome.
- **Folic Acid Awareness (variable AZ5_3) -** binary outcome where women who state that folic acid prevents birth defects are considered a positive outcome. Women who state that folic acid prevents anything other than birth defects are considered a negative outcome.
- **Fruit and Vegetable Consumption (variables FRUITJU1, FRUIT1, FVBEANS, FVGREEN, FVORANGE, and VEGETAB1) -** binary outcome where the variables are summed together. If their daily total is five or greater than they are considered a positive outcome. If their daily total is less than five, they are considered a negative outcome.

Strategic Map Link

By collecting data on folic acid use and awareness and fruit and vegetable consumption, the BRFSS is providing Arizona with a tool to evaluate if its programs are effectively improving internal policy development and implementation, and promoting proper nutrition and physical activity to reduce obesity.
The aforementioned indicators are all part of Arizona's Winnable Battles as outlined in E4 and A1 of the ADHS Strategic Map.
(See Page 5)

Beneficial Health Practices
Folic Acid Use and Awareness

Neural tube defects (NTD) are among the most serious birth defects that contribute to infant mortality and morbidity. Nationally, NTDs including anencephaly, spina bifida, and encephalocele are estimated to account for 2,660 infants born with a birth defect annually.[50] Research has shown that 50% to 70% of these NTDs can be prevented if women consume .4mg of folic acid daily before and during pregnancy. The United States Preventative Services Task Force (USPSTF) recommends that all women who are planning to or can potentially become pregnant take a daily supplement containing folic acid. According to the 2012 BRFSS, 35.9% of Arizona women of child-bearing age take a supplement containing folic acid (see **Figure 22A**).

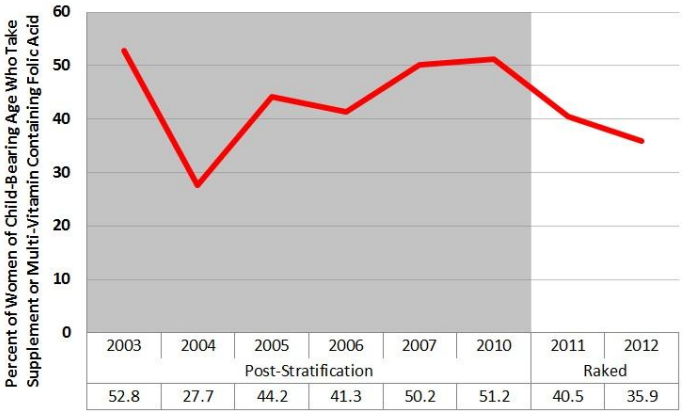


Figure 22A. Arizona 2003-2012 BRFSS female respondents of child-bearing age who take a supplement containing folic acid (not asked in 2008-2009). The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

The USPSTF recommends daily supplementation due to the fact that ~50% of all U.S. pregnancies are unplanned.[51] According to the 2012 BRFSS data, 47.9% of women who are of child-bearing age knew that folic acid prevents birth defects. However, only 13.1% of women follow the USPSTF guideline of daily supplementation (see **Figure 22B**), demonstrating the need for fortification.

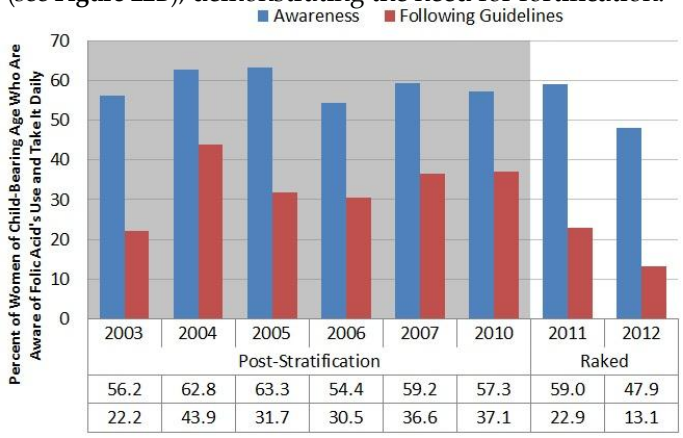


Figure 22B. Arizona 2003-2012 BRFSS female respondents of child-bearing age who knew that folic acid prevents birth defects and who took a folic acid supplement daily. The change in the background color marks methodological changes. Trend comparisons across methodologies are not feasible.

In 1996, the Food and Drug Administration (FDA) began requiring that specific flours, breads, and other grain be fortified with folic acid. The FDA expanded its mandate in 1998 to include other products that use enriched flour and corn flour. Breakfast cereal aside, the foods fortified with folic acid do not provide sufficient folic acid to meet the .4mg recommended; breakfast cereal contain .4mg of folic acid, but the other fortified foods only contain .1 mg per serving. Furthermore, imported corn meal and corn flour products are not required to follow FDA guidelines. Research has shown that Hispanic women are less likely to consume breakfast cereals and are more likely to purchase imported corn flour products.[52] To obtain the appropriate sample size to stratify the data by race, the BRFSS data from 2003 through 2010 was combined. The data indicates that there is a racial disparity when assessing folic acid awareness and supplementation. Arizona Hispanic and American Indian women had significantly lower folic acid supplementation when compared to White Non-Hispanics. Furthermore, all minorities had a significantly lower percentage reporting folic acid awareness when compared to White Non-Hispanic women (see **Figure 22C**). The folic acid intake disparity due to diet is further compounded by the fact that Hispanic women are less likely to take a supplement containing folic acid and less aware of its health benefits.

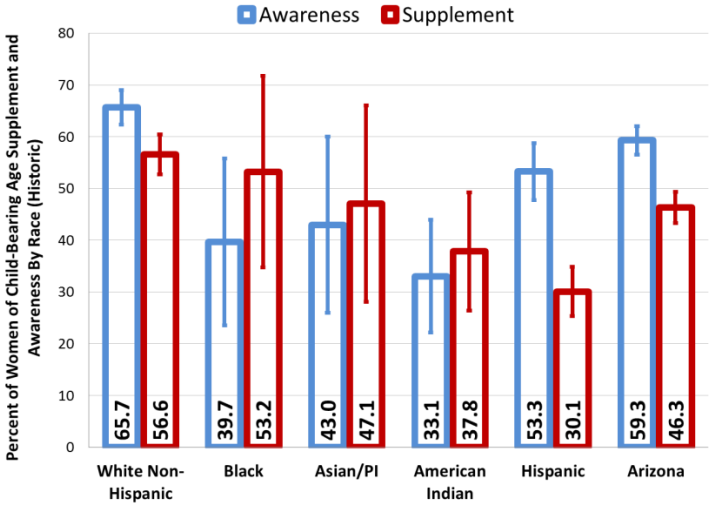


Figure 22C. Arizona 2003-2010 combined BRFSS data assessing female respondents of child-bearing age who knew that folic acid prevents birth defects and/or take a supplement by race.

The historic data also shows that the percent of women who take a folic acid supplement is significantly higher in women who are aware of its benefits, when compared to women who were unaware (see **Figure 22D**). The results indicate that there is a continued need for folic acid awareness education and promotion.

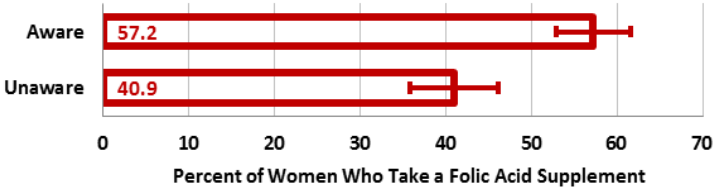


Figure 22D. Arizona 2003-2010 BRFSS female respondents of child-bearing age who take a folic acid supplement by awareness status.

50. U.S. Preventative Services Task Force. Folic Acid to Prevent Neural Tube. http://www.uspreventiveservicestaskforce.org/uspstf/uspsnrfol.htm#related

51. Centers for Disease Control. **Birth Defect: Data & Statistics.** http://www.cdc.gov/ncbddd/

52. Williams L, Rasmussen S, Flores A, Kirby R, Edmonds L. Decline in the Prevalence of Spina Bifida and Anencephaly by Race: 1995-2002. Pediatrics 2005; 116(580). doi 10.1542/peds.2005-0592

Arizona Department of Health Services

Beneficial Health Practices
Folic Acid Use

Arizona Women of Child-Bearing Age Who Take a Supplement Containing Folic Acid in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**35.9**	**30.9**	**40.8**
Age			
18-24	19.7	12.3	27.0
25-34	37.6	29.4	45.7
35-44	44.3	36.1	52.5
Marital Status			
Married	42.6	35.5	49.8
Divorced	40.5	26.9	54.2
*Widowed	46.6	0.0	100.0
*Separated	23.3	0.0	50.8
Never Married	21.0	13.0	29.0
Unmarried Couple	45.0	26.8	63.3
Educational Attainment			
Less than High School	23.4	9.5	37.3
High School Graduate/GED	31.0	21.3	40.6
Some College/Tech School	36.1	27.9	44.3
College Grad	53.5	45.2	61.7
Employment Status			
Employed for wages	40.0	33.1	46.9
Self-employed	46.5	29.3	63.6
Out of work	37.0	18.6	55.3
Homemaker	32.8	21.4	44.2
Student	19.4	9.0	29.7
Retired	.	.	.
Unable to Work	33.7	9.6	57.7
Income			
<$25,000	24.9	16.7	33.1
$25,000-$34,999	43.3	25.3	61.3
$35,000-$49,999	38.9	25.4	52.4
$50,000-$74,999	46.4	32.6	60.2
$75,000+	47.5	36.8	58.3
Race/Ethnicity			
White Non-Hispanic	42.7	36.2	49.2
*Black	38.8	11.1	66.5
*Asian/PI	56.5	23.4	89.5
American Indian	8.9	1.2	16.5
*Other	45.6	12.6	78.7
Hispanic	27.5	18.7	36.2

*Indicates an unreliable estimate due to small sample (n=2-7)

The table to the left displays the distribution of Arizona women of child-bearing age who take a supplement that contains folic acid. The data are broken down by age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were more likely to report that they took a supplement that contained folic acid if they

- Were between the ages of 35 and 44
- Had graduated from college
- Were self-employed
- Had a household income greater than $75,000

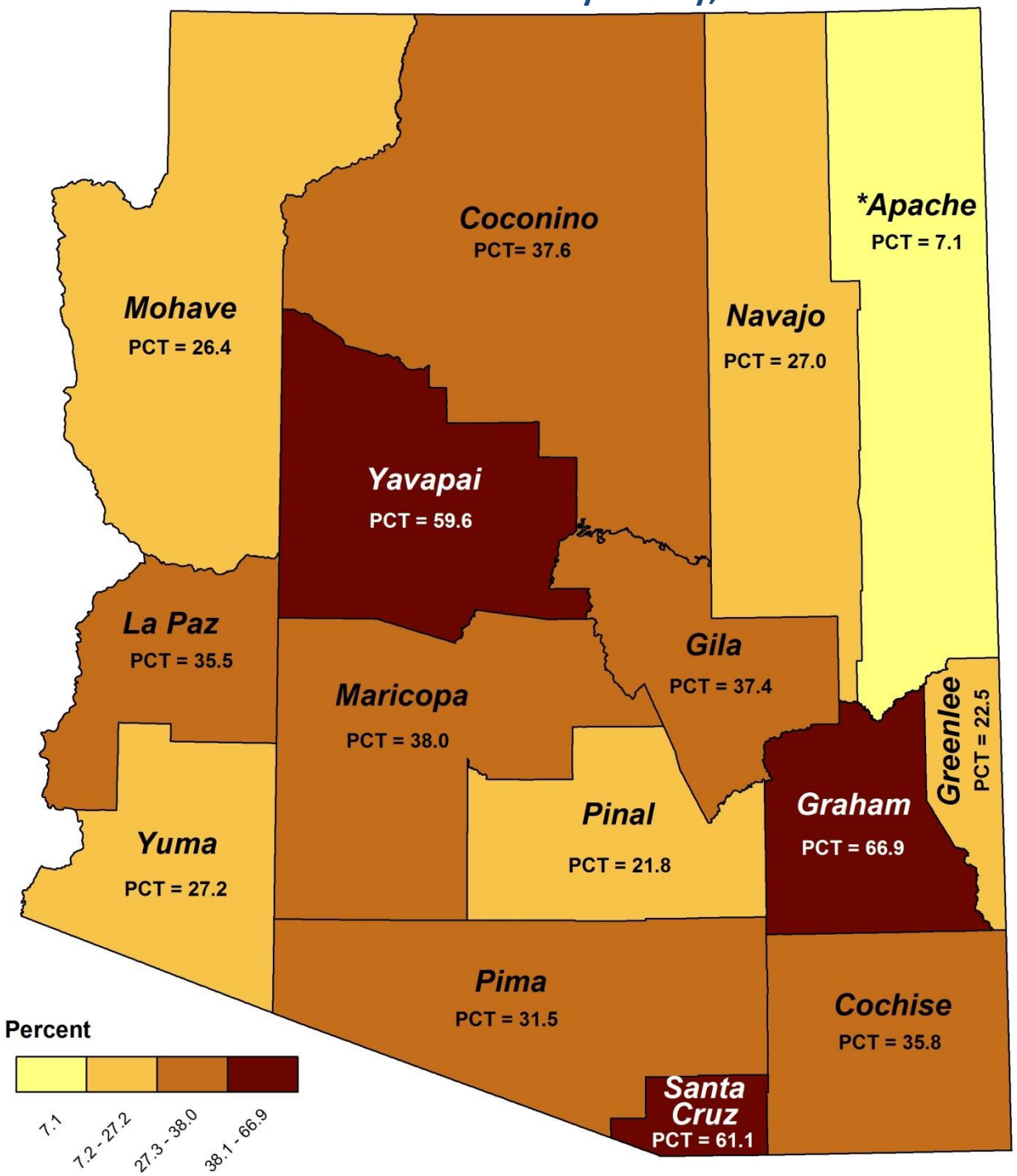
As educational attainment increased so did the likelihood of reporting taking a supplement that contains folic acid.

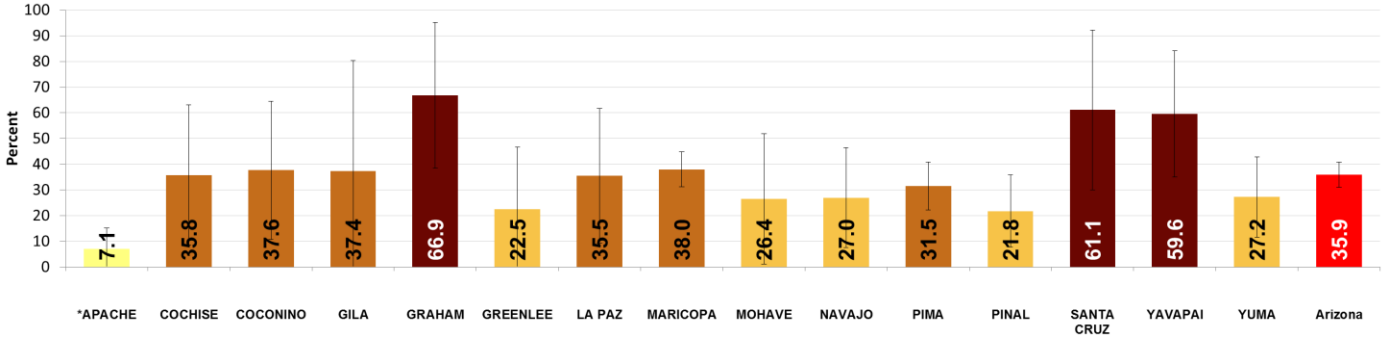
Respondents were less likely to report that they took a supplement that contained folic acid if they

- Were between the ages of 18 and 24
- Did not graduate from high school
- Were students
- Had a household income less than $25,000

Individuals who were American Indian were the least likely to report that they took a supplement that contained folic acid, at 8.9%.

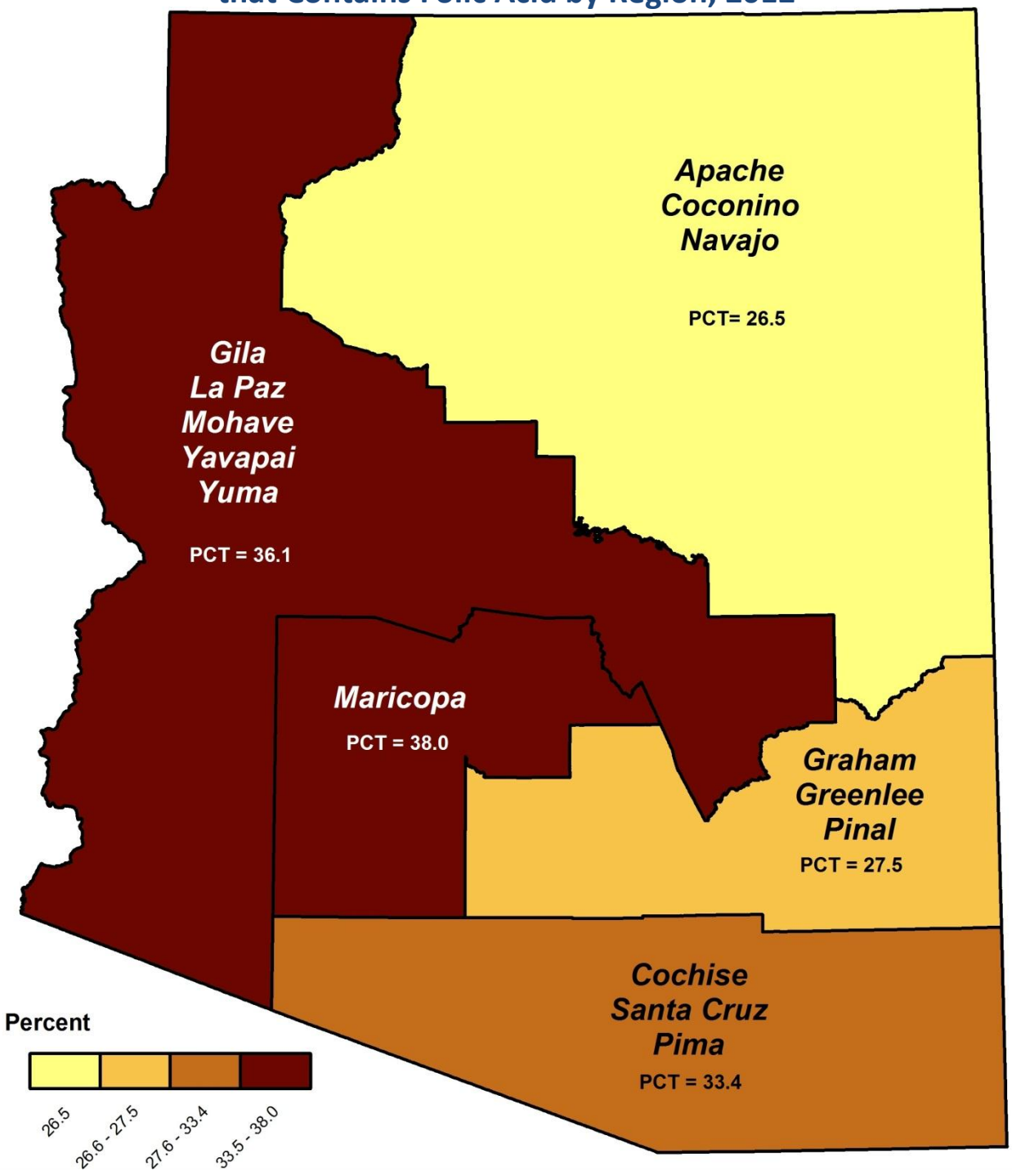
Percentage of Arizona Women of Child-Bearing Age Who Take a Supplement that Contains Folic Acid by County, 2012

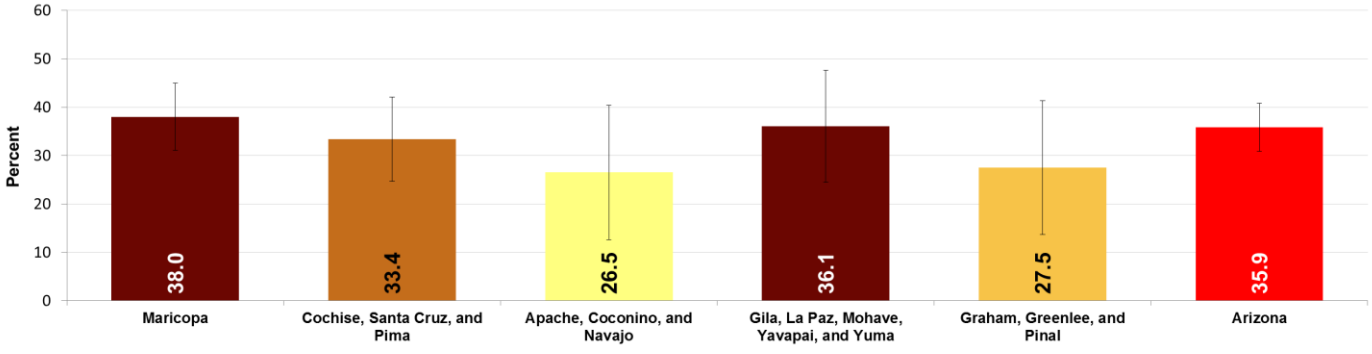




*indicates that the county has a significantly lower percentage of women reporting taking a supplement that contains folic acid than the overall state percentage.

Percentage of Arizona Women of Child-Bearing Age Who Take a Supplement that Contains Folic Acid by Region, 2012





Beneficial Health Practices
Folic Acid Awareness

Arizona Women of Child-Bearing Age Who Answered that Folic Acid Prevents Birth Defects in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**47.9**	**41.9**	**53.9**
Age			
18-24	43.0	30.7	55.4
25-34	44.5	34.8	54.3
35-44	54.0	44.4	63.5
Marital Status			
Married	53.0	44.8	61.3
Divorced	58.9	43.5	74.3
*Widowed	40.6	0.0	100.0
*Separated	37.5	1.6	73.4
Never Married	31.0	20.9	41.1
Unmarried Couple	64.7	46.0	83.3
Educational Attainment			
Less than High School	39.2	20.0	58.4
High School Graduate/GED	37.4	25.4	49.4
Some College/Tech School	48.7	38.6	58.9
College Grad	63.8	55.5	72.1
Employment Status			
Employed for wages	50.3	42.1	58.4
Self-employed	47.0	27.4	66.6
Out of work	23.6	9.2	37.9
Homemaker	61.6	48.0	75.2
Student	45.1	24.9	65.4
Retired	.	.	.
*Unable to Work	19.4	0.0	43.4
Income			
<$25,000	38.9	28.4	49.4
$25,000-$34,999	45.3	25.2	65.5
$35,000-$49,999	44.1	28.6	59.5
$50,000-$74,999	65.9	49.7	82.0
$75,000+	57.6	45.1	70.2
Race/Ethnicity			
White Non-Hispanic	53.6	45.8	61.5
*Black	49.4	18.7	80.2
*Asian/PI	37.1	2.6	71.6
American Indian	24.2	6.2	42.2
*Other	50.6	17.5	83.6
Hispanic	43.3	32.3	54.3

*Indicates an unreliable estimate due to small sample (n=2-7)

The table to the left displays the distribution of Arizona women of child-bearing age who answered that folic acid prevents birth defects. The data are broken down by age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were more likely to answer that folic acid prevents birth defects if they

- Were between the ages of 35 and 44
- Had graduated from college
- Were homemakers
- Had a household income between $50,000 and $75,000

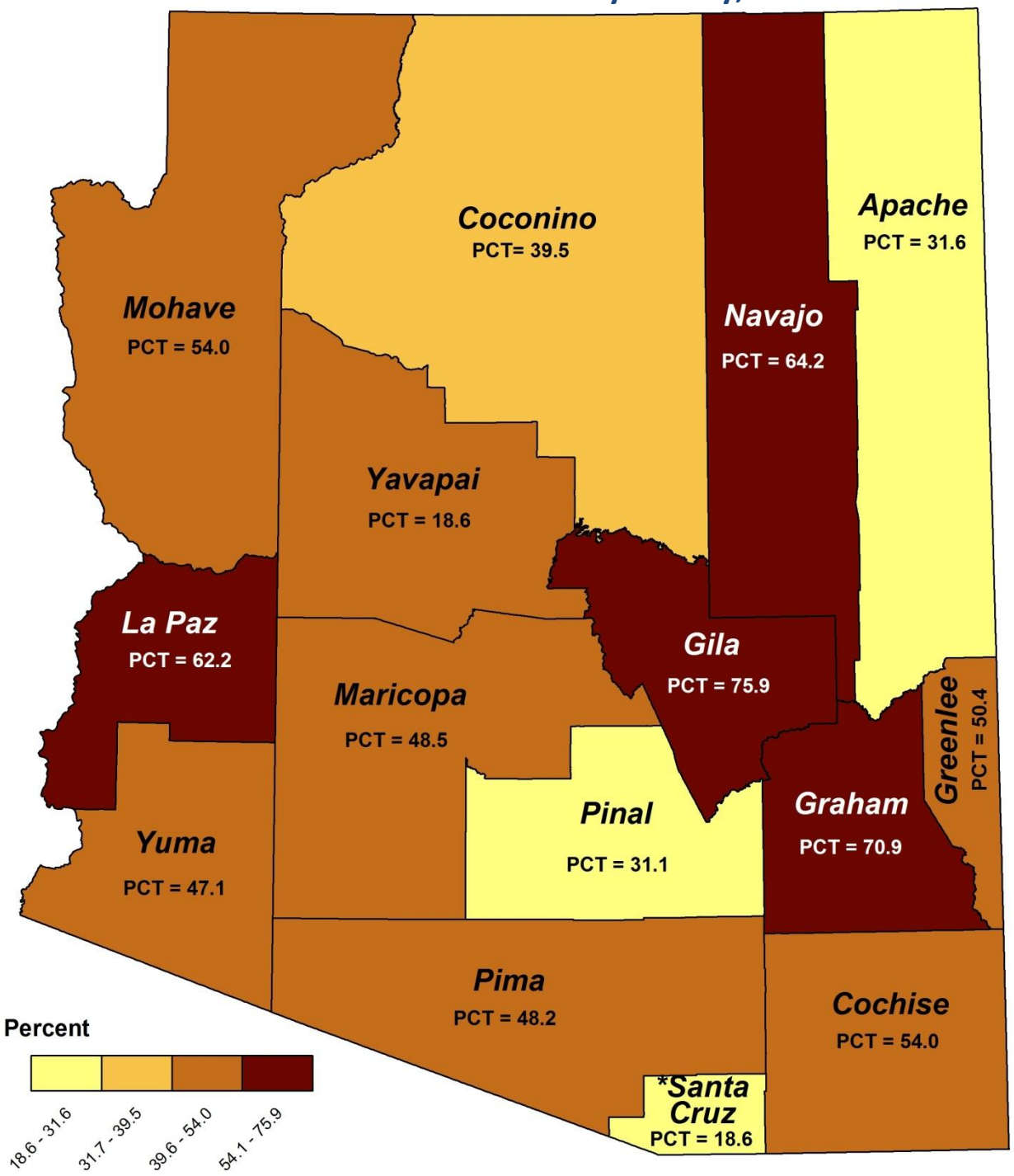
As age increased so did the likelihood of answering that folic acid prevents birth defects.

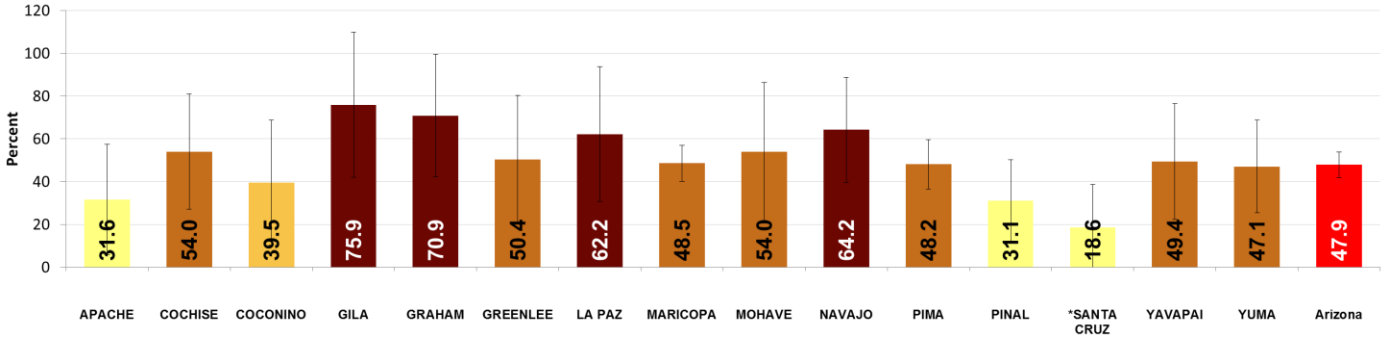
Respondents were less likely to answer that folic acid prevents birth defects if they

- Were between the ages of 18 and 24
- Graduated from high school or had a GED
- Were out of work
- Had a household income less than $25,000

Individuals who reported that they were unable to work were the least likely to answer that folic acid prevents birth defects. However, there were only 3 women in that category, meaning the estimate is not reliable.

