BRFSS

2013

Arizona Behavioral Risk Factor Surveillance System Survey

Arizona Department of Health Services

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Front Cover Photograph

A **special thank you** to Arizona residents for participating in the survey and cooperating with the interviewers.

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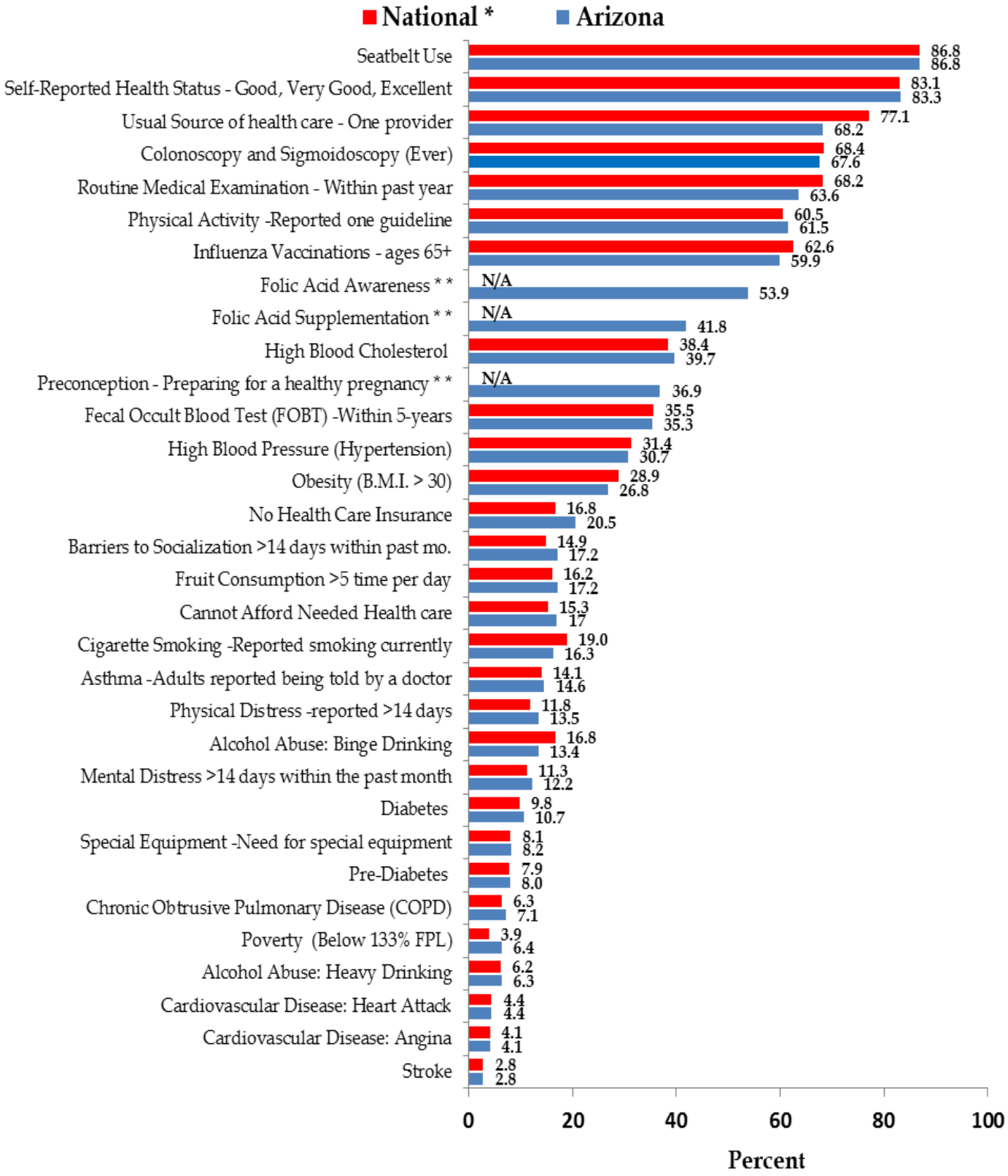
Executive Summary

The Arizona Behavioral Risk Factor Surveillance System (BRFSS) survey is an annual, state-wide telephone survey of adults aged 18 years and older that is conducted through a collaborative effort between the Population Health Surveillance Branch (PHSB) of the Centers for Disease Control and Prevention (CDC) and the Arizona Department of Health Services (ADHS). This report summarizes data on health-related quality of life, preventive practices, barriers to healthcare, health risk behaviors, beneficial health practices, and health conditions and limitations as reported by Arizonans. It compiles data from the 2013 Arizona Behavioral Risk Factor Surveillance System (BRFSS) a state-wide landline and cellular telephone survey. Arizona response variables in the 2013 report should be understood to be the weight-adjusted percentage of survey participants asked the question, who provided an informative response (excluding non-respondents, those who refused to respond, and those who indicated that they did not know how to respond). Because of this, results for the Arizona BRFSS survey in this report will differ slightly from the CDC-provided Arizona response tables in the appendix, which include some of these response categories. This report is only intended to report results of the group of survey respondents. Any inference drawn from these results about the Arizona general population should be made in consideration of the confidence intervals provided, and the reduced size of the 2013 survey sample size. The BRFSS survey provides a rich source of state-level public health data. These data have become integral to health promotion, disease prevention and intervention planning throughout Arizona. Highlights from the 2013 BRFSS can be seen in the below **Table 1.**

Risk Factors	Arizona	National *
Seatbelt Use	86.8	86.8
Self-Reported Health Status - Good, Very Good, Excellent	83.3	83.1
Usual Source of health care - One provider	68.2	77.1
Colonoscopy and Sigmoidoscopy (Ever)	67.6	68.4
Routine Medical Examination - Within past year	63.6	68.2
Physical Activity -Reported one guideline	61.5	60.5
Influenza Vaccinations - ages 65+	59.9	62.6
Folic Acid Awareness * *	53.9	Not Asked
Folic Acid Supplementation * *	41.8	Not Asked
High Blood Cholesterol	39.7	38.4
Preconception - Preparing for a healthy pregnancy * *	36.9	Not Asked
Fecal Occult Blood Test (FOBT) -Within 5-years	35.3	35.5
High Blood Pressure (Hypertension)	30.7	31.4
Obesity (B.M.I. > 30)	26.8	28.9
No Health Care Insurance	20.5	16.8
Fruit Consumption >5 time per day	17.2	16.2
Barriers to Socialization >14 days within past mo.	17.2	14.9
Cannot Afford Needed Health care	17	15.3
Cigarette Smoking -Reported smoking currently	16.3	19
Asthma -Adults reported being told by a doctor	14.6	14.1
Physical Distress -reported >14 days	13.5	11.8
Alcohol Abuse: Binge Drinking	13.4	16.8
Mental Distress >14 days within the past month	12.2	11.3
Diabetes	10.7	9.8
Special Equipment -Need for special equipment	8.2	8.1
Pre-Diabetes	8	7.9
Chronic Obtrusive Pulmonary Disease (COPD)	7.1	6.3
Poverty (Below 133% FPL)	6.4	3.9
Alcohol Abuse: Heavy Drinking	6.3	6.2
Cardiovascular Disease: Heart Attack	4.4	4.4
Cardiovascular Disease: Angina	4.1	4.1
Stroke	2.8	2.8

Table 1. Highlights from the 2013 Arizona and National Behavioral Risk Factor Surveillance System (BRFSS) survey are weighted to population characteristics. ** Arizona's BRFSS specific modules and State-Added questions.

Executive Summary



*The BRFSS 2013 "Nationwide" estimates included in the "BRFSS Executive Summary" chart are median values not means. CDC does not generate a "National" estimate by using the mean because the survey is a combination of separate state surveys. * *Arizona's State-Added questions

Introduction

Background

The Arizona BRFSS collected an annual average of 6,700 combined landlines and cell phones since 2011. However, in 2013 the BRFSS survey was affected by the federal sequestration and faced a drastic budget shortfall. The Arizona's BRFSS data users group met on December 12, 2012. This meeting was also available by teleconference allowing the collaboration of state-wide stakeholders to participate in mitigating Arizona's BRFSS immediate budget crisis. The decision was made unanimously by those who participated in the December 12, 2012 meeting to collapse the counties from 15 to 5 regions/strata in order to reduce the cost to administer the survey. Combining the counties allowed us to remain within Arizona's projected budgets for BRFSS 2013. See Arizona Stratum Map on page 9 (Arizona five regions/strata) questionnaires, the use of address-based sampling, and landline geographic stratification. The BRFSS 2013 sample design was reduced from its original sample size of 6,348 to 4,252 combined landline and cell phone completed interviews. During this meeting there was a discussion on shifting the primary funding responsibility from CDC to ADHS programs and outside stakeholders by increasing the cost for each State-Added question from $1,361.20 up to $4,100 per question, with an additional increase of $1,000 per question for each impending year.

The BRFSS is comprised of CDC's Core, Modules, and State-added questions.

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 questions 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 specific topics such as:

Healthcare Access, Diabetes, Sugar Drinks, Cardiovascular Health, Colorectal Cancer Screening, Reactions to Race, Random Child Section and Childhood Asthma Prevalence.

State added questions are generated by potential stakeholders.

The questions must be validated and approved by Human Subjects Review Board, the Arizona BRFSS' users group and CDC.

Weighting Methodology

In 2011, CDC implemented a methodological change in how BRFSS data are weighted; specifically, the weighting method changed from post-stratification to iterative proportional fitting (refer to the 2011 Annual Arizona BRFSS Report for more details). The iterative proportional fitting (or "raking,") replacement was needed in order to include analysis for imperfections in the sample that might lead to bias. In addition, this method included the selection of units with unequal probabilities, non-coverage of the population, and non-response. The "raking" adjusts the data so that groups which are underrepresented in the sample can be more accurately represented in the final dataset. The raking incorporates additional demographic characteristics and it accurately matches sample distributions to known 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; marital status, education attainment, employment status, income, age groups, race and ethnicity, telephone source, and renter/owner status. Thus, BRFSS 2013 annual report included the respondents contacted by landline and cellular phones. In 2013, according to the Pew Research Center's Internet and American Life Project, found that "56% of American adults have smartphones and youth ages 12-17, at 37%.' Cellphone-only households are especially prevalent among younger families and among certain racial/ethnic groups. Moreover, it was evident that people were using their cell phones…"[1] One anticipated change to Arizona's BRFSS' sample design is to increase the number of cell phone participants by changing the screening process. BRFSS would be unable to fully capture disease and prevalence trends by continuing to rely solely upon landlines.

[1] (Rainie, Lee, Pew Research Center's Internet & American Life Project) Washington, D.C., June 6, 2013, Web accessed: 6/7/2014 http://www.pewresearch.org/fact-tank/2013/06/06/cell-phone-ownership-hits-91-of-adults/

Introduction

In another change from 2011, if a cell phone respondent received a call from a BRFSS interviewer, and they had a landline, they were excluded from the survey. This eliminated a large number of willing cell phone respondents. Therefore, beginning with the 2012 survey, the CDC applied a fully overlapping sample. Under this approach, some of the counties will **not** be able to achieve the minimum of 50 participants. This might affect the ability to analyze the data for those counties with the required minimum number of participants. Therefore, the analyses will have to be done within each of the 5 different strata. CDC contracts with Marketing System Group (MSG) who developed a methodology for constructing cellular sampling frames using rate centers. A rate center delineates the local call boundaries set by service providers for billing purposes. MSG can identify subsets of cellular blocks for all wireless service providers that correspond to the area of interest. Geographic stratification is available for the cell phone sample for 2013. To make the best use of this method, geo-strata should consist of contiguous counties. Weights will be produced for the combined landline and cell phone data as well as weights for each split- questionnaire version of the combined landline and cell phone data which meets the effective sample size. As a reminder for weighting purposes, the minimum number of completed interviews for weighting a region is 500 and for split sample, at 2500. The Arizona BRFSS previously followed CDC's guidelines regarding the rule of not reporting or interpreting percentages based upon a denominator of fewer than 50 respondents, as well as regions with adult populations less than or equal to 500 residents.. In this year's report the confidence interval limits for Arizona measures as upper and lower brackets connected by a single line at the top of chart columns.

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)
- Integrate 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)

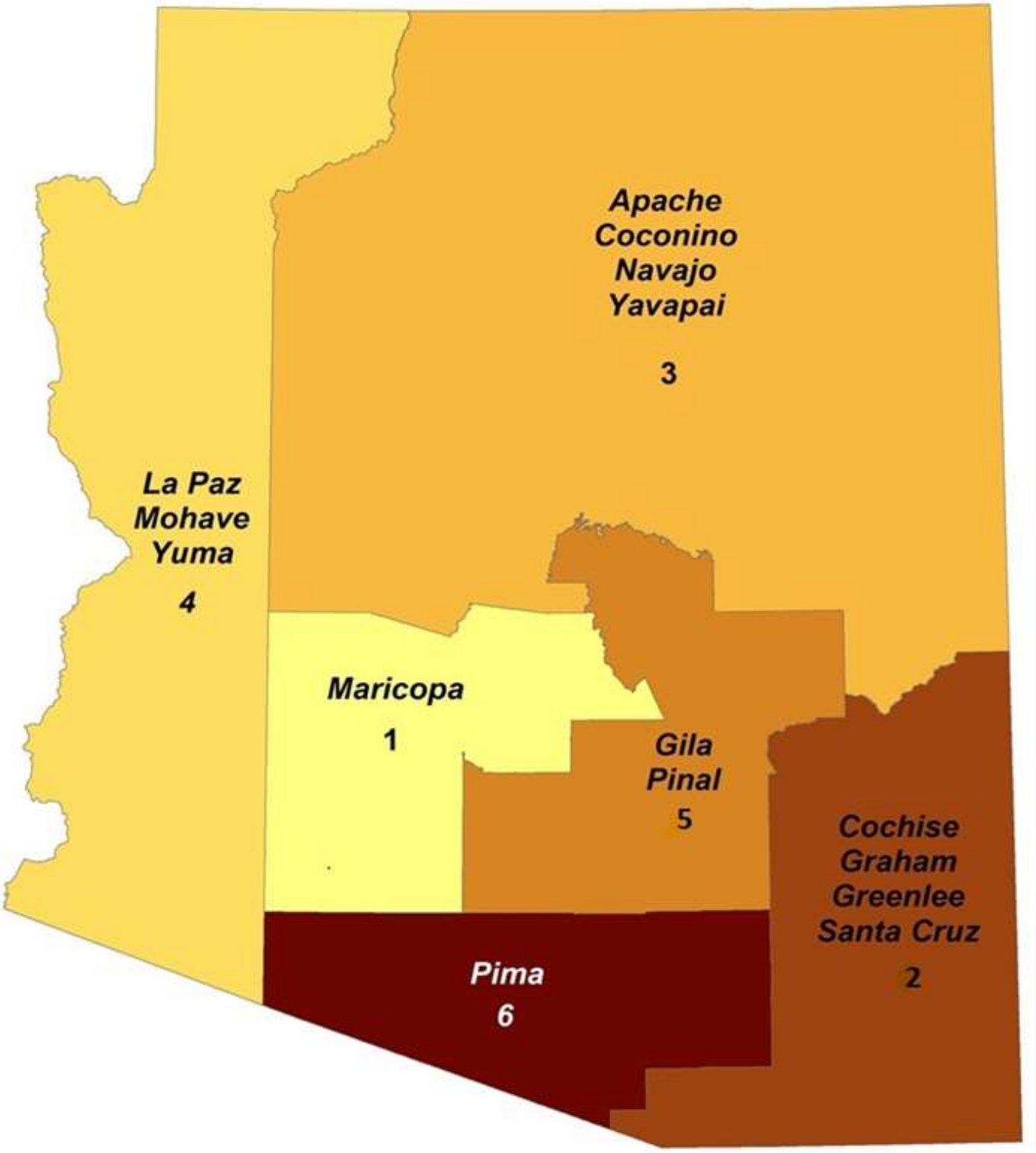
Within these broad strategic priorities, there are key elements that accentuate "winnable public health battles." BRFSS data provide Arizona with a tool to monitor health status and to assess public health interventions and programs. At the beginning of each section of the 2013 BRFSS Annual Report, there are call-out boxes that illustrate potential linkages between the data collected and ADHS' strategic map.

Changes to the 2013 AZ BRFSS Annual Report

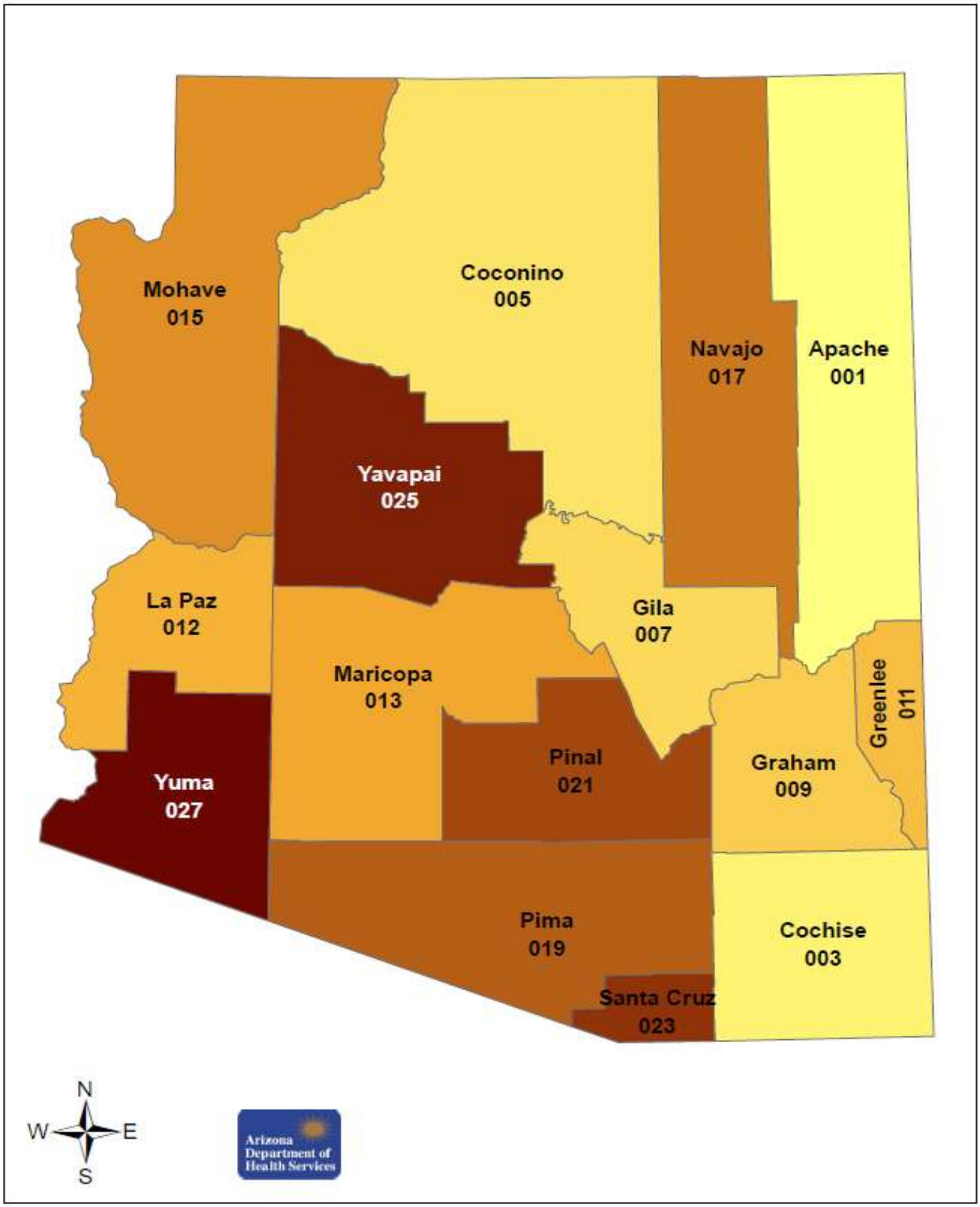
The 2013 BRFSS Annual Report has a layout that provides the reader a different prospective with regard to death, birth, and number of patients discharged from the hospital. At the beginning of each section a description of the data elements is presented. Each subsection includes trend data, national, regional and county information data (presented as a map); and a table of respondent demographics. The table contains the percent and its confidence interval. Tables containing frequencies, weighted frequencies and percentages are located in Appendix, in the order presented in this report. Throughout the text, there are tables generated from the Arizona Hospital Discharge Database. The International Classification of Diseases (ICD-9) is the World Health Organization's 9th revision of the International Classification of Diseases. The ICD-CM, the Clinical Modification, is the official system of assigning codes to diagnoses and procedures associated with hospital utilization in the United States.[2] The term "clinical" is used to emphasize the modifications intent: to serve as a useful tool to classify morbidity data for indexing medical records, medical care review, and ambulatory and other medical care programs, as well as for basic statistics. To describe the clinical picture of the patient, the codes must be more precise than those needed only for statistical groupings and trend analysis. The ICD-9 CM disease classification has been expanded to include health-related conditions and to provide greater specificity at the fifth-digit of details. [3]

[2] International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM).(2013). Retrieved May 16, 2016 from http://www.cdc.gov/nchs/icd/icd9cm.htm
[3] Hart, A. C. (2013). ICD-9-CM for hospitals and payers, volumes 1, 2, 3: 2014 expert: International classification of diseases, 9th revision; clinical modification, sixth edition. Eden Prairie, MN: OptumInsight..

Arizona Behavioral Risk Factor Surveillance
2013 Survey Stratum by Region



Arizona Behavioral Risk Factor Surveillance
2013 Survey Stratum by County Code



BRFSS Survey Comparisons

BRFSS Survey in Comparisons

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, 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).

Comparison of Surveys

	Census	BRFSS	NHANES	HINTS
Participant Selection	All U.S. households are required to participate	Random Digital Dial	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
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	2013 National=491,733 2013 Arizona=4,252	2009-2010 Survey=9,338	2008 Survey=7,674 2011-2012 Survey =3,959 2012-2013 Survey =3,630 2013 Survey =3,185
Collection Interval	Every 10 years	Annual	Starting in 1999 NHANES began gathering data annually. However, data are only presented in two- year intervals.	The HINTS includes five data collection cycles over the course of 3 years: from October 2011 through November of 2014.

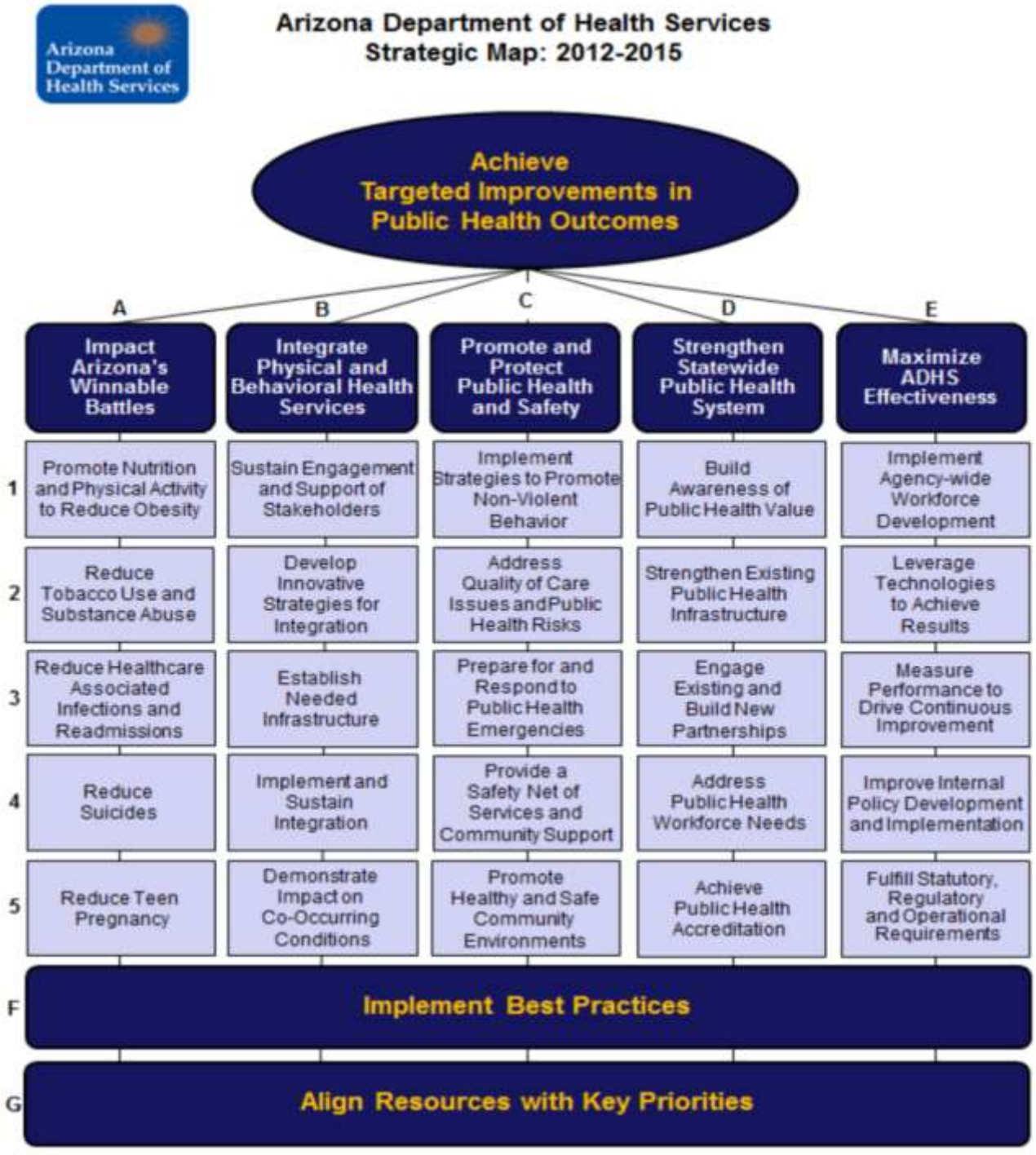
Table 2. The BRFSS Survey in comparison to other surveys

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

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.[4] 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[5]:

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 are a negative outcome.