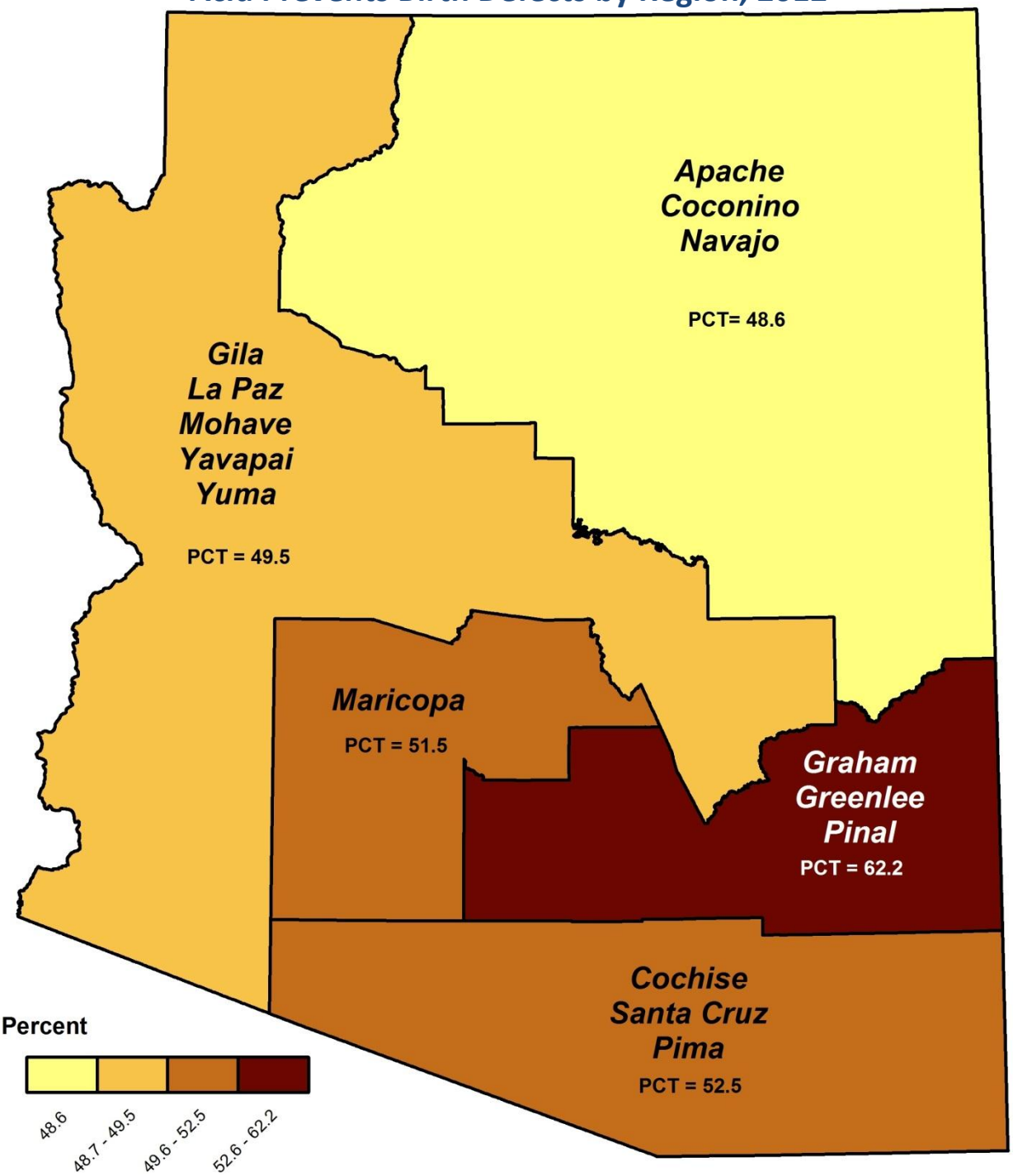
Percentage of Arizona Women of Child-Bearing Age Who Answered that Folic Acid Prevents Birth Defects by County, 2012

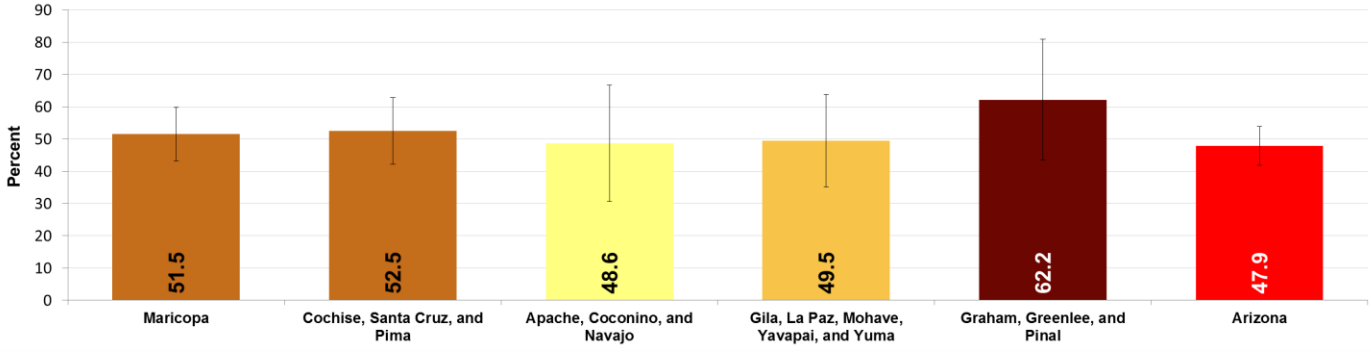




*indicates that the county has a significantly lower percentage of women answering that folic acid prevents birth defects than the overall state percentage.

Percentage of Arizona Women of Child-Bearing Age Who Answered that Folic Acid Prevents Birth Defects by Region, 2012





Beneficial Health Practices
Fruit and Vegetable Consumption

To promote healthy eating the U.S. Department of Agriculture (USDA) has made dietary recommendations. In the past, dietary recommendations were based on the food pyramid. Of particular interest is the consumption of fruits and vegetables. The daily fruit and vegetable intake was 3-5 servings of vegetables and 2-4 servings of fruits. The most recent dietary guideline used by the USDA is the "My Plate" concept (see **Figure 23A**). The "My Plate" works as a guide to show how much of your plate the food groups should comprise each meal. However, the daily recommendation of fruit and vegetable intake has not changed much. The USDA recommends that men and women get 4 ½ - 5 cups of fruits and vegetables daily, and if an individual exercises a lot, they should consume more.[53,54] According to the CDC, there has not been a significant increase in the percent of Americans eating the recommended servings of fruit and vegetables. In fact, from 2000 to 2009, there has been a slight decline in the percent of adults meeting the recommended fruit intake.[55]

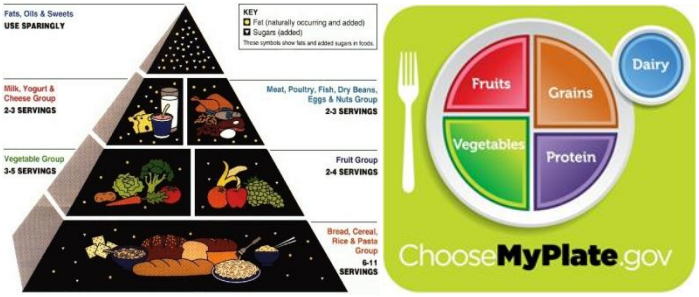
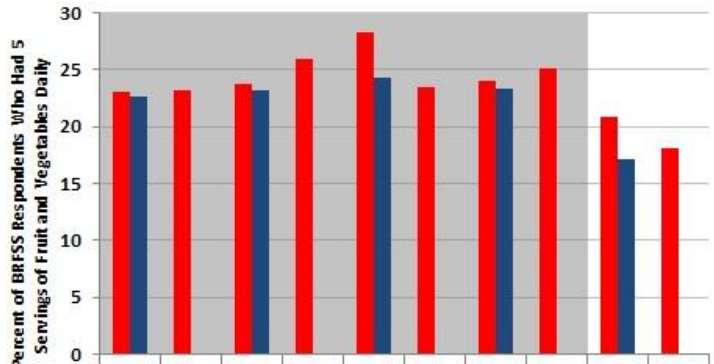


Figure 23A. Historic food pyramid and the current tool "My Plate" utilized by the USDA in making dietary recommendations.[52,53]

Fruit and vegetables provide important nutrients. They lower the risk of developing many chronic diseases and assist in the body's weight management. Furthermore, fruits and vegetables of different colors offer different nutrients, such as:

- **Fiber** – maintains bowel health, lowers cholesterol, controls blood sugar, and helps achieve a healthy weight
- **Folate** – reduces the risk of neural tube birth defects
- **Potassium** – Decreases the risk of stroke, osteoporosis, kidney stones, and high blood pressure
- **Vitamin A –** helps form and maintains healthy skin, teeth, skeletal, and soft tissue. Promotes good vision, specifically in low light.
- **Vitamin C –** is needed for the growth and repair of tissues.[55]

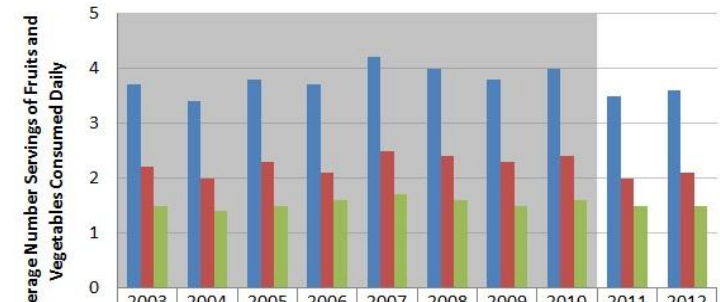
Historically, Arizona had a greater percent of individuals reporting that they consume five servings of fruits and vegetables each day. In 2011, the BRFSS changed the fruit and vegetable question's format. For example, rather than ask if the respondent ate carrots the question asks if the respondent ate an orange vegetable. The new questions are more inclusive and significantly different from previous years. Therefore, it is not possible to harmonize or combine questions from previous years. In 2012, 18.1% of BRFSS respondents reported eating 5 or more servings of fruits and vegetables (see **Figure 23B**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	23.1	23.2	23.7	26	28.3	23.5	24.1	25.2	20.9	18.1
National	22.6	N/A	23.2	N/A	24.3	N/A	23.4	N/A	17.1	N/A

Figure 23B. Arizona and National 2003-2012 BRFSS respondents who responded that they consumed five or more servings of fruits and vegetables daily. The change in the background color marks methodological changes and changes to the question's structure. Trend comparisons across methodologies are not feasible.

Estimates show, on average, U.S. adults consume fruit 1.1 times a day and vegetables 1.6 times per day.[54] According to the 2012 Arizona BRFSS, Arizonans consumed 3.6 servings of fruits and vegetables each day on average. The average number of fruit servings consumed daily was 1.5 and the average number of vegetables consumed was 2.1. Historically, Arizonans would consume more servings of vegetables than fruits, on average (see **Figure 23C**). The average consumption of fruits and vegetables did not differ very much year to year (2003-2010 data).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Fruit & Veg	3.7	3.4	3.8	3.7	4.2	4.0	3.8	4.0	3.5	3.6
Vegetables	2.2	2.0	2.3	2.1	2.5	2.4	2.3	2.4	2.0	2.1
Fruits	1.5	1.4	1.5	1.6	1.7	1.6	1.5	1.6	1.5	1.5

Figure 23C. Average number of fruit and vegetable servings consumed daily. The change in the background color marks methodological changes and changes to the question's structure. Trend comparisons across methodologies are not feasible.

53. "Food Pyramid." United States Department of Agriculture, n.d. Web. 18 Mar. 2014. <http://www.nal.usda.gov/fnic/Fpyr/pyramid.gif>.
54 "ChooseMyPlate.gov." ChooseMyPlate.gov. United States Department of Agriculture, n.d. Web. 16 Mar. 2014. <http://www.choosemyplate.gov/>.
55 Centers for Disease Control (CDC). State-Specific Trends in Fruit and Vegetable Consumption Among Adults --- United States, 2000—2009. MMWR 10 September 2010. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5935a1.htm?s_cid=mm5935a1_w

56. "Nutrient Information for Fruits and Vegetables." Centers for Disease Control and Prevention. June 2012. http://www.cdc.gov/nutrition/everyone/fruitsvegetables/nutrient-info.html.

Beneficial Health Practices
Fruit and Vegetable Consumption

Arizonans Who Consumed Five or More Servings of Fruits and Vegetables Every Day in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**18.1**	**16.5**	**19.7**
Sex			
Male	14.2	12.1	16.3
Female	21.7	19.4	24.0
Age			
18-24	16.2	10.5	21.9
25-34	22.5	17.5	27.5
35-44	17.1	13.0	21.1
45-54	17.0	13.3	20.8
55-64	18.7	15.6	21.8
65+	16.9	14.8	19.0
Marital Status			
Married	18.4	16.3	20.5
Divorced	18.0	14.4	21.7
Widowed	15.3	12.0	18.6
Separated	10.2	2.6	17.8
Never Married	17.3	13.2	21.4
Unmarried Couple	20.9	11.9	29.9
Educational Attainment			
Less than High School	16.0	11.0	21.1
High School Graduate/GED	14.3	11.7	16.9
Some College/Tech School	18.6	15.7	21.5
College Grad	22.7	19.9	25.4
Employment Status			
Employed for wages	16.4	14.1	18.8
Self-employed	18.6	13.2	24.1
Out of work	18.3	12.9	23.8
Homemaker	25.0	18.5	31.5
Student	22.9	11.8	34.0
Retired	16.8	14.5	19.1
Unable to Work	17.6	11.2	24.1
Income			
<$25,000	17.9	14.8	21.0
$25,000-$34,999	16.0	11.7	20.2
$35,000-$49,999	17.3	13.0	21.6
$50,000-$74,999	18.4	14.1	22.7
$75,000+	17.2	14.1	20.3
Race/Ethnicity			
White Non-Hispanic	18.2	16.5	20.0
Black	11.4	4.1	18.7
Asian/PI	22.4	6.8	38.0
American Indian	16.7	8.1	25.3
Other	27.1	15.6	38.6
Hispanic	18.4	14.5	22.2

The table to the left displays the distribution of Arizonans who consumed five or more servings of fruits and vegetables each day. The data are broken down by age categories, marital status, educational attainment, employment status, income, and race.

Respondents were more likely to consume at least five servings of fruits and vegetables each day if they

- Were female
- Were between the ages of 25 and 34
- Were part of an unmarried couple
- Had graduated from college
- Were homemakers
- Had a household income between $50,000 and $75,000
- Reported their race as other

Individuals who reported their race as other were the most likely to report that they ate five or more servings of fruits and vegetables each day.

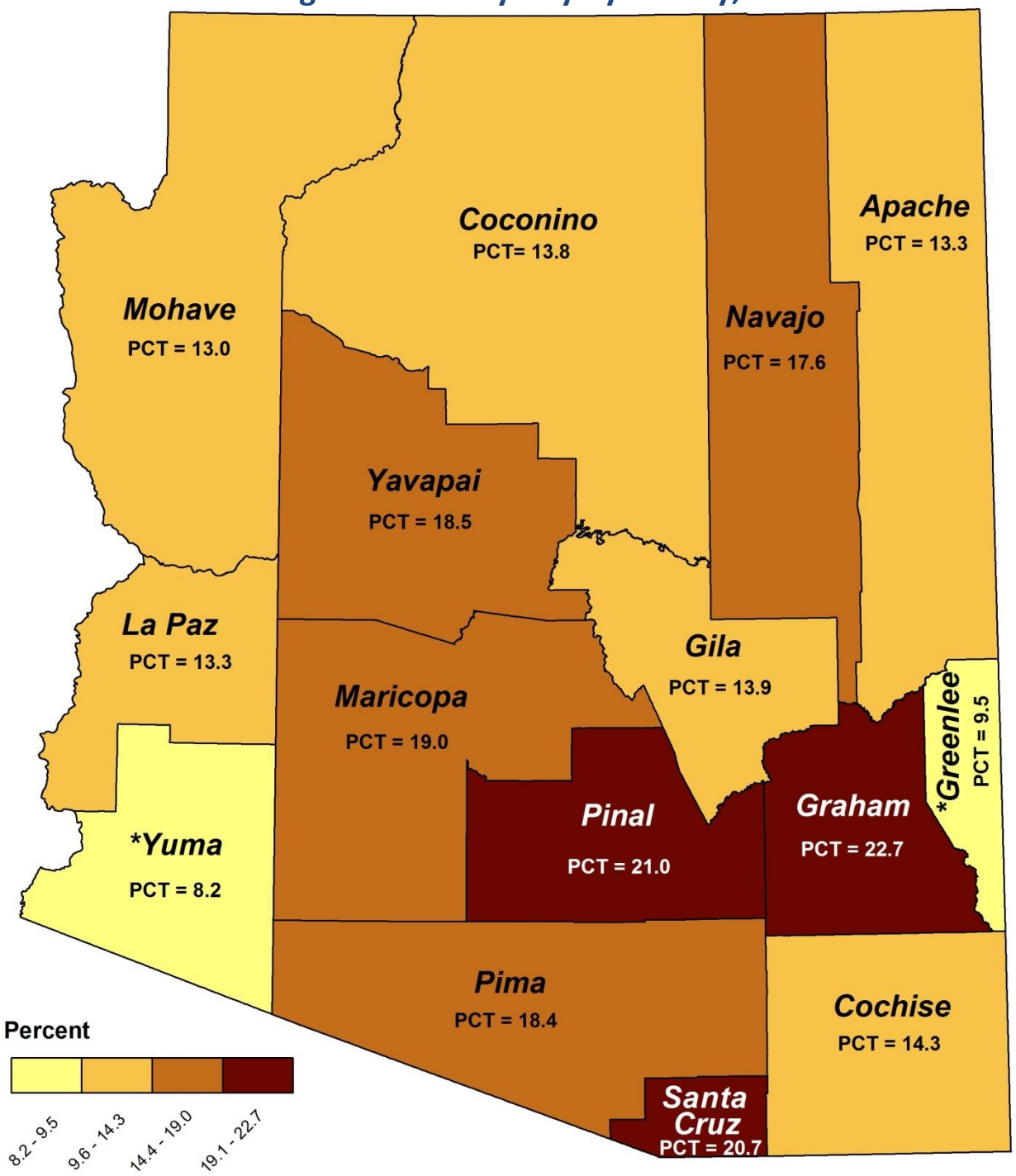
Respondents were less likely to consume at least five servings of fruits and vegetables each day if they

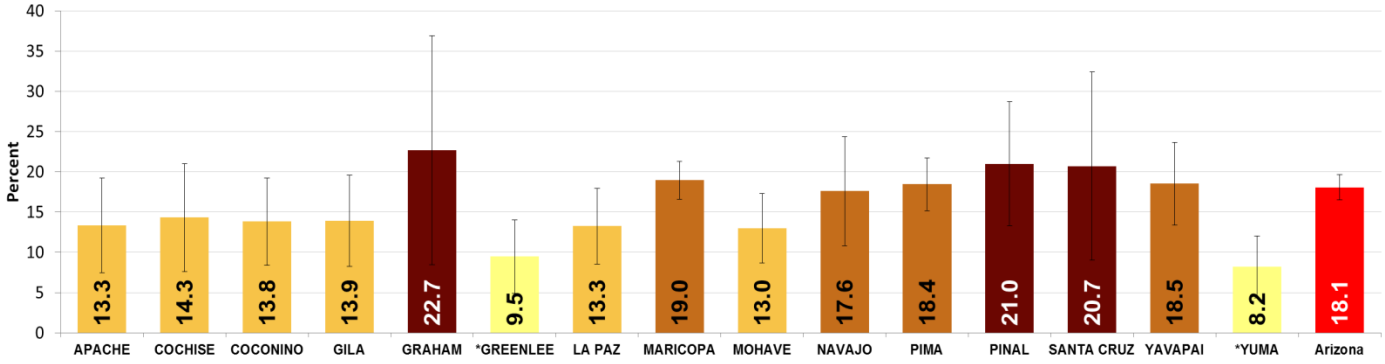
- Were male
- Were between the ages of 18 and 24
- Reported their marital status as separated
- Graduated high school or had a GED
- Had a household income between $25,000 and $34,999
- Reported their race as Black
-

Individuals who reported their marital status as single were the least likely to consume five or more servings of fruits and vegetables each day, at 10.2%.

Arizona Department of Health Services

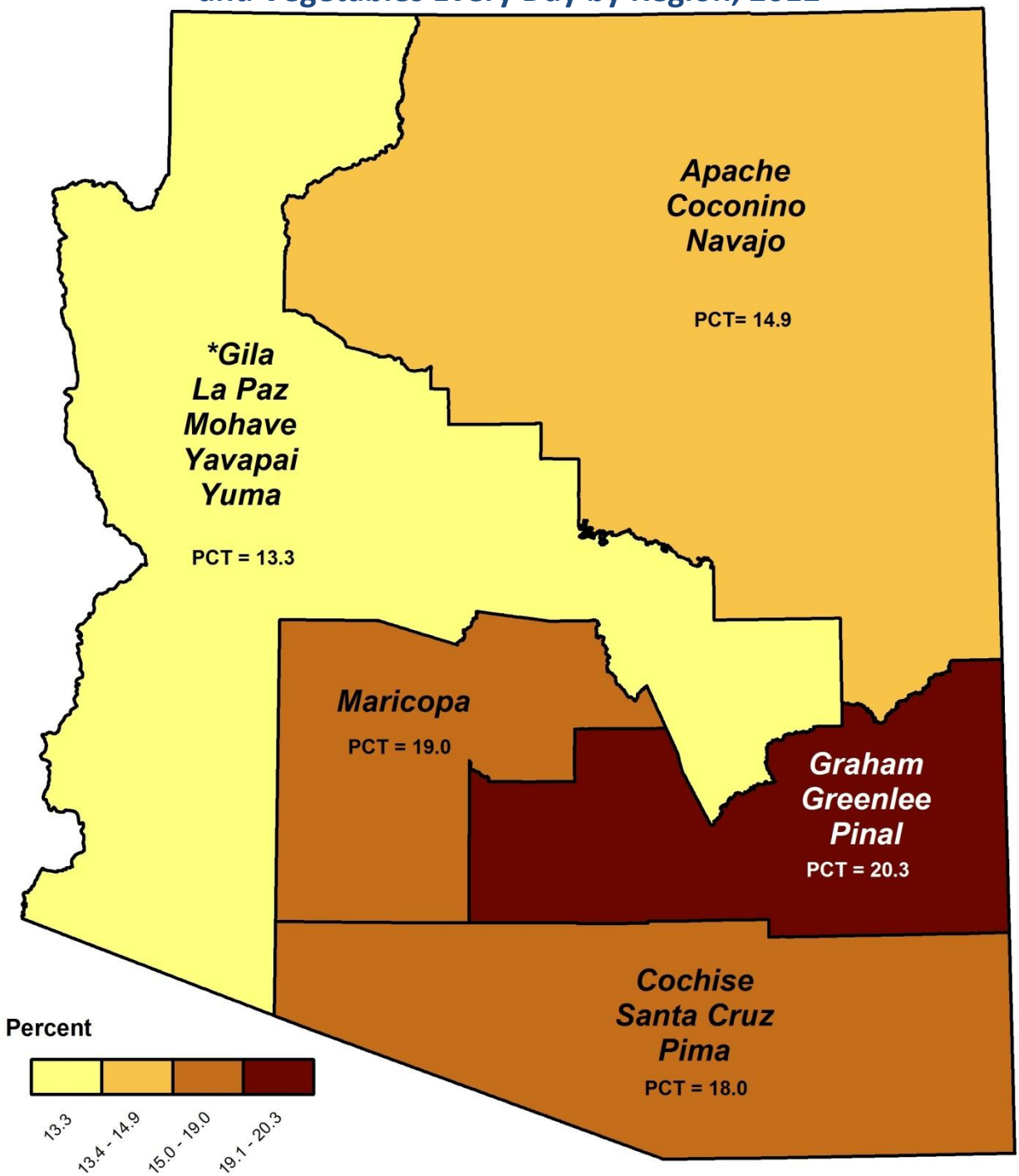
Percentage of Arizonans Who Consume Five or More Servings of Fruits and Vegetables Every Day by County, 2012

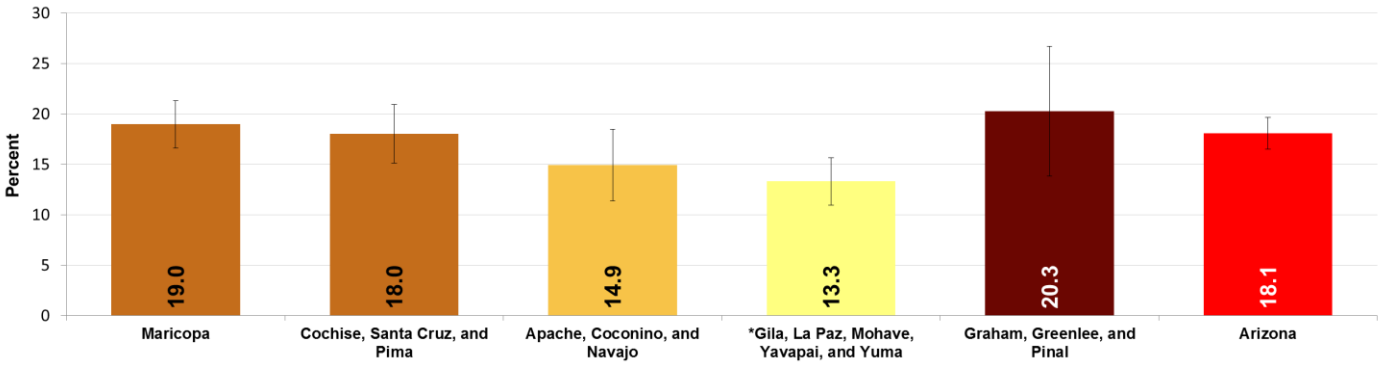




***indicates that the county has a significantly lower percentage respondents eating five or more servings of fruits and vegetables each day than the overall state percentage.**

Percentage of Arizonans Who Consume Five or More Servings of Fruits and Vegetables Every Day by Region, 2012





*indicates that the region has a significantly lower percentage respondents eating five or more servings of fruits and vegetables each day than the overall state percentage.

Arizona Department of Health Services

Health Conditions and Limitations

Chronic health conditions contribute to morbidity and mortality. Furthermore, these conditions reduce an individual's quality of life. The benefits of programs and policies targeting these conditions will be difficult to quantify, as data collection on the community's quality of life is not feasible. However, monitoring the prevalence of these diseases will provide Arizona with a tool to assess the impact of these programs and policies. The Health Conditions and Limitations Section of the 2012 Arizona BRFSS section include an analysis of the following:

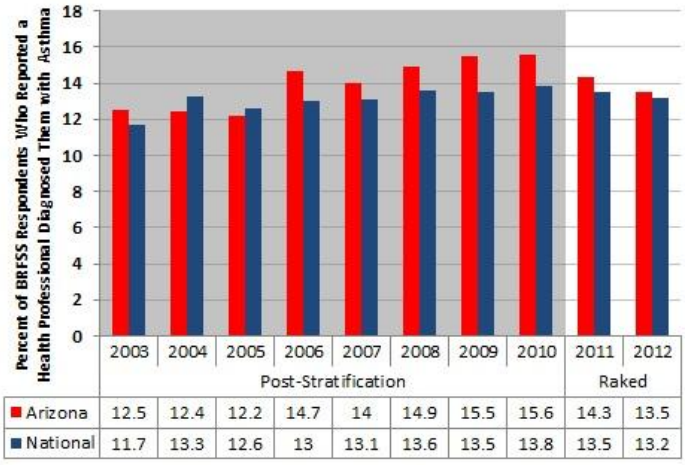
- **Asthma (variable ASTHMA3) -** binary outcome where respondents who were never diagnosed with asthma are considered a positive outcome. Respondents who were diagnosed with asthma are considered a negative outcome.
- **Cardiovascular Disease: Heart Attack (variable CVDINFR4) -** binary outcome where individuals who have never been diagnosed with a heart attack are considered a positive outcome. Individuals who have been diagnosed with a heart attack are considered a negative outcome.
- **Cardiovascular Disease: Angina (variables CVDCRHD4) -** binary outcome where individuals who have never been diagnosed with angina are considered a positive outcome. Individuals who have been diagnosed with angina are considered a negative outcome.
- **Stroke (variable CVDSTRK3) -** binary outcome where individuals who have never been diagnosed with a stroke are considered a positive outcome. Individuals who have been diagnosed with a stroke are considered a negative outcome.
- **Obesity (variable _BMI5CAT) -** binary outcome where individuals who are not obese are considered a positive outcome. Individuals who are obese are considered a negative outcome.
- **Diabetes (variable DIABETE3) -** binary outcome where individuals who have never been diagnosed with diabetes are considered a positive outcome; individuals who have been diagnosed with a diabetes are considered a negative outcome.

Strategic Map Link

By collecting data on asthma, heart attacks, angina, strokes, obesity, and diabetes, the BRFSS is providing Arizona with a tool to evaluate if its programs are effectively improving internal policy development and implementation and promoting proper nutrition and physical activity to reduce obesity.
The aforementioned indicators are all part of Arizona's Winnable Battles as outlined in E4 and A1 of the ADHS Strategic Map.
(See Page 5)

Health Conditions and Limitations
Asthma

Asthma is a chronic respiratory disease characterized by episodes or attacks of impaired breathing. Symptoms are caused by inflammation and narrowing of small airways and may include shortness of breath, coughing, wheezing, and chest pain. Disease severity ranges from mild with occasional symptoms to severe with persistent symptoms that impact quality of life. However, even people with mild disease may suffer severe attacks. Common attack triggers include airway irritants (e.g. tobacco smoke and air pollution), allergens, respiratory infections, stress, and exercise.[57] Therefore, continued monitoring of asthma prevalence is of great importance. According to the 2012 BRFSS, 13.5% of Arizonans have been diagnosed with asthma, which is .3% higher than the national prevalence (see **Figure 24A**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	12.5	12.4	12.2	14.7	14	14.9	15.5	15.6	14.3	13.5
National	11.7	13.3	12.6	13	13.1	13.6	13.5	13.8	13.5	13.2

Figure 24A. Arizona and National 2003-2012 BRFSS respondents who reported that they have been diagnosed with asthma. The change in the background color marks methodological changes and changes to the question's structure. Trend comparisons across methodologies are not feasible.

Although, Arizona had a higher prevalence of asthma when compared to the nation, it was not the state with the highest prevalence. When comparing Arizona to all the states in the U.S. the data shows that Arizona falls into the second highest category for individuals reporting that a health care professional has diagnosed with them asthma (see **Figure 24B**).

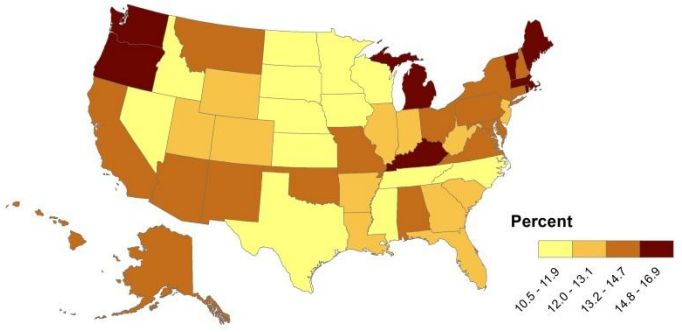


Figure 24B. Percent of 2012 BRFSS respondents who reported that a health care professional diagnosed them with asthma (natural breaks).

57. National Asthma Education and Prevention Program. Expert Panel Report 3: Guidelines for the diagnosis and management of asthma. NIH pub no 07–4051. Bethesda, MD: National Heart, Lung, and Blood Institute, National Institutes of Health. 2007

Asthma is estimated to cost the U.S. more than $50 billion in direct health care cost and $6 billion in indirect costs. The estimated total cost to the U.S. is $56 billion annually. In 2012, there were 166,666 asthma-related emergency department visits and inpatient hospitalizations in Arizona. The average length of stay increased as age increased. The range was .7 days to 2.2 days. The asthma related discharges accounted for more than $2 billion dollars in charges (see **Table 13**).

Inpatient and Emergency Department Discharges Related to Asthma

	Discharges	Charges	Average Length of Stay (Days)
Under 18	40,779	$210,865,276	0.7
18 to 24	19,403	$143,585,648	0.9
25 to 40	37,293	$348,678,812	1.1
40 to 55	31,287	$451,391,566	1.4
55+	37,904	$933,451,350	2.2
Total	**166,666**	**$2,087,972,652**	-

Table 13. Inpatient and emergency room discharges (2012) related to Asthma. Asthma was defined using the following ICD-9 codes: 493.00-493.02, 493.10-493.12, 493.20-493.22, 493.81, 493.82, and 493.90-493.92.

On May 31, 2012, the U.S. President's Task Force on Environmental Health Risk and Safety Risks to Children released the Coordinated Federal Action Plan to Reduce Racial and Ethnic Asthma Disparities. The document outlines the racial and socioeconomic disparities that exist in the U.S. regarding asthma burden. The disparities listed by the Task Force shows that minority children and children from impoverished families are disproportionately affected by asthma. Furthermore, minority children are less likely to be prescribed or receive the appropriate treatment.[58] According to the historic BRFSS (years 2006-2010) the asthma prevalence was significantly lower in Hispanics when compared to the state prevalence. The other risks factors did not significantly differ from the state prevalence (see **Figure 24C**).

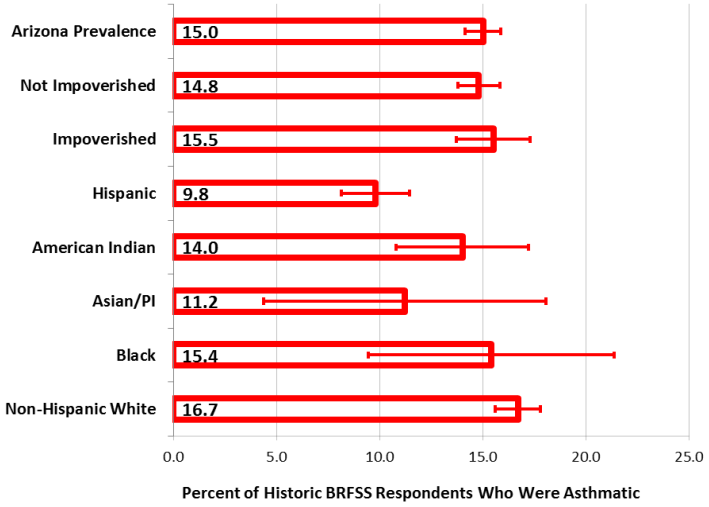


Figure 24C. Historic BRFSS (2006-2010) asthma prevalence by race and poverty status.

58. President's Task Force on Environmental Health Risks and Safety Risks to Children. President's Task Force on Environmental Health Risks and Safety Risks to Children Coordinated Federal Action Plan to Reduce Racial and Ethnic Asthma Disparities. 31 May, 2012.

Arizona Department of Health Services

Health Conditions and Limitations
Asthma

Arizonans Who Reported That They Have Been Diagnosed With Asthma in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**13.5**	**12.3**	**14.8**
National	**13.2**	**13.0**	**13.4**
Sex			
Male	12.5	10.6	14.4
Female	14.6	12.9	16.3
Age			
18-24	17.8	12.8	22.9
25-34	13.8	10.5	17.2
35-44	15.4	11.9	18.9
45-54	11.2	8.8	13.7
55-64	12.6	10.3	14.9
65+	11.5	9.8	13.3
Marital Status			
Married	11.8	10.3	13.3
Divorced	16.3	13.0	19.6
Widowed	14.7	11.1	18.3
Separated	14.9	6.3	23.5
Never Married	17.1	13.5	20.6
Unmarried Couple	8.5	3.2	13.8
Educational Attainment			
Less than High School	9.6	6.2	13.0
High School Graduate/GED	12.2	9.8	14.7
Some College/Tech School	15.7	13.4	18.0
College Grad	14.2	12.1	16.4
Employment Status			
Employed for wages	13.5	11.5	15.5
Self-employed	12.2	7.8	16.6
Out of work	17.9	12.3	23.5
Homemaker	8.1	5.3	10.8
Student	17.2	9.7	24.7
Retired	10.8	9.1	12.5
Unable to Work	21.8	16.4	27.3
Income			
<$25,000	14.9	12.6	17.1
$25,000-$34,999	11.4	8.0	14.8
$35,000-$49,999	13.6	10.5	16.8
$50,000-$74,999	12.4	9.2	15.7
$75,000+	12.9	10.0	15.9
Race/Ethnicity			
White Non-Hispanic	15.6	14.1	17.2
Black	6.0	1.7	10.4
Asian/PI	9.3	0.5	18.1
American Indian	9.2	4.9	13.5
Other	21.8	11.9	31.7
Hispanic	10.7	7.9	13.5

The table to the left displays the distribution of Arizonans who reported that they were diagnosed with asthma. The data are broken down by age categories, marital status, educational attainment, employment status, income, and race.

Respondents were less likely to report being diagnosed with asthma if they

- Were male
- Were between the ages of 45 and 54
- Were part of an unmarried couple
- Had less than a high school education
- Were homemakers
- Had a household income between $25,000 and $34,999
- Reported their race as Black

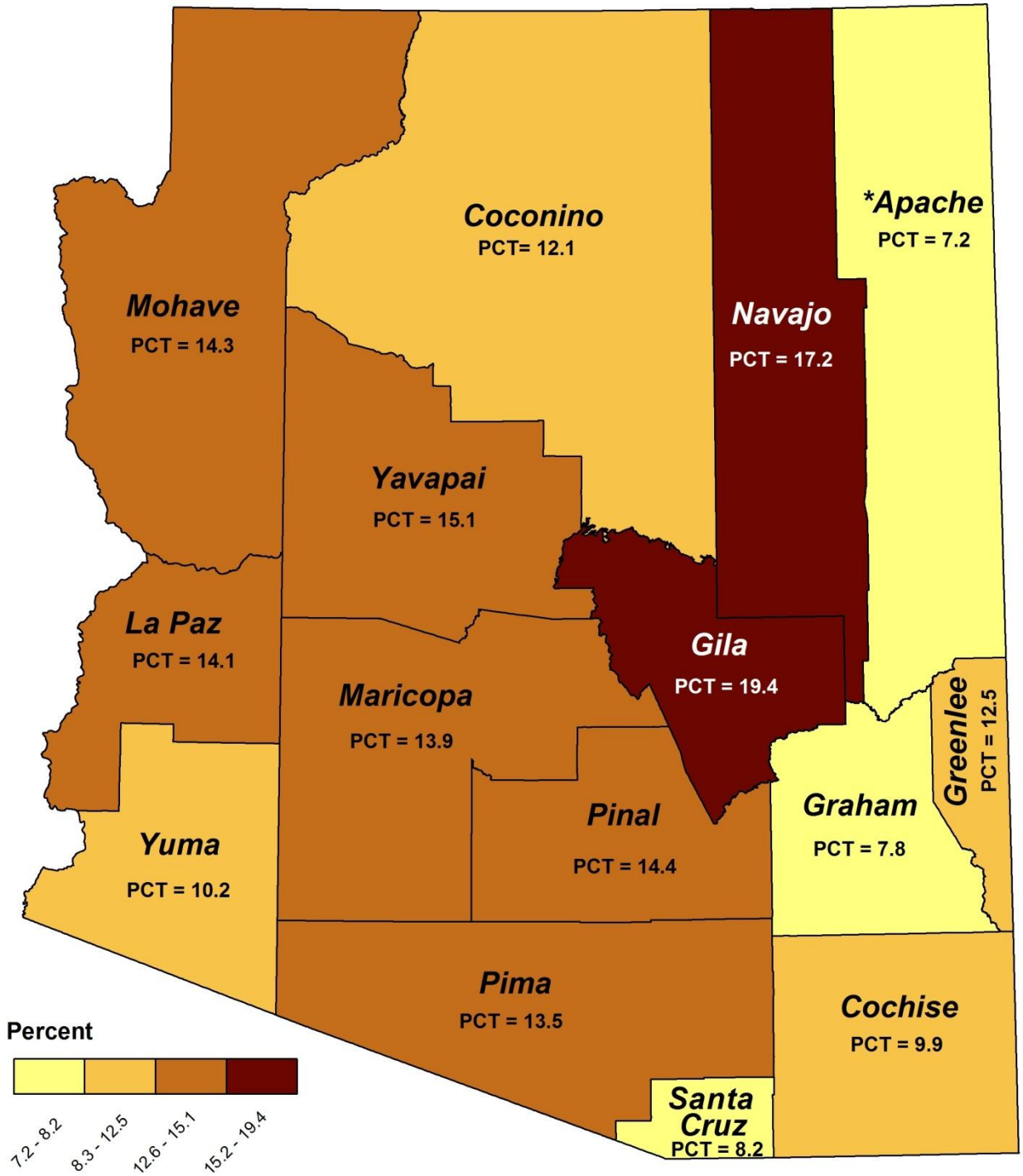
Individuals who reported their race as Black were the least likely to report having been diagnosed with asthma, at 6.0%.

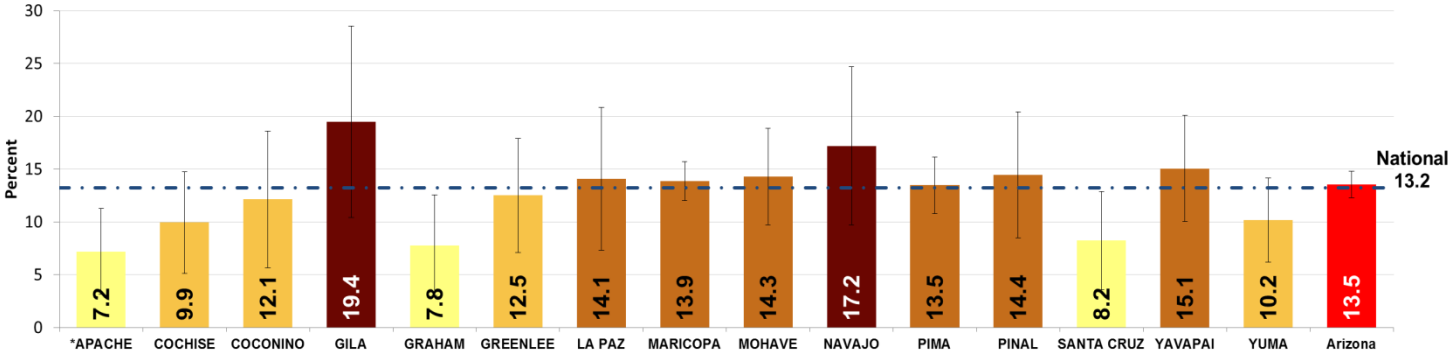
Respondents were more likely to report being diagnosed with asthma if they

- Were female
- Were between the ages of 18 and 24
- Never married
- Had some college or tech school
- Were unable to work
- Had a household income less than $25,000
- Reported their race as other

Individuals who reported that they were unable to work were the most likely to report having been diagnosed with asthma, at 21.8%.

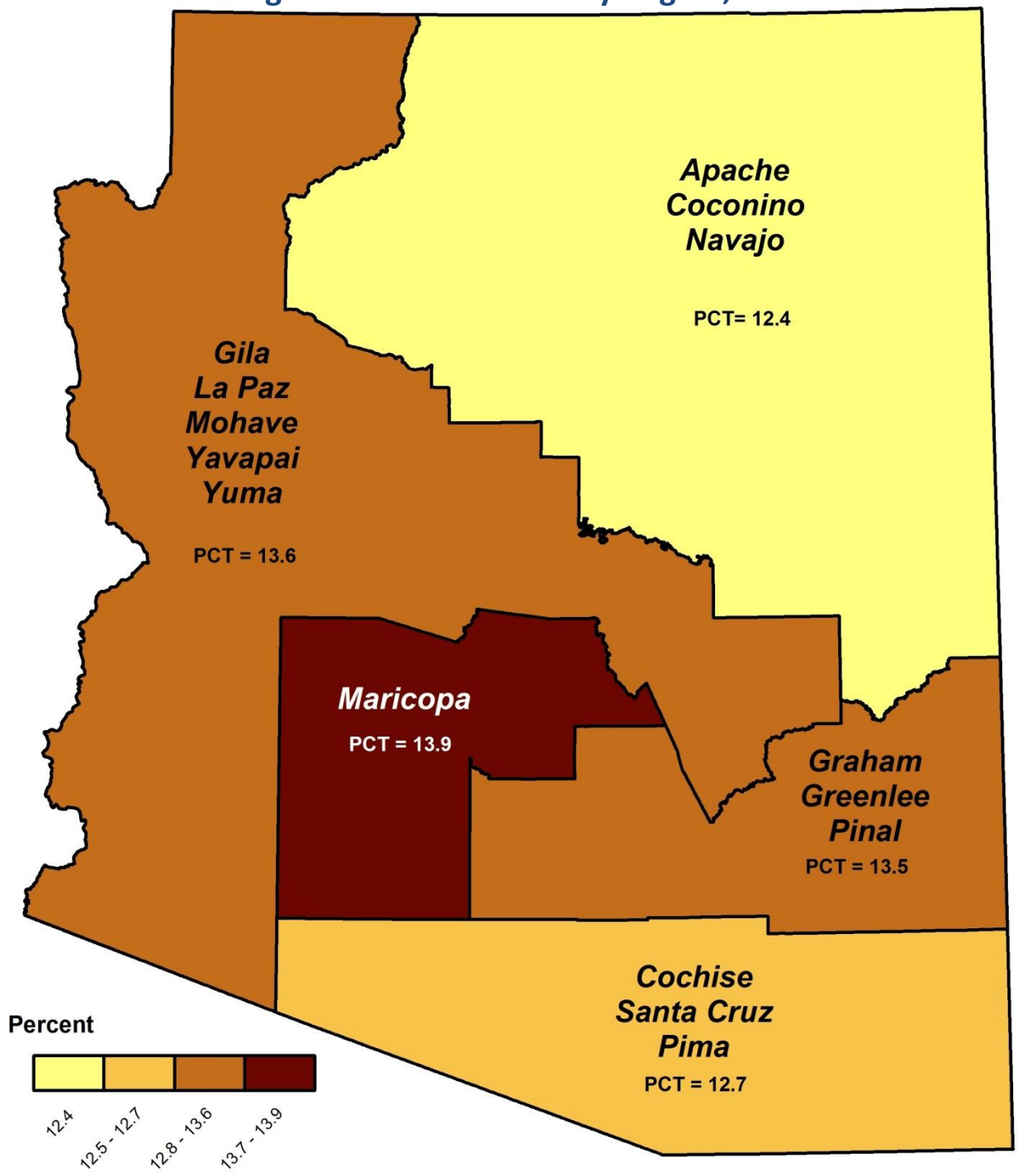
Percentage of Arizonans Who Reported That They Have Been Diagnosed With Asthma by County, 2012

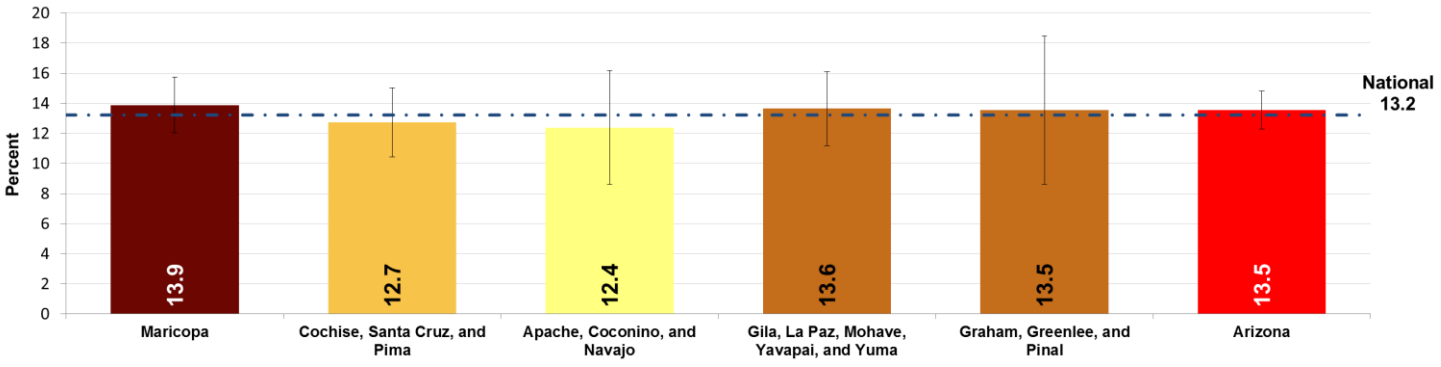




***indicates that the county has a significantly lower percentage reporting having been diagnosed with asthma than the overall state percentage.**

Percentage of Arizonans Who Reported That They Have Been Diagnosed With Asthma by Region, 2012





Health Conditions and Limitations
Cardiovascular: Heart Attack

Cardiovascular disease remains the leading cause of death in the United States. The 2011 national mortality data (the most current available) shows that heart disease is the leading cause of death in the U.S. There were 596,339 deaths related to heart disease nationwide. It is estimated that 173.7 deaths per 100,000 were attributed to heart disease, after adjusting for age. Myocardial infarctions, also known as heart attacks, contributed to 119,732 deaths nationwide. About 20.1% of all heart disease deaths were due to heart attacks.[59] According to the 2012 BRFSS, 4.8% percent of respondents reported that a health professional told them they had a heart attack, which was .4% higher than the national response (see **Figure 25A**).

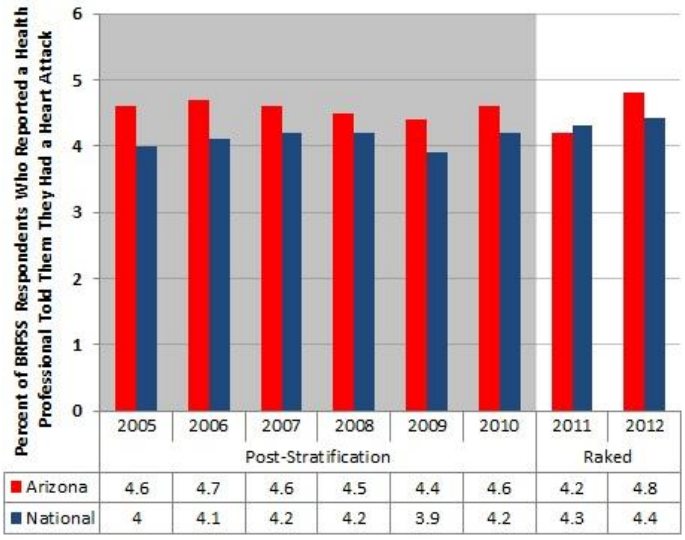


Figure 25A. Arizona and National 2005-2012 BRFSS respondents who reported a health professional told them they had a heart attack. The change in the background color marks methodological changes and changes to the question's structure. Trend comparisons across methodologies are not feasible.

Although Arizona had a higher prevalence of heart attacks when compared to the nation, it was not the state with the highest prevalence. When comparing Arizona to all the states in the U.S., the data shows that Arizona falls into the second highest category for individuals reporting that a health care professional told them that they suffered from a heart attack (see **Figure 25B**).

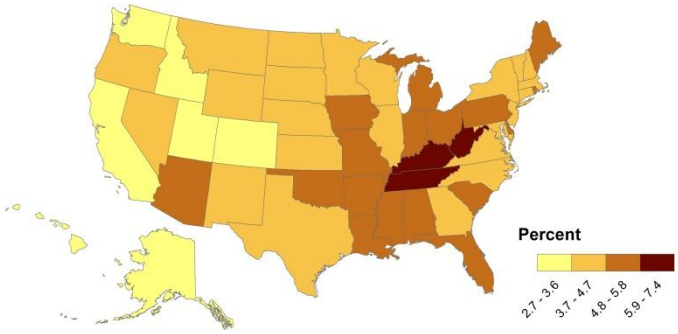


Figure 25B. Percent of 2012 BRFSS respondents who reported that a health care professional diagnosed told them they had suffered from a heart attack (natural breaks).

59. Hoyert D, Xu J. Deaths: Preliminary Data for 2011. National Vital Statistics Reports 10 October, 2012. 61(6).

In 2012, there were 18,824 heart attack-related emergency department visits and inpatient hospitalizations, 1,369 of whom died in the hospital. The visits accrued charges totaling more than $1.5 billion. The average length of stay ranged from 4.1 to 5.8 days (see **Table 14).**

Emergency Department Visits and Inpatient Hospitalizations Related to Heart Attacks

	Discharges	Died	Charges	Average Length of Stay (Days)
Charity	51	6	$5,409,419	5.8
Medicaid	1,251	73	$114,657,399	5.3
Medicare	11,719	1,013	$940,074,786	5.3
Other	452	30	$41,705,360	5.1
Private Insurance	3,866	161	$329,937,268	4.1
Self-Pay	1,485	86	$129,186,077	4.4
Total	**18,824**	**1,369**	**$1,560,970,309**	**-**

Table 14. Inpatient and emergency room discharges (2012) related to heart attacks. Heart attacks were defined by the following ICD-9 codes: 410.00-410.02, 410.10-410.12, 410.20-410.22, 410.30-410.32, 410.40-410.42, 410.50-410.52, 410.60-410.62, 410.70-410.72, 410.80-410.82, and 410.90-410.92.

Hospitalizations due to heart attacks can be specified in three different ways: newly diagnosed (considered an initial episode), subsequent episode if the patient requires additional observation (within eight weeks of the initial episode), and unspecified episode of care if there is insufficient data.[60] The 2012 hospital discharge data shows that the majority of heart attack-related hospitalizations were initial episodes. Of the 18,824 discharges, 16,862 (89.6%) were initial episodes, 1,531 (8.1%) were subsequent episodes, and 431 (2.3%) were unspecified episodes (see **Figure 25C**). Initial episodes had the greatest economic impact. The average charge was $88,158 and the average length of stay was 5.1 days. Subsequent episodes had the second-highest economic impact with an average charge of $42,790 and an average length of stay of 4.9 days. Lastly, unspecified visits had an average charge of $20,710, and an average length of stay of 1.1 days.

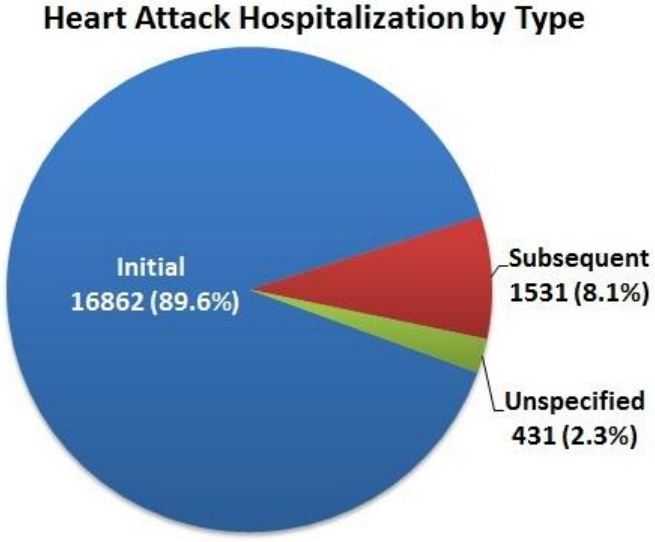


Figure 25C. Emergency department and inpatient heart attack related hospitalizations by episode specification.

60. Optum. ICD-9-CM: 2013. Salt Lake City. 2012

Arizona Department of Health Services

Health Conditions and Limitations
Cardiovascular: Heart Attack

Arizonans Who Reported a Health Professional Told Them They Had a Heart Attack in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**4.8**	**4.1**	**5.5**
National	**4.4**	**4.3**	**4.5**
Sex			
Male	6.1	5.0	7.2
Female	3.6	2.8	4.4
Age			
*18-24	0.5	0.0	1.2
*25-34	1.2	0.0	2.4
35-44	2.0	0.5	3.4
45-54	3.5	1.7	5.3
55-64	6.9	4.8	9.0
65+	13.0	11.1	14.9
Marital Status			
Married	4.9	3.9	5.9
Divorced	7.2	4.6	9.8
Widowed	12.4	9.3	15.4
Separated	5.3	0.9	9.7
Never Married	1.8	0.8	2.8
Unmarried Couple	3.9	0.6	7.2
Educational Attainment			
Less than High School	6.1	3.6	8.6
High School Graduate/GED	6.2	4.6	7.9
Some College/Tech School	4.1	3.1	5.0
College Grad	3.5	2.6	4.4
Employment Status			
Employed for wages	1.7	1.0	2.4
Self-employed	2.2	1.0	3.4
Out of work	4.5	2.1	7.0
Homemaker	3.4	1.0	5.9
*Student	0.0	0.0	0.1
Retired	12.0	10.1	14.0
Unable to Work	15.4	9.8	21.0
Income			
<$25,000	6.3	4.9	7.7
$25,000-$34,999	5.8	3.0	8.6
$35,000-$49,999	6.1	3.8	8.3
$50,000-$74,999	3.9	2.1	5.7
$75,000+	2.0	1.2	2.9
Race/Ethnicity			
White Non-Hispanic	5.7	4.8	6.5
Black	7.5	2.6	12.4
*Asian/PI	0.3	0.0	1.0
American Indian	3.4	0.5	6.3
Other	2.9	0.4	5.5
Hispanic	3.4	1.9	4.9

*Indicates an unreliable estimate due to small sample (n=1-5)

The table to the left displays the distribution of Arizonans who reported that a health professional told them that they suffered from a heart attack. The data are broken down by age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were less likely to report a health professional telling them they had a heart attack if they

- Were female
- Were never married
- Graduated from college
- Had a household income greater than $75,000

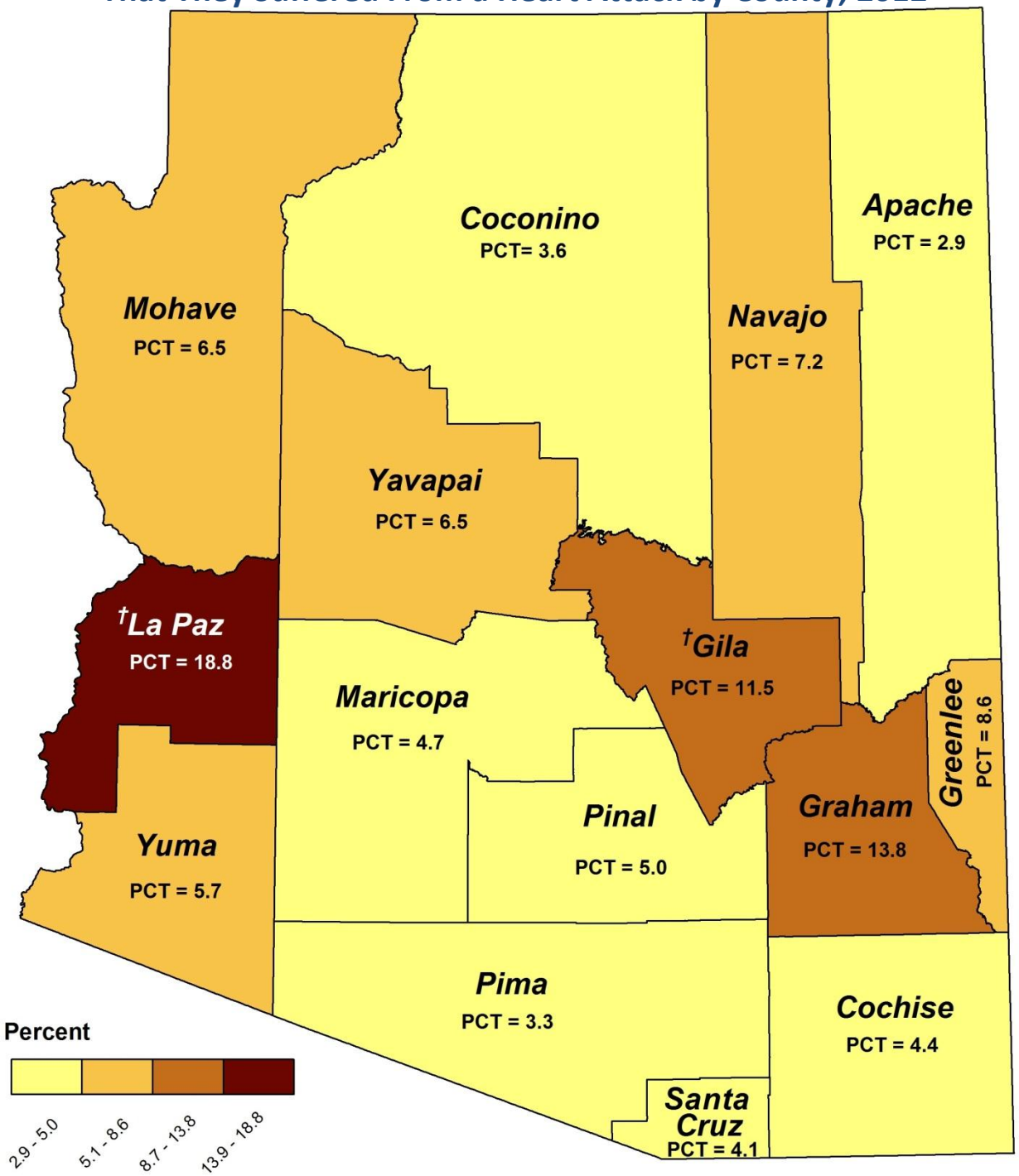
When stratifying by race the data shows that individuals who were Hispanic were less likely to report having a heart attack than their White counterparts.