Number of Unhealthy Days

The majority of Arizonans report zero unhealthy days; however, the second largest category is reporting 30 unhealthy days (see **Figure 1**) Unhealthy days are an estimate of the overall number of days during the previous 30 days when the respondent felt that his or her physical or mental health was not good. To obtain an estimate of a person's overall *unhealthy days,* respondents are asked, "Now, thinking about your physical health, which includes physical illness and how many days during the past 30 days was your physical health not good? And, now thinking about your mental health, which includes stress, depression and emotions, for how many days during the past 30 days was your mental health not good?" These are added together, with a logical maximum of 30 *unhealthy days*.

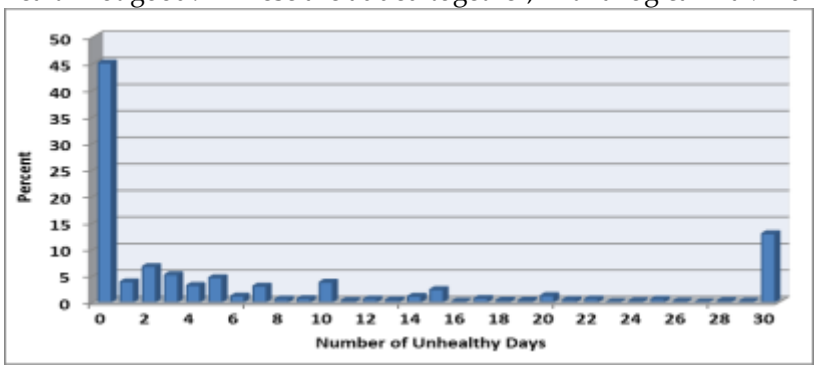


Figure 1. Arizonans who reported unhealthy days in the BRFSS 2013 survey.

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 9)

How is the Summary Index of Unhealthy Days Calculated?

Unhealthy days are an estimate of the overall number of days during the previous 30 days when the respondent felt that his or her physical or mental health was not good. To obtain this estimate, responses to questions regarding Physical and Mental health are combined to calculate a summary index of overall unhealthy days, with a logical maximum of 30 unhealthy days. For example, a person who reports 4 physically unhealthy days and 2 mentally unhealthy days is assigned a value of 6 unhealthy days, and someone who reports 30 physically unhealthy days and 30 mentally unhealthy days is assigned the maximum of 30 unhealthy days. Healthy days are the positive complementary form of unhealthy days. A healthy day estimates the number of recent days when a person's physical and mental health was good (or better) and is calculated by subtracting the number of unhealthy days from 30 days.

4 Ware, J.E., & Sherbourne, C.D. (1992). "Medical Outcomes Study: 36-Item Short Form Survey Instrument." Conceptual Framework and Item Selection Medical Care, 30(6), 473-483. Retrieved Web.12 Sept. 2013. http://www.jstor.org/stable/3765916
5 Centers for Disease Control and Prevention. Measuring Healthy Days. Atlanta, Georgia: CDC, November 2000. (http://www.cdc.gov/hrqol/methods.htm)

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.[6] As a health-related quality of life indicator, it is a multi-dimensional concept that is related to physical, mental, emotional and social health.[7] It has proven to be a more dominant predictor of mortality and morbidity than many objective measures of health.[8] 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 these types of acute care in Arizona totaled more than $10 billion dollars, in 2013 (See **Table 3**).[9]

2013 Arizona Disease Burden Inpatient & Emergency Department Discharges	
Disease	**Charges**
Coronary Heart Disease	$1,157,475,042
Diabetes	$5,523,799,731
Lung Disease	$2,866,509,956
Stroke	$827,835,473
Total	**$10,375,620,202**

Table 3. In 2013, the hospital encounters, both emergency department and admissions, which contained the following ICD-9 codes for Coronary Heart Disease: 412-414; Diabetes: 250-250.9; COPD / Allied conditions (Lung Disease): 466, 490, 491, 492, and 496; Stroke: 430-434, 434.90, 434.91, and 436-438.

In the 2013 BRFSS surveys 83.3% of Arizonans reported that they had good, very good or excellent health - close to the national figure of 83.1% (See **Figure 2A**).

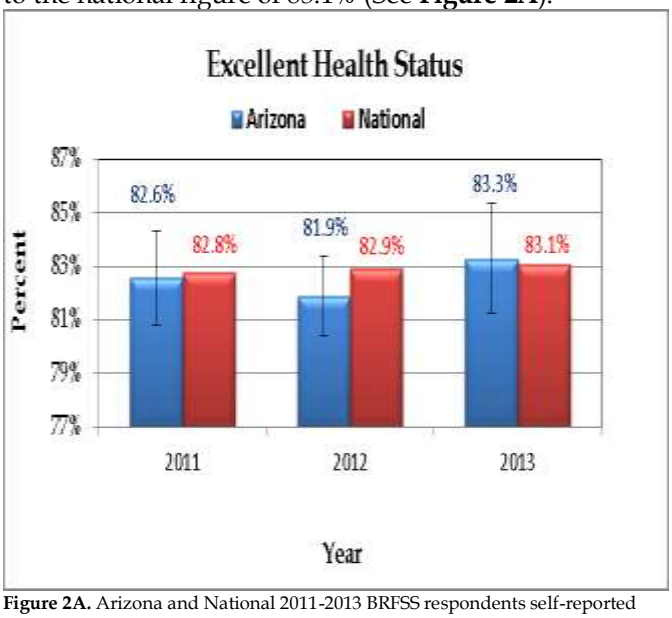


Figure 2A. Arizona and National 2011-2013 BRFSS respondents self-reported health status reported being good, very good or excellent.

When looking at the other states in the nation, Arizona falls in the second-highest category for the percent of respondents reporting good, very good or excellent health (see **Figure 2B**).

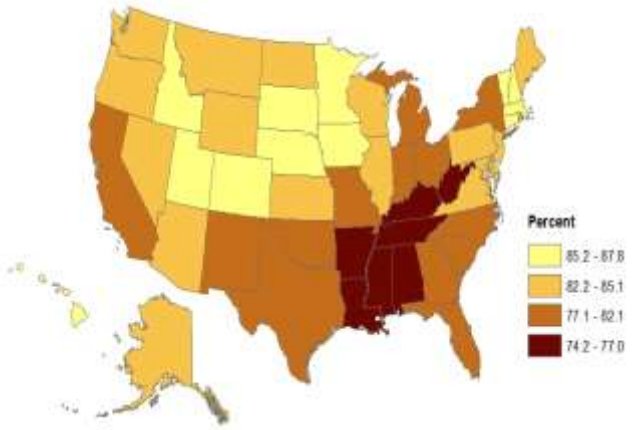


Figure 2B. BRFSS respondents reporting good, very good, or excellent health by state (natural breaks).

The distribution of surveyed Arizonans' self-reported health status was very similar to the nation as a whole (see **Figure 2C**).

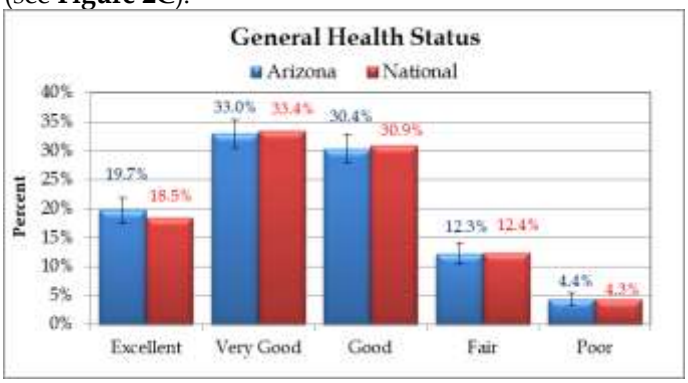


Figure 2C. Arizona and National 2013 BRFSS respondents' self-reported health status.

Figure 2D displays that the percentage of men and women in Arizona was broadly similar in 2013, particularly those who reported their health as 'very good' (32.8% and 33.3% respectively).

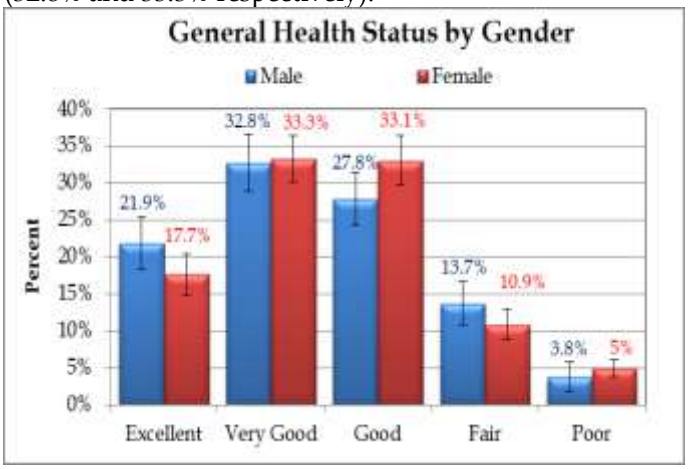


Figure 2D. BRFSS 2013 Arizona's respondents self-reported health status stratified by gender.

6. Mossey JM, Shapiro E. Self-rated health: a predictor of mortality among the elderly. AM J Public Health. 1982 Aug;72(8): 800-8. PMID: 7091475
7 : Estwing C., Ferrans. 2-Definitions and conceptual models of quality of life. In: Gotay C., et al. Outcomes Assessment in Cancer. Cambridge University Press; 2009: 14-30.
8. DeSalvo KB, Bloser N, Reynolds K, He J, Muntner P. Mortality Prediction with a Single General Self-Rated Health Question: A Meta-Analysis. *Journal of General Internal Medicine*. 2006;21(3):267-275. doi:10.1111/j.1525-1497.2005.00291.x.
9. 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: PMID: 23197340

Health-Related Quality of Life
Self-Reported Health Status

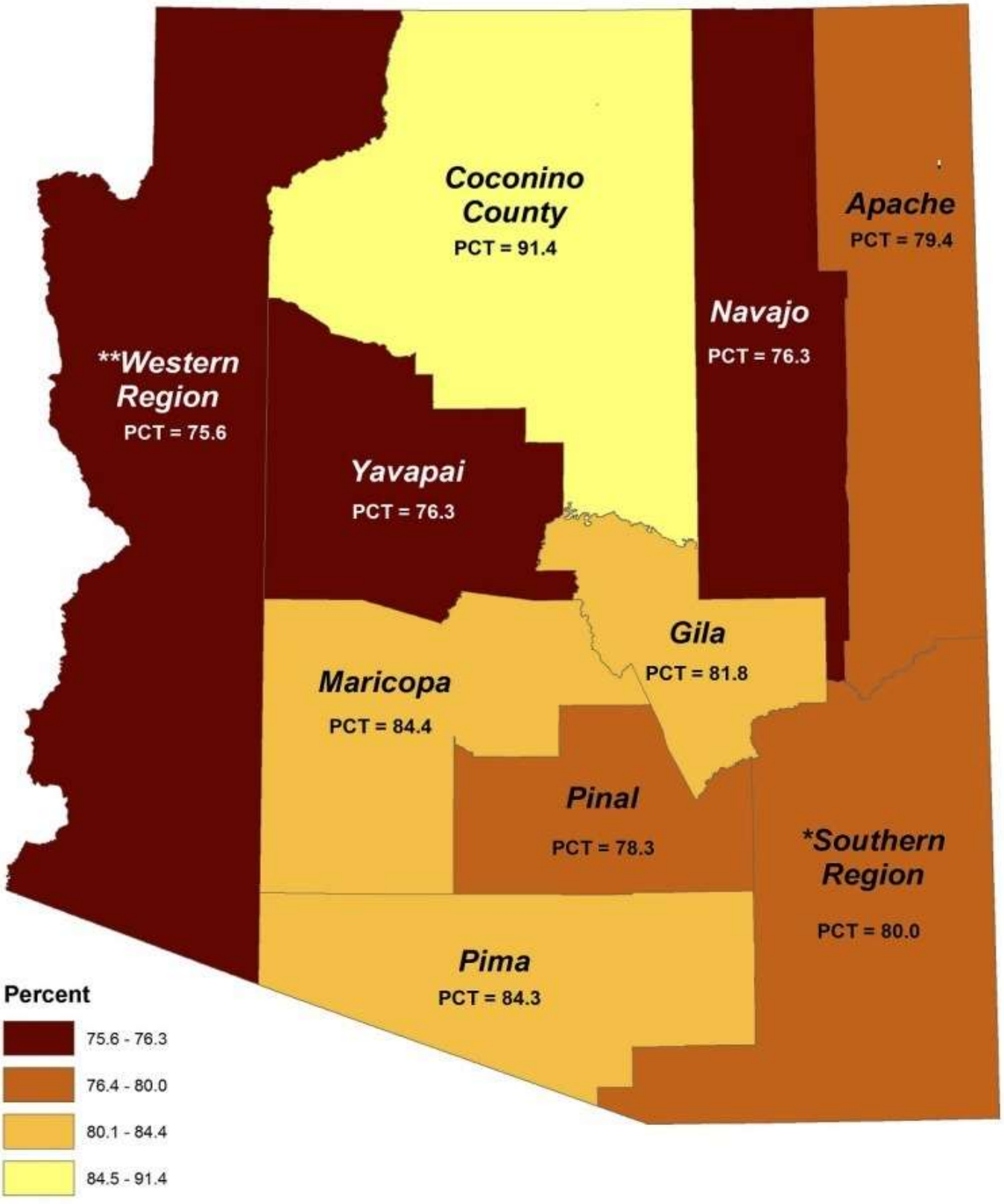
Arizonans Reporting Good to Excellent Health in the 2013 BRFSS				
Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**83.1%**	53		
Arizona	**83.3%**	3367	81.2%	85.3%
Sex				
Male	82.5%	1399	79.1%	85.9%
Female	84.1%	1968	81.7%	86.4%
Age				
18-24	93.2%	237	88.5%	97.8%
25-34	95.5%	362	92.9%	98.2%
35-44	86.0%	376	79.6%	92.4%
45-54	77.2%	504	71.9%	82.5%
55-64	70.1%	670	63.9%	76.2%
65+	79.1%	1218	75.7%	82.4%
Marital Status				
Married	84.6%	1773	81.6%	87.7%
Divorced	72.8%	479	66.6%	79.0%
Widowed	68.9%	432	61.7%	76.1%
Separated	75.3%	58	63.4%	87.2%
Never Married	89.1%	498	85.7%	92.5%
Unmarried Couple	87.7%	107	82.1%	93.2%
Education Attainment				
Less than highschool	62.9%	227	54.5%	71.4%
High School/GED	85.9%	864	83.0%	88.8%
Some College/Technical School	84.8%	1012	82.0%	87.7%
College/Technical School Graduate	92.0%	1247	90.1%	93.8%
Employment Status				
Employed for Wages	91.0%	1260	88.4%	93.5%
Self Employed	91.2%	270	86.6%	95.8%
Out of Work	85.4%	192	79.6%	91.1%
Homemaker	86.0%	273	79.5%	92.5%
Student	89.9%	113	81.7%	98.0%
Retired	79.7%	1147	76.2%	83.1%
Unable to Work	28.9%	97	19.6%	38.2%
Income				
Less than $10,000	58.9%	146	47.5%	70.3%
$10,000 to $14,999	67.9%	152	54.8%	80.9%
$15,000 to $19,999	66.6%	217	54.2%	79.0%
$20,000 to $24,999	81.9%	296	76.0%	87.8%
$25,000 to $34,999	81.0%	381	74.5%	87.5%
$35,000 to $49,999	90.2%	489	87.2%	93.2%
$50,000 to $74,999	88.9%	460	84.6%	93.2%
Above $75,000	94.4%	751	92.2%	96.6%
Race				
White Non-Hispanic	85.3%	2553	83.4%	87.1%
Black/African American	78.9%	71	66.4%	91.5%
Hispanic	77.8%	441	71.9%	83.6%
Asian/Pacific Islander	98.4%	43	96.7%	100%
American Indian	84.8%	151	77.8%	91.8%
Other	82.7%	108	73.9%	91.5%

Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays proportions of Arizonans who responded that their health status was good, very good or excellent. Results are also shown by sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates are median values across all states, not means. The "National" level estimate reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Respondents Reporting Good to Excellent Health, by County & Region - BRFSS 2013

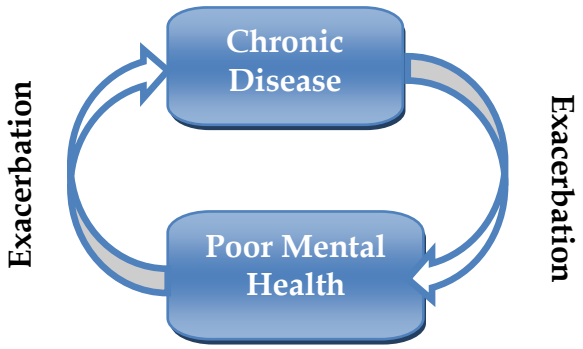


**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Health-Related Quality of Life
Frequent Mental Distress

By 2020, depression is projected to be the second leading cause of the 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.[10] For example, an individual may initially suffer from a chronic disease and then develop a mental health condition (i.e. depression), which exacerbates 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 survey includes depression and anxiety questions within the core section. Researchers have developed and accepted an alternative method of evaluating mental illness called 'Frequent Mental Distress' (FMD). FMD is defined as 14 days or more of poor mental health within the past 30 days.[11] Since 2011, Arizonans surveyed report FMD at similar levels to the nation median (see **Figure 3A**).

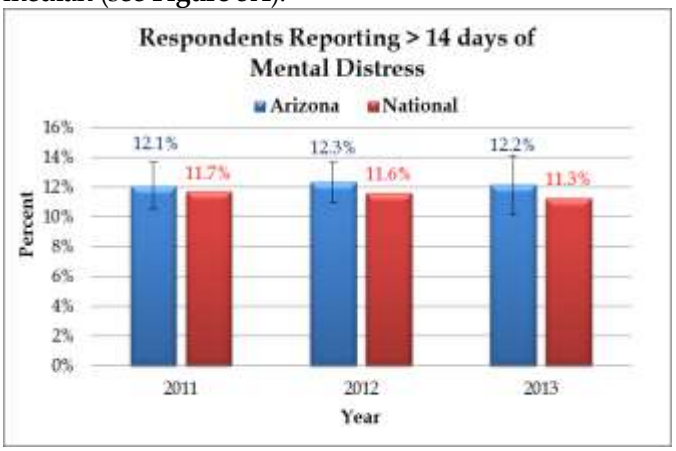


Figure 3A. Arizona and National 2011-2013 BRFSS prevalence of reporting frequent mental distress. Survey Questions: Now thinking about your mental health, which includes stress, depression and problems with emotions, for how many days during the past 30 days was your mental health not good?

10. 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.
11. 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.

In 2013, 12.2% of Arizonans surveyed reported that they suffered from FMD; the national median is 11.3%. When looking at the other states in the nation, Arizona falls in the second-highest class for the percent of respondents reporting FMD (See **Figure 3B**).

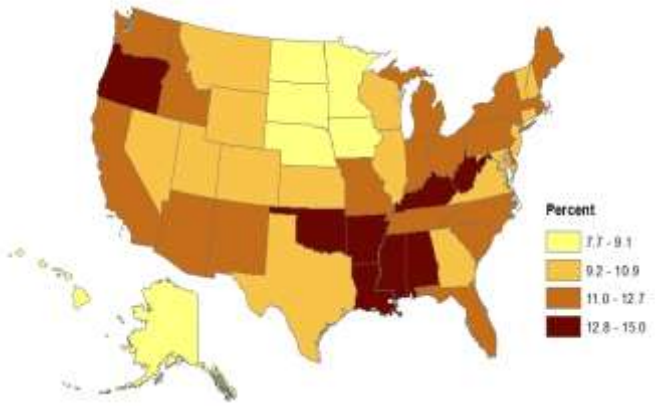


Figure 3B. BRFSS respondents reporting FMD by state (natural breaks).

Among Arizonans surveyed, FMD is reported more frequently in current smokers than nonsmokers or former smokers (see **Figure 3C**).

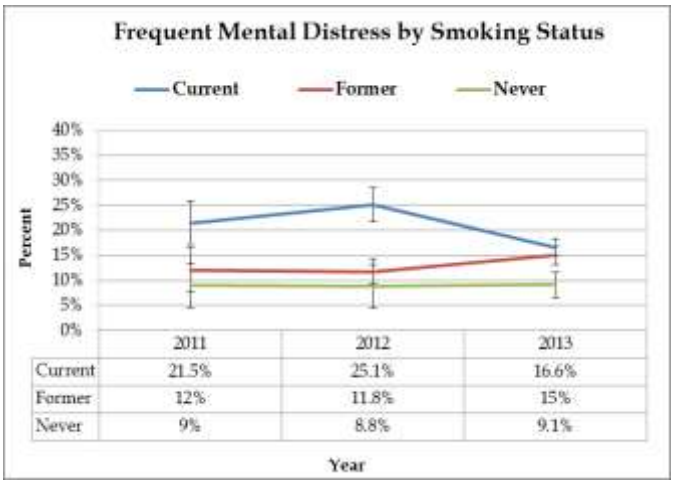


Figure 3C. Arizonans reporting they had FMD by smoking status from 2011 – 2013.

Since 2011, FMD has been reported more frequently by Arizonans surveyed as household income declines (see **Figure 3D**).

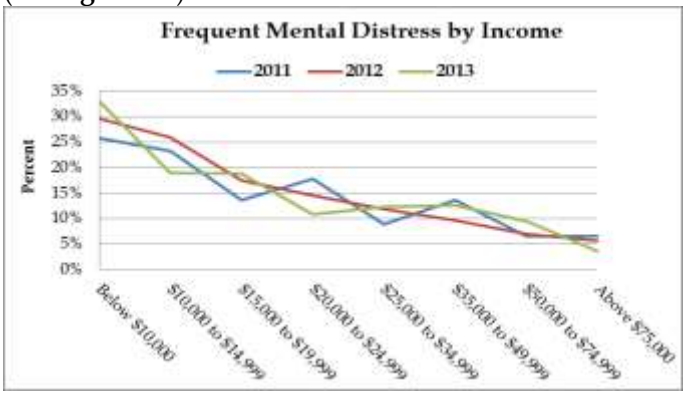


Figure 3D. Arizona 2011-2013 BRFSS over three years of individuals reporting FMD by income.

Health-Related Quality of Life
Frequent Mental Distress

Arizonans Reporting > 14 days of Frequent Mental Distress in the BRFSS 2013

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**11.3%**	53		
Arizona	**12.2%**	461	10.2%	14.2%
Sex				
Male	9.5%	159	6.8%	12.3%
Female	14.7%	302	11.8%	17.6%
Age				
18-24	15.3%	39	8.9%	21.7%
25-34	14.3%	48	8.2%	20.3%
35-44	11.1%	46	5.0%	17.2%
45-54	14.7%	102	10.2%	19.1%
55-64	12.5%	115	8.9%	16.1%
65+	6.7%	111	4.6%	8.8%
Marital Status				
Married	8.9%	151	6.2%	11.5%
Divorced	16.3%	115	11.8%	20.8%
Widowed	13.9%	62	7.4%	20.4%
Separated	12.9%	21	3.0%	22.9%
Never Married	14.6%	88	9.9%	19.4%
Unmarried Couple	18.3%	20	7.9%	28.7%
Education Attainment				
Less than highschool	20.5%	53	11.7%	29.4%
High School/GED	12.6%	135	8.9%	16.3%
Some College/Technical School	12.4%	173	9.7%	15.2%
College/Technical School Graduate	6.1%	99	4.2%	8.0%
Employment Status				
Employed for Wages	7.6%	111	5.5%	9.7%
Self Employed	10.1%	25	2.2%	18.1%
Out of Work	22.5%	52	13.1%	31.9%
Homemaker	12.5%	29	5.3%	19.6%
Student	19.4%	19	7.3%	31.5%
Retired	8.8%	100	5.9%	11.7%
Unable to Work	35.2%	121	23.5%	46.9%
Income				
Less than $10,000	33.1%	71	21.8%	44.4%
$10,000 to $14,999	18.9%	54	10.4%	27.5%
$15,000 to $19,999	18.8%	45	6.3%	31.4%
$20,000 to $24,999	10.8%	45	5.8%	15.9%
$25,000 to $34,999	12.3%	44	6.1%	18.5%
$35,000 to $49,999	12.6%	54	6.0%	19.2%
$50,000 to $74,999	9.4%	41	5.0%	13.9%
$Above $75,000	3.5%	37	1.6%	5.4%
Race				
White Non-Hispanic	9.7%	316	8.0%	11.4%
Black/African American	16.4%	11	4.5%	28.3%
Hispanic	16.4%	81	10.7%	22.2%
Asian/Pacific Islander	12.7%	3	0.0%	33.0%
American Indian	17.7%	30	8.3%	27.1%
Other	14.8%	20	5.3%	24.4%

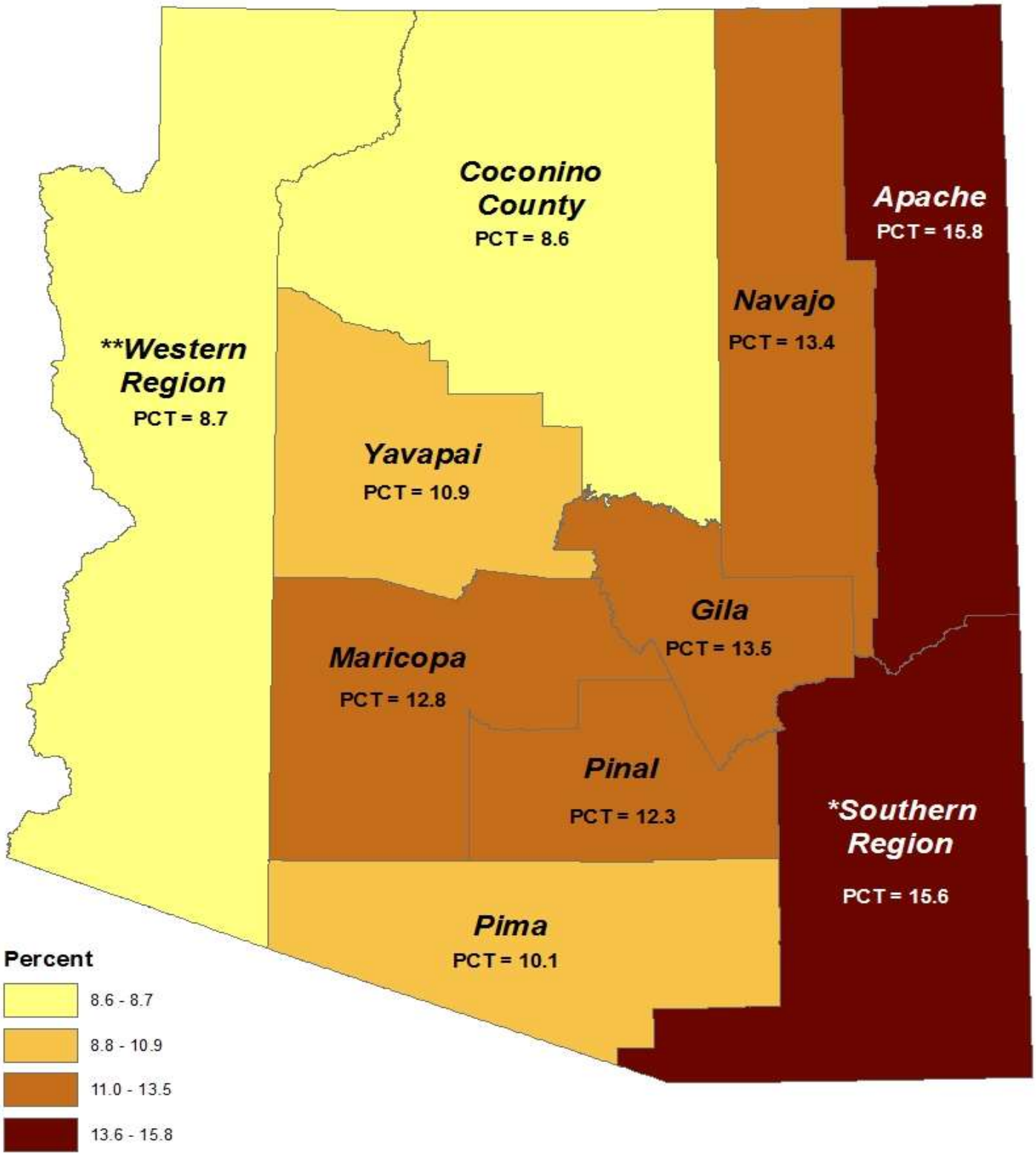
Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizonans surveyed in 2013 who responded that they suffered more than 14 days of poor mental health, in the 30 days prior. Results are also shown by sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Reporting Frequent Mental Distress, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

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 has been associated with both being underweight and with obesity. Obesity increases the risk of morbidity and mortality. Additionally, obesity increases the risk of having heart disease, hypertension, diabetes, arthritis, and some cancers.[12] Furthermore, FPD has been associated with increased risky behaviors, such as drinking and smoking in women of child-bearing age.[13] Arizonans surveyed in 2012 and 2013 reported FPD more frequently than the national median (see **Figure 4A**).