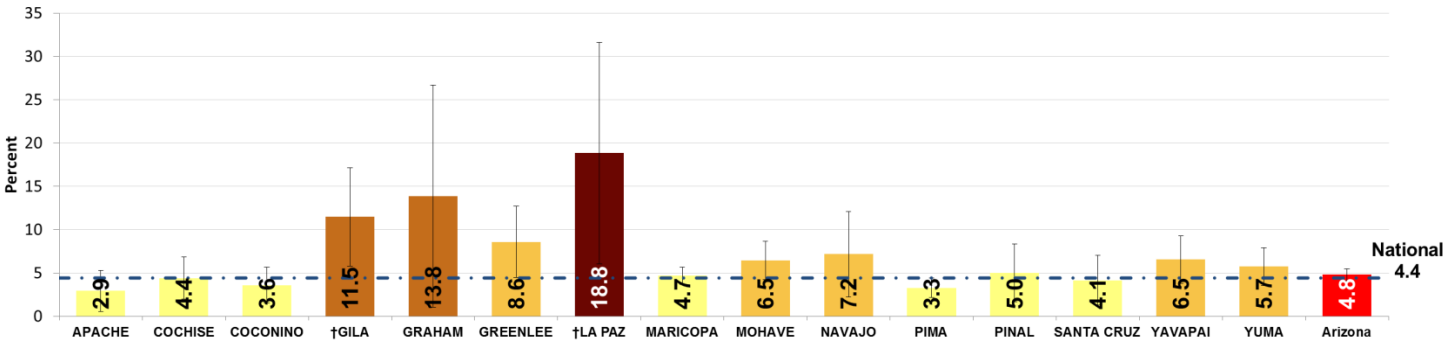
Respondents were more likely report a health professional telling them they had a heart attack if they

- Were male
- Were widowed
- Had graduated from high school or had a GED
- Had a household income less than $25,000

Individuals who were unable to work were the most likely to report having been told that they had suffered from a heart attack, at 15.4%.

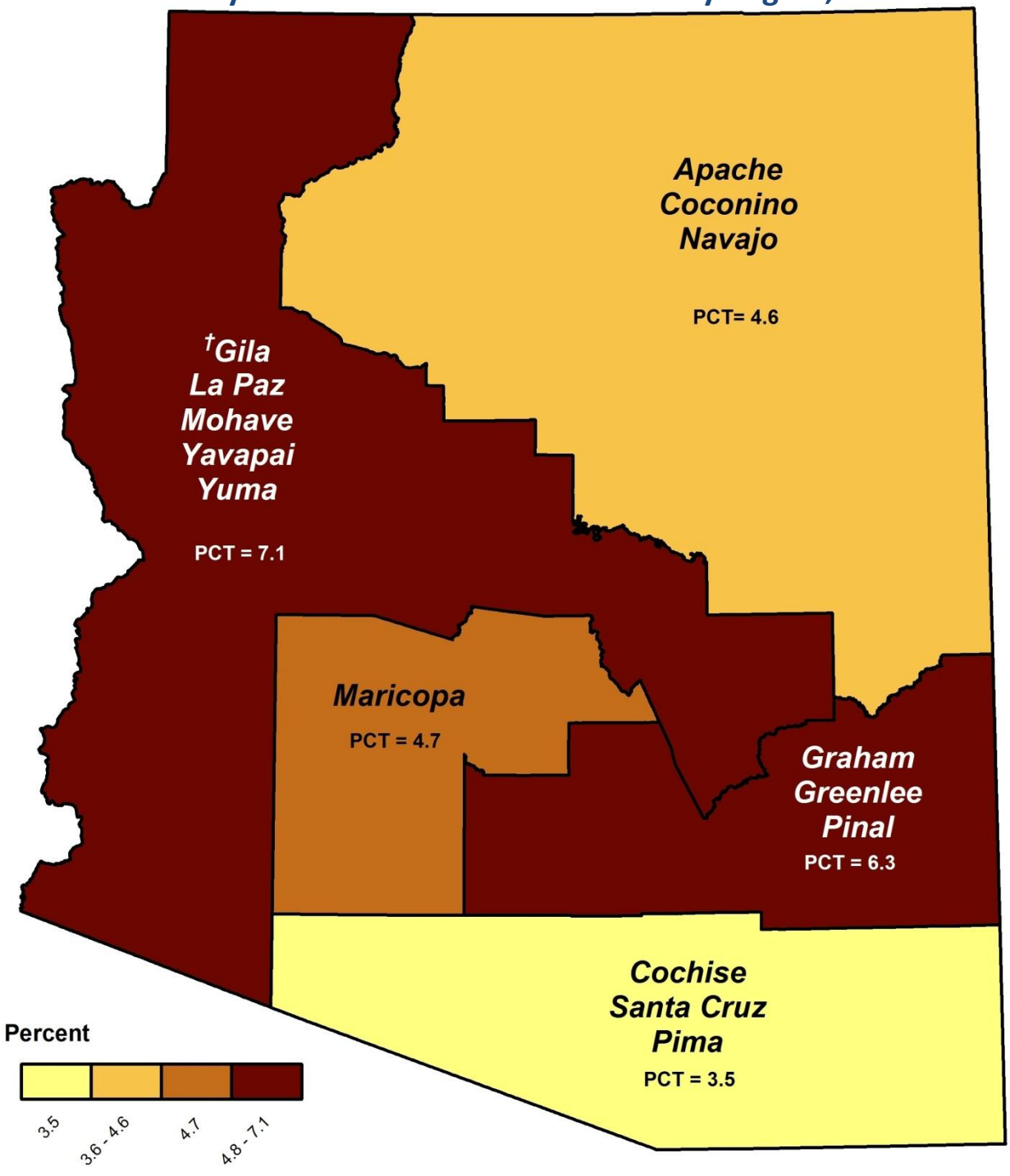
Percentage of Arizonans Who Reported That a Health Professional Told Them That They Suffered From a Heart Attack by County, 2012

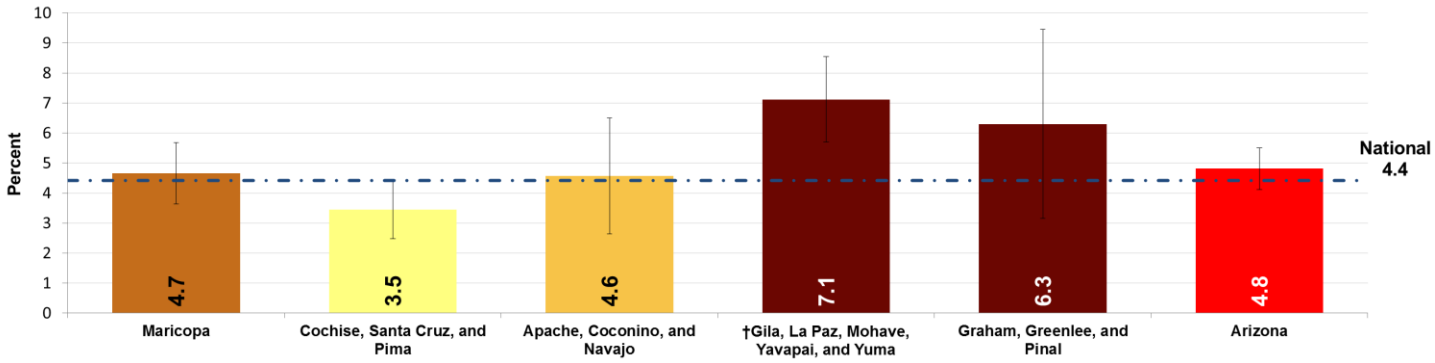




†indicates that the county has a significantly higher percentage reporting having been told by a health profession that they suffered from a heart attack than the overall state percentage.

Percentage of Arizonans Who Reported That a Health Professional Told Them That They Suffered From a Heart Attack by Region, 2012





†indicates that the region has a significantly higher percentage reporting having been told by a health profession that they suffered from a heart attack than the overall state average.

Health Conditions and Limitations
Cardiovascular: Angina

Angina is chest pain or discomfort brought on by reduced blood flow to the heart. Angina is not a disease, but rather a symptom of coronary heart disease (CHD). CHD is a disease where plaque, a buildup of cholesterol and white blood cells, restricts blood flow to the heart itself. The reduction in oxygen to the heart results in angina and in the worst case a heart attack. The major types of angina are as follows:[61,62]

- **Stable Angina:** The most common form of angina. Pain occurs when the heart works harder than usual and follows a regular pattern.
- **Unstable Angina:** Does not follow a pattern and can occur more often and be more severe than stable angina.
- **Variant Angina:** Rare occurrence, brought on by a spasm in the coronary artery.
- **Microvascular Angina:** Also known as Cardiac Syndrome X, it is a small vessel disease and pain can last up to 10 minutes per episode.

Angina is the result of a progressive disease; CHD is a form of atherosclerosis that affects the coronary arteries. Over time a plaque of fat and cholesterol builds up on the artery walls (see **Figure 26A**). Plaque buildup can begin as early as infancy, and it continues to progress throughout life. Complications tend to develop later in life; the most severe of which is heart attack and stroke. Atherosclerosis has been shown to develop in healthy individuals. However, risk factors such as eating foods high in unhealthy cholesterol, having high blood pressure, having Type I or Type II diabetes, being overweight or obese, and eating an unhealthy diet will accelerate its progression.[62]

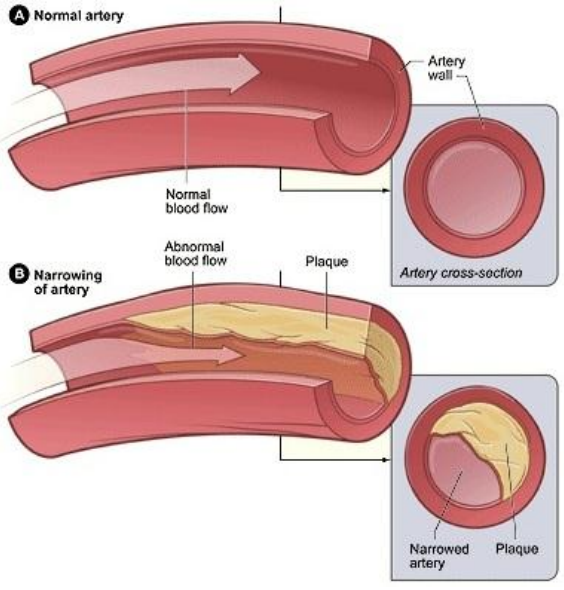
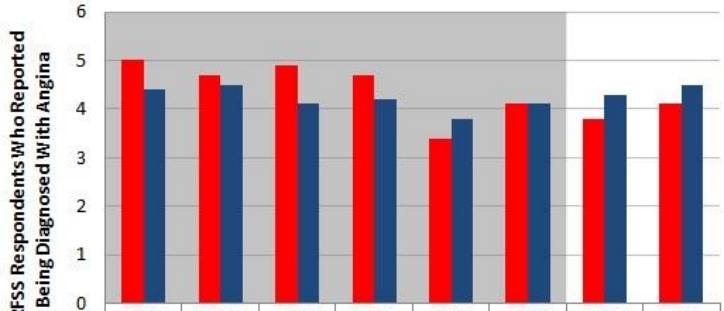


Figure 26A. Difference between a normal artery and an atherosclerotic artery.[61]

The historical BRFSS data shows more Arizonans suffering from angina when compared to the nation (years 2005-2008). In 2009 and 2010, Arizona had a lower prevalence or was equal to the national prevalence. In 2012, 4.1% of Arizonans were diagnosed with angina, which was .4% lower than the national prevalence (see **Figure 26B**).



	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	5	4.7	4.9	4.7	3.4	4.1	3.8	4.1
National	4.4	4.5	4.1	4.2	3.8	4.1	4.3	4.5

Figure 26B. Arizona and National 2005-2012 BRFSS respondents who reported a health professional told them they had angina. The change in the background color marks methodological changes and changes to the question's structure. Trend comparisons across methodologies are not feasible.

When compared to the nation as a whole, Arizona fell into the second lowest category for individuals reporting being diagnosed with angina (see **Figure 26C**).

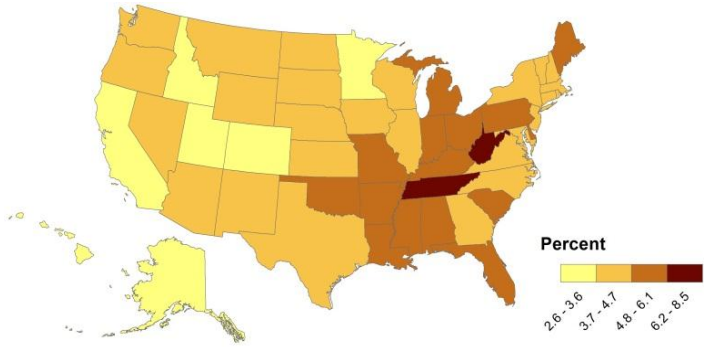


Figure 26C. Percent of 2012 BRFSS respondents who reported that a health professional told them they had angina (natural breaks).

In 2012, there were 5,825 emergency department visits and inpatient hospitalizations related to angina. The visits related to angina accounted for a total 8,952 days spent in the hospital. The total charges accrued were more than $164 million with an average length of stay ranging from 1.2 to 4.6 days (see **Table 15**).

Emergency Department and Inpatient Discharges Related to Angina

	Discharges	Charges	Average Length of Stay (Days)
Charity	14	$1,215,770	4.6
Medicaid	620	$12,466,709	1.2
Medicare	3,608	$102,758,280	1.6
Other	146	$5,130,867	1.7
Private Insurance	1,119	$35,718,233	1.5
Self-Pay	318	$7,419,911	1.3
Total	**5,825**	**$164,709,770**	**-**

Table 15. Inpatient and emergency room discharges (2012) hospitalizations related to angina. Angina was defined by the following ICD-9 codes: 413.0, 413.1, and 413.9.

61. National Heart, Lung, and Blood Institute. What is Coronary Heart Disease? 23 August 2012. https://www.nhlbi.nih.gov/health/health-topics/topics/cad/
62. Mayo Clinic. Diseases and Conditions: Small Vessel Disease. 09 April 2013. http://www.mayoclinic.org/diseases-conditions/small-vessel-disease/basics/definition/con-20032544
63 National Heart, Lung, and Blood. What is Atherosclerosis? 01 July 2011. https://www.nhlbi.nih.gov/health/health-topics/topics/atherosclerosis/

Health Conditions and Limitations
Cardiovascular: Angina

Arizonans Who Reported a Health Professional Told Them They Had Angina in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**4.1**	**3.5**	**4.7**
National	**4.5**	**4.4**	**4.6**
Sex			
Male	4.8	3.9	5.8
Female	3.3	2.6	4.1
Age			
*18-24	.	.	.
*25-34	0.1	0.0	0.3
35-44	1.3	0.2	2.4
45-54	3.2	1.7	4.7
55-64	5.8	3.8	7.9
65+	12.3	10.5	14.2
Marital Status			
Married	4.5	3.6	5.3
Divorced	5.8	4.0	7.6
Widowed	10.1	7.4	12.7
*Separated	3.1	0.3	5.8
Never Married	1.5	0.4	2.6
*Unmarried Couple	2.2	0.0	4.8
Educational Attainment			
Less than High School	4.2	2.3	6.0
High School Graduate/GED	4.1	3.0	5.2
Some College/Tech School	4.4	3.4	5.5
College Grad	3.5	2.6	4.4
Employment Status			
Employed for wages	1.5	0.9	2.1
Self-employed	1.6	0.5	2.8
Out of work	3.6	1.3	5.9
Homemaker	2.7	1.0	4.5
*Student	0.0	0.0	0.1
Retired	11.2	9.4	13.1
Unable to Work	11.0	6.7	15.2
Income			
<$25,000	5.0	3.8	6.2
$25,000-$34,999	3.1	1.6	4.6
$35,000-$49,999	4.8	2.8	6.8
$50,000-$74,999	3.6	2.0	5.1
$75,000+	3.0	1.9	4.1
Race/Ethnicity			
White Non-Hispanic	5.4	4.6	6.3
*Black	4.1	0.7	7.4
*Asian/PI	0.2	0.0	0.5
*American Indian	1.6	0.0	3.8
Other	3.5	0.9	6.0
Hispanic	1.8	0.8	2.8

*Indicates an unreliable estimate due to small sample (n=1-9)

The table to the left displays the distribution of Arizonans who reported that a health professional told them that they suffered from angina. The data are broken down by age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were less likely to report a health professional telling them they had angina if they

- Were female
- Were never married
- Had graduated from college
- Had a household income greater than $75,000

When stratifying by race the data shows that individuals who were Hispanic were less likely to report having angina than their White counterparts.

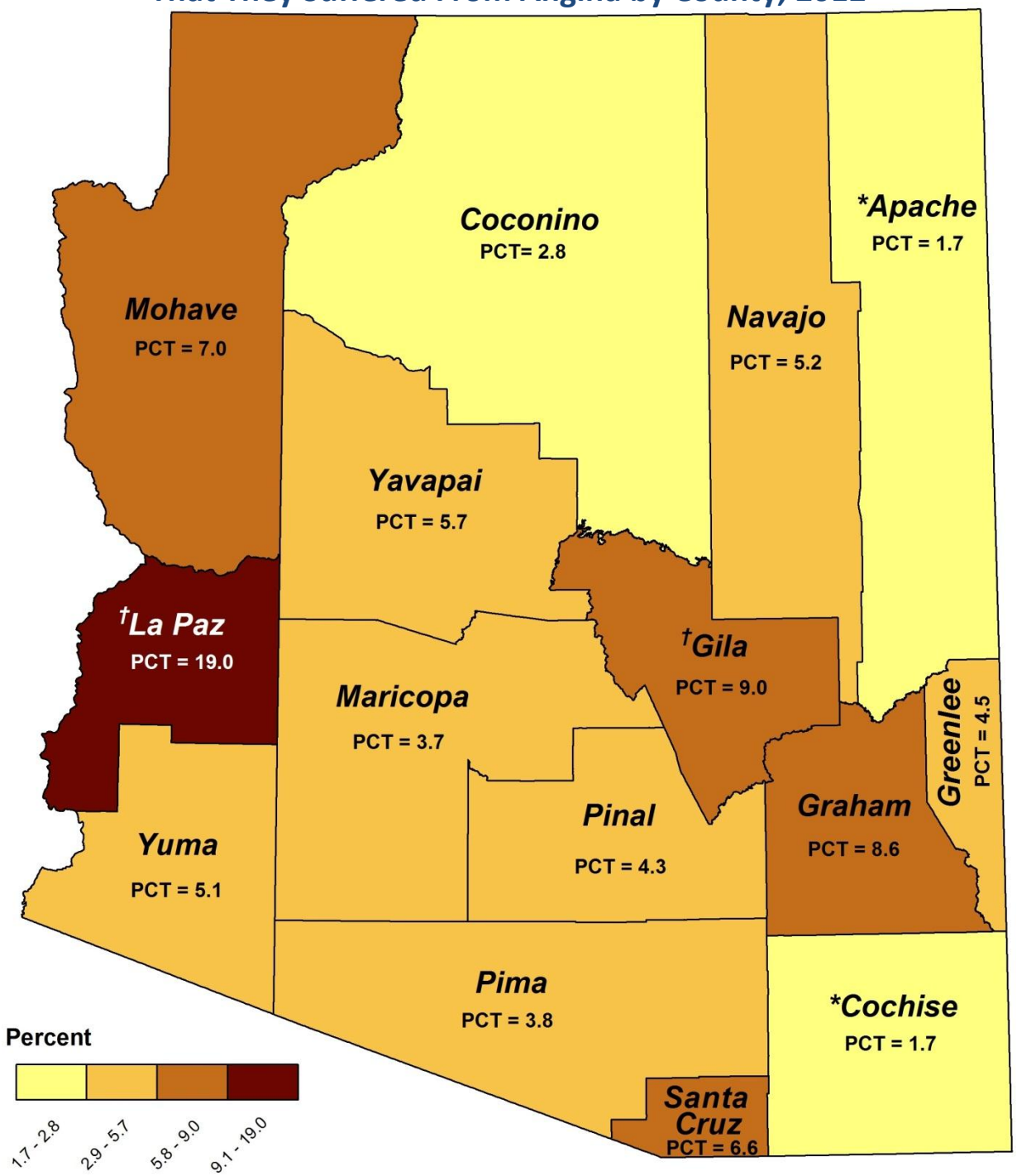
Respondents were more likely report a health professional telling them they had angina if they

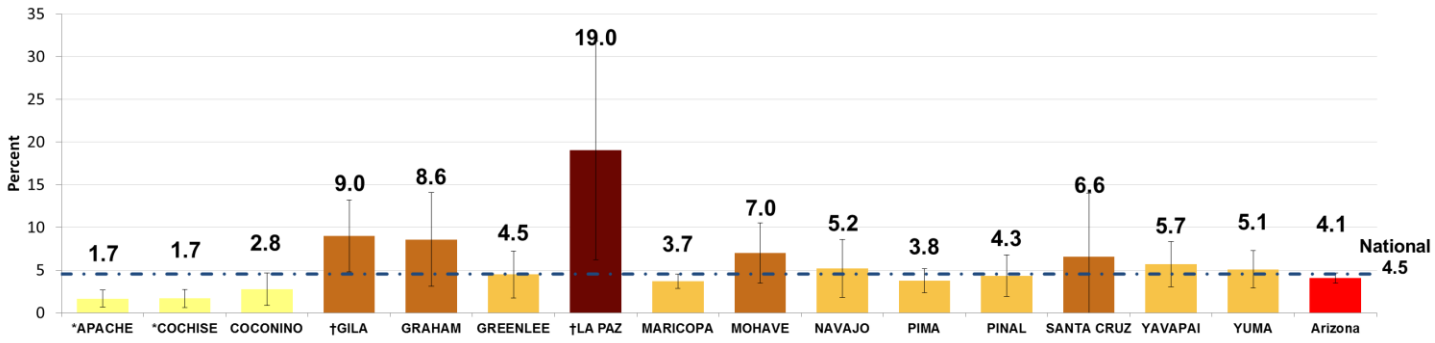
- Were male
- Were widowed
- Had some college or technical school
- Had a household income less than $25,000

Individuals who were 65 and older were the most likely to report suffering from angina, at 12.3%.

Arizona Department of Health Services

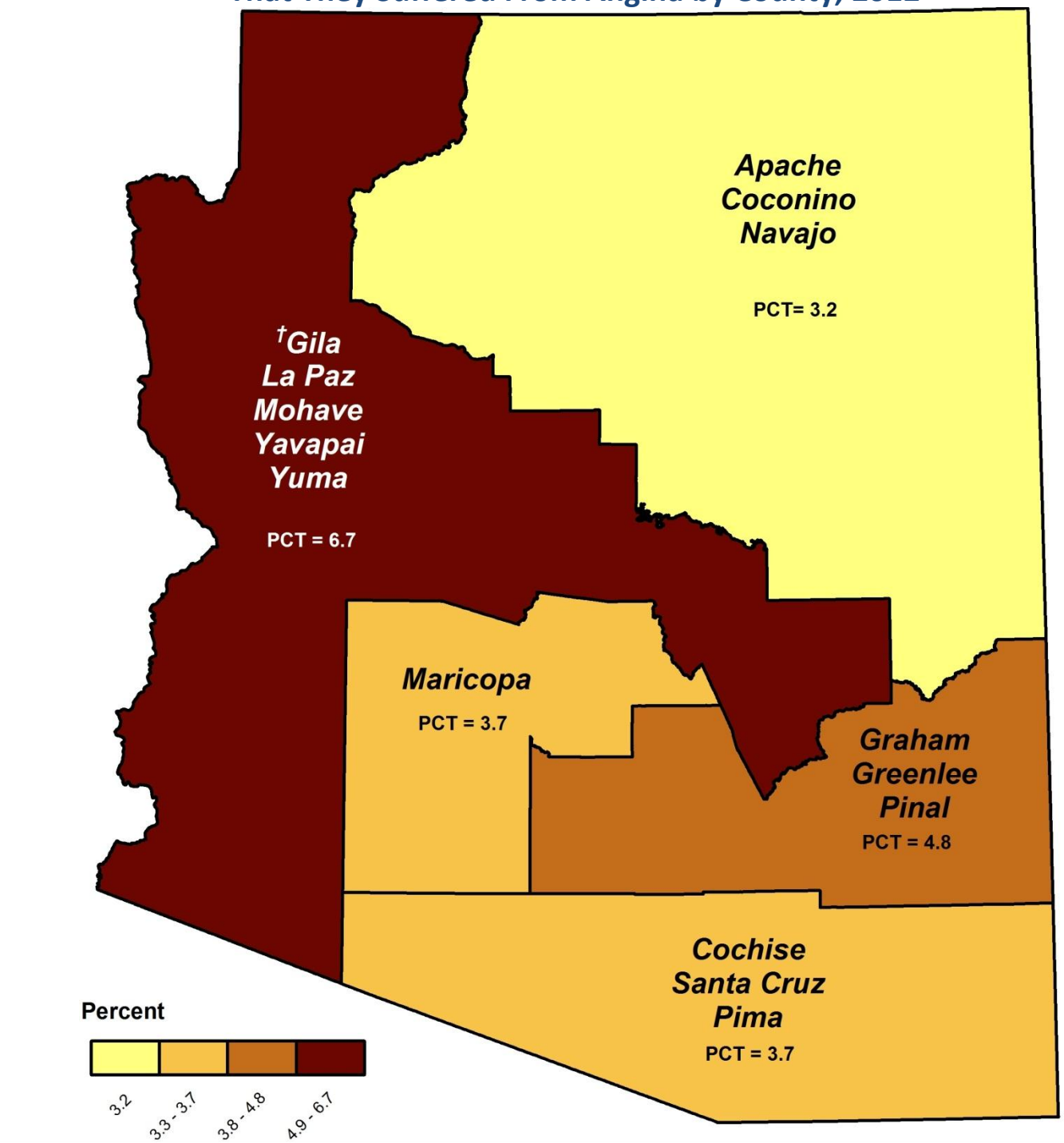
Percentage of Arizonans Who Reported That a Health Professional Told Them That They Suffered From Angina by County, 2012

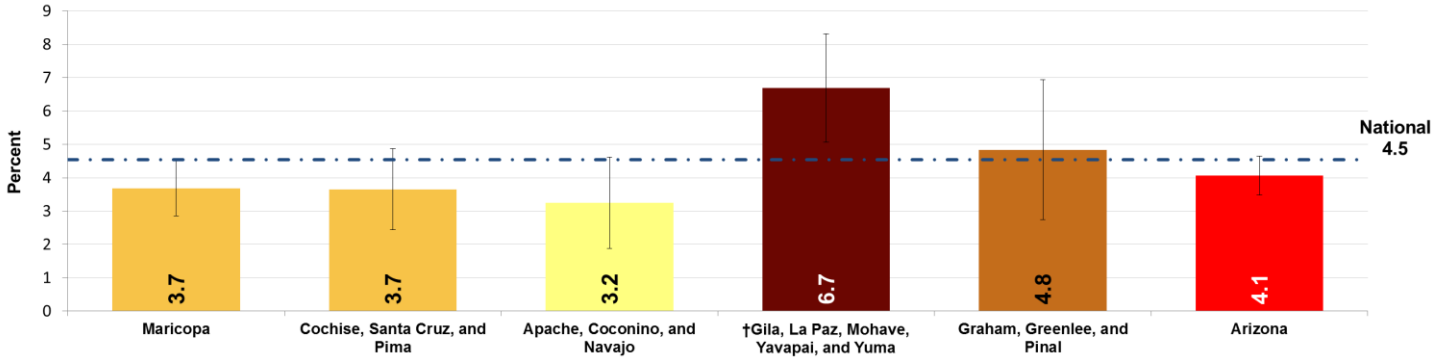




*†indicates that the county has a significantly lower percentage reporting having been told by a health profession that they suffered from angina than the overall state average.
†indicates that the county has a significantly higher percentage reporting having been told by a health profession that they suffered from angina than the overall state average.

Percentage of Arizonans Who Reported That a Health Professional Told Them That They Suffered From Angina by County, 2012





†indicates that the region has a significantly higher percentage reporting having been told by a health profession that they suffered from angina than the overall state average.

Health Conditions and Limitations
Stroke

Cerebrovascular diseases, also known as strokes, are medical emergencies. A stroke occurs when blood stops flowing to the brain, which causes the affected portion to die. Strokes are the fourth leading cause of death in the U.S. Furthermore, in adults, strokes are considered a major cause of disability.[58] The 2011 national mortality data (the most current available) shows that cerebrovascular disease resulted in 128,931 deaths. The main types of strokes are:[64]

- **Ischemic Stroke:** an artery that supplies blood to the brain is blocked; 85% of all strokes are ischemic.
- **Hemorrhagic Stroke:** an artery in the brain leaks or ruptures
- **Transient Ischemic Attack (TIA):** blood flow to the brain is blocked for a short period of time (<5 mins.)
  - Often referred to as a "mini-stroke"
  - Very similar to ischemic strokes as they are often caused by blood clots
  - They are a medical emergency

According to the 2012 BRFSS, 2.9% of Arizonans have suffered from a stroke; the same as the national prevalence (see **Figure 27A**).

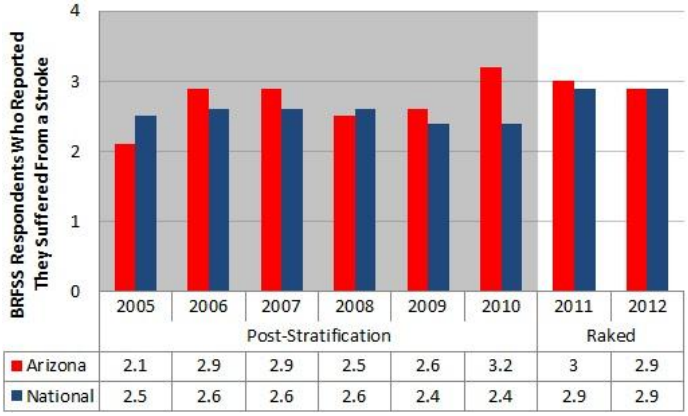


Figure 27A. Arizona and National 2005-2012 BRFSS respondents who reported having suffered from a stroke. The change in the background color marks methodological changes and changes to the question's structure. Trend comparisons across methodologies are not feasible.