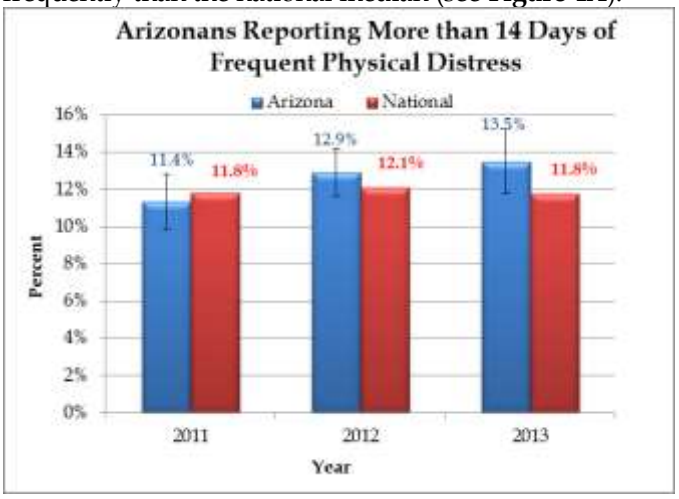


Figure 4A. Arizona and National 2011-2013 BRFSS prevalence of Frequent Physical Distress (FPD) suffering >14 days or more physical unhealthy days within 30 days prior.

Arizona falls in the second-highest class among all states for the percent of respondents reporting FPD (see **Figure 4B**).

Figure 4B. BRFSS 2013 respondents reporting FPD by state (natural breaks).

Arizona 2013 BRFSS results generally concur with the current literature on FPD among women of child-bearing age (see **Figure 4C**). Arizona women surveyed who are current or former cigarette smokers report FPD more frequently than Arizona women surveyed who had never smoked.

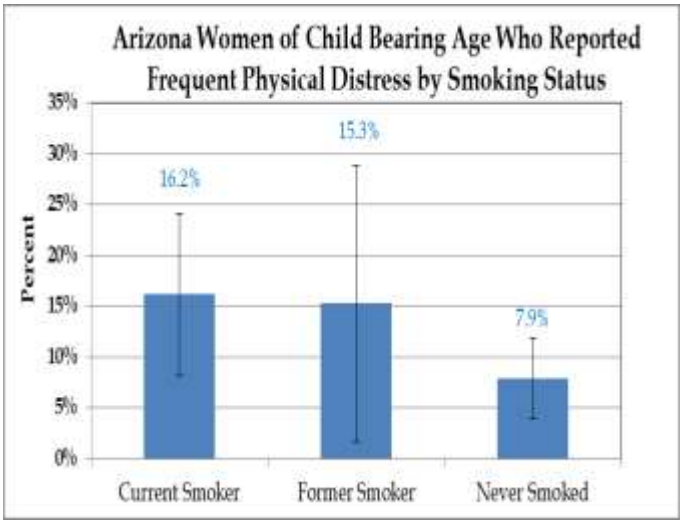


Figure 4C. Arizona 2013 BRFSS data assessing frequent physical distress and risky behaviors such as cigarette smoking in women of child bearing age. Frequent Physical Distress (FPD) suffering >14 days or more physical unhealthy days within 30 days prior.

Among Arizonans surveyed who reported having certain chronic conditions like heart disease, diabetes, hypertension and obesity were more likely to report FPD than those without chronic conditions, and the occurrence of each of these conditions increased the likelihood of reporting FPD above the Arizona average of 13.5% in 2013 (see **Figure 4D**).

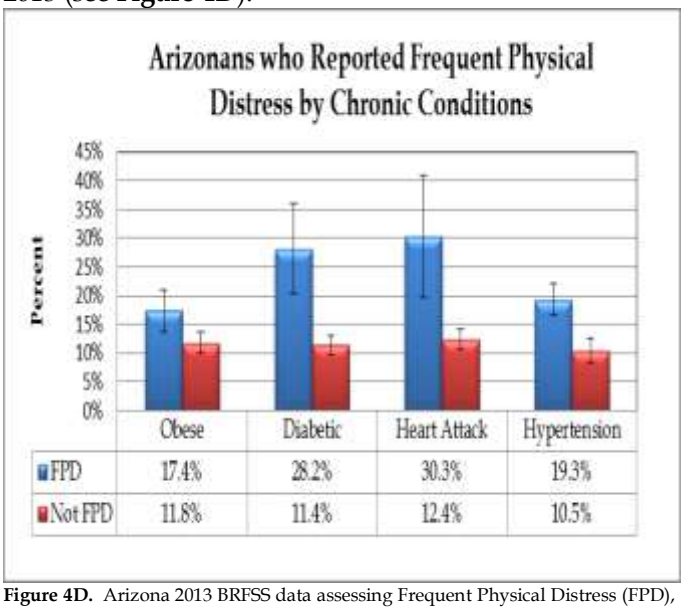


Figure 4D. Arizona 2013 BRFSS data assessing Frequent Physical Distress (FPD), body mass index categories, and conditions associated with being overweight/obese, diabetes, heart attack and hypertension. Frequent Physical Distress (FPD) suffering >14 days or more physical unhealthy days within 30 days prior.

[12] 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.
[13] 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.

Health-Related Quality of Life
Frequent Physical Distress

Arizonans Reporting > 14 days of Frequent Physical Distress in the BRFSS 2013

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper
National	**11.8%**	53		
Arizona	**13.5%**	701	11.8%	15.2%
Sex				
Male	11.3%	244	8.7%	13.9%
Female	15.6%	457	13.3%	17.9%
Age				
18-24	4.0%	13	1.3%	6.7%
25-34	8.3%	29	4.1%	12.5%
35-44	10.5%	53	6.3%	14.7%
45-54	14.9%	121	10.8%	18.9%
55-64	22.3%	184	16.6%	28.0%
65+	19.0%	301	15.8%	22.1%
Marital Status				
Married	11.5%	278	9.1%	13.8%
Divorced	20.3%	152	14.9%	25.8%
Widowed	30.6%	134	23.2%	37.9%
Separated	28.6%	28	13.6%	43.6%
Never Married	9.2%	86	5.9%	12.4%
Unmarried Couple	8.9%	19	3.0%	14.8%
Education Attainment				
Less than high school	17.6%	78	10.5%	24.7%
High School/GED	11.8%	220	9.2%	14.3%
Some College/Technical School	15.9%	253	12.9%	19.0%
College/Technical School Graduate	9.2%	148	7.0%	11.4%
Employment Status				
Employed for Wages	6.3%	96	4.3%	8.3%
Self Employed	9.7%	30	3.8%	15.5%
Out of Work	17.1%	47	10.3%	23.9%
Homemaker	11.8%	54	6.1%	17.4%
Student	3.7%	8	0.0%	7.4%
Retired	19.0%	261	15.5%	22.5%
Unable to Work	57.8%	203	48.0%	67.6%
Income				
Less than $10,000	32.4%	80	21.0%	43.8%
$10,000 to $14,999	25.5%	78	12.8%	38.1%
$15,000 to $19,999	22.7%	81	14.0%	31.3%
$20,000 to $24,999	15.7%	86	10.2%	21.2%
$25,000 to $34,999	13.7%	68	8.2%	19.1%
$35,000 to $49,999	12.9%	98	8.8%	17.0%
$50,000 to $74,999	8.6%	54	5.4%	11.9%
Above $75,000	6.1%	59	3.9%	8.4%
Race				
White Non-Hispanic	14.6%	533	12.7%	16.5%
Black/African American	13.9%	15	4.4%	23.4%
Hispanic	11.6%	90	7.1%	16.1%
Asian/Pacific Islander	1.3%	2	0.0%	3.1%
American Indian	15.4%	35	8.4%	22.4%
Other	15.4%	26	6.0%	24.7%

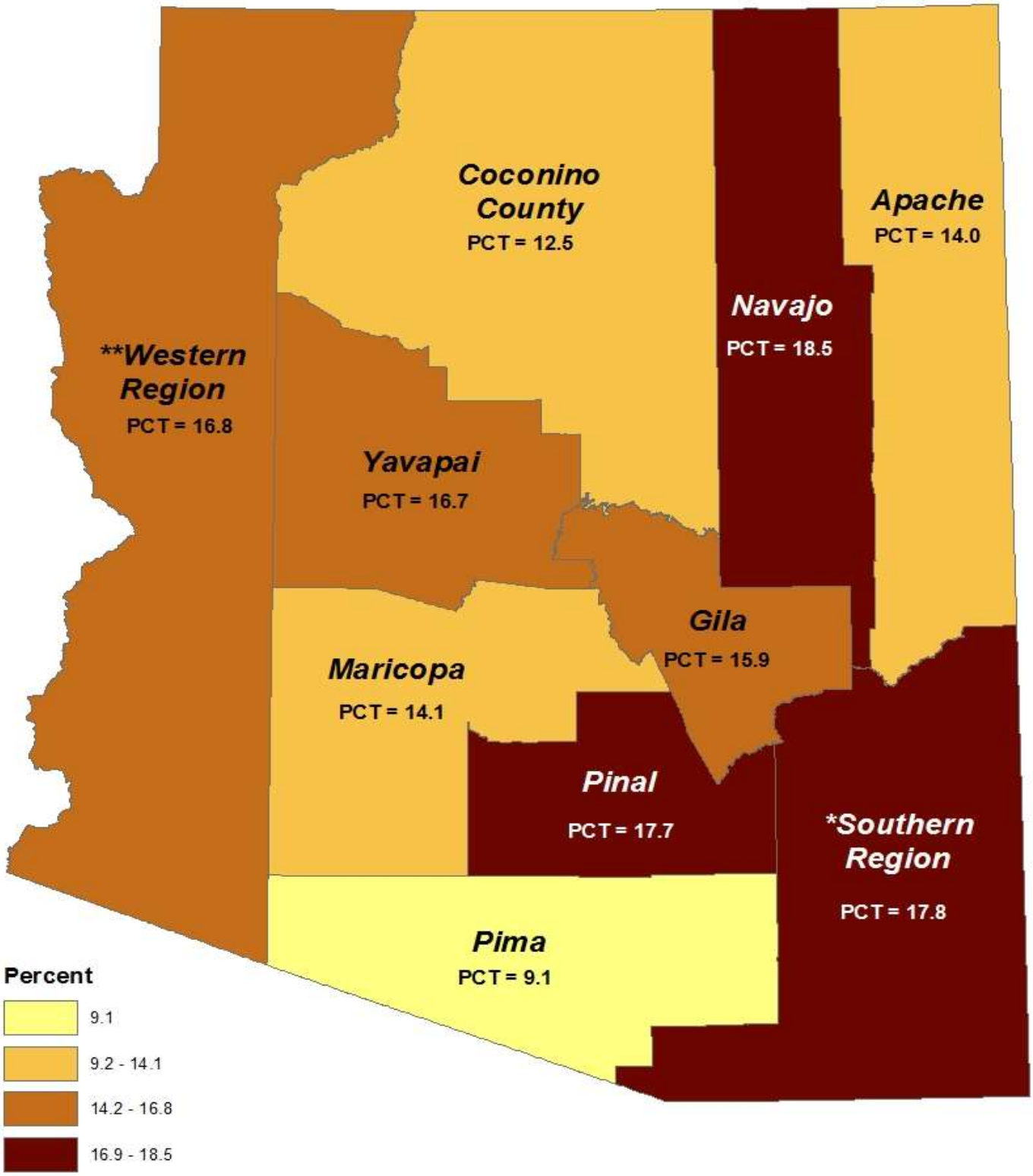
Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions 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 reported by sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Reporting Frequent Physical Distress, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

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.[14] The BRFSS survey asked if a person's activities were inhibited due to poor physical or mental health. To assess socialization, respondents were classified as inhibited socially if they reported 14 or more days of limited activities due to health, within the 30 days prior. Arizonans surveyed reported a similar frequency of inhibited socialization when compared to the national median (see **Figure 5A**).

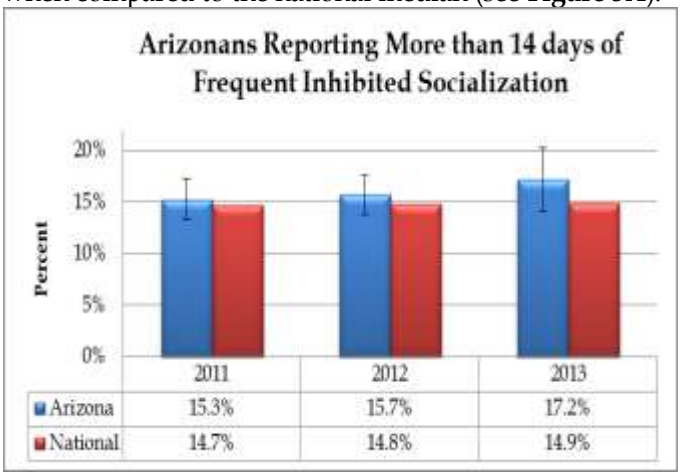


Figure 5A. Arizona and National 2011-2013 BRFSS prevalence of reporting inhibited socialization > 14 days within the prior 30-days.

When looking at all the states in the nation, Arizona falls in the second-highest class for the percent of respondents reporting inhibited socialization (see **Figure 5B**).

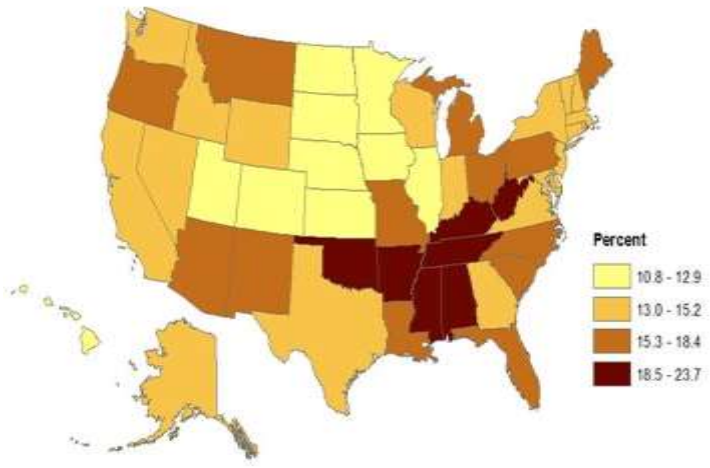


Figure 5B. BRFSS 2013 survey respondents reporting their health interfering with their ability to socialize by state (natural breaks).

[14] Umberson D, Montez JK. Social Relationships and Health: A Flashpoint for Health Policy. *Journal of health and social behavior*. 2010;51(Suppl):S54-S66. doi:10.1177/0022146510383501.

There were some differences in frequent inhibited socialization reported by Arizona survey respondents who also engaged in various other types of social activities such as smoking, binge drinking, heavy drinking and marital status (see **Figure 5C**).

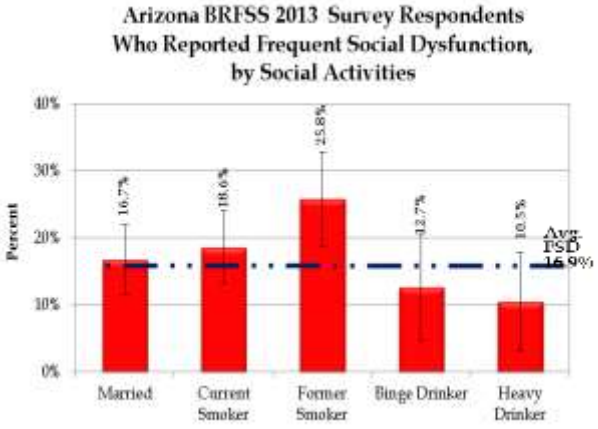


Figure 5C. The Arizona 2013 BRFSS survey respondents who reported FSD by marital status, smoking and drinking behaviors.

There are differences in Arizonans surveyed who reported frequent inhibited socialization who also reported certain medical conditions (see **Figure 5D**). While the occurrence of chronic conditions is higher among those that reported frequently inhibited socialization, not all respondents with these chronic diseases reported that they are socially inhibited.

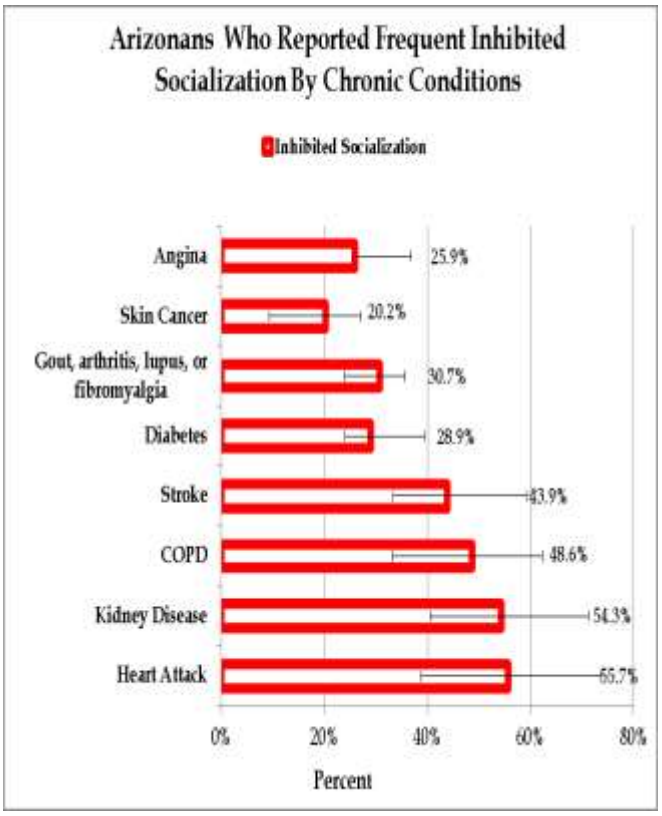


Figure 5D. The Arizona 2013 BRFSS data assessing socialization and skin cancer, COPD, kidney disease, gout, arthritis, lupus, fibromyalgia, diabetes, heart attack, angina, and strokes.

Health-Related Quality of Life
Barriers to Socialization

Arizonans Reporting Frequent Inability to Socialize Due to Poor Health in the 2013 BRFSS

Characteristic	Percent	N	Confidence Interval Lower Mean	Confidence Interval Upper Mean
National	**14.9%**	53		
Arizona	**17.2%**	441	14.1%	20.3%
Sex				
Male	16.4%	154	11.3%	21.4%
Female	17.9%	287	14.0%	21.8%
Age				
18-24	2.2%	7	0.3%	4.1%
25-34	14.9%	20	5.1%	24.7%
35-44	14.5%	33	4.6%	24.4%
45-54	21.4%	97	14.9%	27.9%
55-64	30.3%	127	21.8%	38.8%
65+	19.4%	157	14.9%	23.9%
Marital Status				
Married	16.7%	162	11.5%	21.9%
Divorced	23.8%	107	16.7%	31.0%
Widowed	30.9%	73	20.8%	41.0%
Separated	27.6%	22	9.6%	45.5%
Never Married	9.7%	60	5.0%	14.5%
Unmarried Couple	11.0%	14	3.5%	18.5%
Education Attainment				
Less than high school	30.2%	58	17.9%	42.6%
High School/GED	14.1%	129	9.1%	19.1%
Some College/Technical School	16.5%	161	12.7%	20.4%
College/Technical School Graduate	10.4%	92	7.1%	13.7%
Employment Status				
Employed for Wages	3.7%	35	1.8%	5.6%
Self Employed	11.4%	13	0.0%	24.8%
Out of Work	19.9%	38	8.4%	31.5%
Homemaker	11.9%	27	2.9%	20.9%
Student	9.6%	3	4.6%	14.7%
Retired	23.7%	145	18.0%	29.4%
Unable to Work	65.5%	180	54.8%	76.2%
Income				
Less than $10,000	40.4%	71	27.4%	53.4%
$10,000 to $14,999	22.6%	56	8.1%	37.1%
$15,000 to $19,999	29.8%	51	13.3%	46.4%
$20,000 to $24,999	19.5%	60	11.4%	27.6%
$25,000 to $34,999	17.5%	40	7.5%	27.4%
$35,000 to $49,999	21.1%	48	10.0%	32.3%
$50,000 to $74,999	12.7%	37	7.0%	18.4%
Above $75,000	5.7%	30	2.5%	9.0%
Race				
White Non-Hispanic	16.3%	327	13.7%	19.0%
Black/African American	14.7%	11	2.8%	26.6%
Hispanic	18.9%	59	10.0%	27.7%
Asian/Pacific Islander	28.5%	1	0.0%	83.1%
American Indian	13.7%	20	4.7%	22.6%
Other	25.7%	23	13.2%	8.5%

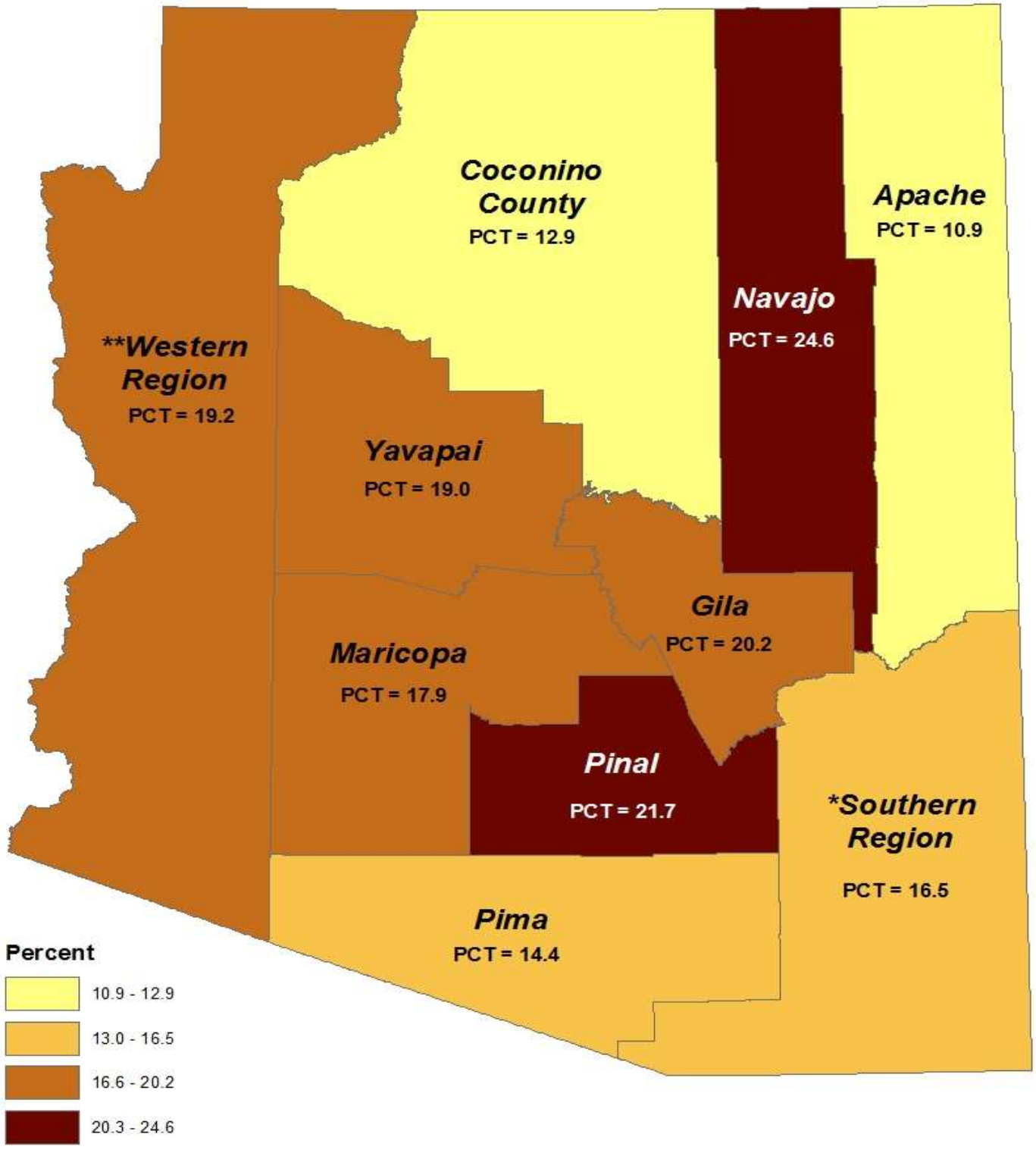
Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left proportion of Arizonans surveyed who indicated that they suffered 14 or more days of poor physical or mental health inhibiting daily function in the 30 days prior. The data are also reported by sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Reporting Frequent Inhibited Socialization, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Arizona Department of Health Services

Preventive Health Practices

Prevention is grouped into three levels: primary, secondary and tertiary. Primary prevention consists of 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 2013 BRFSS Annual Report focuses on primary and secondary prevention, including an analysis of the following:

- **Routine Medical Examination (variable CHECKUP1) —** A medical examinations within a year is considered a positive outcome and medical examination over is considered a negative outcome.

- **Annual Influenza Vaccine (variable _FLSHOT5) —** Individuals 65 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 Preventive Services Task Force recommend a secondary prevention regiment using annual fecal occult blood testing, sigmoidoscopy every five years, and a colonoscopy every ten years. The BRFSS has two questions that can be used to assess colorectal cancer screening: The guidelines set by the United States Preventive Services Task Force recommends a secondary prevention regimen using annual fecal occult blood testing, sigmoidoscopy every five years, and a colonoscopy every ten years.

    - **Fecal Occult Blood Test (variable BLDSTOOL**) — Individuals 50 and older ever having a fecal occult blood test is considered a positive outcome and never having a fecal occult blood test is considered a negative outcome.
    - **Sigmoidoscopy and Colonoscopy (variable HADSIGM3) —** Individuals 50 and older, ever having a sigmoidoscopy or colonoscopy is considered a positive outcome and never having a colonoscopy or sigmoidoscopy is considered a negative outcome.

- **Pre-conception Health –W**omen's reproductive ages should receive preconception care to better manage their condition.

    - **Pre-conception Health-(variable AAZ6_1)** Women (childbearing age) who talk to a health care professional about ways to prepare for a healthy baby is considered to be a positive 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.
(See Page 9)

Preventive Practices
Routine Medical Examinations

Regular medical exams are a valuable tool in preventive care. Routine examinations can find problems early, when treatment is more effective.[15] 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 for healthy individuals.[16] To assess the utilization of health services, the shortest interval recommended for a routine medical examination (1 year) was used. Since 2011 the percent of Arizonans surveyed who reported having a routine medical exam in the past year was lower than the U.S. median (see **Figure 6A**).

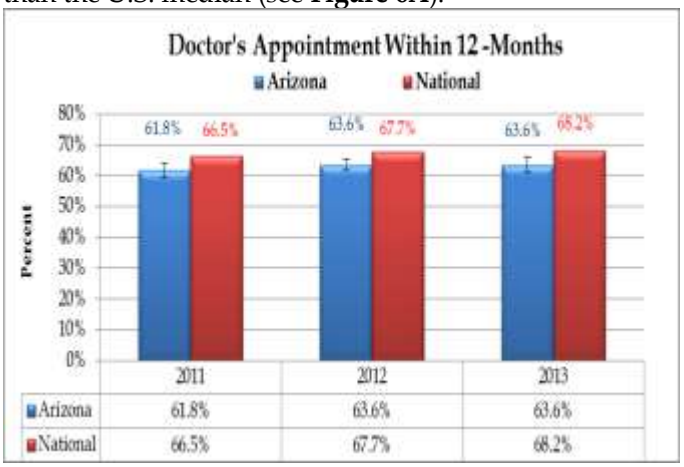


Figure 6A. Prevalence of Arizona and national BRFSS 2013 respondents who have had a routine medical exam within a 12-month period.

In 2013, 63.6% of Arizonans surveyed reported they had a routine medical examination in the past year. The national prevalence is 68.2%. When looking at all the states in the nation, Arizona falls in the second lowest class (see **Figure 6B**).

Figure 6B. BRFSS 2013 survey respondents who reported having had a routine medical exam in the past year by state, (natural breaks).

15 "Regular Check- 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/.
16 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.[17] Since 2011, Arizonans surveyed who reported having no health insurance were significantly less likely to have had a check-up in the past year when compared to survey respondents with health insurance (see **Figure 6C).**

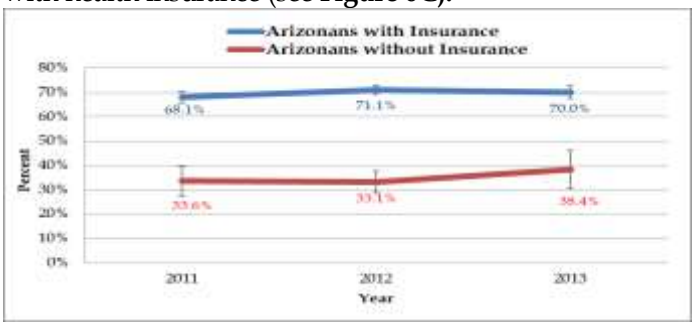


Figure 6C. Prevalence of Arizona respondents who have had a routine medical exam within 12-monnts stratified by insurance status – BRFSS 2013.

There has been much debate on the necessity of routine medical exams for healthy individuals. If a person suffers from a serious medical condition, it is advised that he/she see a medical professional regularly.[17] The percent of Arizonans surveyed who reported having a chronic condition (CC) and had a checkup within the prior year ranges from 74.9% to 87%, depending upon the CC. This is higher than the average percentage among all Arizonans surveyed, at 62.6% (see **Figure 6D**). Although individuals with CCs are more likely to have had a routine medical exam within the past 12 months, when compared to all Arizonans surveyed, it still falls below the recommended 100%. Routine medical examinations prevent the exacerbation of CCs and reduce future costs of care.

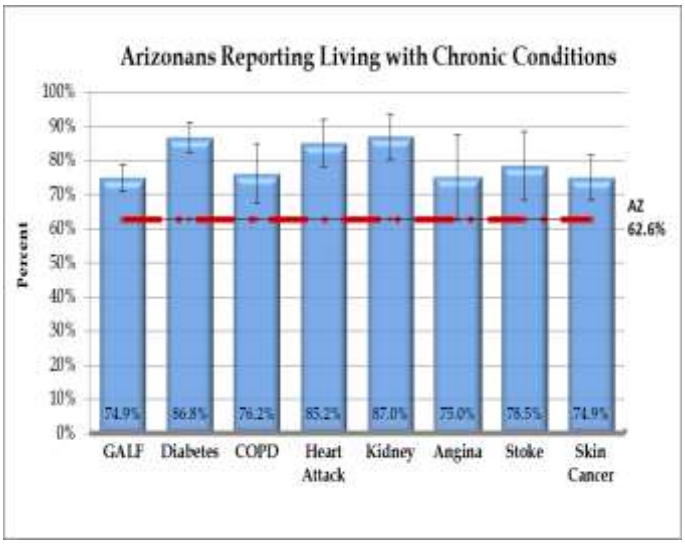


Figure 6D. Arizonans who reported living with a chronic condition who have seen a medical professional in the past year. Arizonans who reported having gout, arthritis, lupus and fibromialgia (GALF) at 74.9 % The red dashed line is the overall percent of Arizonans who have had a routine medical exam in the last 12 months- BRFSS 2013.

17 Bodenheimer T. Willard-Grace R. Teamlets in Primary Care: Enhancing the Patient and Clinical Experience. J Am Board of Fam Med. 2006 Jan-Feb: 29(1): 135-138. doi: 10.3122/ jabfm . 2016.01.150176

Preventive Practices
Routine Medical Examinations

Arizonans Who Had a Checkup in the Past Year
in the 2013 BRFSS

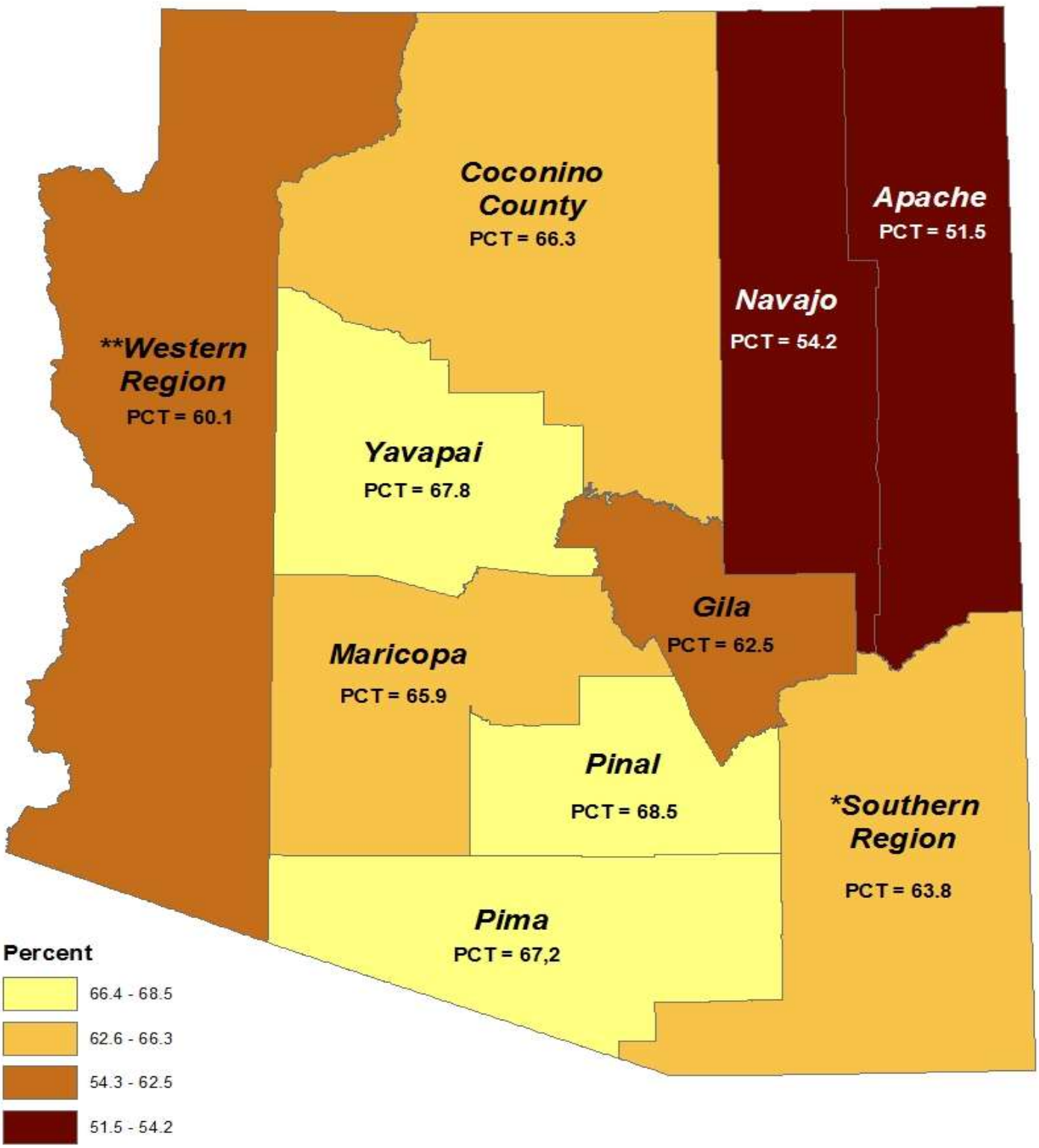
Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**68.2%**	53		
Arizona	**63.6%**	2851	61.0%	66.2%
Sex				
Male	61.2%	1119	57.3%	65.2%
Female	65.8%	1732	62.5%	69.2%
Age				
18-24	55.9%	126	46.7%	65.1%
25-34	55.8%	199	48.1%	63.5%
35-44	57.3%	235	50.1%	64.4%
45-54	55.4%	390	49.1%	61.7%
55-64	68.4%	624	63.3%	73.5%
65+	83.9%	1277	81.1%	86.6%
Marital Status				
Married	66.4%	1485	62.9%	69.9%
Divorced	62.2%	424	55.5%	68.9%
Widowed	76.5%	467	70.3%	82.8%
Separated	63.5%	60	48.2%	78.8%
Never Married	55.3%	316	48.8%	61.9%
Unmarried Couple	55.5%	80	41.3%	69.7%
Education Attainment				
Less than high school	69.1%	253	61.3%	77.0%
High School/GED	56.2%	711	50.9%	61.5%
Some College/Technical School	65.2%	881	60.8%	69.5%
College/Technical School Graduate	65.0%	993	61.1%	69.0%
Employment Status				
Employed for Wages	57.5%	816	53.3%	61.7%
Self Employed	55.1%	177	43.8%	66.4%
Out of Work	57.9%	126	48.0%	67.7%
Homemaker	60.4%	215	51.3%	69.4%
Student	58.3%	67	44.1%	72.5%
Retired	81.7%	1182	78.3%	85.1%
Unable to Work	74.2%	254	65.3%	83.2%
Income				
Less than $10,000	59.3%	157	47.8%	70.8%
$10,000 to $14,999	63.8%	146	52.4%	75.2%
$15,000 to $19,999	62.0%	210	50.9%	73.2%
$20,000 to $24,999	55.5%	247	46.4%	64.7%
$25,000 to $34,999	58.9%	299	51.0%	66.7%
$35,000 to $49,999	63.4%	412	55.9%	70.9%
$50,000 to $74,999	65.7%	367	59.0%	72.3%
Above $75,000	68.9%	587	63.6%	74.1%
Race				
White Non-Hispanic	63.5%	2178	60.6%	66.3%
Black/African American	71.6%	62	58.7%	84.4%
Hispanic	62.6%	372	56.1%	69.1%
Asian/Pacific Islander	61.8%	27	40.6%	83.0%
American Indian	64.4%	122	53.9%	75.0%
Other	62.8%	90	50.5%	75.1%

Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizona Adults who have had a routine medical examination in the past 12 months by: sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Respondents Reporting Having a Medical Checkup in the Past Year, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Preventive Practices
Influenza Vaccinations

Since 1918, there have been four influenza (flu) pandemics; the most recent was the 2009-2010 H1N1 pandemic. The CDC estimates that 43 million to 89 million people contracted H1N1 during the 2009/2010 pandemic.[18] An analysis comparing the cost effectiveness of vaccination versus antiviral treatment of the flu found that antiviral treatment was the most consistently cost-effective treatment for working adults. However, the analysis did not take into consideration flu pandemics, herd immunity or the possibility of drug resistant strains of the flu. When 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.[19] For this reason, the CDC recommends annual flu vaccinations. In 2013 33.5% of Arizonans surveyed reported having a flu vaccine in the last year, which was lower than the national median (see **Figure 7A**).

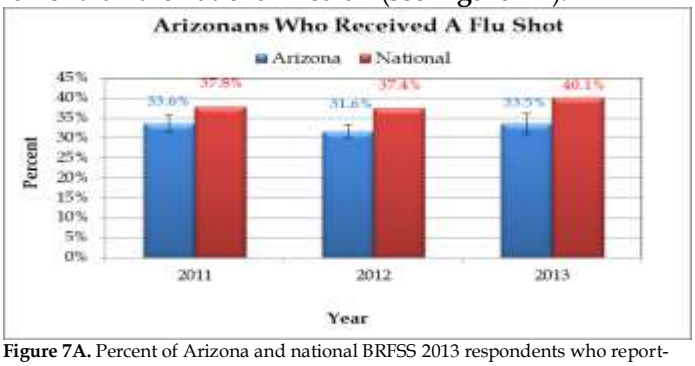


Figure 7A. Percent of Arizona and national BRFSS 2013 respondents who reported having a flu vaccine in the past year.

Controlling seasonal flu requires targeted campaigning; it is important to begin vaccination before high flu activity presents clinically (see **Figure 7B**).

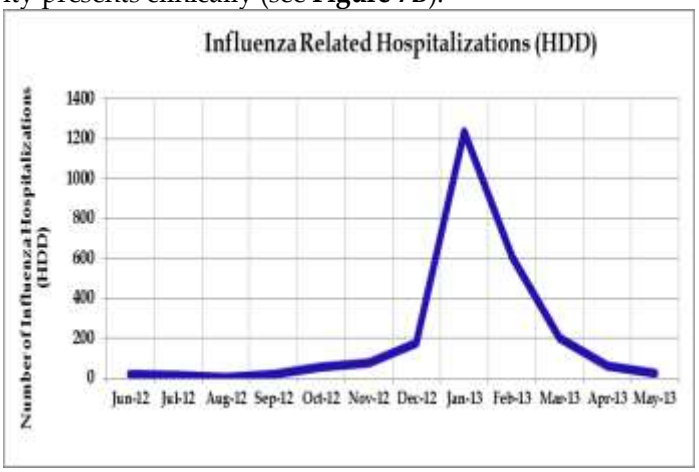


Figure 7B. Hospital discharges containing ICD-9 codes used to identify flu related hospitalizations from June 2012 to May 2013: 487 and 488.

During the 2013- 2014 influenza season, flu and pneumonia increased the risk of mortality in the U.S.[20] In 2013, Arizona in-patient and emergency departments reported 2,486 hospitalizations due to combined flu and pneumonia, with charges totaling more than $111 million (see **Table 4**).

Influenza with Pneumonia Related Hospital Inpatient & Emergency Department Discharges

Age	Number of Discharges	Charges	Average Length of Stay (Days)
<18	433	$12,912,261	4.0
18-24	82	$4,040,847	4.7
25-39	193	$7,623,571	4.3
40-54	320	$17,203,597	5.0
55+	1,458	$69,628,252	5.0
Total	**2,486**	**$111,408,528**	

Table 4. Hospital encounters, both emergency department and admissions in 2013, contained the ICD-9 codes: 487.00, 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 greater concern. Monitoring vaccination prevalence of individuals who are over the age of 65 is recommended. In 2013, there were 1,458 hospitalizations after presenting with both the flu and pneumonia; five died in the hospital. More than one-half (59.9%) of Arizonans over the age of 65 surveyed in 2013 BRFSS reported having a flu vaccination within the past year, levels similar to the national median (see **Figure 7C**).

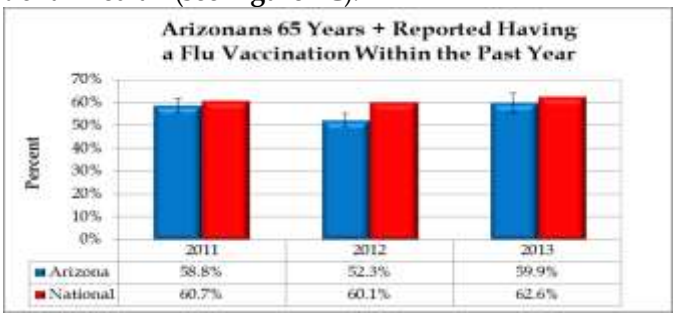


Figure 7C. Percent of Arizona and national BRFSS respondents who reported having a flu vaccine in the past year.

When compared to the other states in the nation, Arizona fell into the lowest class for individuals 65+ reporting a flu shot in the last 12 months (see **Figure 7D**).

Figure 7D. BRFSS respondents 65 and older who had an influenza vaccination in the last 12 months by state (natural breaks).

[18] 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>.
[19] Nichol, K. The efficacy, effectiveness and cost-effectiveness of inactivated influenza virus vaccines. Vaccine 21 (2003) 1769–1775

[20] Centers for Disease Control and Prevention. Influenza Activity — United States, 2013-14 and Composition of the 2014-15 Influenza Vaccines MMWR 10 June6, 2014 State-Specific Trends in Fruit and Vegetable Consumption Among Adults --- United States, 2000—2009. MMWR 10 September 2010. Web. 12 Feb. 2014
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6322a2.htm

Preventive Practices
Influenza Vaccinations

Arizonans Who Received a Flu Shot in the Last 12 Months in the 2013 BRFSS

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**40.1%**	53		
Arizona	**33.5%**	1560	30.9%	36.1%
Sex				
Male	29.0%	583	25.1%	32.9%
Female	37.8%	977	34.4%	41.2%
Age				
18-24	20.8%	52	13.1%	28.5%
25-34	14.7%	64	9.6%	19.8%
35-44	31.5%	115	23.7%	39.4%
45-54	27.2%	173	21.8%	32.6%
55-64	38.9%	321	32.9%	45.0%
65+	60.0%	835	55.8%	64.1%
Marital Status				
Married	38.7%	820	34.9%	42.4%
Divorced	30.9%	234	25.1%	36.7%
Widowed	54.0%	295	47.1%	60.9%
Separated	37.0%	27	18.6%	55.5%
Never Married	20.8%	145	15.2%	26.3%
Unmarried Couple	17.7%	32	9.8%	25.7%
Education Attainment				
Less than high school	36.2%	130	26.4%	45.9%
High School/GED	30.9%	374	26.1%	35.8%
Some College/Technical School	29.7%	449	25.8%	33.6%
College/Technical School Graduate	40.4%	601	36.4%	44.4%
Employment Status				
Employed for Wages	28.7%	398	24.6%	32.7%
Self Employed	21.7%	80	15.1%	28.3%
Out of Work	17.5%	51	10.8%	24.3%
Homemaker	27.8%	110	19.9%	35.7%
Student	15.2%	22	7.4%	23.0%
Retired	56.5%	757	52.1%	60.9%
Unable to Work	48.6%	133	36.4%	60.7%
Income				
Less than $10,000	40.9%	91	28.7%	53.1%
$10,000 to $14,999	31.5%	90	17.8%	45.3%
$15,000 to $19,999	28.3%	102	16.3%	40.2%
$20,000 to $24,999	32.1%	122	22.9%	41.4%
$25,000 to $34,999	31.4%	170	24.4%	38.4%
$35,000 to $49,999	34.0%	243	27.5%	40.5%
$50,000 to $74,999	31.0%	184	24.8%	37.2%
Above $75,000	36.0%	319	30.6%	41.3%
Race				
White Non-Hispanic	36.1%	1237	33.4%	38.8%
Black/African American	21.8%	25	9.0%	34.6%
Hispanic	27.7%	164	20.8%	34.7%
Asian/Pacific Islander	40.7%	18	17.0%	64.5%
American Indian	45.7%	79	34.9%	56.5%
Other	18.1%	37	9.7%	26.5%

Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportion of the 2013 Arizona BRFSS respondents of all ages who reported that they had a flu vaccination in the past 12 months. The data are reported by sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Preventive Practices
Influenza Vaccinations

Arizonans 65 years and Older Who had a Flu Vaccine in the Last 12 Months in the 2013 BRFSS

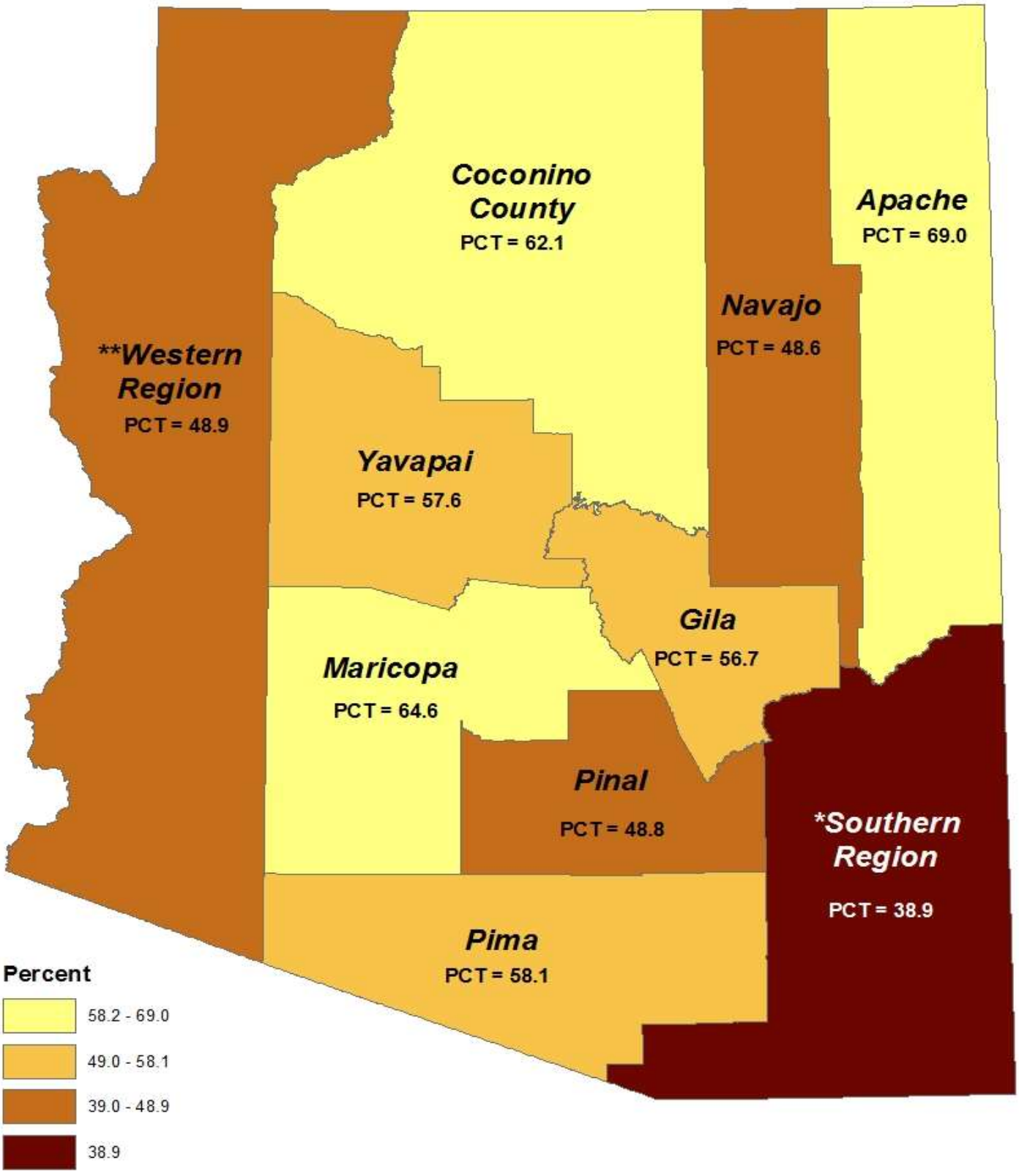
Characteristic	Percent	N	Confidence Interval Lower Mean	Confidence Interval Upper Mean
National	**62.6%**	53		
Arizona	**59.9%**	828	55.7%	64.1%
Sex				
Male	56.9%	313	50.0%	63.9%
Female	62.3%	515	57.2%	67.4%
Age				
65+	59.9%	828	55.7%	64.1%
Marital Status				
Married	63.4%	420	57.9%	68.9%
Divorced	49.4%	113	37.3%	61.4%
Widowed	58.1%	262	50.9%	65.3%
Separated	64.6%	5	14.4%	100.0%
Never Married	38.7%	17	17.8%	59.7%
Unmarried Couple	86.1%	8	59.9%	100.0%
Education Attainment				
Less than high school	61.3%	73	47.6%	75.1%
High School/GED	60.4%	210	53.1%	67.6%
Some College/Technical School	56.6%	238	48.5%	64.7%
College/Technical School Graduate	64.0%	302	57.5%	70.5%
Employment Status				
Employed for Wages	32.9%	27	16.0%	49.8%
Self Employed	64.1%	32	46.5%	81.8%
Out of Work	56.8%	7	31.7%	81.9%
Homemaker	63.9%	54	49.9%	77.9%
Student	100.0%	1		
Retired	61.4%	659	56.7%	66.1%
Unable to Work	66.3%	42	43.1%	89.4%
Income				
Less than $10,000	61.7%	25	41.5%	82.0%
$10,000 to $14,999	73.7%	53	57.1%	90.3%
$15,000 to $19,999	47.3%	57	31.0%	63.6%
$20,000 to $24,999	48.1%	67	35.2%	61.1%
$25,000 to $34,999	56.6%	107	44.4%	68.7%
$35,000 to $49,999	63.1%	147	53.3%	73.0%
$50,000 to $74,999	58.2%	96	46.5%	69.9%
Above $75,000	60.7%	117	49.7%	71.6%
Race				
White Non-Hispanic	61.7%	731	57.5%	66.0%
Black/African American	21.1%	10	4.5%	37.8%
Hispanic	61.3%	53	48.5%	74.2%
Asian/Pacific Islander	48.9%	3	0.0%	100.0%
American Indian	82.1%	11	66.2%	98.0%
Other	39.0%	20	16.6%	61.5%

Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizona adults aged 65 and above who reported that they had a flu vaccination in the past 12 months. Responses are also presented by sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Respondents Age 65 or Older Who Reported Having a Flu Vaccine in the Past 12 Months, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Preventive 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.[21] Three types of tests are recommended by the United States Preventive Services Task Force (USPSTF) to screen for colon cancer: 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. It is considered a noninvasive and cost-effective way to screen for colorectal cancer. The test is completed at home and then submitted to a lab for analysis. The optimal use of the FOBT is part of a programmatic screening as suggested by the USPSTF. A positive FOBT may indicate colon cancer, or polyps in the colon.[22] 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.[23] Over one third (35.5%) of Arizonans over the age of 50 who were surveyed in 2013 reported they had a FOBT, equal to the national median (see **Figure 8A**).