Although Arizona had the same prevalence of stroke when compared to the nation, it fell into the second highest category when examining all the states that make up the U.S. (see **Figure 27B**).

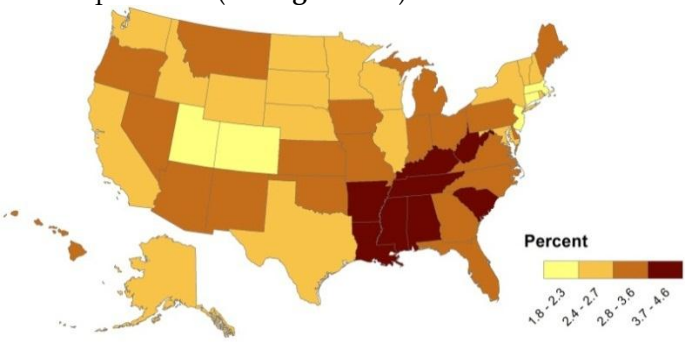


Figure 27B. Percent of 2012 BRFSS respondents who reported they had a stroke (natural breaks)

64 Centers for Disease Control. Types of Strokes. 6 December 2013. http://www.cdc.gov/stroke/types_of_stroke.htm

In 2012, there were 16,447 hemorrhagic or ischemic stroke-related hospital discharges (non-injury), 945 of whom died in the hospital. The stroke-related discharges accrued more than $994 million in charges and had an average length of stay ranging from 4.5 to 7.6 days (see **Table 16**).

Emergency Department and Inpatient Discharges Related to Strokes (Ischemic and Hemorrhagic)

	Discharges	Died	Charges	Average Length of Stay (Days)
Charity	44	4	$3,144,766	7.4
Medicaid	1,336	77	$118,287,567	7.6
Medicare	10,564	606	$538,409,292	4.5
Other	400	52	$33,934,188	6.3
Private Insurance	2,891	139	$219,673,222	5.5
Self-Pay	1,212	67	$81,316,313	5.7
Total	**16,447**	**945**	**$994,765,348**	-

Table 16. Inpatient and emergency room discharges (2012) related to strokes. Strokes were defined by the following ICD-9 codes: 430, 431, 432.0, 432.1, and 432.9 for hemorrhagic strokes, and 433.01, 433.21, 433.81, 433.91, 434.01, 434.11, and 434.91 for ischemic.

The majority of stroke-related incidents were ischemic. Approximately 67% of all stroke-related hospitalizations were solely ischemic. Approximately 30% of the strokes were due to hemorrhage and about 3% were discharged with both ischemic and hemorrhagic stroke (see **Figure 27C**).

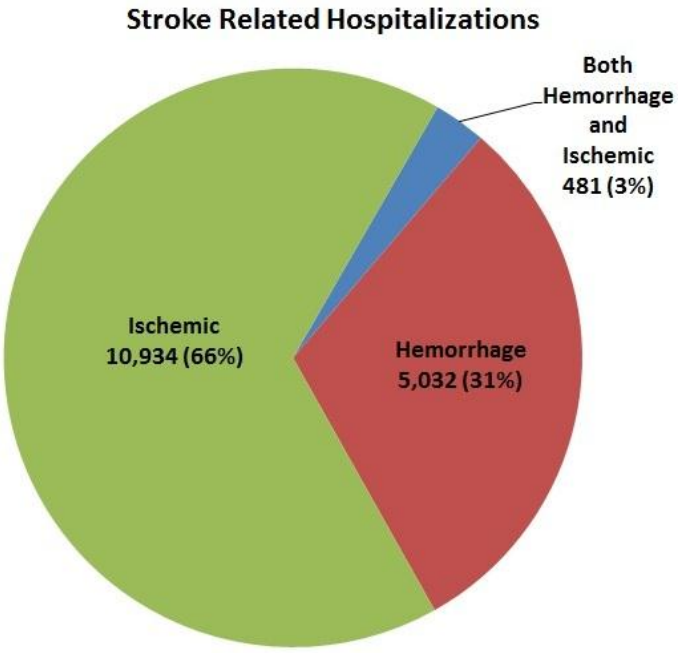


Figure 27C. Distribution of emergency department and inpatient hospitalizations related to strokes.

The information provided only offers a glimpse of the prevalence and economic burden caused by strokes. Due to the nature of the BRFSS data, individuals who died from strokes cannot be incorporated into the state and national prevalence. Furthermore, days spent in the hospital are not a sufficient measure to fully describe the impact a stroke can have on an individual's life because strokes can alter a person's ability to think, speak, taste, see, feel, and move.

Arizona Department of Health Services

Health Conditions and Limitations
Stroke

Arizonans Who Reported Having Suffered From a Stroke in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**2.9**	**2.4**	**3.4**
National	**2.9**	**2.8**	**3.0**
Sex			
Male	2.9	2.1	3.7
Female	2.9	2.2	3.5
Age			
*18-24	0.2	0.0	0.5
*25-34	1.5	0.3	2.7
35-44	1.0	0.2	1.9
45-54	3.1	1.5	4.7
55-64	3.3	2.1	4.4
65+	7.1	5.6	8.5
Marital Status			
Married	3.0	2.3	3.8
Divorced	5.1	3.1	7.1
Widowed	7.5	5.1	9.9
Separated	3.7	0.6	6.8
Never Married	0.9	0.2	1.7
*Unmarried Couple	0.4	0.0	0.9
Educational Attainment			
Less than High School	2.3	1.1	3.6
High School Graduate/GED	3.4	2.2	4.5
Some College/Tech School	3.3	2.3	4.2
College Grad	2.2	1.4	2.9
Employment Status			
Employed for wages	1.3	0.6	1.9
Self-employed	0.8	0.2	1.4
Out of work	2.9	1.0	4.8
Homemaker	2.3	0.6	4.0
*Student	0.4	0.0	1.3
Retired	6.0	4.6	7.4
Unable to Work	10.7	6.9	14.5
Income			
<$25,000	4.1	3.0	5.2
$25,000-$34,999	2.9	1.3	4.5
$35,000-$49,999	4.0	2.1	5.9
$50,000-$74,999	2.4	1.1	3.7
$75,000+	0.9	0.3	1.5
Race/Ethnicity			
White Non-Hispanic	3.4	2.7	4.0
Black	5.2	0.4	10.1
*Asian/PI	.	.	.
American Indian	3.1	0.3	5.9
Other	7.0	0.5	13.5
Hispanic	1.6	0.7	2.6

*Indicates an unreliable estimate due to small sample (n=0-7)

The table to the left displays the distribution of Arizonans who reported that a health professional told them that they suffered from a stroke. The data are broken down by age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were less likely to report a health professional telling them they had stroke if they

- Were a college graduate
- Were self-employed
- Had a household income greater than $75,000

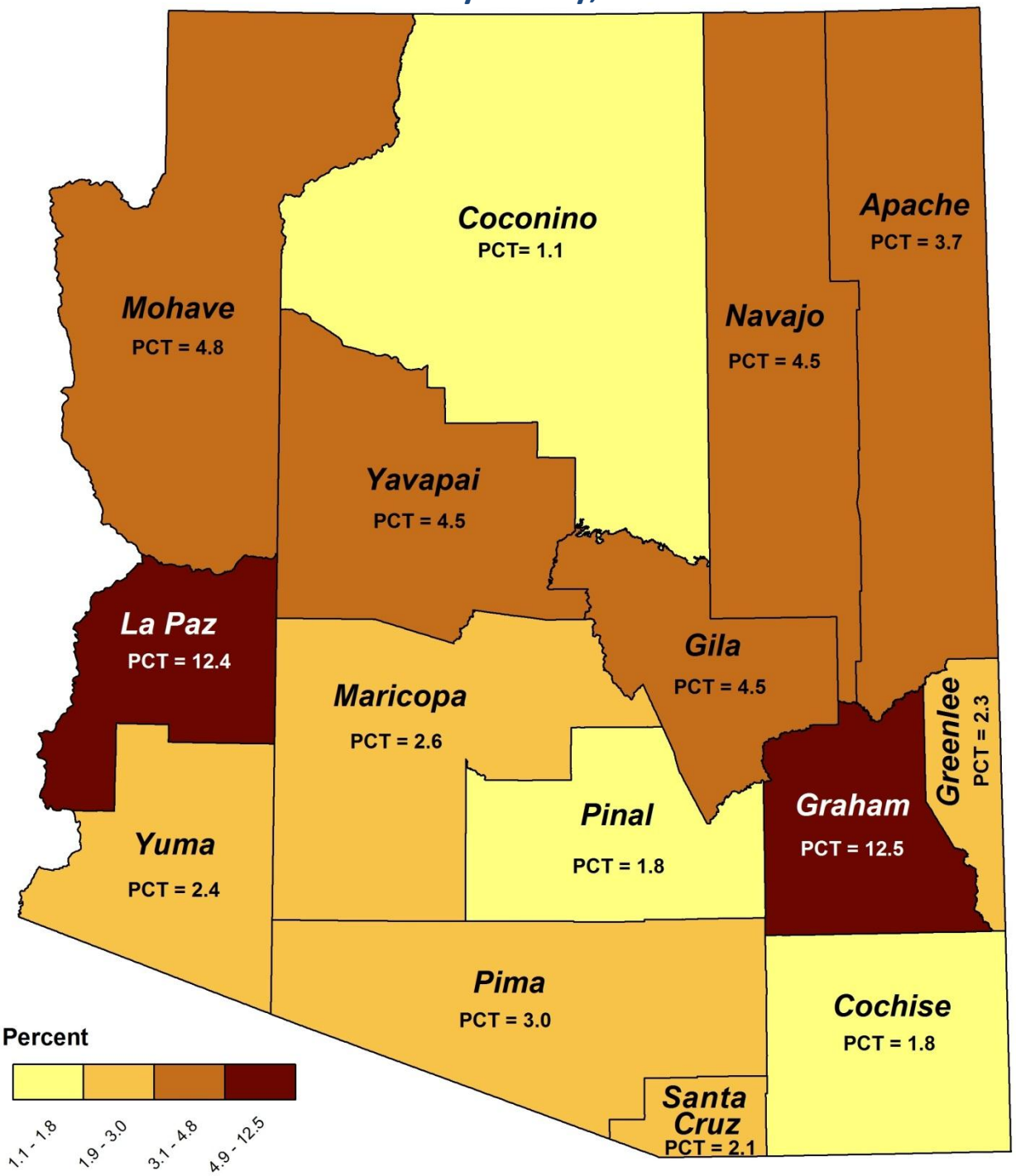
Men and Women were equally as likely to have suffered from a stroke in 2012.

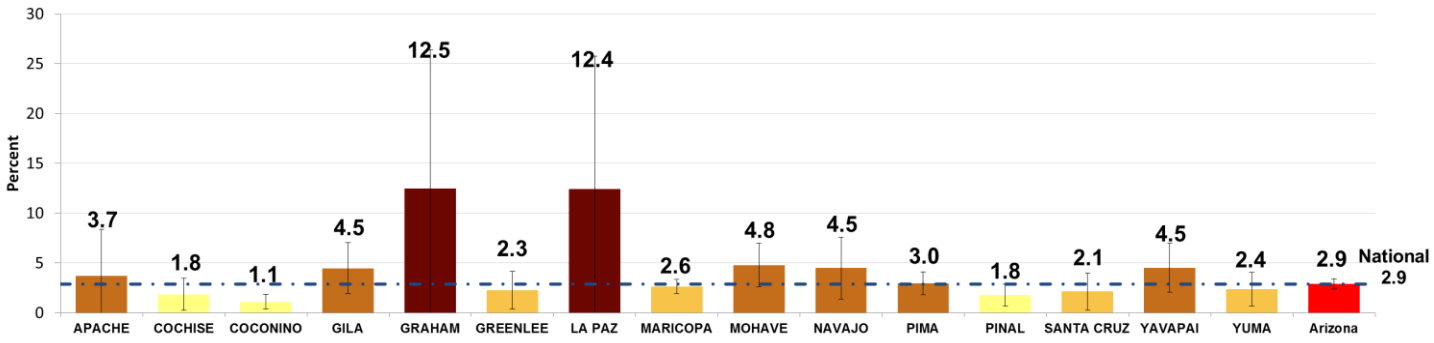
Respondents were more likely report a health professional telling them they had stroke if they

- Were a high school graduate but did not attend college or a technical school
- Were unable to work
- Had a household income less than $25,000

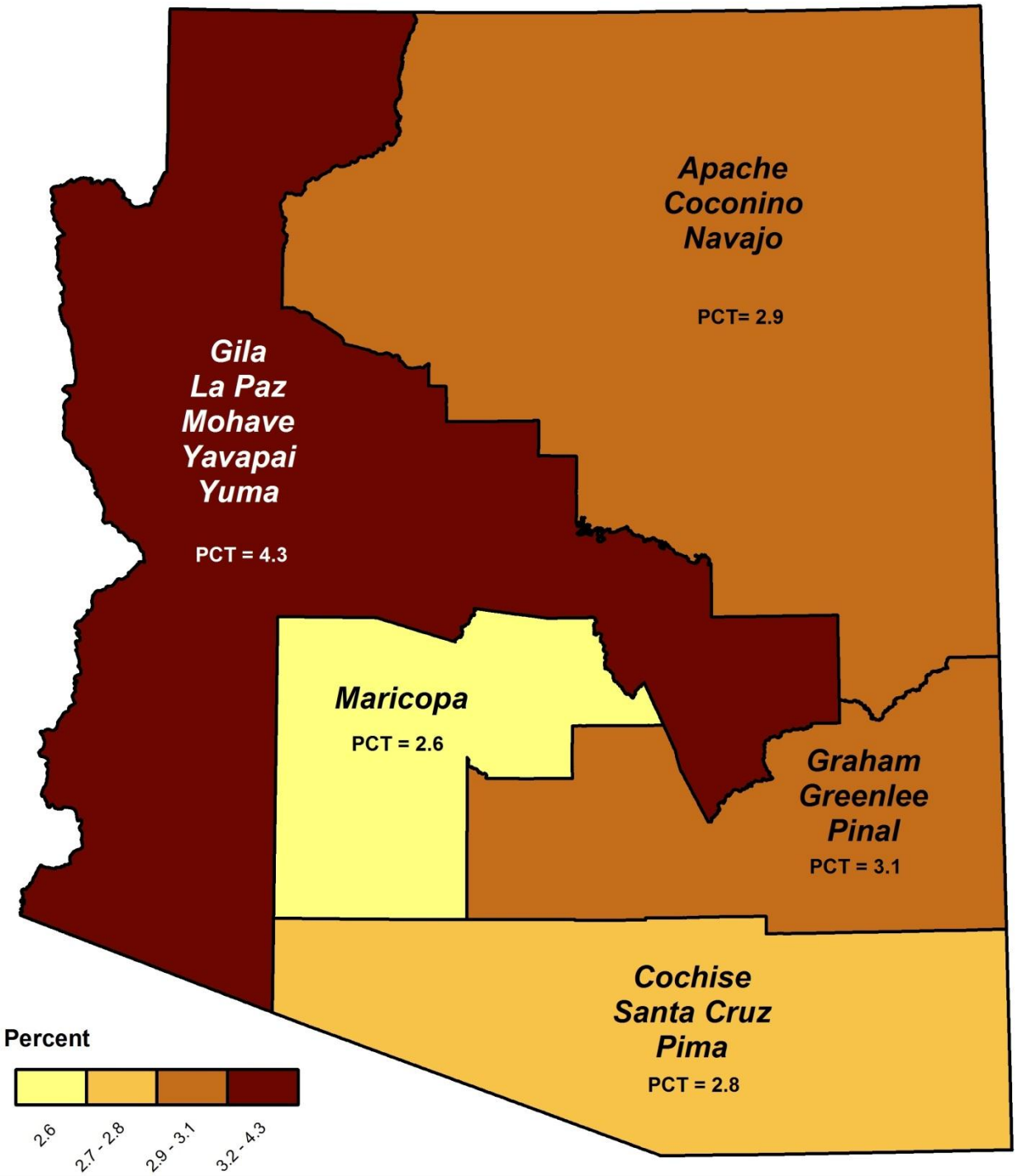
Individuals who were unable to work were the most likely to report suffering from a stroke, at 10.7%.

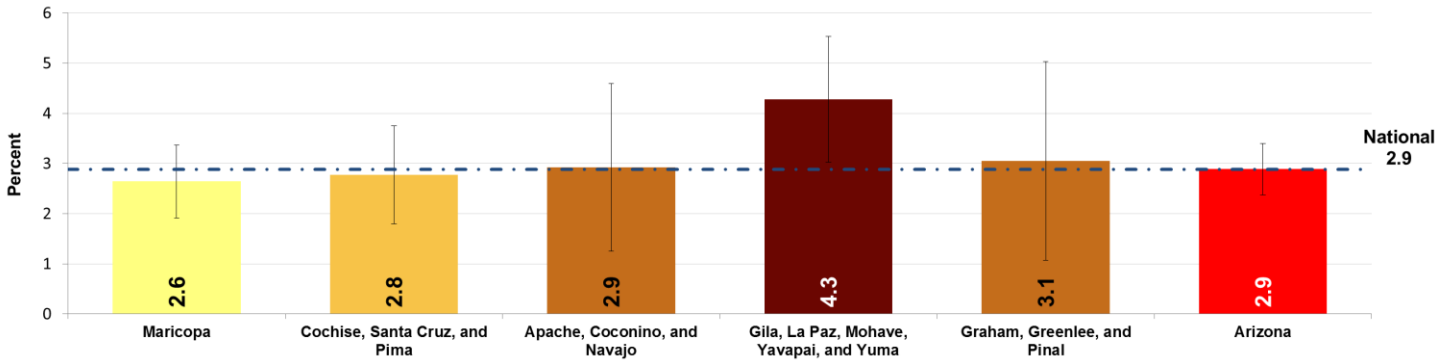
Percentage of Arizonans Who Reported That They Had Suffered From a Stroke by County, 2012





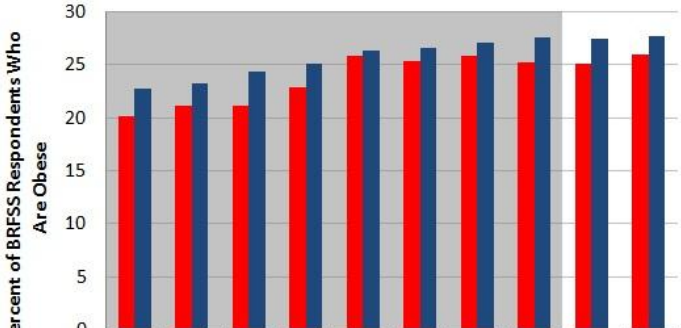
Percentage of Arizonans Who Reported That They Had Suffered From a Stroke by Region, 2012





Health Conditions and Limitations
Obesity

Current estimates show that more than 25 million Americans have Type II diabetes, 27 million have a form of chronic heart disease, and 68 million have hypertension. Additionally, it is estimated that nearly 800,000 people suffer from a stroke each year. These conditions have one thing in common: obesity is a risk factor. Furthermore, one in three cancer-related deaths also can be attributed to obesity.[65] Obesity has attained epidemic magnitude in the United States where it has more than doubled in the past two decades. People who are overweight or obese are at greater risk for heart disease, high blood pressure, diabetes, arthritis-related disabilities, and some cancers.[66] To assess obesity the BRFSS collects data on self-reported height and weight. The BMI formula for body mass index (Kg/m^2 > 30) is then used to define obesity. According to the 2012 BRFSS, Arizonans were less likely to be obese when compared to the U.S. as a whole. Approximately 26.0% of Arizona BRFSS respondents were obese, whereas about 27.7% of the U.S. respondents were obese (see **Figure 28A**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	20.1	21.2	21.1	22.9	25.8	25.4	25.9	25.2	25.1	26.0
National	22.8	23.2	24.4	25.1	26.3	26.6	27.1	27.6	27.4	27.7

Figure 28A. Arizona and National 2005-2012 BRFSS respondents who were obese. The change in the background color marks methodological changes and changes to the question's structure. Trend comparisons across methodologies are not feasible.

In addition to having a lower prevalence of obesity when compared to the U.S., Arizona fell into the second lowest category for obesity (see **Figure 28B**).

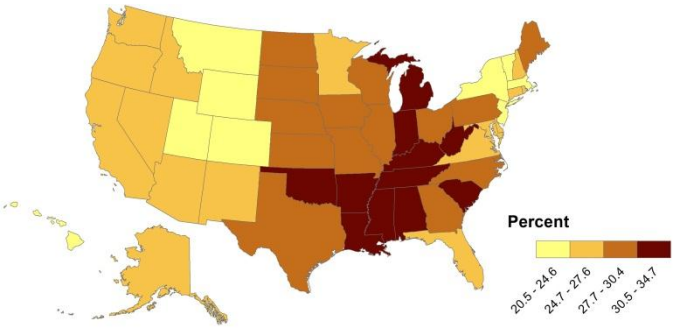


Figure 28B. Percent of 2012 BRFSS respondents who were obese (natural breaks).

Research has shown that low income households are less likely to live in communities that support healthy eating. Research has shown that stores in low-income communities are more likely to stock foods that are of lower nutritional value, but are more filling and effective at satisfying a family. Furthermore, individuals from low-income households have expressed that fresh fruits and vegetables are desirable but impractical due to cost.[67] The effect of the unavailability of healthy foods can be seen in the rise of obesity in low income households. The historic BRFSS data (2000-2010) shows that low-income households were the most likely to report a height and weight that would be classified as obese. The data shows an increasing trend in all income categories. The most pronounced categories were households with incomes less than $25,000 and households that earned between $35,000 and $49,999 (see **Figure 28C**).

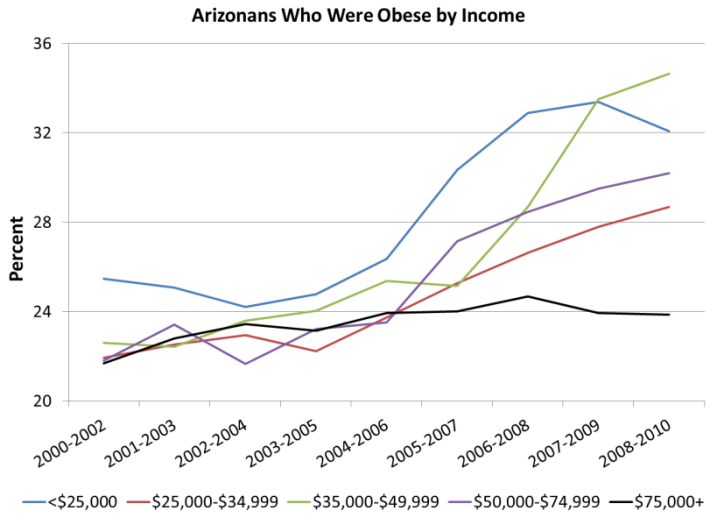


Figure 28C. Arizona 2000-2010 BRFSS three year rolling averages of individuals who were obese by income.

Although the disease burden associated with obesity is far reaching, being overweight and underweight also has detrimental effects on health. In 2012, only 35.6 of Arizonans fell in the normal BMI range, which was 1.1% higher than the national prevalence of 34.7% (see **Figure 28D**).

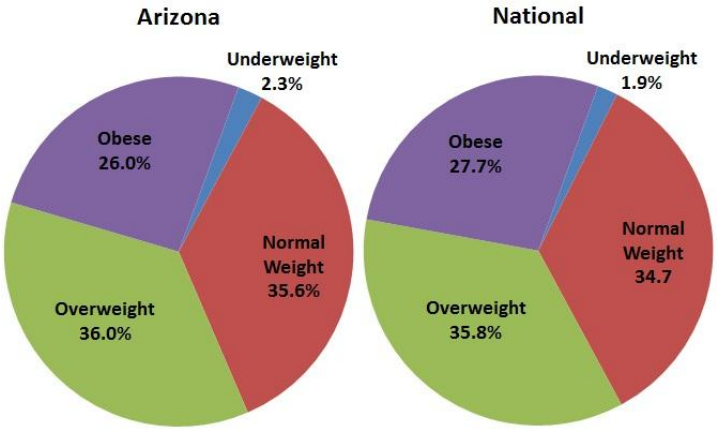


Figure 28D. Distribution of BMI categories of the respondents of the 2012 Arizona and National BRFSS.

65. Trust for America's Health. F as in Fat: How Obesity Threatens America's Future. September 2012. http://www.healthyamericans.org/assets/files/TFAH2012FasInFatFnlRv.pdf
66. Center for Disease and Control, "State -Specific Obesity Prevalence Among Adults U.S., 2009," http://www.cdc.gov/mmwr/preview/mmwrhtml/mm59e0803a1.htm
67. Hednrickson D, Smith C, Eikrnberry N. Fruit and Vegetable access in four low income food desert Communities in Minnesota. Agr and Hum Val. 2006 (23)

Health Conditions and Limitations
Obesity

Arizonans Who Were Obese in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**26.0**	**24.3**	**27.7**
National	**27.7**	**27.4**	**28.0**
Sex			
Male	26.4	23.9	28.9
Female	25.6	23.2	28.0
Age			
18-24	16.2	10.9	21.6
25-34	29.3	24.3	34.3
35-44	30.0	25.1	34.9
45-54	27.1	22.9	31.2
55-64	29.6	25.9	33.3
65+	22.5	20.1	24.9
Marital Status			
Married	25.8	23.5	28.0
Divorced	29.6	25.3	33.9
Widowed	25.0	20.6	29.5
Separated	20.8	11.1	30.5
Never Married	25.4	21.1	29.7
Unmarried Couple	26.8	17.7	36.0
Educational Attainment			
Less than High School	32.3	26.1	38.5
High School Graduate/GED	26.9	23.5	30.3
Some College/Tech School	25.3	22.5	28.2
College Grad	22.3	19.7	24.9
Employment Status			
Employed for wages	25.5	22.8	28.1
Self-employed	22.3	16.6	27.9
Out of work	33.5	26.3	40.6
Homemaker	31.6	24.7	38.6
Student	16.2	8.0	24.4
Retired	23.1	20.6	25.7
Unable to Work	36.9	28.8	44.9
Income			
<$25,000	29.9	26.4	33.4
$25,000-$34,999	25.9	20.7	31.2
$35,000-$49,999	26.2	21.7	30.8
$50,000-$74,999	28.1	23.3	32.8
$75,000+	21.6	18.3	25.0
Race/Ethnicity			
White Non-Hispanic	23.1	21.3	24.9
Black	35.4	24.2	46.7
Asian/PI	4.7	0.0	9.8
American Indian	45.8	35.9	55.6
Other	30.1	19.6	40.6
Hispanic	30.9	26.4	35.5

The table to the left displays the distribution of Arizonans who were obese. The data are broken down by age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were less likely to be obese if they

- Were female
- Were between the ages of 18 and 24
- Were separated
- Were college graduates
- Were students
- Had a household income greater than $75,000
- Were Asian or Pacific Islander

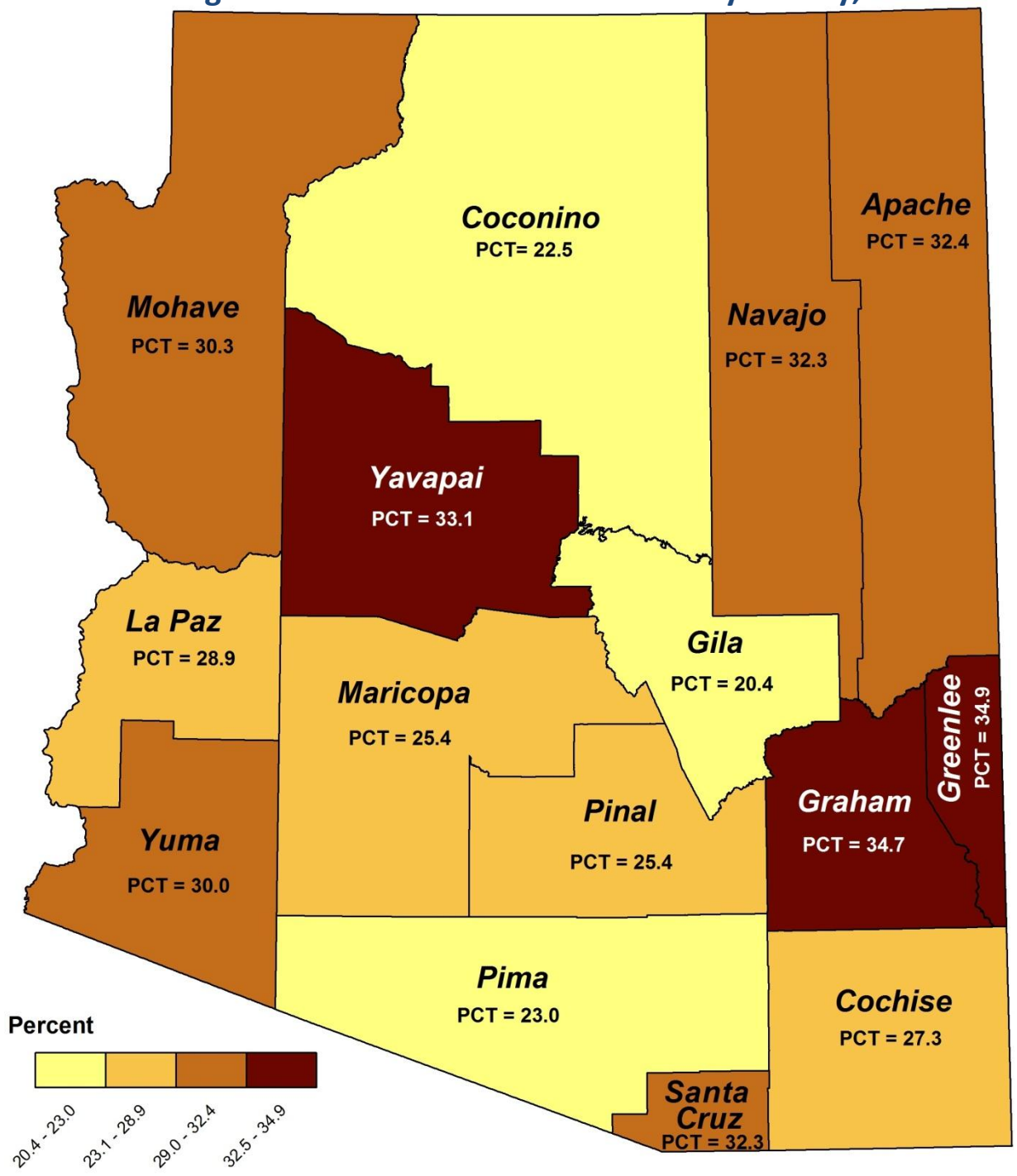
Asians and Pacific Islanders were the least likely to report that they were obese, at 4.7%.

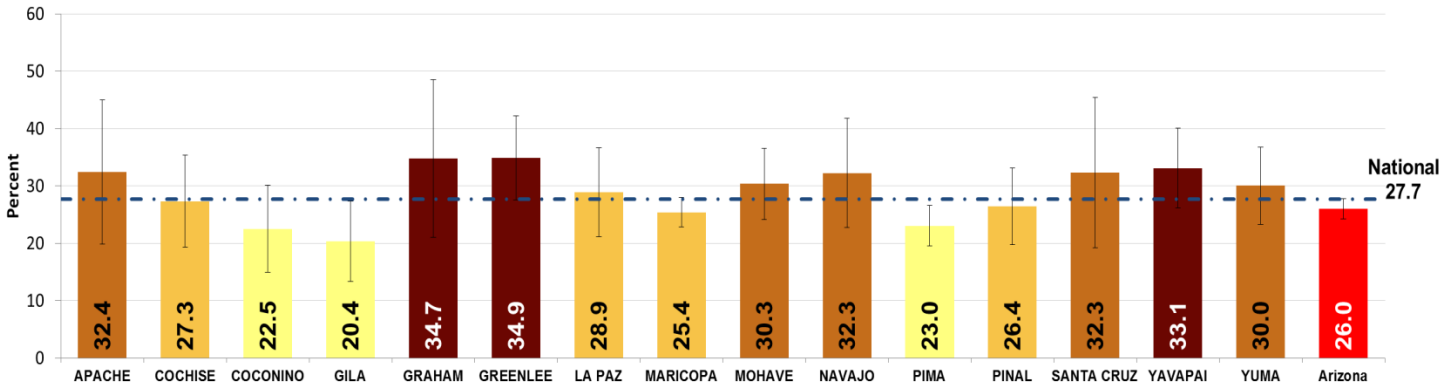
Respondents were more likely to be obese if they

- Were male
- Were between the ages of 35 and 44
- Were divorced
- Did not graduate high school
- Were unable to work
- Had a household income less than $25,000
- Were American Indian

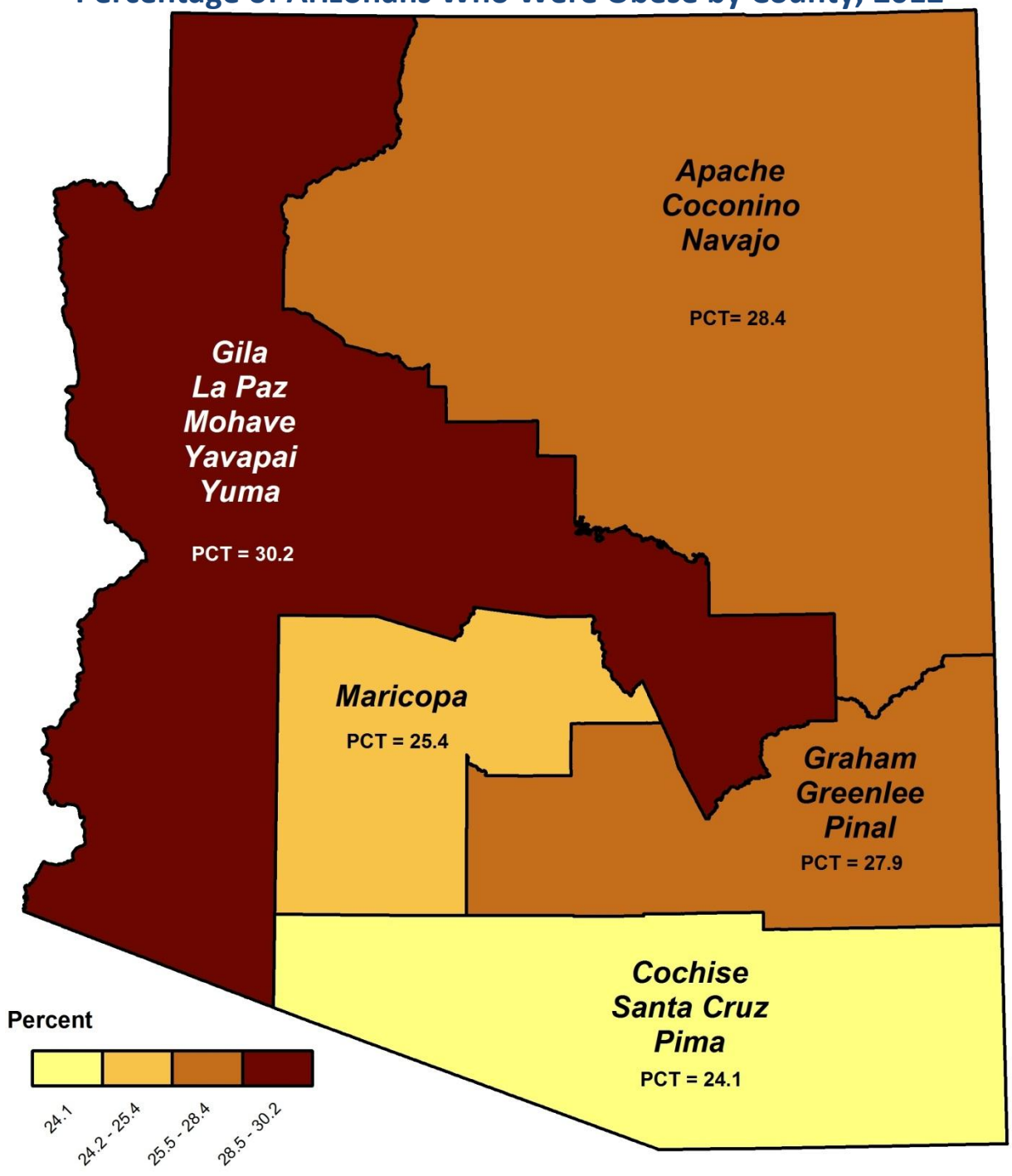
Individuals who were American Indian were the most likely to report that they were obese, at 45.8%.

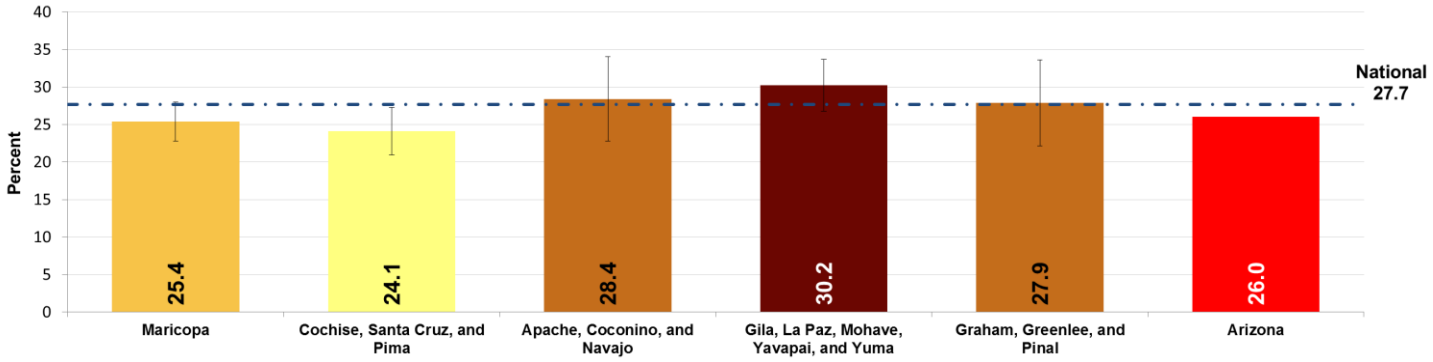
Percentage of Arizonans Who Were Obese by County, 2012





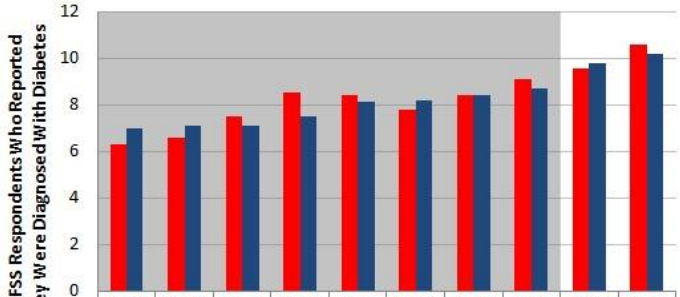
Percentage of Arizonans Who Were Obese by County, 2012





Health Conditions and Limitations
Diabetes

Currently, more than 17 million Americans have diabetes.[68] The 2011 national mortality data (the most current available) shows that diabetes mellitus is the seventh leading cause of death in the U.S. Nationally there were 73,282 deaths associated with diabetes.[57] Diabetes can cause heart disease, stroke, blindness, kidney failure, leg and foot amputations, pregnancy complications, and deaths related to flu and pneumonia. Particularly at risk are the 5.9 million Americans who are unaware that they have the disease.[65] The hormones which appear during pregnancy can cause glucose intolerance. This is known as gestational diabetes. It typically goes away after childbirth.[69] Therefore, individuals who were diagnosed with gestational diabetes are not categorized as diabetics in the following analysis. According to the 2012 BRFSS, 10.6% of Arizonans had a health professional diagnose them with diabetes, which was .4% higher than the national prevalence (see **Figure 29A**).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arizona	6.3	6.6	7.5	8.5	8.4	7.8	8.4	9.1	9.5	10.6
National	7.0	7.1	7.1	7.5	8.1	8.2	8.4	8.7	9.8	10.2

Figure 29A. Arizona and National 2005-2012 BRFSS respondents who were diagnosed with diabetes. The change in the background color marks methodological changes and changes to the question's structure. Trend comparisons across methodologies are not feasible.

Although Arizona had a higher prevalence of individuals reporting that a health professional diagnosed them with diabetes, it did not have the highest prevalence in the U.S. When compared to the other states Arizona fell into the second highest category reporting a diabetes diagnosis (see **Figure 29B**).

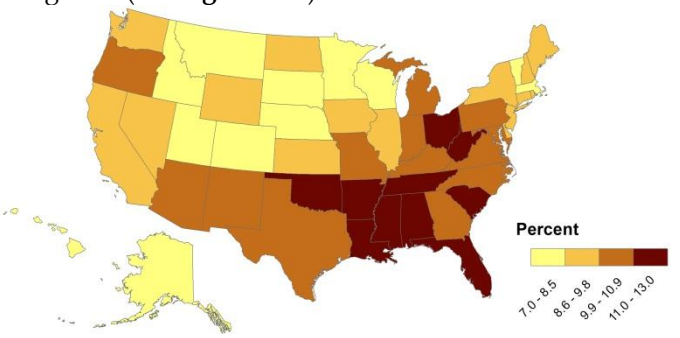


Figure 29B. Percent of 2012 BRFSS respondents who had diabetes (natural breaks).

In 2012, there were 7,023 emergency department or inpatient hospitalizations that were directly related to diabetes. The individuals hospitalized for diabetes spent 22,414 days in either the emergency room or an inpatient hospital. The average length of stay ranged anywhere from 2.4 to 3.8 days. The visits accrued charges totaling more than $179 million (see **Table 17**).

Emergency Department and Inpatient Hospitalizations Related to Diabetes

	Discharges	Charges	Average Length of Stay (Days)
Charity	40	$758,462	2.4
Medicaid	1,869	$44,008,053	2.9
Medicare	2,150	$62,015,066	3.8
Other	244	$5,969,687	3.2
Private Insurance	1,561	$37,408,961	3
Self-Pay	1,159	$29,789,438	2.9
Total	**7,023**	**$179,949,667**	**-**

Table 17. Inpatient and emergency room discharges (2012) related to angina. Angina was defined by the following ICD-9 codes: 413.0, 413.1, and 413.9.

Research has shown that smoking decreases insulin sensitivity, which in turn results in disorders of glucose metabolism. Furthermore, it has been shown that smoking worsens metabolic control when compared to non-smokers. Additionally, nicotine has been shown to increase apoptosis of islet β-cells, which synthesize and secrete insulin.[70,71] The historic BRFSS data indicates that current smokers have a very similar prevalence of diabetes, when compared to individuals who never smoked. Former smokers have a much greater diabetes prevalence than both individuals who never smoked and current smokers (see **Figure 29C**).

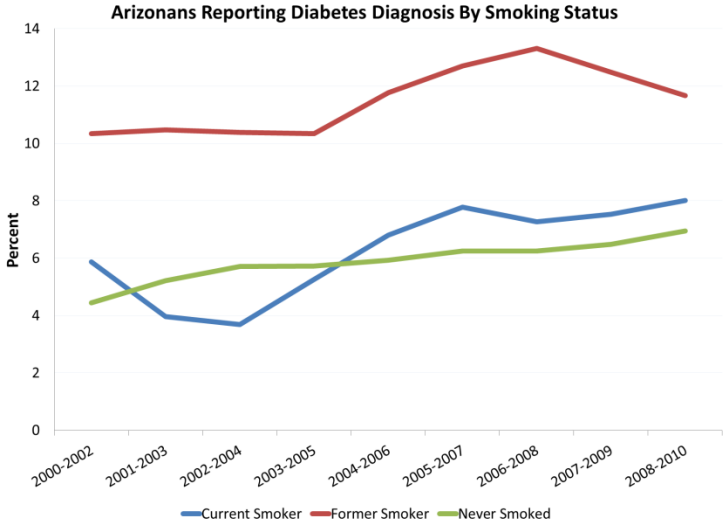


Figure 29C. Arizona 2000-2010 BRFSS three year rolling averages of individuals reporting diabetes by smoking status.

68. Centers for Disease Control and Prevention. Diabetes is Common: Disabling, Deadly, and on the Rise National diabetes fact sheet: general information and national estimates on diabetes in the United States, 2007.
69. U.S. National Library of Medicine. Gestational Diabetes. http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001898/

70. Xie X, Liu Q, Wakui M. Impact of Cigarette Smoking in type 2 diabetes development. Acta Pharma Sin. 2009.
71 Kulkarni RN. The Islet beta-cell. Int J Biochem Cell Biol. 2004 Mar;36(3):365-71.

Health Conditions and Limitations
Diabetes

Arizonans Who Reported Having Been Diagnosed With Diabetes in the 2012 BRFSS

Characteristic	Percent	Confidence Interval	
Arizona	**10.6**	**9.4**	**11.7**
National	**10.1**	**10.0**	**10.4**
Sex			
Male	11.0	9.2	12.7
Female	10.2	8.7	11.7
Age			
*18-24	2.2	0.0	4.5
25-34	2.9	1.2	4.7
35-44	8.6	5.3	11.8
45-54	12.6	9.3	16.0
55-64	17.4	13.9	20.8
65+	17.9	15.7	20.0
Marital Status			
Married	10.8	9.2	12.4
Divorced	13.8	10.8	16.9
Widowed	18.4	14.6	22.3
Separated	12.1	5.4	18.7
Never Married	8.0	5.1	10.8
Unmarried Couple	6.2	2.7	9.6
Educational Attainment			
Less than High School	14.6	10.2	19.0
High School Graduate/GED	10.4	8.2	12.6
Some College/Tech School	10.7	8.9	12.5
College Grad	7.6	6.2	9.0
Employment Status			
Employed for wages	6.5	5.1	8.0
Self-employed	8.8	3.9	13.7
Out of work	10.1	5.8	14.5
Homemaker	10.9	6.7	15.1
*Student	0.5	0.0	1.0
Retired	17.8	15.6	20.1
Unable to Work	28.3	21.0	35.7
Income			
<$25,000	14.1	11.5	16.7
$25,000-$34,999	12.5	8.8	16.3
$35,000-$49,999	8.2	5.9	10.4
$50,000-$74,999	11.8	8.5	15.2
$75,000+	5.4	4.0	6.8
Race/Ethnicity			
White Non-Hispanic	9.4	8.3	10.6
Black	14.7	6.3	23.2
*Asian/PI	2.7	0.0	5.4
American Indian	15.8	9.5	22.1
Other	14.9	7.4	22.4
Hispanic	12.4	9.3	15.6

*Indicates an unreliable estimate due to small sample (n=0-7)

The table to the left displays the distribution of Arizonans who were diagnosed with diabetes. The data are broken down by age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

Respondents were less likely to report a health professional telling them they had diabetes if they

- Were female
- Were part of an unmarried couple
- Were a college graduate
- Had a household income greater than $75,000

When looking specifically at marital status individuals who were part of an unmarried couple were the least likely to report being diagnosed with diabetes, at 6.2%.

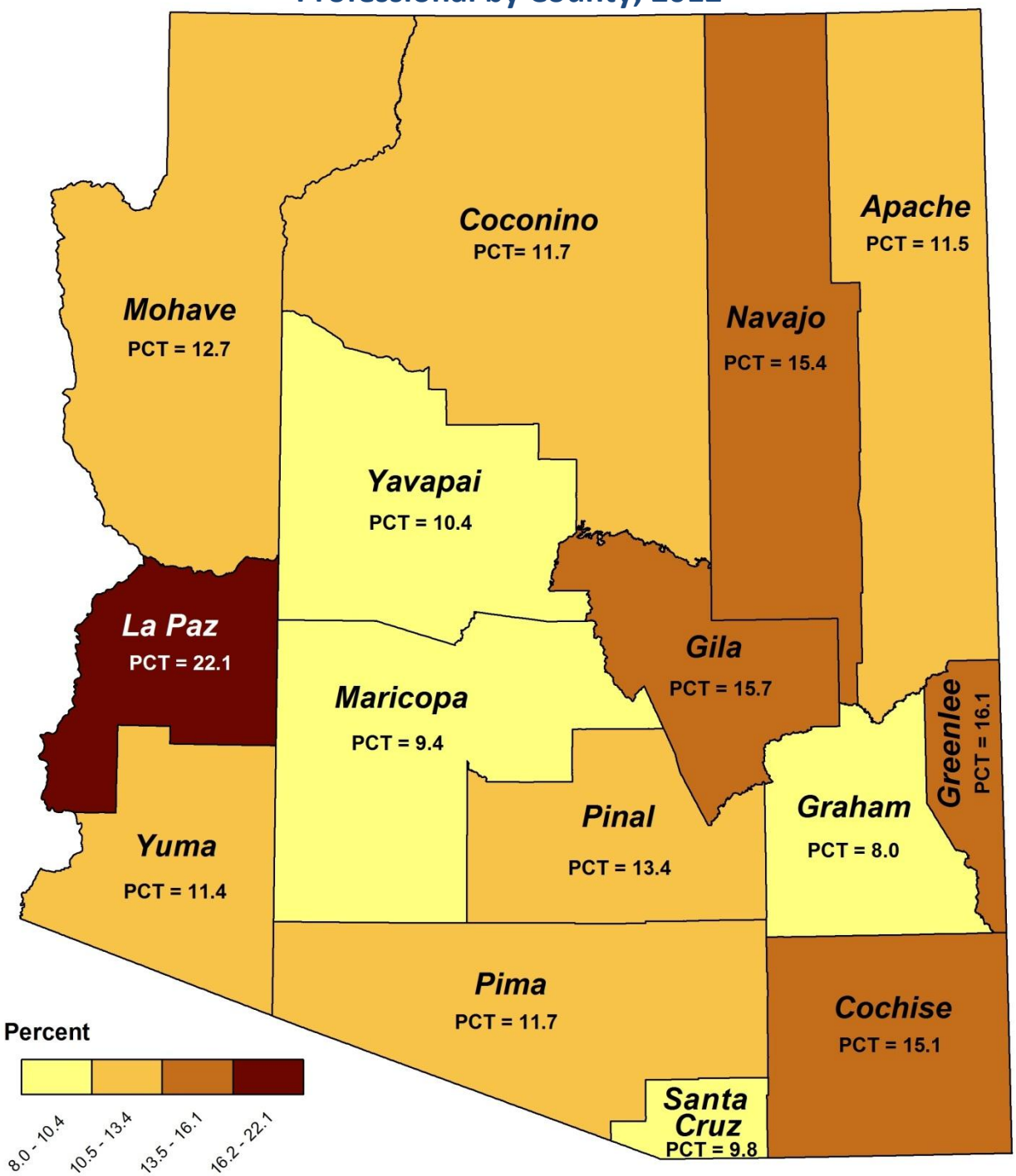
Respondents were more likely to report a health professional telling them they had diabetes if they

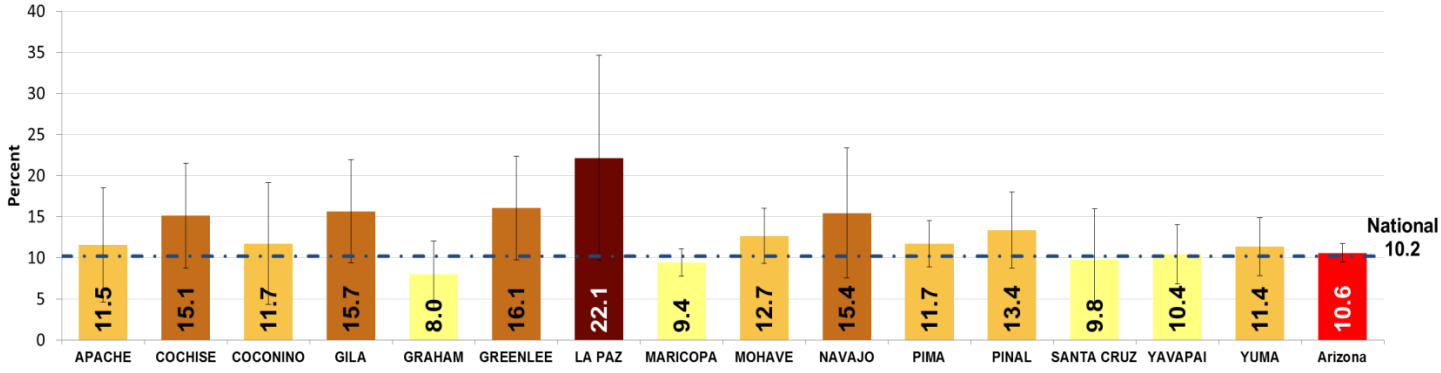
- Were male
- Were widowed
- Had less than a high school education
- Had a household income less than $25,000

When looking at race and ethnicity, aside from Asians, minorities were more likely to report having been diagnosed with diabetes when compared to non-Hispanic Whites.

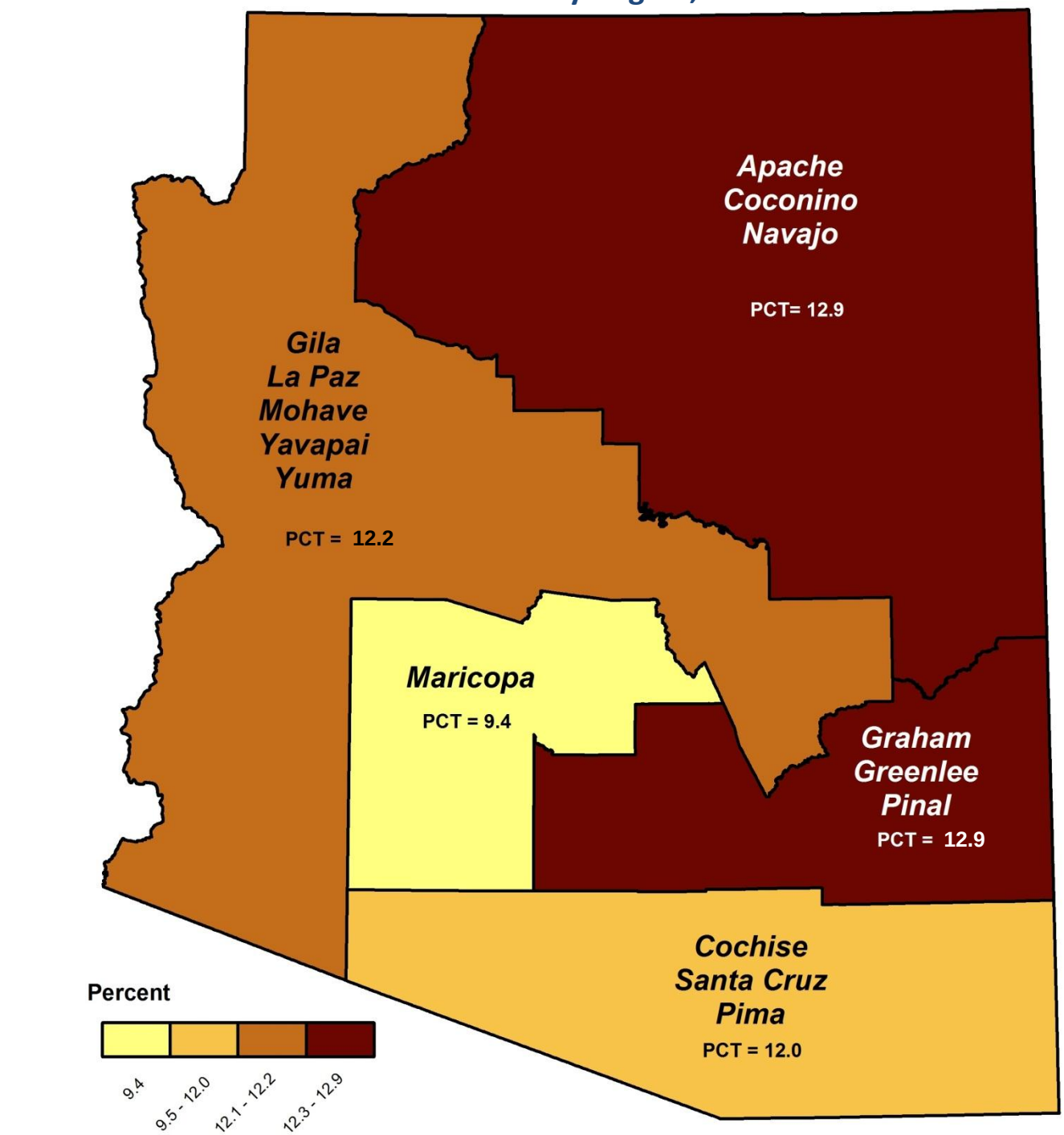
Arizona Department of Health Services

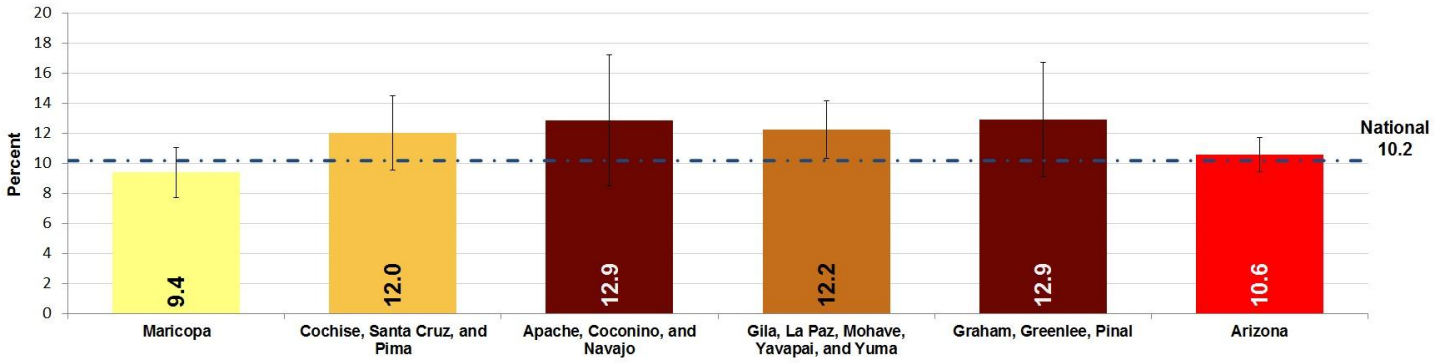
Percentage of Arizonans Who Were Diagnosed With Diabetes by a Health Professional by County, 2012





Percentage of Arizonans Who Were Diagnosed With Diabetes by a Health Professional by Region, 2012





Appendices

Arizonans Reporting Good to Excellent Health in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	81.9	5807	4021137	**EMPLOYMENT**			
SEX				Employed for wages	90.6	2167	1927446
Male	82.3	2378	1987498	Self-employed	87.6	476	361386
Female	81.5	3429	2033638	Out of work	75.6	329	315354
AGE	91.3	340	589665	Homemaker	78.7	477	336046
18-24	88.8	579	774914	Student	91.3	157	244447
25-34	83.4	616	695788	Retired	78.9	2016	693485
35-44	77.9	837	655160	Unable to Work	30.4	146	101516
45-54	75.1	1221	569721	**INCOME**			
55-64	76.9	2214	735888	<$25,000	69.9	1413	1056120
65+	91.3	340	589665	$25,000-$34,999	82.1	604	371420
MARITAL STATUS				$35,000-$49,999	84.5	782	475698
Married	83.5	3108	2036473	$50,000-$74,999	90.6	856	548597
Divorced	75.3	819	435610	$75,000+	93.7	1302	982034
Widowed	72.3	797	212705	**RACE/ETHNICITY**			
Separated	68.5	87	71378	White Non-Hispanic	84.0	4332	2487570
Never Married	84.7	771	987753	Black	77.8	96	145619
Unmarried Couple	83.4	176	235718	Asian/PI	94.0	90	147915
EDUCATION				American Indian	80.4	230	138982
Less than High School	66.5	374	502975	Other	83.9	120	58830
High School Graduate/GED	80.2	1420	1002356	Hispanic	75.9	813	965577
Some College/Tech School	84.1	1818	1445030				
College Grad	90.8	2171	1057312				