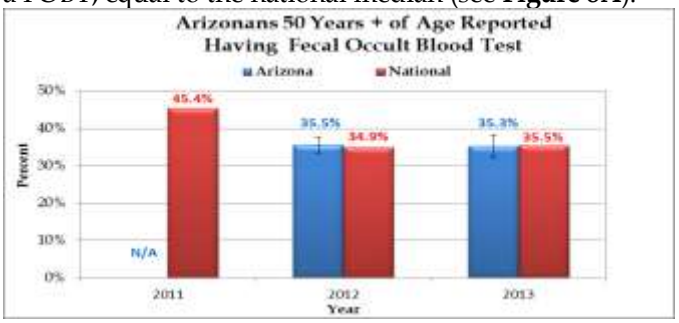


Figure 8A. Arizona 2013 BRFSS respondents over the age 50 who reported ever having a fecal occult blood test.

Although Arizona had fewer BRFSS respondents reporting having had an FOBT, compared to the other states in the nation, Arizona fell into the second-highest class for FOBT (see **Figure 8B**).

Figure 8B. BRFSS 2013 respondents who were 50 years old or older who reported having had a FOBT by state (natural breaks).

Of those surveyed who reported having a FOBT, only 35.5% nationally had the exam within a year. The largest proportion of BRFSS respondents who reported an FOBT had it more than five years ago (see **Figure 8C**).

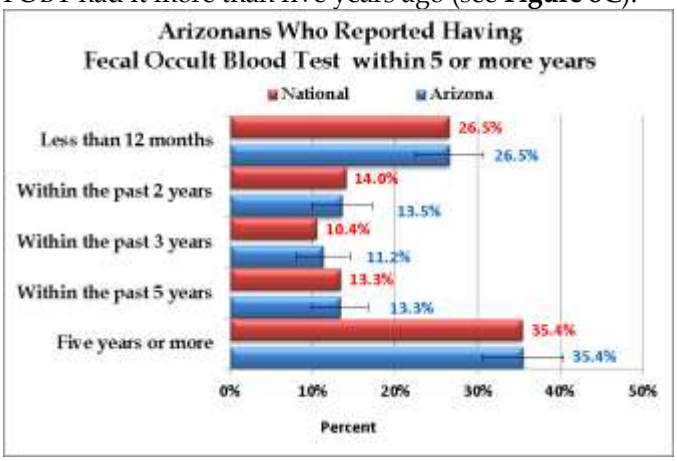


Figure 8C. Arizona and national BRFSS 2013 survey distribution of when respondents reported last having an FOBT.

Colorectal cancer is associated with lifestyle factors such as being overweight or obese; alcohol consumption; low fruit and vegetable intake and tobacco use.[24] Arizona residents who eat less than five servings of fruit and vegetables a day, who were former or current smokers, who are overweight or obese, and who drink heavily are less likely to report having an FOBT (see **Figure 8D**). 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.

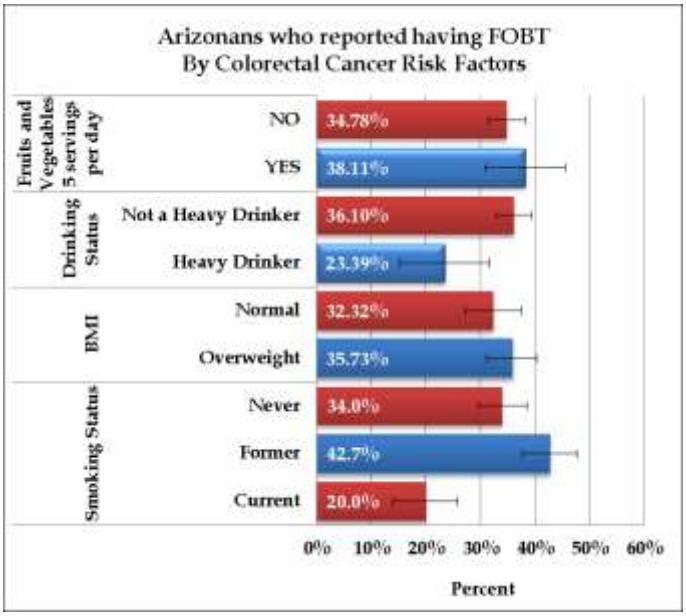


Figure 8D. Arizonans who reported having FOBT by colorectal cancer risk factors-BRFSS 2013 survey.

21 Haggar FA, Boushey RP. Colorectal Cancer Epidemiology: Incidence, Mortality, Survival, and Risk Factors. *Clinics in Colon and Rectal Surgery*. 2009;22(4):191-197. doi:10.1055/s-0029-1242458.
22 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>
23 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>.

24 Haggar FA, Boushey RP. Colorectal Cancer Epidemiology: Incidence, Mortality, Survival, and Risk Factors. *Clinics in Colon and Rectal Surgery*. Nutritional Practices, Physical Activity and Obesity, Cigarette Smoking, Heavy Alcohol Consumption 2009;22(4):191-197. doi:10.1055/s-0029-1242458.

Preventive Practices
Fecal Occult Blood Test

Arizonans 50 years of age & Older Reported Having Fecal Occult Blood Test

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**35.5%**	10		
Arizona	**35.3%**	995	32.3%	38.3%
Sex				
Male	32.8%	379	28.2%	37.4%
Female	37.2%	616	33.3%	41.2%
Age				
35-44	8.8%	1		
45-54	13.9%	53	8.7%	19.1%
55-64	29.8%	268	24.8%	34.9%
65+	48.5%	673	44.2%	52.9%
Marital Status				
Married	36.9%	557	32.7%	41.0%
Divorced	30.4%	143	23.0%	37.8%
Widowed	41.9%	227	35.3%	48.6%
Separated	11.2%	7	1.4%	21.0%
Never Married	25.7%	38	13.5%	38.0%
Unmarried Couple	25.4%	14	10.3%	40.6%
Education Attainment				
Less than high school	22.3%	50	12.5%	32.2%
High School/GED	31.0%	230	25.7%	36.2%
Some College/Technical School	39.9%	319	34.5%	45.3%
College/Technical School Graduate	39.3%	388	34.6%	44.1%
Employment Status				
Employed for Wages	20.9%	142	15.9%	25.9%
Self Employed	35.8%	61	23.7%	48.0%
Out of Work	23.0%	27	11.0%	34.9%
Homemaker	33.6%	67	22.5%	44.7%
Student	9.9%	1	0.0%	27.5%
Retired	48.4%	632	44.0%	52.8%
Unable to Work	23.6%	63	14.0%	33.2%
Income				
Less than $10,000	17.1%	27	8.3%	26.0%
$10,000 to $14,999	36.5%	57	18.7%	54.3%
$15,000 to $19,999	29.6%	62	20.2%	39.0%
$20,000 to $24,999	26.9%	86	18.9%	34.9%
$25,000 to $34,999	34.1%	117	25.0%	43.2%
$35,000 to $49,999	43.9%	175	35.9%	51.9%
$50,000 to $74,999	38.9%	137	30.4%	47.4%
Above $75,000	34.9%	182	28.3%	41.4%
Race				
White Non-Hispanic	37.8%	866	34.6%	41.0%
Black/African American	46.3%	21	25.6%	67.0%
Hispanic	22.8%	65	14.2%	31.4%
Asian/Pacific Islander	16.4%	5	0.0%	35.7%
American Indian	30.9%	14	7.9%	53.8%
Other	33.0%	24	16.0%	50.0%

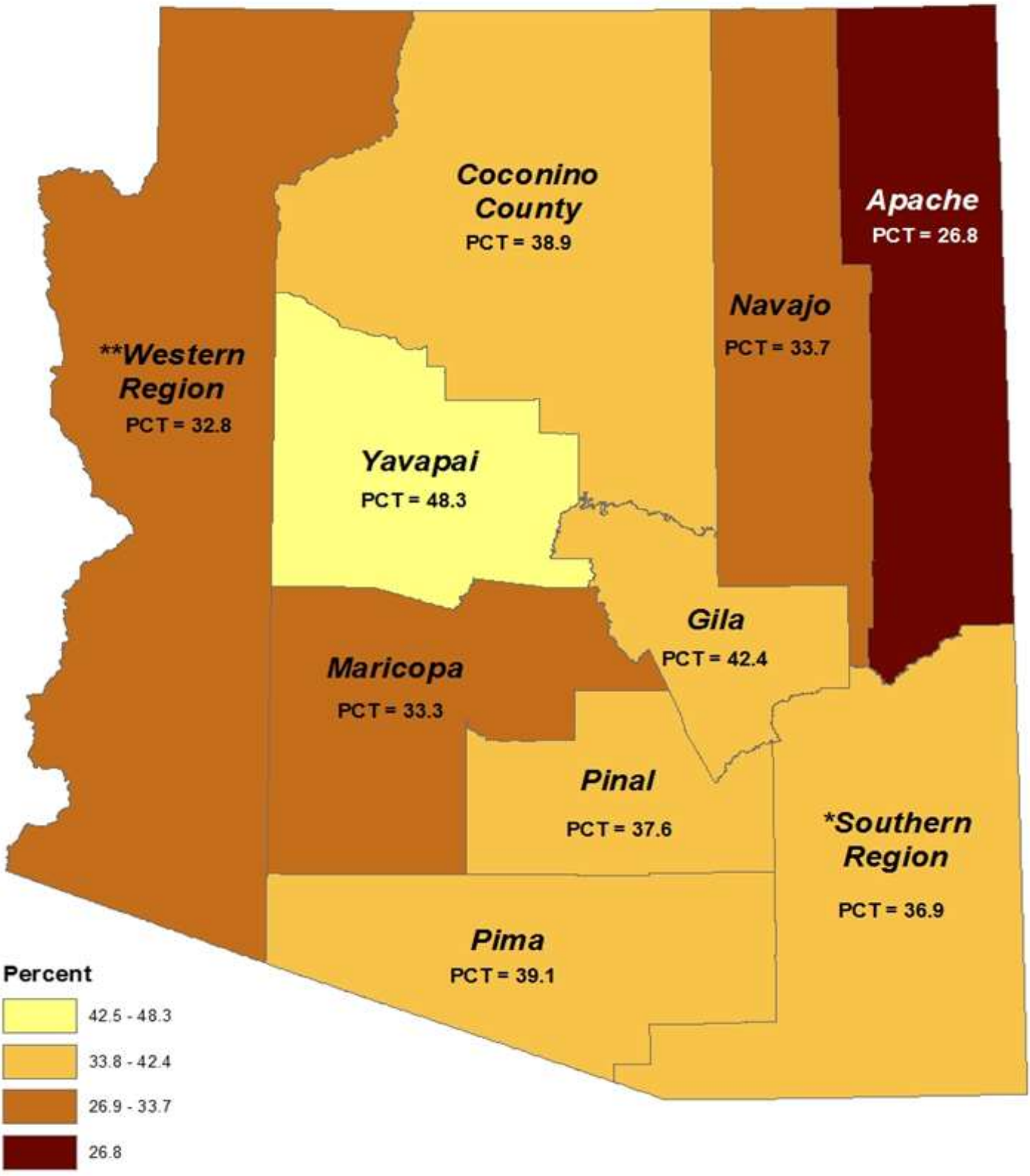
Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left reflects surveyed Arizona adults aged 50 and over who indicated they have ever had a FOBT. Results are also presented by sex, age, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Age 50+ Reporting Having had a Fecal Occult Blood Test, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Preventive Practices
Colonoscopy and Sigmoidoscopy

In 2013, according to the Arizona hospital discharge database, there were 3,985 unique inpatient/emergency discharges that were associated with colorectal cancer (CRC). The total charges accumulated in 2013 were more than $287 million. The distribution of the discharges and their associated payer type are presented in the (**Table 5** below).

Colorectal Cancer Associated Inpatient & Emergency Department Discharges

Payer Type	Number of Discharges	Average Charges	Total Charges
Charity	11	$102,138	$1,123,519
Medicaid	350	$65,650	$22,977,325
Medicare	2,239	$72,112	$161,458,056
Other	70	$71,640	$5,014,816
Private Insurance	1,152	$71,176	$81,994,386
Self-Pay	163	$94,284	$15,368,231
Total	**3,985**	**$476,999**	**$287,936,333**

Table 5. Arizona's 2013 HDD colorectal cancer emergency department and admissions ICD-9 codes: 153.0-153.9, and 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 (USPSTF).[25] Research has shown that colonoscopies can reduce mortality related to CRC by 29%; sigmoidoscopy has been shown to reduce CRC-related mortality by 26%.[26, 27] In the 2013 BRFSS, 63% of Arizonans over the age of 50 reported having had a colonoscopy or sigmoidoscopy, similar to the national median (see **Figure 9A**).

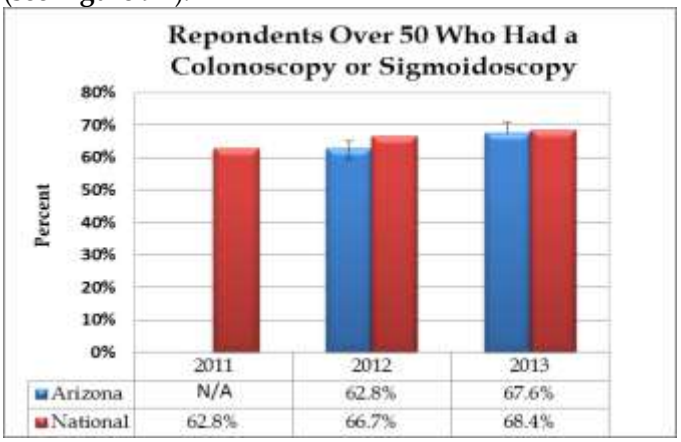


Figure 9A. Arizona and National 2013 BRFSS respondents over the age 50 who reported ever having a sigmoidoscopy or colonoscopy. Arizona's BRFSS 2011 survey excluded question regarding those who had a sigmoidoscopy or colonoscopy.

25 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>.
26 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. doi: 10.1053/j.gastro.2010.06.052.
27 Schoen RE, Pinsky PF, Weissfeld JL, et al. Colorectal-Cancer Incidence and Mortality with Screening Flexible Sigmoidoscopy. *The New England journal of medicine*. 2012;366(25):2345-2357. doi:10.1056/NEJMoa111 4635.

When compared to the other states in the nation Arizona fell into the third lowest class for its residents having had a colonoscopy or sigmoidoscopy (see **Figure 9B**).

Figure 9B. Arizona 2013 BRFSS respondents who were 50 years or older who reported having had a sigmoidoscopy or colonoscopy by state (natural breaks).

Arizonans surveyed in 2013 who reported having a known risk for CRC (eating less than five servings of fruit and vegetables daily, being a former or current smoker, being overweight, obese or drinking heavily) also more frequently reported having had a colonoscopy or sigmoidoscopy (see **Figure 9C**).

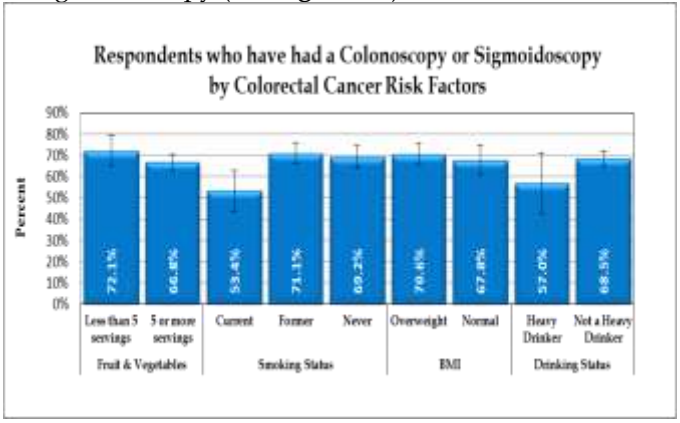


Figure 9C. Arizona's 2013 BRFSS who reported having a Colonoscopy or Sigmoidoscopy and categorized by colorectal cancer risk factors.

BRFSS 2013 survey results indicate that 19.2% of Arizonans over the age of 50 reported they had either a sigmoidoscopy or colonoscopy within the last 5 years – similar to the national median of 21.2% (see **Figure 9D**).

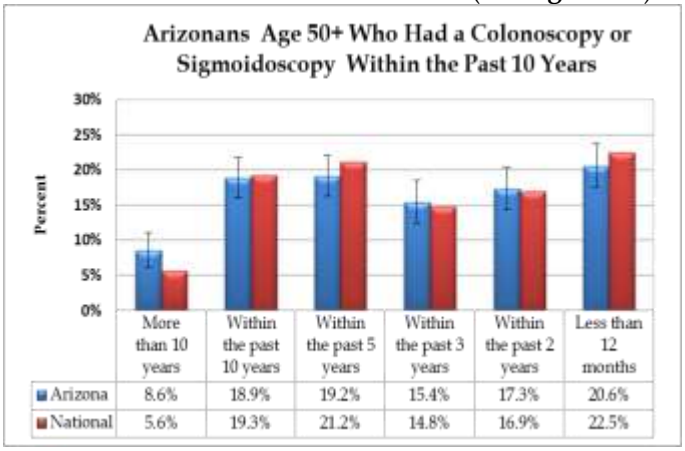


Figure 9D. Arizona and national 2013 BRFSS respondents over the age of 50 reporting having had a colonoscopy and sigmoidoscopy.

Preventive Practices
Colonoscopy and Sigmoidoscopy

Arizonans 50 years of age & Older Who Had a Colonoscopy or Sigmoidoscopy in the 2013 BRFSS				
Characteristics	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**68.4%**	10		
Arizona	**67.6%**	1727	64.2%	71.0%
Sex				
Male	67.7%	677	61.9%	73.4%
Female	67.5%	1050	63.5%	71.5%
Age				
45-54	45.9%	130	37.1%	54.7%
55-64	67.1%	530	60.5%	73.7%
65+	77.2%	1067	73.5%	81.0%
Marital Status				
Married	72.0%	958	67.3%	76.7%
Divorced	63.5%	273	55.2%	71.7%
Widowed	69.0%	366	62.5%	75.6%
Separated	32.8%	16	15.3%	50.2%
Never Married	38.4%	66	25.6%	51.2%
Unmarried Couple	68.9%	36	53.9%	84.0%
Education Attainment				
Less than high school	52.5%	114	38.4%	66.6%
High School/GED	64.7%	419	58.2%	71.2%
Some College/Technical School	67.7%	502	62.2%	73.2%
College/Technical School Graduate	77.2%	682	73.0%	81.4%
Employment Status				
Employed for Wages	61.0%	315	54.0%	68.0%
Self Employed	61.7%	105	48.4%	74.9%
Out of Work	55.0%	49	37.4%	72.6%
Homemaker	56.0%	101	44.2%	67.8%
Student	9.9%	1	0.0%	27.5%
Retired	79.5%	1006	75.8%	83.1%
Unable to Work	52.8%	141	38.7%	66.8%
Income				
Less than $10,000	53.6%	70	41.8%	65.4%
$10,000 to $14,999	55.6%	98	33.9%	77.2%
$15,000 to $19,999	56.4%	114	43.5%	69.2%
$20,000 to $24,999	68.0%	147	59.2%	76.7%
$25,000 to $34,999	63.8%	192	53.0%	74.6%
$35,000 to $49,999	73.4%	285	65.6%	81.3%
$50,000 to $74,999	75.6%	232	68.2%	83.1%
Above $75,000	79.5%	351	73.1%	85.8%
Race				
White Non-Hispanic	70.7%	1464	67.5%	74.0%
Black/African American	76.5%	40	58.9%	94.1%
Hispanic	54.0%	148	41.2%	66.8%
Asian/Pacific Islander	70.3%	10	39.5%	100.0%
American Indian	41.6%	29	26.5%	56.8%
Other	58.3%	36	39.3%	77.3%

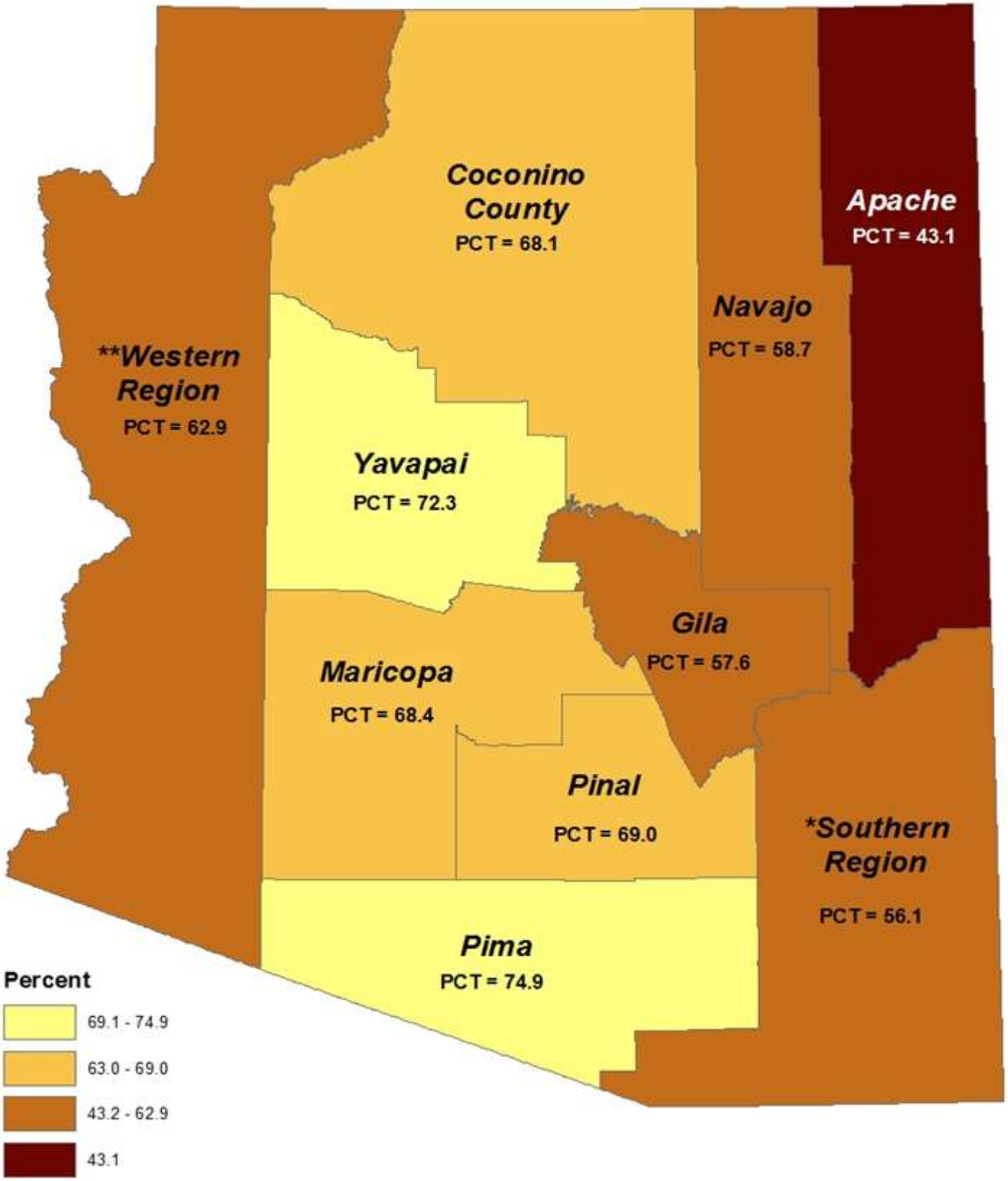
Use caution in interpreting cell sizes less than 50. N* is weighted.