Arizonans Reporting Frequent Mental Distress in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	12.3	765	597355	**EMPLOYMENT**			
SEX				Employed for wages	9.1	193	190875
Male	11.3	264	268055	Self-employed	5.1	34	20630
Female	13.4	501	329300	Out of work	19.0	87	77473
AGE				Homemaker	11.7	58	49432
18-24	17.8	44	114526	Student	17.2	24	45696
25-34	12.9	77	111690	Retired	6.7	171	57561
35-44	12.0	93	99317	Unable to Work	45.7	195	145760
45-54	13.4	147	109852	**INCOME**			
55-64	13.1	192	97629	<$25,000	20.9	393	314311
65+	6.9	212	64342	$25,000-$34,999	11.8	75	52539
MARITAL STATUS				$35,000-$49,999	9.7	72	53454
Married	16.4	161	93487	$50,000-$74,999	7.0	64	41939
Divorced	12.7	119	36480	$75,000+	5.7	61	59428
Widowed	26.4	33	26831	**RACE/ETHNICITY**			
Separated	17.9	123	203388	White Non-Hispanic	11.2	516	327442
Never Married	12.7	30	35772	Black	13.9	15	25589
Unmarried Couple	16.4	161	93487	Asian/PI	4.5	4	6626
EDUCATION				American Indian	12.6	36	21674
Less than High School	18.2	111	132794	Other	12.6	25	8717
High School Graduate/GED	14.3	230	176863	Hispanic	15.5	149	194640
Some College/Tech School	12.5	272	212325				
College Grad	6.3	149	72632				

Arizonans Reporting Frequent Physical Distress in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	12.9	1057	624770	**EMPLOYMENT**			
SEX				Employed for wages	6.9	149	145305
Male	12.8	414	305262	Self-employed	5.5	34	22565
Female	13.0	643	319508	Out of work	15.5	74	62185
AGE				Homemaker	12.4	80	51783
18-24	5.0	16	31727	Student	4.4	9	11691
25-34	9.4	55	80542	Retired	13.9	387	120315
35-44	11.8	74	97261	Unable to Work	62.6	319	204946
45-54	15.7	155	129834	**INCOME**			
55-64	19.2	272	143440	<$25,000	19.2	516	284307
65+	15.2	485	141966	$25,000-$34,999	14.9	98	67029
MARITAL STATUS				$35,000-$49,999	9.2	102	50519
Married	12.4	449	299102	$50,000-$74,999	9.9	84	59854
Divorced	20.1	242	114931	$75,000+	6.9	96	72103
Widowed	14.8	188	42579	**RACE/ETHNICITY**			
Separated	24.9	39	24694	White Non-Hispanic	12.5	763	365626
Never Married	9.6	105	110496	Black	14.5	18	27129
Unmarried Couple	10.6	24	29100	Asian/PI	4.9	5	7222
EDUCATION				American Indian	10.7	38	18011
Less than High School	21.1	156	153963	Other	16.4	33	11458
High School Graduate/GED	14.1	303	173943	Hispanic	15.2	183	190121
Some College/Tech School	11.9	355	202965				
College Grad	7.9	240	91725				

Arizonans Reporting Frequent Inability to Socialize Due To Poor Health in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	15.7	686	417007	**EMPLOYMENT**			
SEX				Employed for wages	6.4	70	70706
Male	15.9	275	191257	Self-employed	8.3	18	15185
Female	15.6	411	225750	Out of work	22.9	68	59257
AGE				Homemaker	8.7	32	18742
18-24	7.1	13	28115	Student	4.3	6	6997
25-34	11.4	36	55886	Retired	14.7	208	59925
35-44	14.1	54	62018	Unable to Work	62.7	281	184794
45-54	23.3	127	108202	**INCOME**			
55-64	23.0	189	94751	<$25,000	25.5	392	245026
65+	15.1	267	68035	$25,000-$34,999	17.5	60	41357
MARITAL STATUS				$35,000-$49,999	8.6	55	25291
Married	12.6	259	151347	$50,000-$74,999	10.4	45	30701
Divorced	24.5	172	80818	$75,000+	6.3	53	32554
Widowed	19.2	117	30649	**RACE/ETHNICITY**			
Separated	28.9	31	20247	White Non-Hispanic	15.1	502	240196
Never Married	13.9	76	99174	Black	20.9	13	22554
Unmarried Couple	20.5	26	32845	Asian/PI	6.6	2	4867
EDUCATION				American Indian	13.3	24	12423
Less than High School	24.8	98	113511	Other	18.5	24	8621
High School Graduate/GED	15.0	193	98473	Hispanic	17.2	108	120078
Some College/Tech School	15.9	253	154310				
College Grad	8.6	138	48313				

Arizonans Who Had a Check-Up in the Past Year in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	63.6	5062	3086268	**EMPLOYMENT**			
SEX				Employed for wages	60.8	1548	1279202
Male	59.0	1972	1411491	Self-employed	54.2	303	219116
Female	68.1	3090	1674777	Out of work	56.5	246	232736
AGE				Homemaker	59.2	395	247703
18-24	57.5	210	368404	Student	61.4	103	161965
25-34	53.5	341	459108	Retired	79.1	2055	688620
35-44	55.9	418	463918	Unable to Work	70.5	385	233290
45-54	62.4	665	520266	**INCOME**			
55-64	67.6	1081	503538	<$25,000	56.1	1357	835682
65+	81.4	2347	771034	$25,000-$34,999	63.4	522	285470
MARITAL STATUS				$35,000-$49,999	64.1	670	356478
Married	68.3	2710	1647475	$50,000-$74,999	71.9	687	432651
Divorced	62.4	731	355970	$75,000+	69.5	1039	722769
Widowed	77.2	848	224768	**RACE/ETHNICITY**			
Separated	47.0	80	48566	White Non-Hispanic	64.9	3765	1895978
Never Married	56.1	536	646188	Black	77.5	93	145015
Unmarried Couple	44.9	115	124907	Asian/PI	75.1	72	118141
EDUCATION				American Indian	72.8	202	124433
Less than High School	54.3	393	404277	Other	61.6	123	43156
High School Graduate/GED	63.9	1305	789247	Hispanic	56.3	708	708229
Some College/Tech School	63.5	1557	1080518				
College Grad	69.2	1790	799450				

Arizonans 65 and Older Who Had a Flu Vaccine in the Last 12 Months in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	52.3	1488	483249	**EMPLOYMENT**			
SEX				Employed for wages	45.1	107	37072
Male	51.7	568	215302	Self-employed	47.5	45	18875
Female	52.8	920	267947	Out of work	32.0	11	5765
AGE		.	.	Homemaker	47.8	98	34431
18-24	.	.	.	Student	6.1	1	68.27573
25-34	.	.	.	Retired	54.6	1156	366123
35-44	.	.	.	Unable to Work	51.8	61	18762
45-54	.	.	.	**INCOME**			
55-64	.	.	.	<$25,000	39.9	376	98463
65+	52.3	1488	483249	$25,000-$34,999	58.2	192	60778
MARITAL STATUS				$35,000-$49,999	54.6	217	75928
Married	54.3	779	288718	$50,000-$74,999	54.9	195	68530
Divorced	52.8	179	58597	$75,000+	60.2	211	72670
Widowed	50.4	462	110438	**RACE/ETHNICITY**			
Separated	34.4	12	3054	White Non-Hispanic	54.3	1274	407639
Never Married	41.1	35	13920	Black	45.2	12	7143
Unmarried Couple	41.5	15	6898	Asian/PI	73.9	12	8354
EDUCATION				American Indian	50.4	24	7501
Less than High School	35.7	110	36272	Other	38.4	25	5220
High School Graduate/GED	49.9	401	118950	Hispanic	39.0	109	37302
Some College/Tech School	54.4	448	188240				
College Grad	57.7	519	132389				

Arizonans Respondents Over 50 Years Old Who Had A Fecal Occult Blood Test in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	35.6	1879	723362	**EMPLOYMENT**			
SEX				Employed for wages	27.0	331	156901
Male	34.3	736	333155	Self-employed	22.9	93	35017
Female	36.8	1143	390206	Out of work	25.6	59	33692
AGE				Homemaker	42.7	133	57510
18-24	.	.	.	Student	42.6	3	1944
25-34	.	.	.	Retired	46.5	1122	377143
35-44	.	.	.	Unable to Work	28.6	130	57429
45-54	17.8	125	81322	**INCOME**			
55-64	32.1	478	217200	<$25,000	30.8	469	167807
65+	47.3	1276	424840	$25,000-$34,999	30.7	195	63826
MARITAL STATUS				$35,000-$49,999	42.5	286	112343
Married	36.9	1023	443309	$50,000-$74,999	39.0	279	109811
Divorced	31.8	284	105906	$75,000+	36.7	358	154315
Widowed	43.4	447	112191	**RACE/ETHNICITY**			
Separated	16.5	13	5773	White Non-Hispanic	40.2	1641	609873
Never Married	23.7	70	32653	Black	35.8	23	23024
Unmarried Couple	37.5	36	22014	Asian/PI	24.7	7	7905
EDUCATION				American Indian	21.5	30	11076
Less than High School	17.2	88	44703	Other	31.3	43	9967
High School Graduate/GED	32.6	447	159795	Hispanic	18.0	107	53615
Some College/Tech School	41.2	631	312920				
College Grad	40.0	711	205460				

Arizona Respondents Over 50 Years Old Who Had a Colonoscopy or Sigmoidoscopy in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	63.0	3151	1278163	**EMPLOYMENT**			
SEX				Employed for wages	54.4	623	313111
Male	61.6	1237	595956	Self-employed	53.7	194	82637
Female	64.2	1914	682208	Out of work	46.1	108	60699
AGE				Homemaker	55.8	194	75961
18-24	.	.	.	Student	63.5	7	3457
25-34	.	.	.	Retired	75.4	1762	609810
35-44	.	.	.	Unable to Work	63.9	252	129523
45-54	38.9	245	176682	**INCOME**			
55-64	64.7	922	437921	<$25,000	54.6	791	294200
65+	73.9	1984	663560	$25,000-$34,999	65.2	334	133728
MARITAL STATUS				$35,000-$49,999	67.4	461	180306
Married	66.0	1751	792086	$50,000-$74,999	70.5	460	198780
Divorced	58.0	491	194675	$75,000+	68.0	630	287343
Widowed	66.4	659	171788	**RACE/ETHNICITY**			
Separated	46.3	41	15803	White Non-Hispanic	66.6	2614	1009533
Never Married	48.1	140	65682	Black	62.1	39	40046
Unmarried Couple	59.1	55	34714	Asian/PI	36.1	19	11383
EDUCATION				American Indian	36.8	51	18940
Less than High School	51.4	231	133404	Other	64.7	66	20436
High School Graduate/GED	58.1	725	281790	Hispanic	53.3	306	159207
Some College/Tech School	63.6	985	482217				
College Grad	72.0	1200	373556				

Arizonan Women 40 Years+ Who Had A Mammogram in the Past Year in the 2012 BRFSS							
Groups	**Weighted Percent**	**N***	**Weighted N**	**Groups**	**Weighted Percent**	**N***	**Weighted N**
Total	58.7	1834	775618	**EMPLOYMENT**			
SEX				Employed for wages	56.0	491	239091
Male	.	.	.	Self-employed	57.6	93	50988
Female	58.7	1834	775618	Out of work	55.9	83	57212
AGE				Homemaker	57.8	212	109011
18-24	.	.	.	Student	53.5	6	3028
25-34	.	.	.	Retired	62.9	796	248651
35-44	52.1	74	77364	Unable to Work	61.5	142	65729
45-54	51.3	277	181109	**INCOME**			
55-64	64.4	548	218327	<$25,000	50.4	460	166672
65+	62.3	935	298818	$25,000-$34,999	50.9	197	71073
MARITAL STATUS				$35,000-$49,999	62.2	250	106938
Married	61.7	942	470851	$50,000-$74,999	66.4	238	117932
Divorced	56.0	308	120058	$75,000+	66.3	357	180046
Widowed	55.3	410	107157	**RACE/ETHNICITY**			
Separated	49.6	32	15457	White Non-Hispanic	59.6	1444	568649
Never Married	55.5	96	43369	Black	61.8	26	26172
Unmarried Couple	41.2	30	12947	Asian/PI	75.8	22	23577
EDUCATION				American Indian	45.1	49	16494
Less than High School	50.7	143	82451	Other	51.4	38	9577
High School Graduate/GED	55.1	470	190984	Hispanic	56.8	229	124074
Some College/Tech School	57.2	576	280611				
College Grad	69.0	640	217343				

Arizona Women Between The Ages of 21 and 65 Who Had a Pap Smear Within The Last Three Years in the 2012 BRFSS							
Groups	**Weighted Percent**	**N***	**Weighted N**	**Groups**	**Weighted Percent**	**N***	**Weighted N**
Total	80.5	1780	1311530	**EMPLOYMENT**			
SEX				Employed for wages	84.6	866	630601
Male	.	.	.	Self-employed	80.9	136	113683
Female	80.5	1780	1311530	Out of work	70.7	133	110452
AGE				Homemaker	84.6	279	262131
18-24	91.9	75	105556	Student	79.7	41	40568
25-34	85.1	287	320655	Retired	69.6	184	62914
35-44	86.5	318	333340	Unable to Work	65.3	133	84183
45-54	76.3	422	284316	**INCOME**			
55-64	69.9	605	241486	<$25,000	78.8	487	412937
65	77.9	73	26177	$25,000-$34,999	83.5	155	127733
MARITAL STATUS				$35,000-$49,999	75.2	219	131838
Married	81.1	999	743882	$50,000-$74,999	83.5	251	157436
Divorced	76.5	315	161301	$75,000+	87.4	452	337179
Widowed	71.0	98	33432	**RACE/ETHNICITY**			
Separated	71.2	46	28369	White Non-Hispanic	80.0	1177	764671
Never Married	81.3	236	235163	Black	85.1	39	60122
Unmarried Couple	87.5	72	102600	Asian/PI	96.9	32	45193
EDUCATION				American Indian	72.9	108	51721
Less than High School	81.9	153	209096	Other	87.5	45	17243
High School Graduate/GED	75.6	368	284196	Hispanic	81.5	364	366143
Some College/Tech School	77.4	582	456906				
College Grad	88.8	673	358622				

Arizona Men Who Had a PSA and Had a Medical Professional Tell Them About Its Benefits and Risks in the 2012 BRFSS							
Groups	**Weighted Percent**	**N***	**Weighted N**	**Groups**	**Weighted Percent**	**N***	**Weighted N**
Total	23.5	547	311242	**EMPLOYMENT**			
SEX				Employed for wages	22.0	156	113618
Male	23.5	547	311242	Self-employed	18.9	47	27371
Female	.	.	.	Out of work	15.9	21	17266
AGE				Homemaker	11.5	1	358.36235
18-24	.	.	.	Student	32.0	1	392.97061
25-34	.	.	.	Retired	29.2	287	120712
35-44	12.2	16	24069	Unable to Work	24.6	33	30646
45-54	21.2	80	84057	**INCOME**			
55-64	27.1	169	88246	<$25,000	23.6	118	83440
65+	28.2	282	114870	$25,000-$34,999	19.6	46	21470
MARITAL STATUS				$35,000-$49,999	27.1	82	47463
Married	24.8	364	197608	$50,000-$74,999	23.4	88	44373
Divorced	22.9	80	51900	$75,000+	26.8	169	91502
Widowed	25.5	51	16841	**RACE/ETHNICITY**			
Separated	3.9	2	963.96166	White Non-Hispanic	22.9	429	205970
Never Married	19.9	35	32133	Black	31.4	13	14135
Unmarried Couple	25.1	13	11428	Asian/PI	18.2	4	5442
EDUCATION				American Indian	25.8	11	8557
Less than High School	22.4	29	41705	Other	38.4	12	6797
High School Graduate/GED	17.9	110	54076	Hispanic	22.7	66	61360
Some College/Tech School	25.4	145	114155				
College Grad	25.8	259	98458				

Arizonans Who Are Living In Poverty in the 2012 BRFSS							
Groups	**Weighted Percent**	**N***	**Weighted N**	**Groups**	**Weighted Percent**	**N***	**Weighted N**
Total	12.5	707	521227	**EMPLOYMENT**			
SEX				Employed for wages	8.1	160	156458
Male	10.5	237	219781	Self-employed	12.9	48	45335
Female	14.5	470	301445	Out of work	23.0	103	76906
AGE				Homemaker	24.9	99	85140
18-24	9.9	35	50190	Student	7.1	21	14712
25-34	13.0	90	102956	Retired	6.5	128	46314
35-44	19.4	129	146948	Unable to Work	33.9	147	96264
45-54	12.7	137	93324	**INCOME**			
55-64	12.8	143	81462	<$25,000	31.0	663	469162
65+	6.1	173	46347	$25,000-$34,999	7.8	34	35330
MARITAL STATUS				$35,000-$49,999	3.0	10	16735
Married	10.6	262	223086	$50,000-$74,999	.	.	..
Divorced	11.5	147	59239	$75,000+	.	.	.
Widowed	9.8	81	23535	**RACE/ETHNICITY**			
Separated	20.4	38	18390	White Non-Hispanic	6.2	298	157465
Never Married	15.0	143	142765	Black	18.5	15	31195
Unmarried Couple	19.5	30	46554	Asian/PI	7.0	6	9832
EDUCATION				American Indian	22.7	90	33804
Less than High School	35.2	198	211490	Other	12.3	15	7813
High School Graduate/GED	13.8	243	142331	Hispanic	25.9	269	270320
Some College/Tech School	8.2	186	122996				
College Grad	4.1	77	43107				

Arizonans Who Reported That They Did Not Have Health Insurance in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	20.0	912	974736	**EMPLOYMENT**			
SEX				Employed for wages	17.6	336	371278
Male	20.8	403	499083	Self-employed	34.4	127	141946
Female	19.1	510	475831	Out of work	45.0	175	185071
AGE				Homemaker	30.3	114	128888
18-24	26.1	82	164538	Student	15.0	26	39738
25-34	30.1	147	262721	Retired	3.5	72	30510
35-44	25.6	159	213809	Unable to Work	15.6	51	52180
45-54	21.3	221	178812	**INCOME**			
55-64	18.4	255	138954	<$25,000	35.5	489	537541
65+	1.7	49	16079	$25,000-$34,999	22.7	113	102341
MARITAL STATUS				$35,000-$49,999	14.2	83	79986
Married	14.7	379	358850	$50,000-$74,999	8.1	61	48864
Divorced	20.6	189	119159	$75,000+	3.7	40	38842
Widowed	8.7	53	25686	**RACE/ETHNICITY**			
Separated	28.3	30	29535	White Non-Hispanic	13.2	473	387679
Never Married	28.4	193	325617	Black	17.5	22	32760
Unmarried Couple	32.6	54	92227	Asian/PI	12.5	13	19650
EDUCATION				American Indian	16.7	45	28572
Less than High School	40.9	169	308222	Other	13.6	17	9543
High School Graduate/GED	24.7	312	306258	Hispanic	37.5	320	477907
Some College/Tech School	15.3	275	261092				
College Grad	8.2	153	95528				

Arizonans Who Could Not Afford Needed Medical Care in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	20.9	947	873747	**EMPLOYMENT**			
SEX				Employed for wages	18.2	335	349896
Male	17.9	354	374382	Self-employed	28.0	85	98359
Female	24.0	593	499365	Out of work	38.3	135	127653
AGE				Homemaker	27.5	95	93979
18-24	23.2	66	117325	Student	19.6	31	40440
25-34	29.5	152	233097	Retired	7.5	127	53175
35-44	23.8	136	179701	Unable to Work	35.6	133	101067
45-54	22.7	206	165738	**INCOME**			
55-64	20.1	235	127952	<$25,000	35.3	586	531545
65+	6.6	152	49935	$25,000-$34,999	24.5	122	110883
MARITAL STATUS				$35,000-$49,999	18.8	117	105791
Married	17.6	393	371407	$50,000-$74,999	10.6	71	64031
Divorced	23.3	222	119980	$75,000+	5.9	51	61497
Widowed	14.3	81	34143	**RACE/ETHNICITY**			
Separated	35.9	32	32378	White Non-Hispanic	16.0	541	406741
Never Married	24.9	162	236398	Black	33.2	28	55813
Unmarried Couple	29.2	50	68410	Asian/PI	17.5	9	24548
EDUCATION				American Indian	14.0	42	20771
Less than High School	36.0	140	215165	Other	22.5	31	14304
High School Graduate/GED	24.5	277	251908	Hispanic	32.1	274	333495
Some College/Tech School	18.3	317	273235				
College Grad	12.3	209	128746				

Arizonans Who Always Wear Seatbelts When Driving or Riding In a Car in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	83.2	6047	3972414	**EMPLOYMENT**			
SEX				Employed for wages	84.3	1978	1707362
Male	81.6	2354	1870957	Self-employed	82.6	414	311419
Female	87.7	3693	2101456	Out of work	80.0	346	327690
AGE				Homemaker	86.7	513	353704
18-24	75.1	269	467810	Student	83.7	144	215853
25-34	79.7	498	661728	Retired	91.1	2196	768548
35-44	84.4	583	666461	Unable to Work	79.4	421	257921
45-54	86.6	878	702172	**INCOME**			
55-64	89.8	1327	643576	<$25,000	80.4	1743	1155004
65+	90.3	2492	830667	$25,000-$34,999	82.5	601	358252
MARITAL STATUS				$35,000-$49,999	84.3	782	460593
Married	88.9	3151	2070572	$50,000-$74,999	86.3	796	503008
Divorced	84.1	914	470573	$75,000+	90.3	1218	904764
Widowed	90.9	968	258401	**RACE/ETHNICITY**			
Separated	68.7	98	70116	White Non-Hispanic	86.8	4469	2468165
Never Married	75.7	701	840446	Black	80.8	104	151200
Unmarried Couple	85.5	171	223827	Asian/PI	90.7	85	133410
EDUCATION				American Indian	73.2	223	117232
Less than High School	79.5	520	574329	Other	83.6	141	56758
High School Graduate/GED	82.7	1516	981592	Hispanic	80.5	886	962103
Some College/Tech School	85.3	1892	1400929				
College Grad	89.2	2095	1001731				

Arizonans Who Reported That They Are Current Smokers in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	17.1	1091	817589	**EMPLOYMENT**			
SEX				Employed for wages	15.9	368	326431
Male	19.6	501	460577	Self-employed	18.3	79	73704
Female	14.7	590	357012	Out of work	30.2	130	125018
AGE				Homemaker	10.8	65	45153
18-24	18.9	290	510749	Student	16.1	22	42048
25-34	21.1	500	668587	Retired	10.6	251	91342
35-44	16.7	575	674363	Unable to Work	32.1	169	106139
45-54	18.6	834	667677	**INCOME**			
55-64	19.2	1275	602910	<$25,000	22.3	453	331329
65+	9.5	2575	846448	$25,000-$34,999	20.3	127	90415
MARITAL STATUS				$35,000-$49,999	18.1	147	100638
Married	11.5	401	273071	$50,000-$74,999	13.0	102	76385
Divorced	27.7	273	157342	$75,000+	10.0	118	101506
Widowed	13.5	134	39479	**RACE/ETHNICITY**			
Separated	29.6	40	30626	White Non-Hispanic	18.2	790	526480
Never Married	20.1	183	229464	Black	24.1	32	44025
Unmarried Couple	29.2	53	79970	Asian/PI	3.7	6	5603
EDUCATION				American Indian	20.4	56	33924
Less than High School	20.7	124	154569	Other	20.1	34	13851
High School Graduate/GED	22.9	365	276789	Hispanic	14.3	151	177181
Some College/Tech School	17.1	398	286085				
College Grad	8.5	200	97607				

Arizonans Who Reported That They Are Heavy Drinkers in the 2012 BRFSS							
Groups	**Weighted Percent**	**N***	**Weighted N**	**Groups**	**Weighted Percent**	**N***	**Weighted N**
Total	5.1	371	239784	**EMPLOYMENT**			
SEX				Employed for wages	5.6	142	113464
Male	5.4	160	124572	Self-employed	7.7	38	30967
Female	4.8	211	115212	Out of work	4.7	18	18759
AGE				Homemaker	2.2	19	9007
18-24	6.7	24	41089	Student	5.0	9	12983
25-34	5.5	32	45981	Retired	4.8	123	40377
35-44	4.1	36	32447	Unable to Work	3.8	21	12529
45-54	4.6	53	37350	**INCOME**			
55-64	6.1	98	44802	<$25,000	4.0	86	58364
65+	4.2	128	38116	$25,000-$34,999	8.7	47	38367
MARITAL STATUS				$35,000-$49,999	5.0	63	27464
Married	4.6	189	108492	$50,000-$74,999	5.6	49	32596
Divorced	3.2	55	17645	$75,000+	5.4	89	54665
Widowed	4.3	38	12078	**RACE/ETHNICITY**			
Separated	3.3	5	3322	White Non-Hispanic	5.6	305	159503
Never Married	7.2	62	80671	Black	1.7	2	3047
Unmarried Couple	5.5	19	14499	Asian/PI	3.5	2	5076
EDUCATION				American Indian	3.6	13	5847
Less than High School	3.8	19	27248	Other	6.5	13	4279
High School Graduate/GED	5.0	97	58622	Hispanic	4.5	29	54409
Some College/Tech School	5.0	128	83014				
College Grad	6.3	127	70900				

Arizonans Who Reported That They Participate in Binge Drinking in the 2012 BRFSS							
Groups	**Weighted Percent**	**N***	**Weighted N**	**Groups**	**Weighted Percent**	**N***	**Weighted N**
Total	15.3	748	715894	**EMPLOYMENT**			
SEX				Employed for wages	20.9	383	422491
Male	21.1	454	484170	Self-employed	13.3	69	51547
Female	9.7	294	231724	Out of work	18.4	60	73437
AGE				Homemaker	4.8	28	19590
18-24	26.7	88	163417	Student	24.4	37	62660
25-34	21.9	131	181634	Retired	5.9	128	50126
35-44	19.6	127	154942	Unable to Work	9.5	40	30757
45-54	11.9	140	95506	**INCOME**			
55-64	11.9	139	86237	<$25,000	16.7	221	242011
65+	3.7	123	34158	$25,000-$34,999	17.9	69	78633
MARITAL STATUS				$35,000-$49,999	17.6	117	95077
Married	11.6	354	270110	$50,000-$74,999	15.5	106	89758
Divorced	15.5	115	86223	$75,000+	15.2	186	153611
Widowed	5.1	40	14248	**RACE/ETHNICITY**			
Separated	11.6	13	11589	White Non-Hispanic	14.6	522	416084
Never Married	26.0	189	286411	Black	9.2	10	17135
Unmarried Couple	17.5	36	47055	Asian/PI	10.8	7	15992
EDUCATION				American Indian	19.8	43	31636
Less than High School	12.3	47	88249	Other	15.2	17	9971
High School Graduate/GED	17.5	209	206934	Hispanic	17.9	138	212697
Some College/Tech School	15.0	254	245035				
College Grad	15.4	236	174080				

Arizonans Women of Child-Bearing Age Who Take a Supplement Containing Folic Acid in the 2012 BRFSS							
Groups	**Weighted Percent**	**N***	**Weighted N**	**Groups**	**Weighted Percent**	**N***	**Weighted N**
Total	35.9	276	298122	**EMPLOYMENT**			
SEX				Employed for wages	40.0	146	143528
Male	.	.	.	Self-employed	46.5	26	33224
Female	35.9	276	298122	Out of work	37.0	21	31431
AGE				Homemaker	32.8	57	61764
18-24	19.7	33	39279	Student	19.4	18	18280
25-34	37.6	109	115335	Retired	33.7	8	9894
35-44	44.3	134	143508	Unable to Work	40.0	146	143528
45-54	.	.	.	**INCOME**			
55-64	.	.	.	<$25,000	24.9	66	75006
65+	.	.	.	$25,000-$34,999	43.3	23	30757
MARITAL STATUS				$35,000-$49,999	38.9	36	37315
Married	42.6	160	172190	$50,000-$74,999	46.4	46	38664
Divorced	40.5	30	22480	$75,000+	47.5	80	84585
Widowed	46.6	2	1900	**RACE/ETHNICITY**			
Separated	23.3	4	3102	White Non-Hispanic	42.7	177	173825
Never Married	21.0	47	53694	Black	38.8	7	14535
Unmarried Couple	45.0	31	42261	Asian/PI	56.5	6	13499
EDUCATION				American Indian	8.9	13	2945
Less than High School	23.4	15	37679	Other	45.6	7	4343
High School Graduate/GED	31.0	51	66941	Hispanic	27.5	63	87160
Some College/Tech School	36.1	92	100873				
College Grad	53.5	117	92036				

Arizona Women of Child-Bearing Age Who Answered That Folic Acid Prevents Birth Defects in the 2012 BRFSS							
Groups	**Weighted Percent**	**N***	**Weighted N**	**Groups**	**Weighted Percent**	**N***	**Weighted N**
Total	47.9	307	303049	**EMPLOYMENT**			
SEX				Employed for wages	50.3	159	140443
Male	.	.	.	Self-employed	47.0	21	25719
Female	47.9	307	303049	Out of work	23.6	17	15631
AGE				Homemaker	61.6	86	84359
18-24	43.0	42	62957	Student	45.1	21	32298
25-34	44.5	114	105770	Retired	19.4	3	4600
35-44	54.0	151	134322	Unable to Work	50.3	159	140443
45-54	.	.	.	**INCOME**			
55-64	.	.	.	<$25,000	61.1	95	138847
65	.	.	.	$25,000-$34,999	54.7	27	29252
MARITAL STATUS				$35,000-$49,999	55.9	33	40287
Married	53.0	248	329548	$50,000-$74,999	34.1	25	22316
Divorced	58.9	192	167486	$75,000+	42.4	45	64939
Widowed	40.6	32	25443	**RACE/ETHNICITY**			
Separated	37.5	1	771.14023	White Non-Hispanic	53.6	193	163199
Never Married	31.0	5	3927	Black	49.4	9	15893
Unmarried Couple	64.7	54	56812	Asian/PI	37.1	4	7759
EDUCATION				American Indian	24.2	15	5440
Less than High School	39.2	19	41318	Other	50.6	6	4983
High School Graduate/GED	37.4	50	58913	Hispanic	43.3	77	104094
Some College/Tech School	48.7	98	104374				
College Grad	63.8	139	97851				