The table to the left displays the results of surveyed Arizonans aged 50 and above that reported having ever had either a sigmoidoscopy or colonoscopy. Results are also presented by sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Over 50 Years Old Who Reported Having a Colonoscopy or Sigmoidoscopy, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Preventive Practices
Preconception Health

Preconception health refers to the health of women and men before and between pregnancies and focuses on improving one's health *before* becoming pregnant in the hopes of improving future pregnancy and birth outcomes in the future, resulting in healthier infants and children.[28]

As preconception health is about getting and staying healthy overall throughout the lifespan, all women and men can benefit from improving their preconception health, regardless of whether they plan to have a baby. Preconception health encompasses multiple areas of health, including reproductive health, nutrition and physical activity, tobacco use, substance abuse and learning to manage chronic conditions,[29] not only improving the lives of individuals, but also leading to healthier communities as a whole.

In addition, while no one expects an unplanned pregnancy, the reality is that it happens frequently. About half of all pregnancies in the United States are unintended,[30] making preconception health even more important to ensure optimal health *before pregnancy* and safeguarding babies' future health. In 2013, the BRFSS survey asked respondents if a doctor, nurse or other health care worker had ever talked with them about ways to prepare for a healthy pregnancy and baby. The percentage of Arizonans surveyed indicating they had been asked was 36.9% in 2013, lower than response levels since 2011 (see **Figure 10A**).

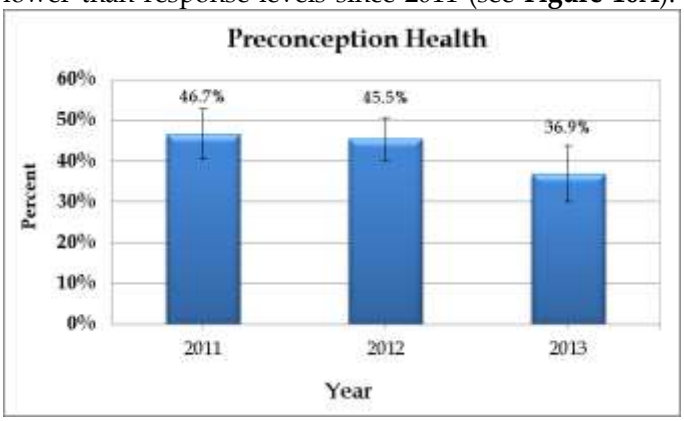


Figure 10A. Arizona female respondents between the ages of 18 and 45 who reported a doctor, nurse, or other health care worker ever having talked with them about ways to prepare for a healthy pregnancy and baby.

Recognizing the importance of preconception health, since 2006, the Centers for Disease Control and Prevention have recommended that preconception health and care be incorporated into routine primary care visits.[31]

While all women and men of reproductive age should receive preconception care, it is particularly important for women with chronic diseases.[32] Chronic diseases before and during pregnancy, such as diabetes, hypertension, high cholesterol and mental health conditions, have been associated with increased risk of adverse birth outcomes, such as pre-term birth, low birth weight, birth defects and even infant mortality.[33] During preconception health counseling, women can discuss with their health professionals ways to better manage their conditions, increase compliance with treatment and alter treatment plans if necessary (see **Figure 10B).**

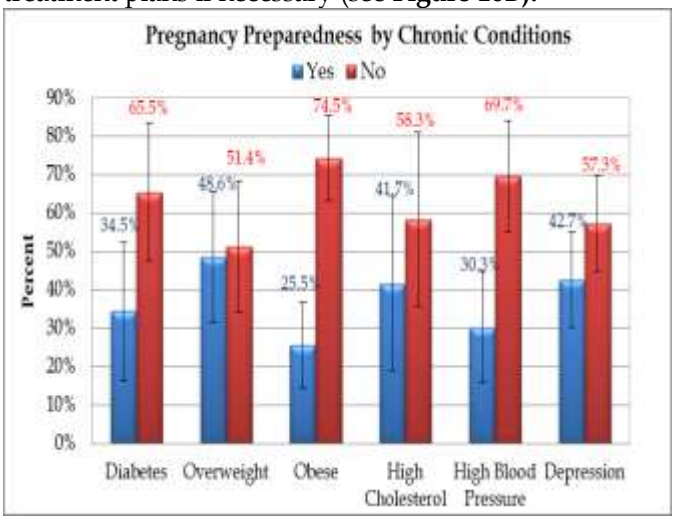


Figure 10B. Arizona women who reported a health care professional ever having talked with them about ways to prepare for a healthy pregnancy and baby by chronic conditions.

[28] Web: 14 January 2014 (http://www.azdhs.gov/prevention/womens-childrens-health/womens-health/index.php#preconception-home)
[29] Mumford SL, Michels KA, Salaria N, Valanzasca P, Belizán JM. Preconception care: it's never too early. *Reproductive Health*. 2014;11:73. doi:10.1186/1742-4755-11-73.
[30](Kathryn M. Curtis & Curtis, PhD, 2013) *Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion Center for Chronic Disease Prevention and Health Promotion;*Finer LB, Zolna MR. Unintended pregnancy in the United States: incidence and disparities, 2006. Contraception 2011;84:478–85.

[31] Bello JK et al. Trends in Contraceptive and Preconception Care in United States Ambulatory Practices. Fam Med. 2015;47(4):264-271.
[32] Steel A, Lucke J, Adams J. The prevalence and nature of the use of preconception services by women with chronic health conditions: an integrative review. *BMC Women's Health*. 2015;15:14. doi:10.1186/s12905-015-0165-6.
[33] Neuman G. Counselling a patient with chronic illness before pregnancy. J Popul Ther Clin Pharmacol. 2014;21(3):e520-5.

Preventive Practices
Preconception Health

Arizonan Women of Childbearing Age (Between the Ages of 18 and 45) Who Reported a Health Care Professional Ever Having Talked to Them About Ways to Prepare for a Healthy Pregnancy and Baby

Characteristc	Percent	N	Confidence Interval Lower Mean	Upper Mean
Sex				
Female	**36.9%**	174	30.0%	43.8%
Age				
18-24	13.1%	18	4.9%	21.4%
25-34	39.6%	55	27.0%	52.1%
35-44	53.0%	101	42.2%	63.8%
Marital Status				
Married	52.2%	102	42.0%	62.5%
Divorced	39.5%	21	20.0%	59.0%
Widowed	100%	1		
Separated	74.2%	9	61.2%	87.2%
Never Married	14.2%	33	7.5%	20.9%
Unmarried Couple	31.5%	8	3.8%	59.2%
Education Attainment				
Less than high school	36.1%	14	16.8%	55.5%
High School/GED	29.7%	42	19.7%	39.8%
Some College/Technical School	37.6%	58	25.2%	50.0%
College/Technical School Graduate	44.9%	60	33.6%	56.2%
Employment Status				
Employed for Wages	40.5%	103	31.3%	49.8%
Self Employed	41.2%	11	28.6%	53.9%
Out of Work	20.5%	10	2.3%	38.6%
Homemaker	56.1%	39	40.2%	72.1%
Student	9.1%	5	0.0%	21.2%
Unable to Work	30.6%	6	9.1%	52.0%
Income				
Less than $10,000	19.6%	10	5.3%	33.9%
$10,000 to $14,999	18.7%	10	3.6%	33.8%
$15,000 to $19,999	46.3%	9	10.8%	81.8%
$20,000 to $24,999	33.6%	13	11.8%	55.5%
$25,000 to $34,999	39.8%	21	18.7%	60.9%
$35,000 to $49,999	37.2%	17	13.7%	60.8%
$50,000 to $74,999	36.1%	23	19.2%	53.0%
Above $75,000	55.4%	53	38.5%	72.2%
Race				
White Non-Hispanic	41.3%	105	31.9%	50.7%
Black/African American	14.1%	3	0.0%	29.2%
Hispanic	38.4%	46	25.0%	51.8%
Asian/Pacific Islander	3.4%	1		
American Indian	48.1%	12	27.5%	68.8%
Other	19.8%	7	0.0%	43.6%

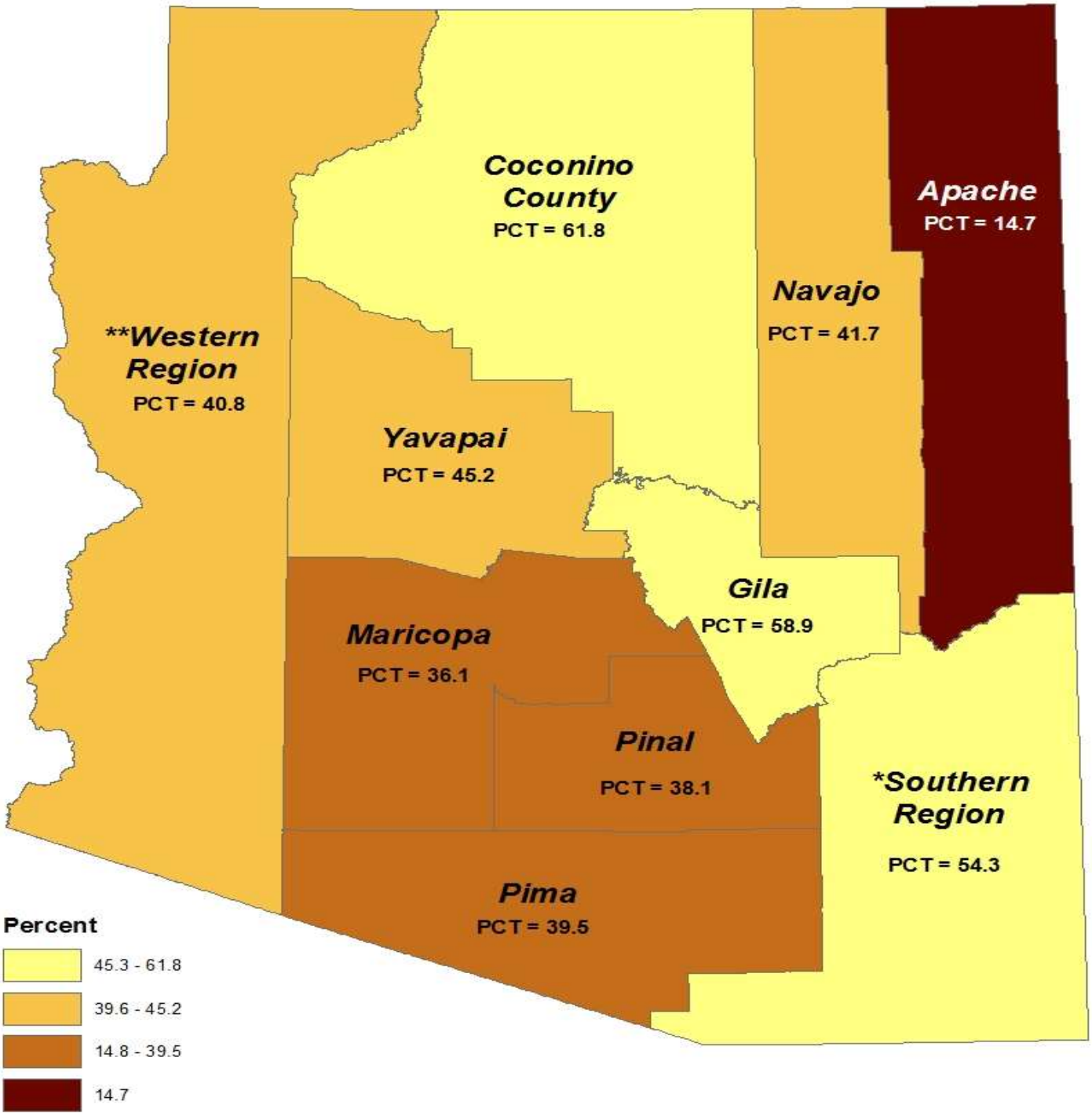
Use caution in interpreting cell sizes less than 50. N* is uneighted

The table to the left displays the characteristics of Arizona women of childbearing age (between the age of 18 and 45) who reported a health care professional ever having talked to them about ways to prepare for a healthy pregnancy and baby. The data are reported by age categories, marital status, educational attainment, employment status, income, and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Female Respondents Who Reported A Health Care Professional Ever Having Talked with Them About Ways to Prepare for A Healthy Pregnancy and Baby, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

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

Arizona Department of Health Services

Barriers to Healthcare

As of the writing of this report in early 2014, the United States has entered a new healthcare model with the implementation of Patient Protection and Affordable Care Act (ACA). Under the ACA, Medicaid coverage was 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 100% and 400% of the federal poverty line. Continued monitoring of barriers to healthcare will provide the feedback needed to assess Arizona's efforts to provide services and care to its population. On March 23, 2010, President Obama signed the Affordable Care Act and set into place an effort that will help ensure Americans have secure, stable, affordable health insurance. As part of the law the Centers for Consumer Information & Insurance Oversight (CCIO) within the division of the Centers for Medicare & Medicaid Services (CMS) and part of the Department of Health & Human Services (DHHS) provides national leadership in setting and enforcing standards for health insurance that promote fair and reasonable practices to ensure that affordable, quality health coverage is available to all Americans. People with low and middle incomes are eligible for tax subsidies that will help them buy coverage from state health insurance exchanges. The Affordable Care Act also broadens Medicaid eligibility in many states including Arizona to generally include individuals with income below 133% of the Federal poverty line ($14,400 for an individual and $29,300 for a family of 4), including single adults without children who were previously not generally eligible for Medicaid. Persons living with human immunodeficiency virus (HIV) who meet this income threshold no longer have to wait for an AIDS diagnosis in order to become eligible for Medicaid. The ACA also helps people with public or private coverage have access to the information they need to get the best quality care.[34] This section of the 2013 BRFSS Annual Report will include analysis of the following:

- **Poverty (variable calculated from INCOME2 NUMMEN NUMWOMEN and CHILDREN) -** binary variable where household size and income are used to calculate 133% of the federal poverty line.
- **Healthcare Insurance status (variable calculated from HLTHPLN1) -** binary variable where having insurance is considered a positive outcome and not having insurance is considered a negative outcome.
- **Cannot Afford Needed Healthcare (variable MEDCOST) -** binary variable where being able to afford needed healthcare is a positive outcome and being able to not afford needed health care is considered a negative outcome.
- **Usual Source of Healthcare (variable calculated from PERSDOC2) –** binary variable in which having a usual health care provider is considered a positive outcome and not having a usual health care provider is considered 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.
in C1 and E4 of the
ADHS Strategic Map.
(See Page 9)

[34] Web. 14 January 2014 http://www.cdc.gov/hiv/pdf/policies_Affordable_Care_Act_English.pdf

Barriers to Health Care
Poverty

Globally there are approximately 1.2 billion people living in extreme poverty (less than a dollar a day).[35] It is very rare to find extreme poverty in the U.S.; however, poverty does exist. Poverty in the U.S. is based on income and the size of the household. Research has shown that individuals who live in poverty have worse health outcomes. The U.S. Census Bureau sets the federal poverty limit (FPL) using annual household income data and household size.[36] In BRFSS 2013, 6.4% of Arizonans surveyed reported they lived with household incomes below 133% of FPL, above the national 2013 BRFSS median. The charts that follow report respondents indicating they were at or below 133% of the FPL in each year ("In Poverty"). The proportion of survey respondents below 133% FPL has declined for both national median and Arizona survey respondents each year since 2011 (see **Figure 11A**).

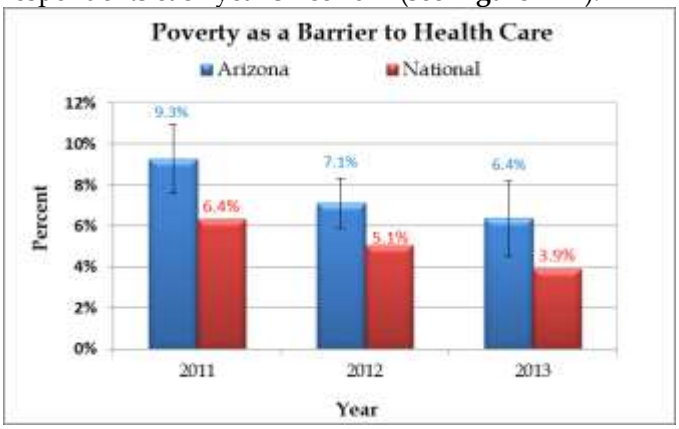


Figure 11A. Arizona and National BRFSS 2011-2013 survey respondents who reported living in poverty.

When looking at all the states in the nation, Arizona is in the highest class for percent of impoverished respondents (see **Figure 11B**).

Figure 11B. BRFSS 2013 respondents who reported living in poverty by state (natural breaks).

The prevalence of poverty is broadly similar among Arizonans surveyed in 2013 when different chronic conditions are taken into consideration. Those reporting heart attack or COPD diagnoses reported poverty slightly more frequently than those with other conditions (see **Figure 11C)**.

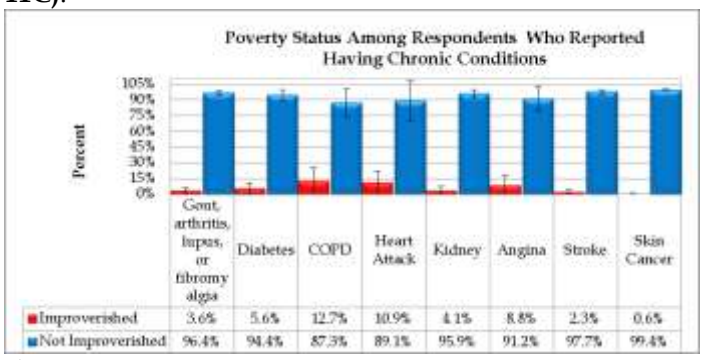


Figure 11C. Arizona 2013 BRFSS data assessing poverty status and chronic conditions.

Arizona BRFSS 2013 respondents who reported living in poverty (below 133% of FPL) and having no insurance constituted 9.3% in 2011 and 5.5% in 2013. Likewise, uninsured individuals (in purple) who earned income above the poverty line (above 133% of FPL), contributed to 40.7% in 2011 and 44.5% in 2013 and apparently rising (see **Figure 11D**).

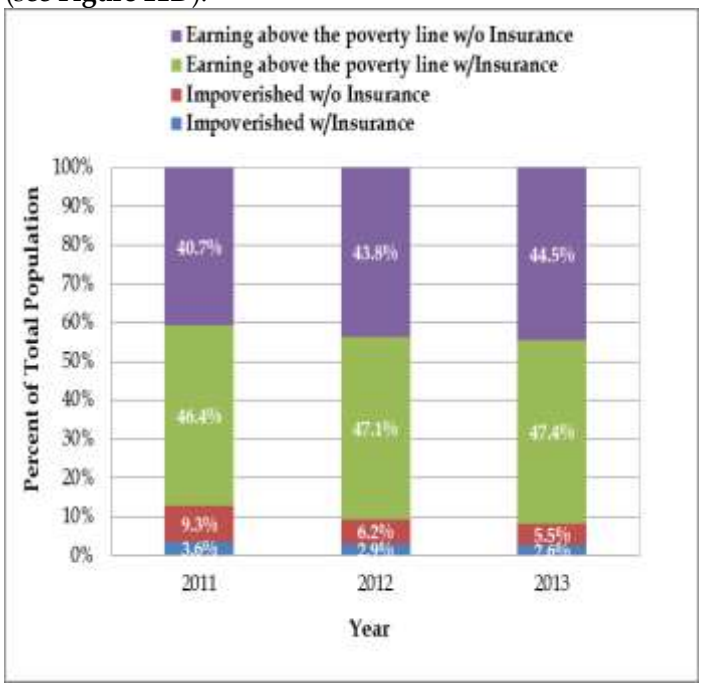


Figure 11D. Arizona 2011-2013 BRFSS respondents reporting insurance status by poverty status.

[35] Wagstaff, Adam. (2002). Poverty and health sector inequalities. *Bulletin of the World Health Organization*, *80*(2), 97-105. Retrieved March 29, 2016, from http://www.scielosp.org/scielo.php?script=sci_arttext&pid=S0042-96862002000200004&lng=en&tlng=en.

[36] Federal Register, Vol. 78, No. 16, January 24, 2013, pp. 5182-5183. Web. Dec. 2013. "The poverty guidelines updated periodically in the Federal Register by the U.S. Department of Health and Human Services under the authority of 42 U.S.C. 9902(2)" http://aspe.hhs.gov/2013-poverty-guidelines.html

Barriers to Health Care
Poverty

BRFSS 2013 Arizonans Respondents
Who are Living in Poverty

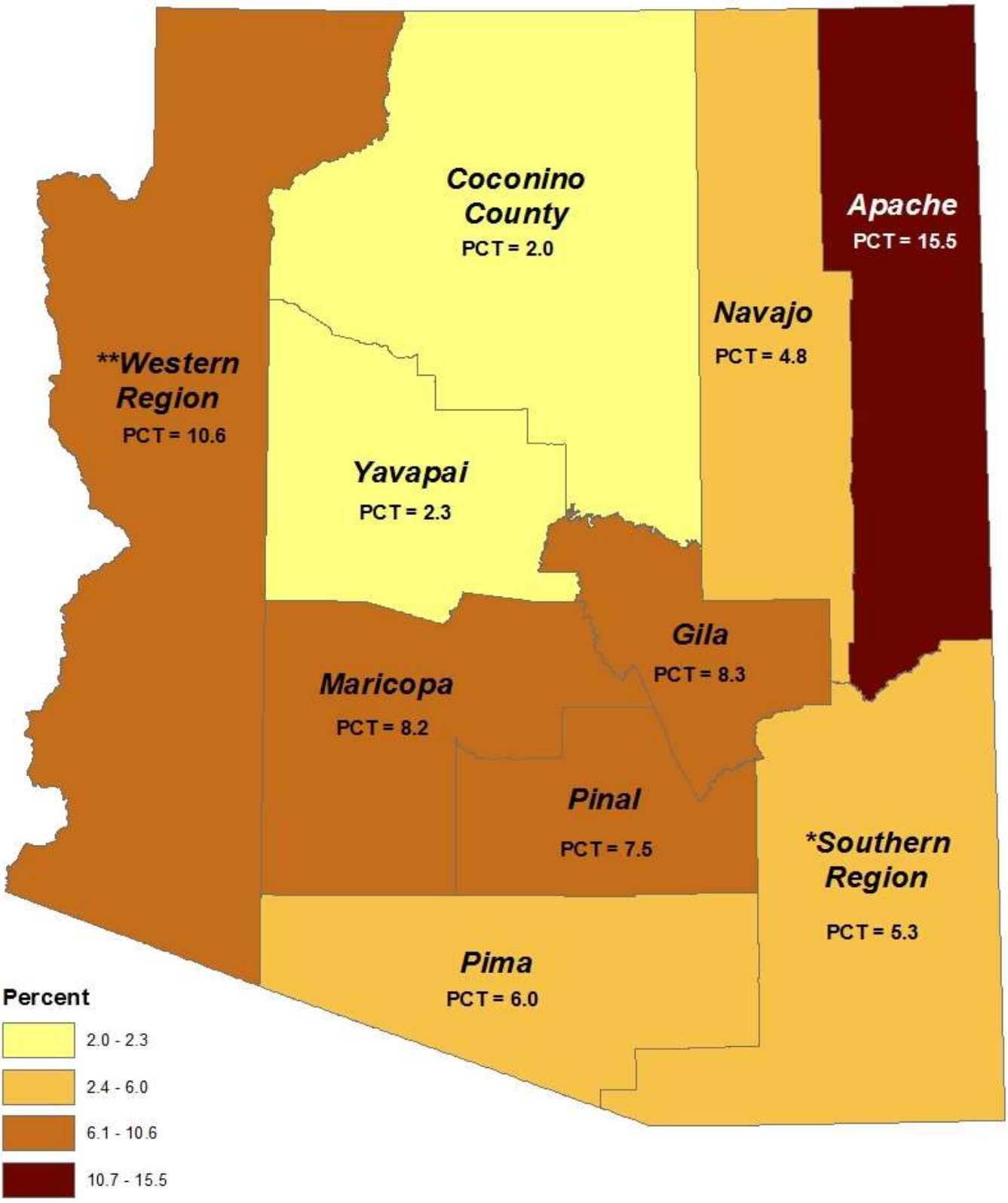
Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**3.9%**	53		
Arizona	**6.4%**	156	4.5%	8.2%
Sex				
Male	6.2%	46	3.2%	9.1%
Female	6.5%	110	4.4%	8.7%
Age				
18-24	7.0%	16	0.6%	13.4%
25-34	7.5%	34	3.8%	11.2%
35-44	10.5%	40	4.3%	16.7%
45-54	9.4%	29	4.2%	14.7%
55-64	4.1%	26	0.8%	7.4%
65+	0.7%	11	0.1%	1.3%
Marital Status				
Married	7.9%	75	4.9%	10.8%
Divorced	2.3%	19	1.0%	3.6%
Widowed	0.9%	9	0.2%	1.6%
Separated	9.6%	9	3.0%	16.2%
Never Married	5.4%	33	1.6%	9.1%
Unmarried Couple	11.1%	9	2.7%	19.5%
Education Attainment				
Less than high school	19.4%	49	11.6%	27.3%
High School/GED	5.8%	51	3.0%	8.6%
Some College/Technical School	4.4%	35	1.7%	7.1%
College/Technical School Graduate	1.2%	21	0.5%	2.0%
Employment Status				
Employed for Wages	6.7%	56	3.9%	9.6%
Self Employed	7.0%	14	0.3%	13.6%
Out of Work	7.5%	24	3.9%	11.2%
Homemaker	11.3%	27	4.8%	17.7%
Student	7.3%	9	0.0%	16.0%
Retired	0.4%	9	0.0%	0.8%
Unable to Work	11.5%	17	0.0%	23.4%
Income				
Less than $10,000	7.6%	28	4.1%	11.2%
$10,000 to $14,999	16.4%	26	3.7%	29.0%
$15,000 to $19,999	30.1%	39	17.5%	42.7%
$20,000 to $24,999	15.2%	35	7.6%	22.9%
$25,000 to $34,999	11.2%	25	4.6%	17.9%
$35,000 to $49,999	1.2%	2	0.0%	3.2%
$50,000 to $74,999	0.1%	1	0.0%	0.2%
Above $75,000				
Race				
White Non-Hispanic	2.2%	66	1.4%	3.0%
Black/African American	5.7%	6	0.0%	13.1%
Hispanic	15.7%	58	10.1%	21.3%
Asian/Pacific Islander	12.0%	2	0.0%	32.0%
American Indian	7.3%	19	4.0%	10.6%
Other	4.0%	5	0.0%	8.0%

Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizona adults living in poverty (defined as earning less than 133% of the federal poverty line) by sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Respondents Who Reported Living In Poverty, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Barriers to Health Care
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. A number of lawsuits followed, each challenging the constitutionality of parts of the ACA. The U.S. Supreme Court combined several of these cases into one. On June 28, 2012, the Supreme Court (i) upheld the part of the ACA that requires all citizens to obtain health insurance or pay a penalty on taxable income, and (ii) struck down as unconstitutional the part that "penalized" states with loss of federal funding for Medicaid programs for not participating in the ACA, but approved the federal government providing states a choice to accept a federal grant and comply with accompanying conditions, or not participate. [37]

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 designed to provide assistance in obtaining medical care to pregnant women, children, needy families, the blind, the elderly and the disabled. Under the ACA, Medicaid will provide coverage to adults with an income up to 133% of the FPL.[37] In Arizona in 2013, there were over 500,000 inpatient and emergency department discharges with charges totaling more than $31.9 billion (see **Table 6**). Uninsured individuals accounted for 7.4% of the hospitalizations and accrued charges over 2.37 billion dollars (sum of Charity and Self-Pay payer statuses).

2013 Arizona Inpatient & Emergency Department Hospital Discharges			
Payer Type	Number of Discharges	Total Charges	Average Length of Stay (Days)
Charity	2,138	$142,636,349	7.8
Medicaid	76,334	$3,674,042,193	5.2
Medicare	327,434	$18,692,875,422	5.2
Other	20,260	$1,226,411,885	5.1
Private Insurance	108,465	$5,990,098,259	4.8
Self-Pay	41,888	$2,222,917,390	4.9
Total	**576,519**	**$31,948,981,500**	

Table 6. Inpatient and emergency department discharges in 2013 by payer type.

Approximately one in five (20.5%) Arizonans surveyed in 2013 report they do not have insurance, which is above the national median. Data from 2011 through 2013 predate the implementation of the ACA, and can establish a baseline against which to measure the impact of the ACA (see **Figure 12A**).

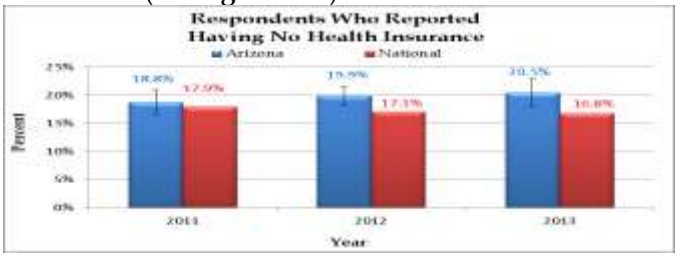


Figure 12A. Arizona and National 2011-2013 BRFSS respondents who reported that they had no health insurance.

When compared to other states in the nation, Arizona is in the second-highest category for respondents who reported that they do not have health insurance **(see Figure 12B).**

Figure 12B. Arizona BRFSS 2013 respondents who do not have insurance by state (natural breaks).

Research shows that uninsured African Americans and Hispanics are less likely than uninsured Whites to obtain needed medical care, and were more likely to be uninsured.[38] These findings are reflected among Arizonans surveyed each year since 2011 (see **Figure 12C**).

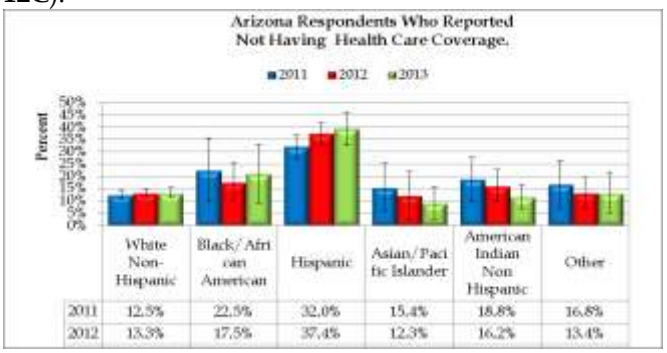


Figure 12C. Arizona 2011-2013 BRFSS three year rolling averages of individuals reporting no insurance by race/ethnicity

When assessing insurance status it is necessary to exclude the elderly from the analysis as individuals 65 and older qualify for Medicare. In 2013 Hispanics were 29.8% of Arizona's population (2013 ADHS estimates), but comprised 51.0% of Arizonans surveyed who reported having no health insurance. Hispanics factor disproportionately among those surveyed who are without health insurance (see **Figure 12D**).

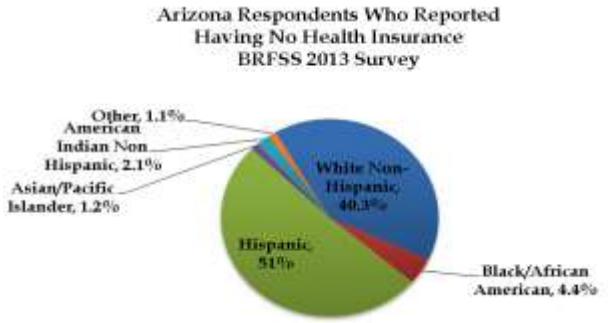


Figure 12D. The distribution of uninsured Arizonans reported from 2013 BRFSS by Race/Ethnicity (weighted percent).

37 Nat'l Fed'n of Indep. Bus. v. Sebelius, 567 U.S. 132 , S. Ct. 2566, 2608 (2012).

38 Lillie-Blaton 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. doi: 10.1377/hlthaff.24.2.398

Barriers to Health Care
No Health Insurance

BRFSS 2013 Arizonans Respondents
Who Reported Being UnInsured

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**16.8%**	53		
Arizona	**20.5%**	553	17.9%	23.0%
Sex				
Male	23.2%	261	19.2%	27.1%
Female	17.8%	292	14.8%	20.9%
Age				
18-24	24.5%	65	17.4%	31.5%
25-34	34.4%	93	26.3%	42.4%
35-44	20.0%	89	14.2%	25.8%
45-54	26.8%	143	20.6%	32.9%
55-64	19.9%	143	14.0%	25.9%
65+	1.0%	20	0.3%	1.7%
Marital Status				
Married	14.1%	194	11.0%	17.3%
Divorced	22.2%	107	15.6%	28.8%
Widowed	7.2%	23	1.8%	12.7%
Separated	39.2%	26	22.5%	55.8%
Never Married	32.7%	170	26.2%	39.1%
Unmarried Couple	37.1%	30	23.1%	51.2%
Education Attainment				
Less than highschool	43.6%	109	34.3%	52.9%
High School/GED	22.6%	193	18.1%	27.2%
Some College/Technical School	17.3%	164	13.5%	21.0%
College/Technical School Graduate	7.5%	85	5.0%	9.9%
Employment Status				
Employed for Wages	18.9%	221	15.2%	22.6%
Self Employed	39.9%	69	28.0%	51.8%
Out of Work	40.7%	96	30.8%	50.6%
Homemaker	29.0%	60	19.8%	38.1%
Student	25.0%	30	14.4%	35.6%
Retired	3.9%	35	1.5%	6.2%
Unable to Work	19.3%	38	8.2%	30.4%
Income				
Less than $10,000	34.1%	76	23.2%	45.1%
$10,000 to $14,999	37.3%	66	24.2%	50.4%
$15,000 to $19,999	27.6%	60	17.0%	38.3%
$20,000 to $24,999	40.0%	92	30.4%	49.7%
$25,000 to $34,999	23.6%	71	16.5%	30.8%
$35,000 to $49,999	17.3%	50	10.1%	24.5%
$50,000 to $74,999	6.3%	25	2.9%	9.7%
Above $75,000	5.5%	25	1.1%	9.9%
Race				
White Non-Hispanic	13.4%	309	11.3%	15.6%
Black/African American	21.1%	21	9.0%	33.1%
Hispanic	39.5%	169	32.6%	46.3%
Asian/Pacific Islander	9.1%	8	2.7%	15.6%
American Indian	11.9%	28	6.9%	17.0%
Other	13.4%	18	5.0%	21.7%

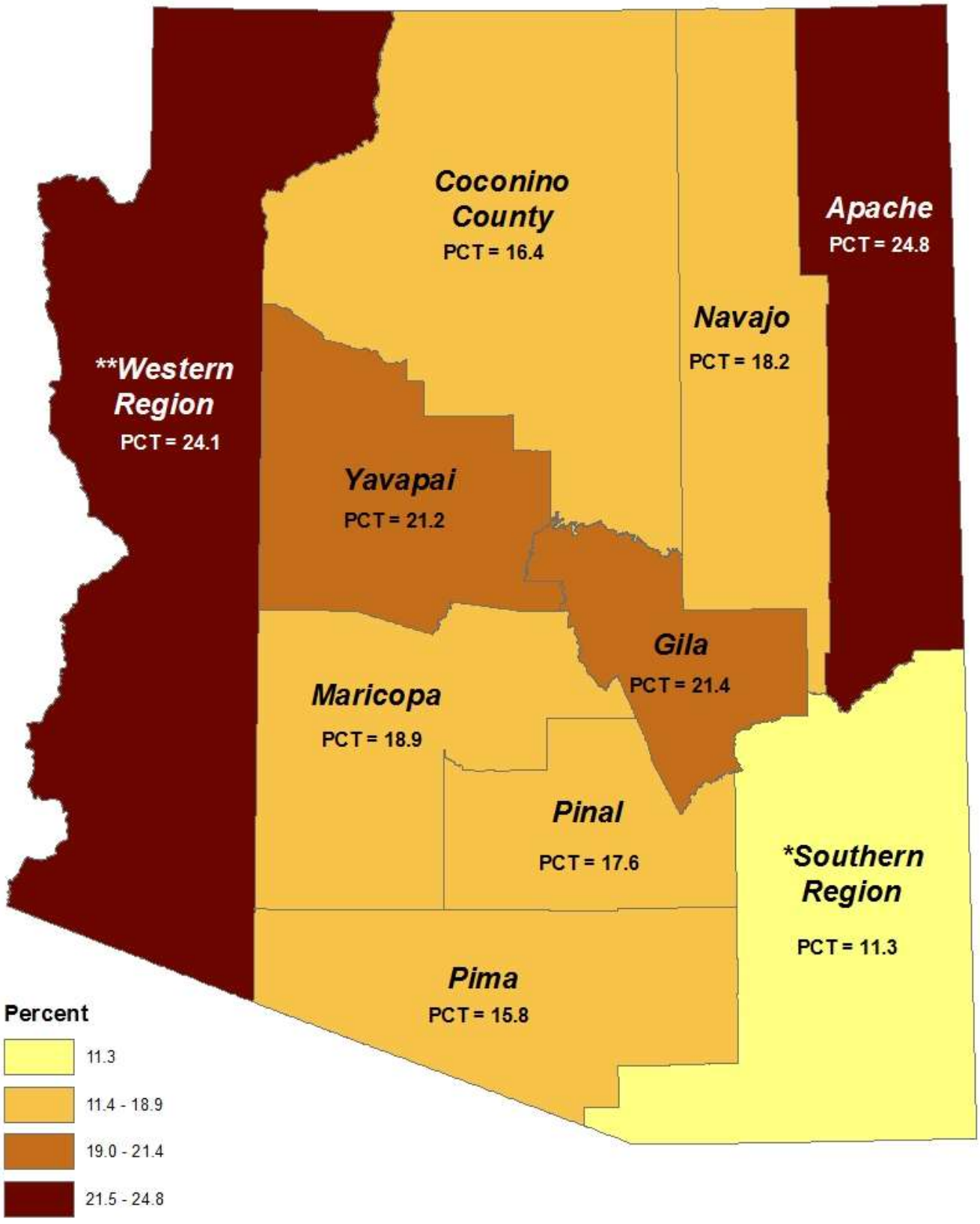
Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizonans that are uninsured by gender, age, categories, marital status, educational attainment, employment status, income, and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Who Reported Having No Health Insurance, By County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Barriers to Health Care
Could Not Afford Health Care

When people lack health insurance or sufficent cover-age, or their fincanial situation deteriorates, they may often forgo needed medical tests and therapies. Electing to forgo needed medical care has many ethical and clinical implications. Often, symptoms of one disease overlap with another, and tests are necessary to determine if a treatment is appropriate. Barriers to care associated with cost imposes ethical dilemmas upon healthcare professionals: do they treat the patient's symptoms, treat at minimal or substandard care levels, or deny them care outright? Patients will often request that their providers treat at minimal or substandard care because it is more affordable. By treating patients in this way, underlying disease may remain untreated, resulting in a more serious condition later.[39] The inability to seek or receive appropriate medical care creates a strain on the medical system for both patients and providers. One in six (17%) of Arizonans surveyed reported they could not afford needed medical care, similar to the national median (see **Figure 13A**).

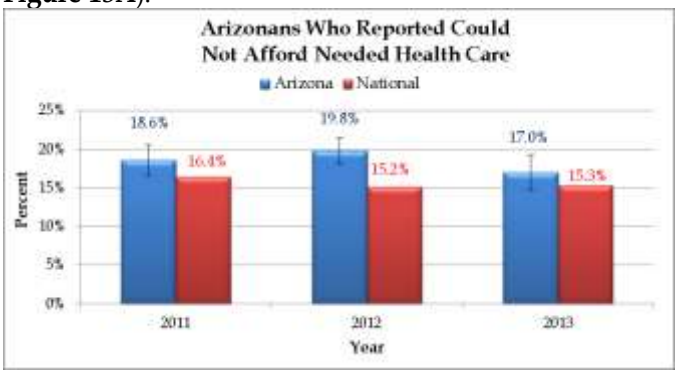


Figure 13A. Arizona and National 2011-2013 BRFSS respondents who reported that they could not afford needed medical care.

When compared to the other states, Arizona is in the highest category of respondents reporting that they could not afford needed medical care (see **Figure 13B)**

Figure13B. Arizona BRFSS 2013 respondents who reported they could not afford needed health care by state (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] Nationally, in general, as household size increases, the inability to afford needed health care also increases. Data comparing Arizona family size to national medians since 2011 are shown in (**Figure 13C)**.

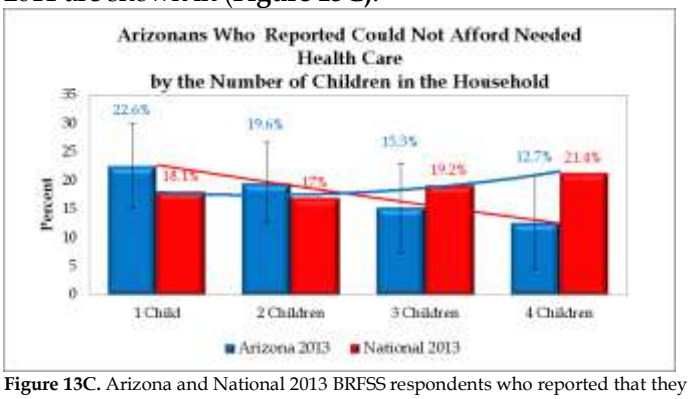


Figure 13C. Arizona and National 2013 BRFSS respondents who reported that they were unable to afford needed medical care by the number of children in the household.

Household composition can also play a significant role in one's ability to afford needed medical care. BRFSS data only provides information on the gender of the guardian; it is not possible to differtiate familial relationships. However, information on family composition can still offer insight on potential disparties. Nationally, single individuals and traditional families were the least likely to report being unable to afford medical care. Families with a single female guardian and non-traditional structures were more likely to report being unable to afford medical care (**Figure 13D**).

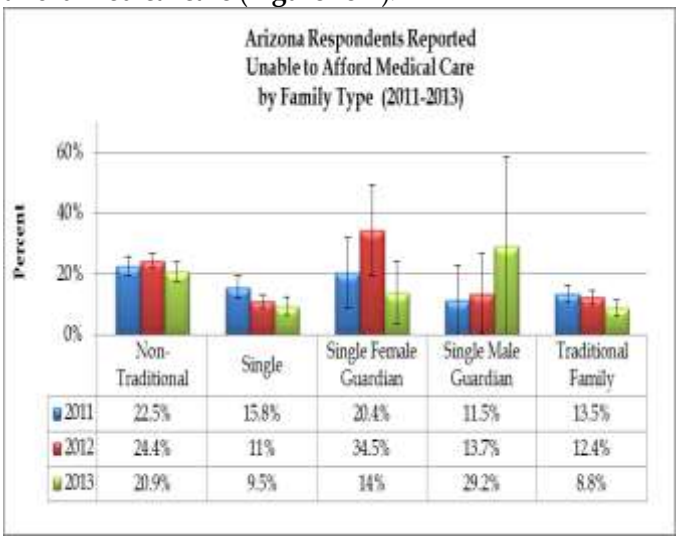


Figure 13D. BRFSS 2013 Arizona respondents who reported that they were unable to afford needed medical care by household composition

39 Weiner, S. (2001), "I Can't Afford That!". Journal of General Internal Medicine, 16: 412–418. doi: 10.1046/j.1525-1497.2001.016006412.x

40 Cohen, R., and Kirzinger, W. (2014, Jan.). *Financial Burden of Medical Care: A Family Perspective. NCHS Data Brief No. 142*. Washington: U.S. Department of Health and Human Services..

Barriers to Health Care
Could Not Afford Health Care

The table to the left displays the proportions of Arizona adults who reported that they could not afford needed medical care by sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

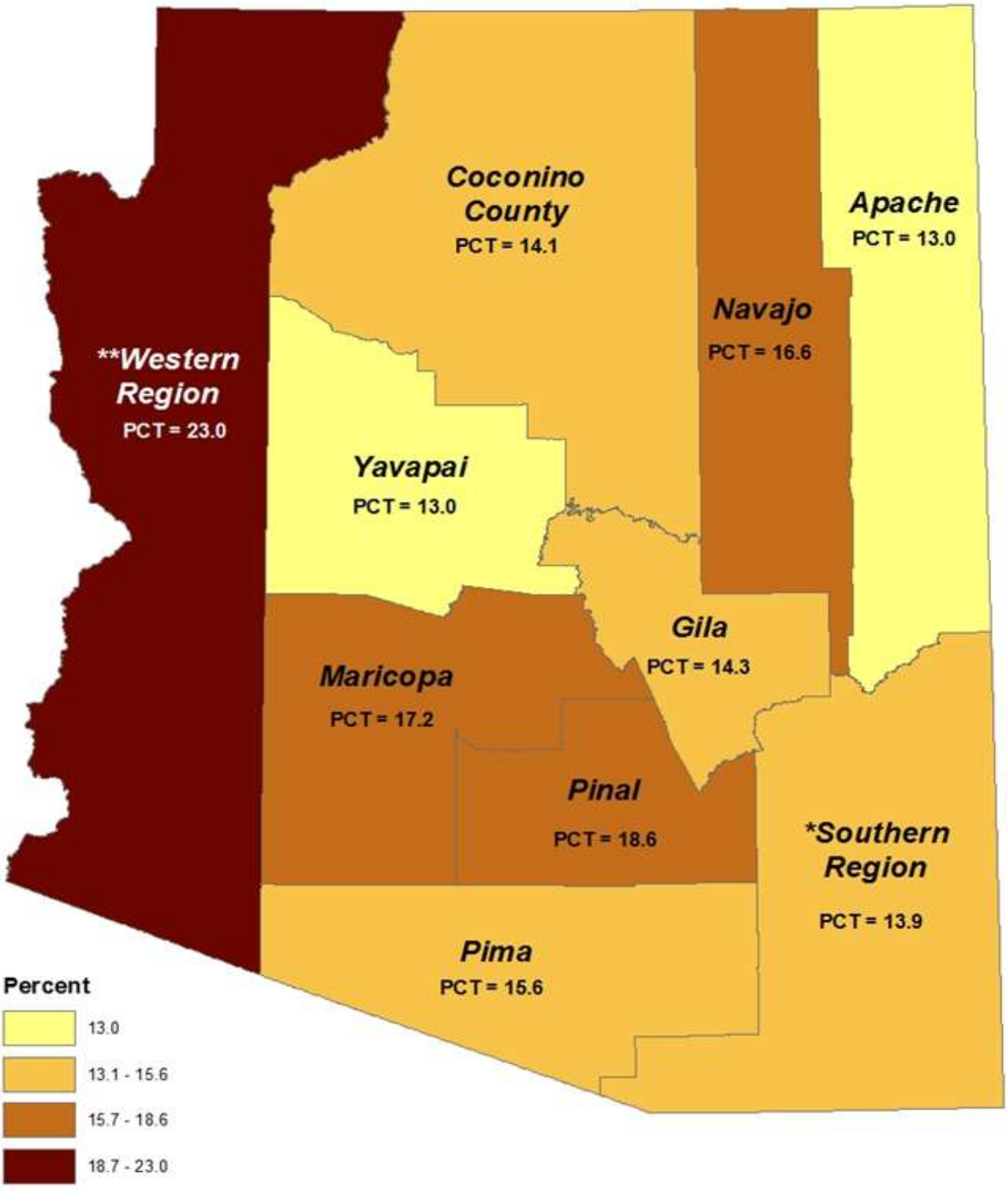
The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

BRFSS 2013 Arizonans Respondents Who Could Not Afford Health Care

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**15.3%**	53		
Arizona	**17.0%**	582	4.5%	8.2%
Sex				
Male	16.9%	212	13.3%	20.6%
Female	17.1%	370	14.5%	19.8%
Age				
18-24	13.0%	34	5.9%	20.1%
25-34	22.2%	88	16.0%	28.5%
35-44	16.4%	74	11.4%	21.5%
45-54	27.5%	161	21.4%	33.6%
55-64	18.3%	153	12.4%	24.2%
65+	5.8%	72	3.1%	8.5%
Marital Status				
Married	14.1%	217	11.1%	17.1%
Divorced	19.7%	138	14.6%	24.8%
Widowed	10.6%	45	6.0%	15.2%
Separated	26.8%	26	12.0%	41.7%
Never Married	20.0%	119	14.4%	25.7%
Unmarried Couple	31.8%	31	19.0%	44.7%
Education Attainment				
Less than high school	33.7%	96	25.0%	42.5%
High School/GED	17.0%	192	13.4%	20.6%
Some College/Technical School	16.4%	178	12.6%	20.1%
College/Technical School Graduate	6.8%	112	5.0%	8.7%
Employment Status				
Employed for Wages	15.4%	206	11.9%	19.0%
Self Employed	20.1%	51	11.0%	29.1%
Out of Work	35.0%	82	25.4%	44.7%
Homemaker	21.8%	52	14.0%	29.6%
Student	14.4%	24	7.0%	21.8%
Retired	7.0%	74	4.1%	10.0%
Unable to Work	29.4%	89	18.6%	40.2%
Income				
Less than $10,000	32.2%	77	21.6%	42.9%
$10,000 to $14,999	47.3%	84	34.0%	60.5%
$15,000 to $19,999	28.2%	72	18.2%	38.2%
$20,000 to $24,999	28.4%	77	18.9%	38.0%
$25,000 to $34,999	20.2%	76	13.2%	27.2%
$35,000 to $49,999	12.3%	62	7.4%	17.1%
$50,000 to $74,999	8.9%	39	5.2%	12.6%
Above $75,000	3.4%	25	1.6%	5.2%
Race				
White Non-Hispanic	13.1%	358	11.1%	15.1%
Black/African American	17.6%	18	7.2%	28.1%
Hispanic	26.9%	143	20.5%	33.3%
Asian/Pacific Islander	2.8%	4	0.0%	6.0%
American Indian	22.6%	35	12.7%	32.5%
Other	17.8%	24	7.3%	28.2%

Use caution in interpreting cell sizes less than 50. N* is unweighted

Arizona Respondents Who Reported They Could Not Afford Needed Health Care, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Barriers to Health Care: Usual Source of Health Care

The Committee on Quality of Health Care in America and the Institute of Medicine recommended that health care organizations offer customization of care based on patient needs and become better able to anticipate the needs of the patient rather than reacting to medical events.[41] To do this, health care professionals and patients must build a long term and trusting relationship, ideally with a primary care provider (PCP). A PCP is an individual's main health care practitioner that offers non-emergency care. PCPs can be doctors, physician assistants, or nurse practitioners. PCPs provide preventive care, teach and promote healthy lifestyle choices, and identify and treat common medical conditions.[42] Since 2011, Arizonans surveyed were less likely to report having a usual source of health care than the national median. In 2013, just 68.2% of Arizonans surveyed reported having a usual source of healthcare, lower than the national median of 77.1% (see **Figure 14A**).

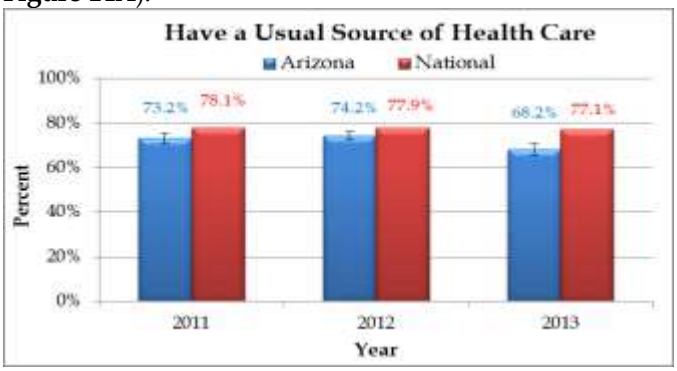


Figure 14A. Arizona and National 2011-2013 BRFSS respondents who reported that they had a usual source of health care.

When compared to other states, Arizona is in the lowest category for percent of respondents who reported they have a usual source of health care (see **Figure 14B**).