Arizonans Who Consumed Five or More Servings of Fruits and Vegetables Every Day in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	18.1	1189	761946	**EMPLOYMENT**			
SEX				Employed for wages	16.4	388	290993
Male	14.2	371	288818	Self-employed	18.6	102	65292
Female	21.7	818	473128	Out of work	18.3	65	66600
AGE				Homemaker	25.0	116	94912
18-24	16.2	45	82790	Student	22.9	29	49695
25-34	22.5	114	157431	Retired	16.8	404	134645
35-44	17.1	119	121385	Unable to Work	17.6	80	52140
45-54	17.0	175	127505	**INCOME**			
55-64	18.7	275	125317	<$25,000	17.9	316	226039
65+	16.9	461	147519	$25,000-$34,999	16.0	121	60755
MARITAL STATUS				$35,000-$49,999	17.3	154	87685
Married	18.4	616	397104	$50,000-$74,999	18.4	171	96987
Divorced	18.0	179	92465	$75,000+	17.2	253	156763
Widowed	15.3	170	40936	**RACE/ETHNICITY**			
Separated	10.2	15	9203	White Non-Hispanic	18.2	881	469956
Never Married	17.3	146	160956	Black	11.4	14	20105
Unmarried Couple	20.9	44	47338	Asian/PI	22.4	12	26712
EDUCATION				American Indian	16.7	49	20308
Less than High School	16.0	71	102899	Other	27.1	40	16804
High School Graduate/GED	14.3	232	152144	Hispanic	18.4	174	198466
Some College/Tech School	18.6	356	274942				
College Grad	22.7	527	230109				

Arizonans Who Reported That They Have Been Diagnosed With Asthma in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	13.5	1020	664418	**EMPLOYMENT**			
SEX				Employed for wages	13.5	315	286007
Male	12.5	352	300579	Self-employed	12.2	71	50471
Female	14.6	668	363839	Out of work	17.9	82	74710
AGE				Homemaker	8.1	72	34244
18-24	17.8	63	115451	Student	17.2	31	45585
25-34	13.8	99	120507	Retired	10.8	301	94591
35-44	15.4	124	128188	Unable to Work	21.8	145	72815
45-54	11.2	147	94512	**INCOME**			
55-64	12.6	221	95479	<$25,000	14.9	365	224774
65+	11.5	366	110281	$25,000-$34,999	11.4	95	51614
MARITAL STATUS				$35,000-$49,999	13.6	128	76724
Married	11.8	471	286898	$50,000-$74,999	12.4	121	75113
Divorced	16.3	196	94497	$75,000+	12.9	167	135302
Widowed	14.7	147	43108	**RACE/ETHNICITY**			
Separated	14.9	23	15503	White Non-Hispanic	15.6	785	462223
Never Married	17.1	154	198584	Black	6.0	11	11096
Unmarried Couple	8.5	24	24093	Asian/PI	9.3	10	14682
EDUCATION				American Indian	9.2	39	15917
Less than High School	9.6	79	73168	Other	21.8	32	15202
High School Graduate/GED	12.2	236	152332	Hispanic	10.7	124	136322
Some College/Tech School	15.7	359	269361				
College Grad	14.2	343	165164				

Arizonans Who Reported a Health Professional Told Them They Had a Heart Attack in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	4.8	537	235405	**EMPLOYMENT**			
SEX				Employed for wages	1.7	54	36146
Male	6.1	308	146873	Self-employed	2.2	23	9142
Female	3.6	229	88532	Out of work	4.5	24	18709
AGE				Homemaker	3.4	25	14572
18-24	0.5	3	3374	Student	0.0	1	68.27573
25-34	1.2	5	10244	Retired	12.0	324	105319
35-44	2.0	12	16488	Unable to Work	15.4	82	50642
45-54	3.5	38	29325	**INCOME**			
55-64	6.9	99	51923	<$25,000	6.3	227	95059
65+	13.0	380	124051	$25,000-$34,999	5.8	56	26245
MARITAL STATUS				$35,000-$49,999	6.1	65	34104
Married	4.9	249	119880	$50,000-$74,999	3.9	56	23336
Divorced	7.2	87	41599	$75,000+	2.0	46	21082
Widowed	12.4	148	35854	**RACE/ETHNICITY**			
Separated	5.3	13	5474	White Non-Hispanic	5.7	418	166765
Never Married	1.8	25	20888	Black	7.5	12	13852
Unmarried Couple	3.9	11	11058	Asian/PI	0.3	1	506.49818
EDUCATION				American Indian	3.4	15	5822
Less than High School	6.1	70	46103	Other	2.9	11	2070
High School Graduate/GED	6.2	160	77662	Hispanic	3.4	64	43440
Some College/Tech School	4.1	167	69757				
College Grad	3.5	138	40880				

Arizonans Who Reported a Health Professional Told Them They Had Angina in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	4.1	486	198579	**EMPLOYMENT**			
SEX				Employed for wages	1.5	46	31133
Male	4.8	266	115799	Self-employed	1.6	17	6663
Female	3.3	220	82779	Out of work	3.6	22	15078
AGE				Homemaker	2.7	18	11596
18-24	.	0	.	Student	0.0	1	68.27573
25-34	0.1	1	841.18808	Retired	11.2	299	97925
35-44	1.3	8	10755	Unable to Work	11.0	81	35893
45-54	3.2	32	26290	**INCOME**			
55-64	5.8	89	44192	<$25,000	5.0	191	75285
65+	12.3	356	116501	$25,000-$34,999	3.1	47	13945
MARITAL STATUS				$35,000-$49,999	4.8	59	27074
Married	4.5	242	108532	$50,000-$74,999	3.6	48	21415
Divorced	5.8	86	33482	$75,000+	3.0	63	31763
Widowed	10.1	122	29299	**RACE/ETHNICITY**			
Separated	3.1	9	3179	White Non-Hispanic	5.4	402	160479
Never Married	1.5	18	17755	Black	4.1	8	7540
Unmarried Couple	2.2	7	6160	Asian/PI	0.2	2	323.98015
EDUCATION				American Indian	1.6	8	2815
Less than High School	4.2	51	31161	Other	3.5	13	2371
High School Graduate/GED	4.1	151	50995	Hispanic	1.8	41	22675
Some College/Tech School	4.4	152	75623				
College Grad	3.5	131	40709				

Arizonans Who Reported Having Suffered From a Stroke in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	2.9	303	141532	**EMPLOYMENT**			
SEX				Employed for wages	1.3	31	26730
Male	2.9	134	70266	Self-employed	0.8	13	3376
Female	2.9	169	71266	Out of work	2.9	16	12004
AGE				Homemaker	2.3	16	9937
18-24	0.2	1	1163	Student	0.4	1	1163
25-34	1.5	7	12985	Retired	6.0	158	52479
35-44	1.0	8	8716	Unable to Work	10.7	66	35464
45-54	3.1	30	26185	**INCOME**			
55-64	3.3	59	24812	<$25,000	4.1	137	61916
65+	7.1	198	67670	$25,000-$34,999	2.9	32	13120
MARITAL STATUS				$35,000-$49,999	4.0	32	22483
Married	3.0	132	74090	$50,000-$74,999	2.4	32	14520
Divorced	5.1	62	29385	$75,000+	0.9	18	9431
Widowed	7.5	78	21987	**RACE/ETHNICITY**			
Separated	3.7	10	3811	White Non-Hispanic	3.4	239	99315
Never Married	0.9	15	10671	Black	5.2	6	9730
Unmarried Couple	0.4	5	1245	Asian/PI	.	0	.
EDUCATION				American Indian	3.1	11	5395
Less than High School	2.3	30	17729	Other	7.0	8	4891
High School Graduate/GED	3.4	95	41884	Hispanic	1.6	31	20951
Some College/Tech School	3.3	106	56359				
College Grad	2.2	71	24976				

Arizonans Who Were Obese in the 2012 BRFSS

Groups	Weighted Percent	N*	Weighted N	Groups	Weighted Percent	N*	Weighted N
Total	26.0	1814	1204080	**EMPLOYMENT**			
SEX				Employed for wages	25.5	616	521130
Male	26.4	795	627570	Self-employed	22.3	109	89123
Female	25.6	1019	576510	Out of work	33.5	131	131404
AGE				Homemaker	31.6	147	110686
18-24	16.2	48	100299	Student	16.2	27	41262
25-34	29.3	166	233090	Retired	23.1	591	196104
35-44	30.0	221	234676	Unable to Work	36.9	184	110448
45-54	27.1	287	215602	**INCOME**			
55-64	29.6	448	214490	<$25,000	29.9	601	420436
65+	22.5	644	205924	$25,000-$34,999	25.9	190	112866
MARITAL STATUS				$35,000-$49,999	26.2	227	143499
Married	25.8	944	590816	$50,000-$74,999	28.1	256	165235
Divorced	29.6	298	166733	$75,000+	21.6	313	217533
Widowed	25.0	246	71400	**RACE/ETHNICITY**			
Separated	20.8	36	20585	White Non-Hispanic	23.1	1217	655401
Never Married	25.4	225	283418	Black	35.4	39	63887
Unmarried Couple	26.8	60	65053	Asian/PI	4.7	7	6927
EDUCATION				American Indian	45.8	123	75760
Less than High School	32.3	195	216697	Other	30.1	51	20816
High School Graduate/GED	26.9	495	318482	Hispanic	30.9	336	357584
Some College/Tech School	25.3	578	418379				
College Grad	22.3	542	247898				

Arizonans Who Reported Having Been Diagnosed With Diabetes in the 2012 BRFSS							
Groups	**Weighted Percent**	**N***	**Weighted N**	**Groups**	**Weighted Percent**	**N***	**Weighted N**
Total	10.6	983	520311	**EMPLOYMENT**			
SEX				Employed for wages	6.5	195	138984
Male	11.0	448	265325	Self-employed	8.8	40	36149
Female	10.2	535	254986	Out of work	10.1	53	42289
AGE				Homemaker	10.9	81	46461
18-24	2.2	5	14142	Student	0.5	6	1349
25-34	2.9	17	25575	Retired	17.8	450	156757
35-44	8.6	53	71346	Unable to Work	28.3	152	94768
45-54	12.6	128	106333	**INCOME**			
55-64	17.4	256	131791	<$25,000	14.1	377	214005
65+	17.9	524	171125	$25,000-$34,999	12.5	112	56640
MARITAL STATUS				$35,000-$49,999	8.2	110	46073
Married	10.8	475	262534	$50,000-$74,999	11.8	115	71699
Divorced	13.8	186	80047	$75,000+	5.4	119	56158
Widowed	18.4	187	54373	**RACE/ETHNICITY**			
Separated	12.1	25	12592	White Non-Hispanic	9.4	634	279180
Never Married	8.0	84	92732	Black	14.7	22	27553
Unmarried Couple	6.2	22	17470	Asian/PI	2.7	8	4243
EDUCATION				American Indian	15.8	67	27417
Less than High School	14.6	127	111329	Other	14.9	31	10493
High School Graduate/GED	10.4	287	129740	Hispanic	12.4	195	159024
Some College/Tech School	10.7	318	183927				
College Grad	7.6	246	88501				

Appendix B. 2012 Arizona Respondent Profile

2012 Arizona Respondent Profile							
Groups	**Weighted Percent**	**N***	**Weighted N**	**Groups**	**Weighted Percent**	**N***	**Weighted N**
Total	100.0	7306	4918548	**EMPLOYMENT**			
SEX				Employed for wages	43.3	2394	2124236
Male	49.2	2984	2418459	Self-employed	8.4	535	411278
Female	50.8	4309	2493145	Out of work	8.5	442	416897
AGE				Homemaker	8.7	607	426970
18-24	13.2	366	650247	Student	5.5	173	267823
25-34	17.8	639	872552	Retired	17.9	2574	879344
35-44	16.9	725	832201	Unable to Work	6.8	519	334432
45-54	17.1	1063	840681	**INCOME**			
55-64	15.4	1579	757816	<$25,000	30.9	2154	1515805
65+	19.5	2921	958107	$25,000-$34,999	9.2	746	452612
MARITAL STATUS				$35,000-$49,999	11.5	938	563171
Married	49.6	3746	2436655	$50,000-$74,999	12.3	948	605391
Divorced	11.8	1115	578032	$75,000+	21.3	1407	1045331
Widowed	6.0	1096	294735	**RACE/ETHNICITY**			
Separated	2.1	136	104160	White Non-Hispanic	60.2	5314	2958196
Never Married	23.7	925	1165505	Black	3.8	125	187159
Unmarried Couple	5.8	216	282438	Asian/PI	3.2	100	157349
EDUCATION				American Indian	3.5	302	172998
Less than High School	15.5	658	762824	Other	1.4	165	70256
High School Graduate/GED	25.4	1862	1248636	Hispanic	26.0	1134	1277782
Some College/Tech School	35.0	2297	1718149				
College Grad	23.7	2445	1162474				

Appendix C. Risk Factors/Chronic Disease Glossary of Terms

Arthritis Burden

While the word *arthritis* is used by clinicians to specifically mean joint inflammation, it is used in public health to refer more generally to more than 100 rheumatic diseases and conditions that affect joints, the tissues which surround the joint, and other connective tissue. The pattern, severity, and location of symptoms can vary.
http://www.cdc.gov/arthritis/basics/general.htm

Alcohol Consumption

According to the *Dietary Guidelines for Americans*,[1] moderate alcohol consumption is defined as having up to one drink per day for women and up to two drinks per day for men. This definition is referring to the amount consumed on any single day and is not intended as an average over several days.
http://www.cdc.gov/alcohol/faqs.htm#whatAlcohol

Asthma

The National Heart, Lung, and Blood Institute defines asthma as "…a chronic inflammatory disorder of the airways in which many cells and cellular elements play a role, in particular, mast cells, eosinophil, T lymphocytes, airway macrophages, neutrophils, and epithelial cells. In susceptible individuals, this inflammation causes recurrent episodes of wheezing, breathlessness, chest tightness and coughing, particularly at night or in the early morning. These episodes are usually associated with widespread but variable airflow obstruction that is often reversible either spontaneously or with treatment. The inflammation also causes an associated increase in the existing bronchial hyper-responsiveness to a variety of stimuli" (NHLBI 2003).
http://www.atsdr.cdc.gov/csem/csem.asp?csem=18&po=4

Binge Drinking

Respondents who reported having five or more drinks on an occasion, one or more times in the past month.

Cancer

Respondents who reported having been told by a doctor, nurse, or other health care professional that they had cancer. In addition, cancer survivors reported on the type of cancer they had and if they were in clinical trials. For more than 30 years, excess weight, lack of physical activity, and an unhealthy diet have been considered second only to tobacco use as preventable causes of disease and death in the United States. Since the 1960s, tobacco use has decreased by a third while obesity rates have doubled.
http://www.cdc.gov/Features/dsCancerAnnualReport/

The special feature section explains how being overweight and not getting enough physical activity increase cancer risk. The following six cancers are associated with being overweight or obese—

- Breast cancer among postmenopausal women
- Colorectal cancer
- Endometrial cancer
- Esophageal adenocarcinoma
- Kidney cancer
- Pancreatic cancer

Several of these cancers also are associated with not getting enough physical activity.

Cardiovascular Disease

Respondents who reported a doctor told them they had a heart attack, angina or stroke. Coronary artery disease can cause a heart attack. If you have a heart attack, you are more likely to survive if you know the signs and symptoms, call 9-1-1 right away, and get to a hospital quickly. People who have had a heart attack can also reduce the risk of future heart attacks or strokes by making lifestyle changes and taking medication.
http://www.cdc.gov/heartdisease/

Cholesterol Awareness

Cholesterol is a waxy substance that is found in the fats (lipids) in your blood. While your body needs cholesterol to continue building healthy cells, having high cholesterol can increase your risk of heart disease.
http://www.mayoclinic.com/health/high-blood-cholesterol/DS00178

Behavioral Risk Factor Surveillance System respondents who had had their blood cholesterol checked were asked about high blood cholesterol: "Have you EVER been told by a doctor, nurse or other health professional that your blood cholesterol is high?" Responses were grouped into two categories: Yes and No.

Analyses excluded respondents younger than 20 years of age and those who did not report ever having had their cholesterol checked.
http://dhds.cdc.gov/guides/healthtopics/indicator?i=EverHadHighCholesterol

Chronic obstructive pulmonary disease (COPD)

One of the most common lung diseases. There are two main forums of COPD—Chronic Bronchitis (long-term cough, with mucus), and emphysema (Involves the destruction of the lungs over time). Most people have a combination of the two forms.
http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001153/

Current Smoking	Respondents who reported smoking at least 100 cigarettes during their lifetime and who smoke now (regularly or irregularly).
Diabetes	Respondents who reported a doctor told them they had diabetes. Diabetes is a serious disease that affects almost every part of your body and can shorten your life. Some complications with diabetes are kidney disease, heart disease, stroke, eye disease, and having to have a leg or foot amputated. If you already have diabetes, you can still do a lot to keep from getting complications from diabetes. http://www.cdc.gov/Features/LivingWithDiabetes/
Disability	Disability is called secondary conditions, and can include pain, depression, and a greater risk for certain illnesses. To be healthy, people with disabilities require health care that meets their needs as a whole person not just as a person with a disability. http://www.cdc.gov/ncbddd/disabilityandhealth/healthyliving.html
Influenza Vaccination	Respondents 65 years or older who reported not receiving a flu shot in the past 12 months. Influenza illness can include any or all of these symptoms: fever, muscle aches, headache, lack of energy, dry cough, sore throat, and possibly a runny nose. http://www.cdc.gov/flu/professionals/diagnosis/labrolesprocedures.htm
Immunization	**Immunizations** work by stimulating the immune system, the natural disease-fighting system of the body.
Folic Acid Awareness	Female respondents 18 to 44 years of age reported a reason other than preventing birth defects as the reason experts recommend that women take folic acid. Folic acid is a B vitamin. If a woman has enough folic acid in her body before and during pregnancy, it can help prevent major birth defects of the baby's brain and spine. Women need 400 micrograms (mcg) of folic acid every day
Fruits/Vegetables	Respondents who reported that they consumed fewer than five servings of fruits and vegetables daily. To increase fruit and vegetable consumption of community members, it is important to improve access and to increase the availability of high quality, affordable fruits and vegetables. A diet high in fruits and vegetables can reduce the risk for many leading causes of death and can play an important role in weight management. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5935a1.htm

HCUP	Healthcare Cost and Utilization Project http://hcupnet.ahrq.gov/HCUPnet.jsp?Id=6A4B1124FA223267&Form=SelQUERYTYPE&JS=Y&Action=%3E%3ENext%3E%3E&_QUERYTYPE=DxPr
Heart Attack	The death of heart muscle due to the loss of blood supply. The loss of blood supply is usually caused by a complete blockage of a coronary artery, one of the arteries that supplies blood to the heart muscle. Death of the heart muscle, in turn, causes chest pain and electrical instability of the heart muscle tissue. http://www.medterms.com/script/main/art.asp?articlekey=3669
Health Care Coverage	Respondents who reported that they did not have health care coverage.
Hypertension Awareness	Hypertension, also known as high blood pressure, affects one out of every three American adults. But more than half don't have their blood pressure under control. Left untreated, high blood pressure raises your risk for heart disease, stroke, kidney failure, and other conditions. Prevention is your best defense, but lifestyle changes and medications can help get your blood pressure numbers to a healthy level. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6040a1.htm
Heavy Drinking	Adult men having more than two drinks per day and adult women having more than one drink per day. Excessive drinking, both in the form of heavy drinking or binge drinking, is associated with numerous health problems, including chronic diseases such as liver cirrhosis (damage to liver cells), pancreatitis (inflammation of the pancreas), various cancers, including liver, mouth, throat, larynx (the voice box), esophagus, high blood pressure, and psychological disorders. Heavy drinking can cause unintentional injuries, such as motor-vehicle traffic crashes, falls, drowning, burns, and firearm injuries. It also can cause violence, such as child maltreatment, homicide, and suicide.
HIV/AIDS	HIV is the human immunodeficiency virus. It is the virus that can lead to acquired immune deficiency syndrome, or AIDS. http://www.cdc.gov/hiv/basics/index.html
Limited Activities	Respondents who reported they were limited in any activities due to any impairment or health problems.
No Leisure-Time Activity	Respondents who reported that they did not participate in physical activity in the past month outside of normal work-related activities.

Pre-Diabetes	Blood glucose levels that are higher than normal but not yet high enough to be diagnosed as diabetes. http://www.diabetes.org/diabetes-basics/diagnosis/
Pre-conception Health	Pre-conception care and interventions are designed to reduce perinatal risk factors and, for optimal effectiveness, must be successfully implemented before the start of pregnancy. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1592248/
Respondent	Arizona residents 18 years of age or older. In some cases various subset(s) of this group may be used.
Seatbelt Use	Respondents who reported that they "sometimes", "seldom", or "never" wear seat belts when driving or riding in a car.
Special Equipment	Respondents reported having a health problem or impairment that required special equipment.
Stroke	Stroke is the stoppage of blood flow to the brain due to a sudden blockage or rupture of a blood vessel in the brain resulting in the loss of consciousness, partial loss of movement, or loss of speech. http://www.stroke.org/site/PageServer?pagename=stroke
Tobacco Use	Smoking causes cancer, heart disease, stroke, and lung diseases (including emphysema, bronchitis, and chronic airway obstruction).[1] For every person who dies from a smoking-related disease, 20 more people suffer with at least one serious illness from smoking.[2] Centers for Disease Control and Prevention. **Cigarette Smoking-Attributable Morbidity—United States, 2000**. Morbidity and Mortality Weekly Report 2003;52(35):842–4 [accessed 2012 Jun 7].

Appendix D. Methods

Sample Design

The Arizona BRFSS is a random digit dialing and a Computer Assisted Telephone Interviewing (CATI) system of gathering Health Statistics. The number of completed BRFSS interviews in 2012 was 7,306, with around 80 percent coming from landline interviews and a targeted 20 percent of interviews coming from cell phone only households. Interviews are conducted over a 12-month period. The estimated prevalence of a given risk factor can be reliably projected across the total population of Arizona residents. Prevalence estimates of individual demographic variables, especially those that yield smaller sample sizes, do not achieve the same level of accuracy as the total sample. The CDC has stated that County level analysis will not produce reliable values as the sample size may be too small. The CDC has emphasized the use of Regions in analyses of geographies smaller than State-level. Arizona consists of 7 regions. Regions are combinations of contiguous counties. See Appendix.

Traditionally, BRFSS relied solely on calling landlines. However, with the progressive increase in cell phone only households, the BRFSS would be unable to fully capture disease and prevalence trends by continuing to rely solely upon landlines. Current estimates show that cell phone only households have increased by 700 percent from 2003-2009; 3 out of 10 households in the U.S. only have cell phones. Cell phone-only households are especially prevalent among younger families and among certain racial/ethnic groups. Therefore, to capture data that is more representative of the U.S. population, in 2011 BRFSS began targeting that 20 percent of all completed interviews would come from cell phones.

A demographic profile of the Arizona population surveyed is reported in Appendix: 2012 Arizona Respondent Profile.

New Weighting Methodology - Raking

Sampling weights are needed to correct for imperfections in the sample that might lead to bias. It can include the selection of units with unequal probabilities, non-coverage of the population, and non-response. Data weights incorporate characteristics of the population and the sample.

In the past, the CDC has used post stratification to weight BRFSS data. Post stratification is based on the known demographics of the population. Essentially, post stratification forces the sum of the weighted frequencies to be equal to the known population estimates.

In 2011, a new weighting methodology, iterative proportional fitting (or "raking"), replaced the post stratification weighting methodology. Raking adjusts the data so that groups that are underrepresented in the sample can be more accurately represented in the final dataset. Raking incorporates additional demographic characteristics and more accurately matches sample distributions to known population demographics. Furthermore, the use of raking reduces non-response bias and has been shown to reduce within-error estimates. BRFSS raking integrates a multitude of categories such as age by gender, detailed race and ethnicity groups, educational levels, marital status, regions within states, gender by race and ethnicity, telephone source, renter/owner status, and age groups by race and ethnicity. In 2012, 50 states, the District of Columbia, Guam, and Puerto Rico collected samples of both landline and cell phone interviews; the Virgin Islands only collected data via landlines.

New Weighting Methodology - Raking

The State BRFSS Coordinators Working Group meets three times a year with the Behavioral Risk Factor Surveillance System Branch Management. The questionnaire is the same for both landlines and cell

phones except for when the respondent is screened for the asthma follow-up survey. The asthma follow-up questions are only asked on the land-line survey. One task of this group is to develop a 5-year, long-term plan for the BRFSS core instrument. The 2011 BRFSS questionnaire was the first year of a 5-year plan.

Before the beginning of the calendar year, CDC provides states with the text of the core component and the optional modules that will be supported for the coming year. States select their optional modules and choose any state-added questions. Each state then constructs its questionnaire. The order of the questioning is always the same. The core component is asked first, optional modules are asked next, and state-added questions are last. This ordering ensures comparability across states and follows CDC guidelines. Generally, the only changes allowed are limited insertions of state-added questions on topics related to core questions. Such exceptions are to be agreed upon in consultation with CDC.

Once the questionnaire content (core, modules, and state-added questions) is determined by a state, a hard-copy or electronic version of the instrument is constructed and sent to CDC. For states with Computer-Assisted Telephone Interview (CATI) systems, this document is used for CATI programming and general reference. The questionnaire is used without changes for one calendar year. The questionnaire is available at http://www.cdc.gov/brfss/questionnaires.htm#aboutIf a significant portion of the state population does not speak English, states have the option of translating the questionnaire into other languages. At the present time, CDC also provides a Spanish version of the core questionnaire and optional modules.

Administration of the Questionnaire

The ADHS has contracted with a private survey research firm since August, 2000 to contact randomly selected Arizona residences from 9 a.m. until 9 p.m. weekdays and from 11 a.m. until 7 p.m. on weekends. All telephone numbers released in each month's sample received at least 15 attempts over a minimum 14-day period, including at least three attempts during weekends, and at least three attempts during a weekday. Furthermore, selected respondents who were not able to complete the interview at the time of selection received a minimum of 10 call-backs during the interview period. A pre-notification letter was mailed out to alert potential participants that their household was randomly selected from all adults residing in the household to be interviewed.

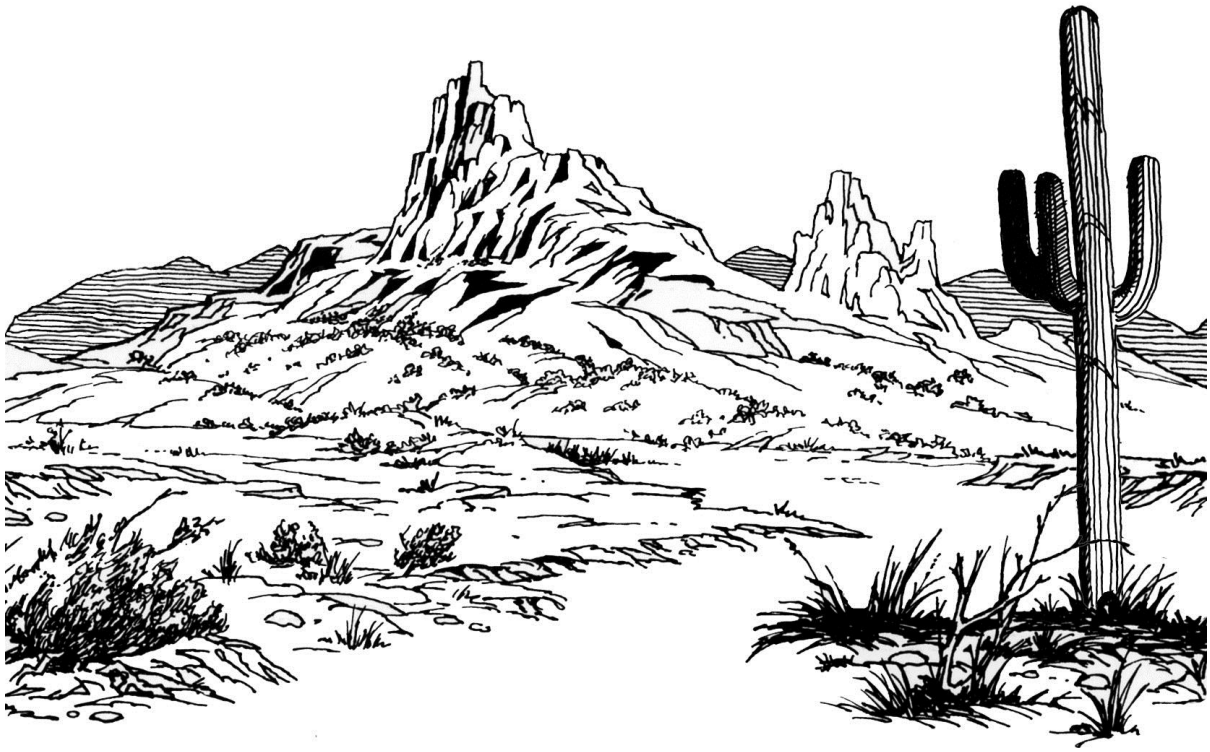
Data Analysis

All analyses presented are based on cell size counts of at least eight cases. The demographic information that was collected and presented in these results includes sex, age, education, household income, race, and ethnicity. Comparisons between responses within demographic categories were analyzed for statistical significance at the alpha = .05 level. Throughout the report, statistical difference is noted when analysis provides 95 percent confidence that the categories described are different.

Disclaimer for 2012

Due to significant changes in the BRFSS methodology as described above, Arizona's BRFSS estimates for 2011 and 2012 data SHOULD NOT be compared to estimates provided from previous years. Thus, Arizona's 2011 data are the new BRFSS baseline provided. The new methodology changes will cause breaks in the BRFSS trends, but going forward, will also greatly improve the accuracy, coverage, validity, and repetitiveness of the Arizona BRFSS. Additional information regarding the new BRFSS METHODS is available at:

http://www.cdc.gov/surveillancepractice/reports/brfss/brfss.html



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