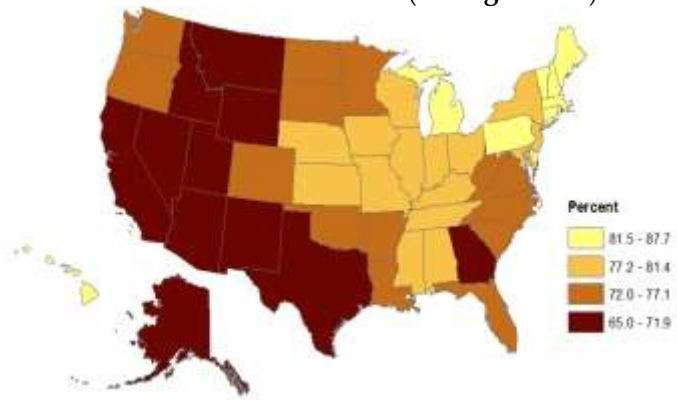


Figure 14B. BRFSS 2013 respondents who reported having a usual source of health care (natural breaks).

The services physicians provide are not identical. There are many different specialties in medicine and an individual may need to see more than one physician. Sixty eight percent of Arizonans surveyed said they had at least one provider, below the national median of 77% (see **Figure 14C**).

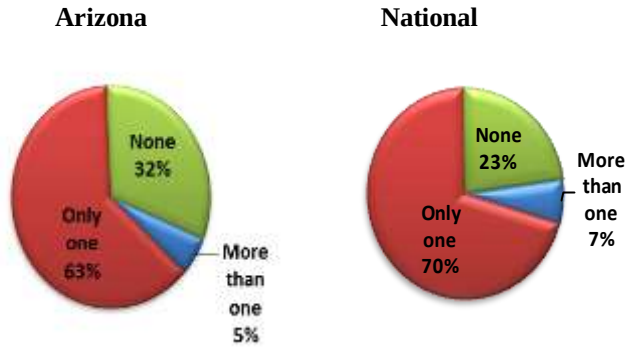


Figure 14C. Distribution of the number of providers respondents see as a usual source of health care in the Arizona and National BRFSS 2013.

Arizona respondents reporting no usual source of health care were found *more* frequently among respondents who were Hispanic, uninsured or impoverished, and *less* frequently among White non-Hispanics, the insured, and those not in poverty (see **Figure 14D**).

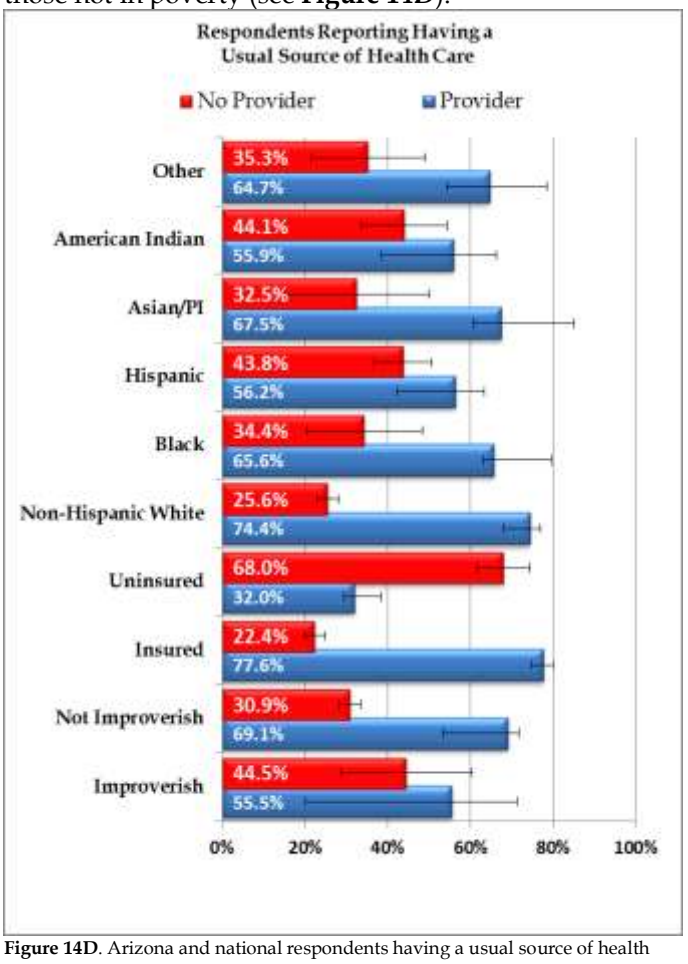


Figure 14D. Arizona and national respondents having a usual source of health care.

41 IOM (Institute of Medicine) Washington, D.C: National Academy Press; 2001. Crossing the Quality Chasm: A New Health System for the 21st Century.
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>

Barriers to Healthcare: Usual Source of Health Care

BRFSS 2013 Arizonans Respondents
Who Reported Having a Usual Source of Health Care

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**77.1%**	53		
Arizona	**68.2%**	3286	65.5%	70.9%
Sex				
Male	61.3%	1236	57.1%	65.5%
Female	74.8%	2050	71.7%	78.0%
Age				
18-24	51.6%	120	43.4%	59.7%
25-34	48.3%	200	40.6%	56.0%
35-44	68.4%	294	61.9%	74.9%
45-54	66.5%	477	60.2%	72.8%
55-64	76.3%	742	70.0%	82.5%
65+	91.5%	1453	88.9%	94.1%
Marital Status				
Married	74.9%	1748	71.5%	78.4%
Divorced	71.4%	506	64.8%	78.1%
Widowed	85.9%	529	79.9%	92.0%
Separated	62.8%	66	48.0%	77.7%
Never Married	50.2%	330	43.6%	56.7%
Unmarried Couple	48.5%	84	35.1%	61.9%
Education Attainment				
Less than high school	51.7%	251	42.4%	60.9%
High School/GED	67.2%	824	62.3%	72.1%
Some College/Technical School	71.0%	1015	66.6%	75.4%
College/Technical School Graduate	76.1%	1180	72.4%	79.7%
Employment Status				
Employed for Wages	63.6%	968	59.4%	67.9%
Self Employed	57.8%	212	46.0%	69.7%
Out of Work	52.1%	137	41.9%	62.3%
Homemaker	66.4%	255	57.4%	75.5%
Student	60.1%	63	47.6%	72.5%
Retired	90.1%	1337	87.0%	93.2%
Unable to Work	72.0%	297	60.4%	83.7%
Income				
Less than $10,000	52.2%	159	40.3%	64.1%
$10,000 to $14,999	55.8%	188	41.7%	70.0%
$15,000 to $19,999	63.3%	215	52.4%	74.3%
$20,000 to $24,999	60.8%	287	51.3%	70.2%
$25,000 to $34,999	65.6%	359	57.8%	73.4%
$35,000 to $49,999	67.7%	466	60.3%	75.0%
$50,000 to $74,999	76.5%	435	70.6%	82.5%
Above $75,000	78.1%	685	72.8%	83.4%
Race				
White Non-Hispanic	74.4%	2577	71.8%	77.0%
Black/African American	65.6%	67	51.7%	79.6%
Hispanic	56.2%	407	49.2%	63.2%
Asian/Pacific Islander	67.5%	30	50.1%	85.0%
American Indian	55.9%	109	45.6%	66.2%
Other	64.7%	96	51.0%	78.4%

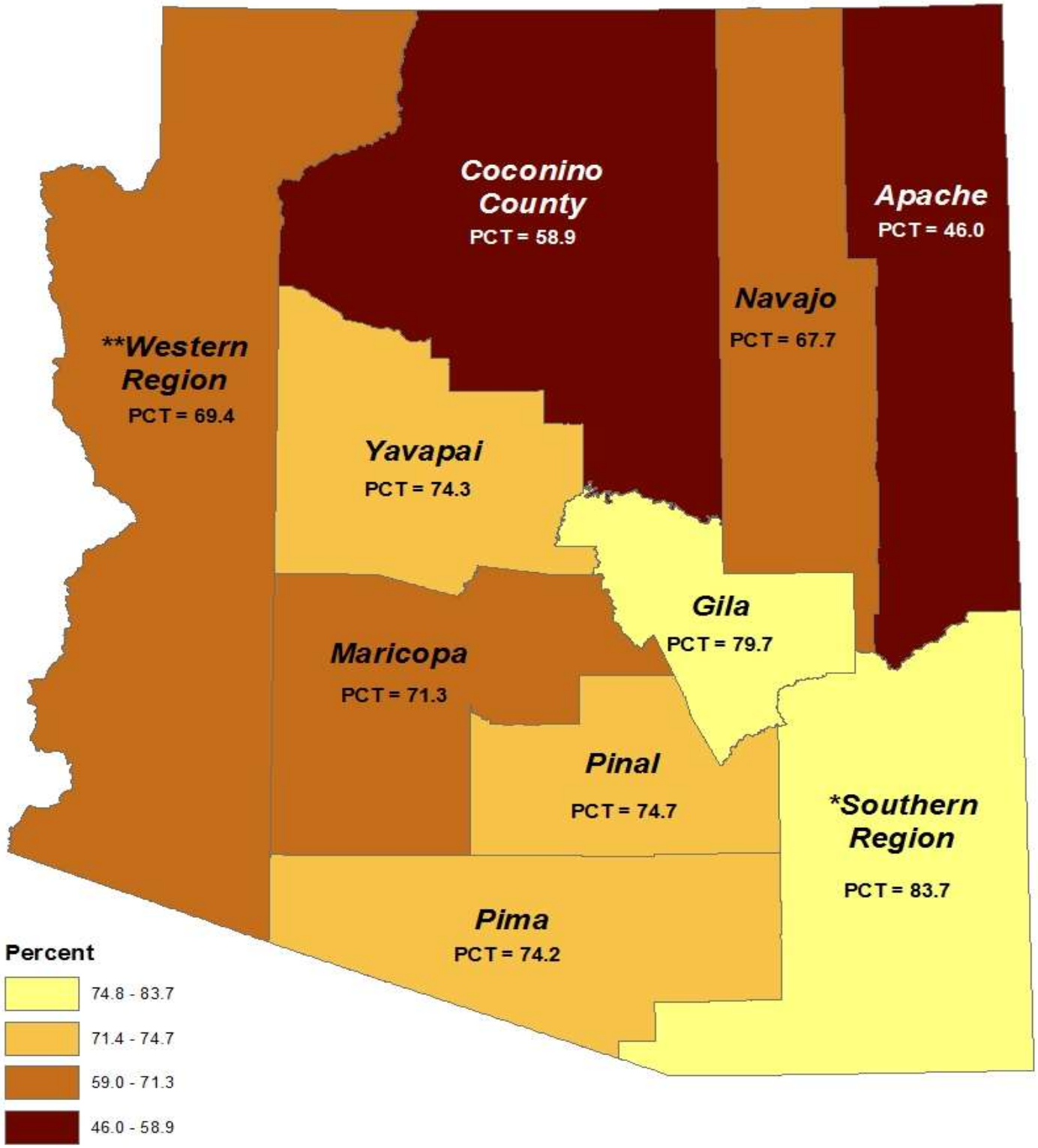
Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizona adults who reported that they had a usual source of health care by sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Who Reported Having a Usual Source of Health Care, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

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Arizona Department of Health Services

Health Risks and Behaviors

Certain activities or behaviors increase the risk of mortaility and morbidity. Promotion of cessation programs, awareness, and policy changes will help reduce the impact of these behaviors. Many programs and policies have been enacted to reduce the burdens 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 this Annual Report include an analysis of the following:

- **Seat Belt Use (variable SEATBELT) -** Always wearing a seat belt is considered a positive outcome and less frequent use is considered a negative outcome.
- **Cigarette Smoking (variable _RFSMOK3) -** Formerly or never smoking are considered a positive outcome and currently smoking is considered a negative outcome.
- **Alcohol Abuse: Heavy Drinking (variable _RFDRHV4) -** Adult men who have more than two drinks a day, and women who have more than one drink per day are considered a negative outcome and less frequent drinking including no drinking is considered a positive outcome.
- **Alcohol Abuse: Binge Drinking (variable _RFBING5) -** A person that has more than five drinks on at least one occasion in the past 30 days is considered a negative outcome and not engaging in this behavior is considered 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 9)

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 use can reduce the number of deaths and serious injuries by 50%.[43] There were additional persons injured, such as motorcyclists, bicyclists and pedestrians, who were not in a motor vehicle. For drivers under the age of 18, there were 18 deaths and 456 discharges. They accounted for more than $43 million in medical charges. Motor vehicle-related visits resulted in over $540 million in medical charges, and individuals were hospitalized on average between 4.8 and 6 days (see **Table 7**).

Note: Of the 5,687 motor vehicle accidents, 5,918 were alcohol- related crashes and are designated by (alcohol abuse, alcohol dependency, and alcohol-induced disorders. The alcohol-related deaths are not exclusive to car crashes; they are deaths incident to those identified by the ICD-9 codes designated for alcohol-related motor vehicle accidents. There were more than 231 of the 5,687 that were exclusive of motor vehicle accidents where the drivers were not impaired. In 2013, there were 5,687 inpatient and emergency department discharges in Arizona due to motor vehicle accidents where the injured person was either a driver or a passenger in a motor vehicle; 167 of those individuals died in the hospital.

Motor Vehicle Accidents Where the Driver or Passenger were Injured Inpatient & Emergency Department Discharges				
Age	**Number of Discharges**	**Died**	**Charges**	**Average Length of Stay (Days)**
<18	456	18	$43,356,432	4.8
18-24	953	12	$84,204,372	4.6
25-39	1,387	31	$130,577,382	5.1
40-54	1,206	29	$125,323,312	6.0
55+	1,685	77	$156,715,868	5.9
Total	**5,687**	**167**	**$540,177,366**	

Table 7. 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.

In 2013, 37% of motor vehicle related hospitalizations in Arizona were among pedestrians, bicyclists or bicyclists, or other persons (**Figure 15A**).

Figure 15A. Distribution of motor vehicle accident related hospitalization in Arizona both emergency department and admissions, which contained the ICD-9 codes: E810.0-E819.9.

Biennially since 2006, the BRFSS survey contained a seat belt use question. In 2013, the majority (86.8%) of Arizonans reported that they always wear their seat belts when they drive or ride in a car; similare to the national median (see **Figure 15B**).

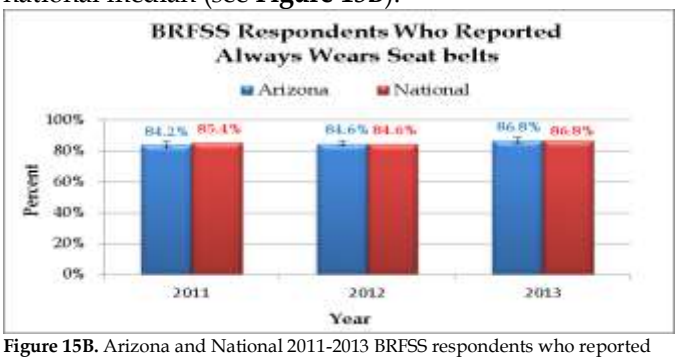


Figure 15B. Arizona and National 2011-2013 BRFSS respondents who reported that they always wore a seat belt when they drove or rode in a car.

Although Arizonans' reported 86.8% rate was the same as the national mean rate as to always wearing a seat belt when they drive or ride in a car; it fell into the second highest class for percent of respondents reporting that they always wear a seat belt when compared to all the states (see **Figure 15C**).

Figure 15C. BRFSS 2013 respondents who always wear seat belts by state, (natural breaks).

Seat belt use may be impacted by a state's laws. States with primary seat belts laws allow police officers to stop vehicles solely for seat belt violations. In states with secondary seat belt laws, such as Arizona, an officer must have another reason to stop the vehicle (see **Figure 15D**).[44]

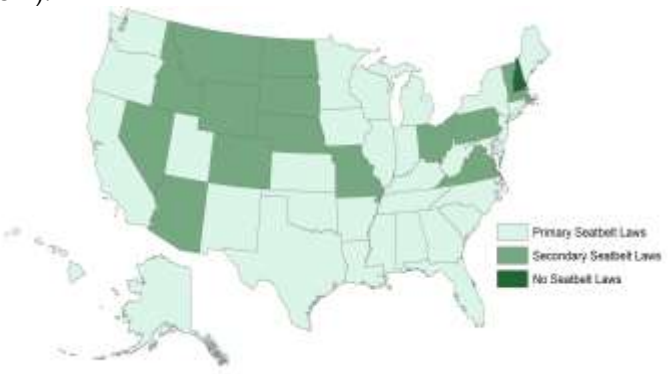


Figure 15D. National Highway Safety Laws by state, (natural breaks)

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/>.

44 " Governors Highway Safety Association. Seat Belt Laws. <http://www.ghsa.org/html/stateinfo/laws/seatbelt_laws.html> Pub 2015. Accessed December 10, 2015.

Health Risks Behaviors
Seat belt Use

BRFSS 2013 Arizonans Respondents
Who Reported Always Wear Seatbelts

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**86.8%**	53		
Arizona	**86.8%**	3383	84.9%	88.8%
Sex				
Male	82.8%	1325	79.6%	85.9%
Female	90.7%	2058	88.6%	92.9%
Age				
18-24	78.3%	171	71.1%	85.5%
25-34	80.7%	275	74.5%	86.8%
35-44	89.3%	340	85.5%	93.2%
45-54	86.5%	507	81.9%	91.1%
55-64	91.0%	754	87.3%	94.7%
65+	92.6%	1336	90.4%	94.7%
Marital Status				
Married	91.4%	1747	89.3%	93.4%
Divorced	82.4%	521	76.5%	88.3%
Widowed	94.4%	500	91.4%	97.4%
Separated	84.0%	65	72.1%	95.8%
Never Married	78.6%	429	73.2%	84.0%
Unmarried Couple	78.7%	102	65.6%	91.7%
Education Attainment				
Less than high school	84.1%	281	77.6%	90.5%
High School/GED	83.8%	859	79.6%	88.0%
Some College/Technical School	88.1%	1029	85.0%	91.1%
College/Technical School Graduate	90.0%	1199	87.3%	92.7%
Employment Status				
Employed for Wages	85.1%	1092	81.8%	88.3%
Self Employed	83.0%	225	75.3%	90.6%
Out of Work	83.7%	176	77.2%	90.3%
Homemaker	94.4%	274	90.9%	98.0%
Student	75.6%	87	63.0%	88.2%
Retired	93.3%	1238	91.5%	95.2%
Unable to Work	87.8%	277	81.5%	94.1%
Income				
Less than $10,000	68.2%	179	54.4%	81.9%
$10,000 to $14,999	92.5%	199	87.3%	97.8%
$15,000 to $19,999	89.1%	245	83.8%	94.5%
$20,000 to $24,999	88.5%	330	82.5%	94.5%
$25,000 to $34,999	79.9%	363	72.1%	87.8%
$35,000 to $49,999	87.0%	477	82.3%	91.7%
$50,000 to $74,999	87.7%	436	82.8%	92.7%
Above $75,000	91.7%	684	88.4%	94.9%
Race				
White Non-Hispanic	89.4%	2604	87.6%	91.2%
Black/African American	83.8%	72	73.1%	94.4%
Hispanic	83.5%	435	78.5%	88.5%
Asian/Pacific Islander	70.5%	33	42.5%	98.4%
American Indian	75.2%	129	65.0%	85.5%
Other	94.7%	110	88.7%	100.0%

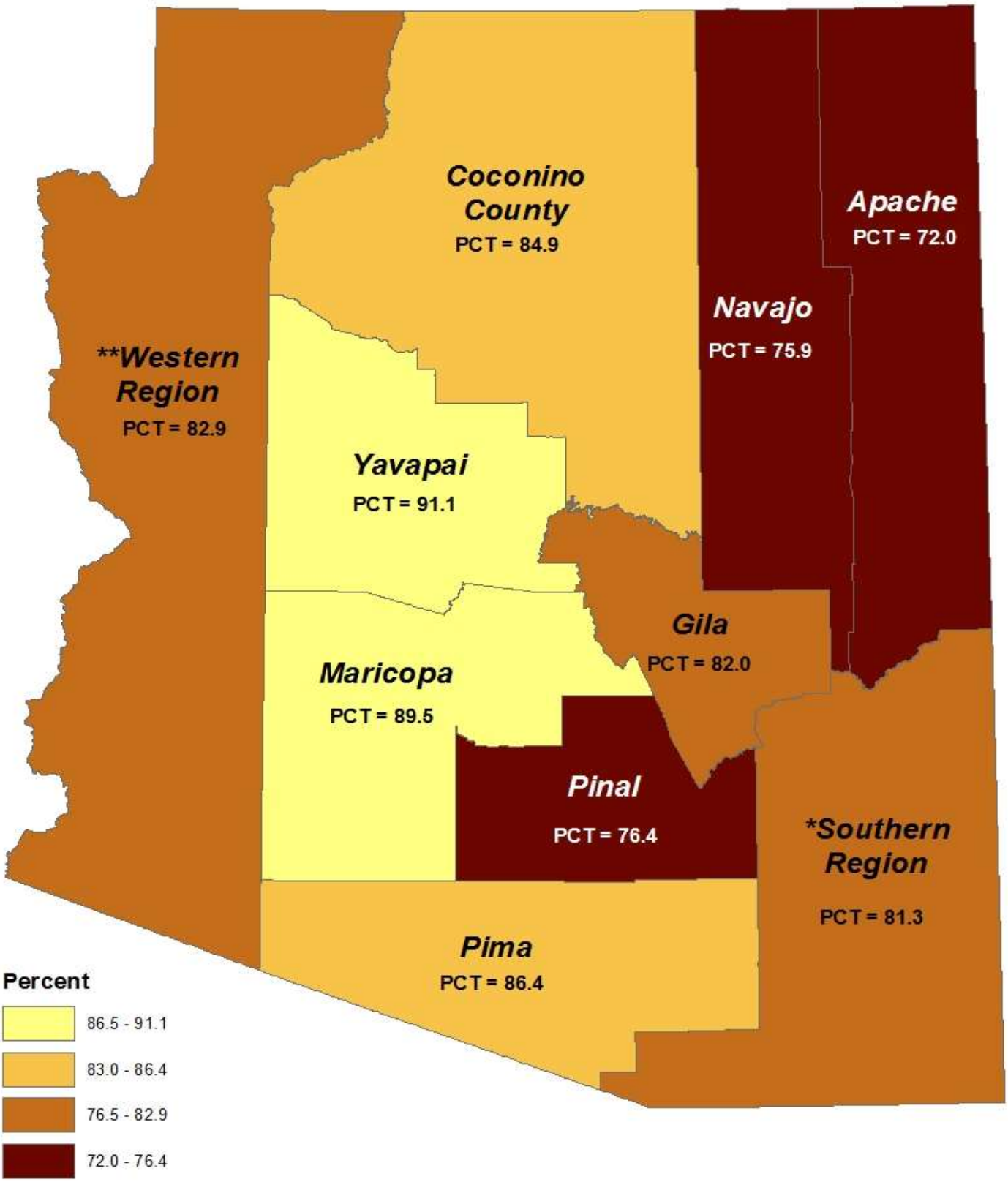
Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportion of Arizonans who reported that they "always" wear a seat belt when driving or riding in a car. Data are also presented by sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Who Reported Always Wearing a Seat Belt When Driving or Riding in a Car, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Health Risk Behaviors: Cigarette Use

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 report was based on the available biomedical articles that related smoking and diseases. At that time there was more than 7,000 articles on the topic. 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 2013, 16.3% of Arizonans surveyed reported that they currently smoke, lower than the national median (see **Figure 16A**).

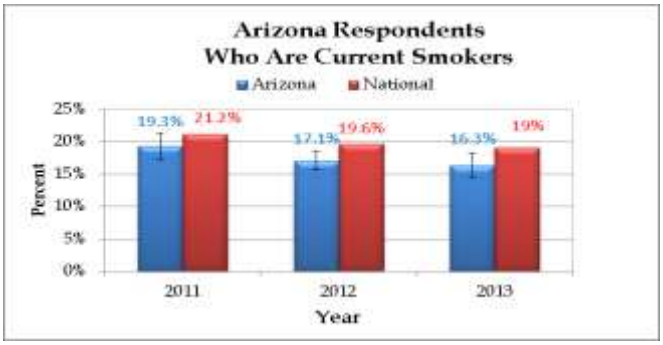


Figure 16A. Arizona and National 2011-2013 BRFSS respondents who reported that they were current smokers.

The proportions of Arizonans who are current smokers, former smokers, or who never smoked are similar to national figures (see **Figure 16B**).

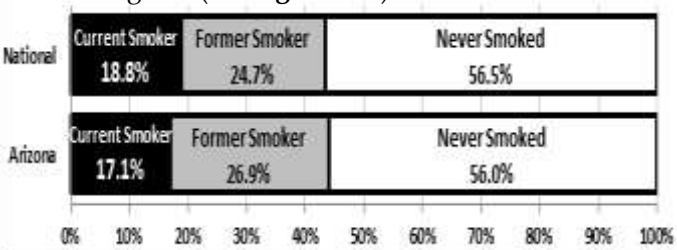


Figure 16B. National and Arizona rates for smoking proportioned by current, former, and never smoked.

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. To quit smoking can be 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. The proportion of Arizonans who reported being former smokers in 2013 was higher than the national median. Arizona is in the lowest category among U.S. states for current smoking percentages (see **Figure 16C**).

Figure 16C. Distribution of smoking status in the 2013 BRFSS by state, (natural breaks).

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 16D**).

Figure 16D. 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.[45]

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 2013, there were 6,644 hospitalizations for tracheal, bronchial, and lung cancers, in Arizona resulting in 400 deaths while in the hospital and medical charges of more than $414 million (see **Table 8**).

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

Payer Type	Number of Discharges	Died	Charges	Average Length of Stay (Days)
Charity	19	3	$1,201,722	6.9
Medicaid	424	17	$24,690,904	5.8
Medicare	4,673	282	$286,417,189	5.7
Other	127	12	$8,600,219	5.5
Private Insurance	1,227	71	$81,283,868	5.6
Self-Pay	174	15	$12,131,732	6.4
Total	**6,644**	**400**	**$414,325,634**	

Table 8. Arizona Hospital 2013 Discharges for inpatient and emergency department visits that contain the following ICD-9 CODES: 162.0, 162.2, 162.3, 162.4, 162.5, 162.8, and 162.9.

Health Risk Behaviors: Cigarette Use

BRFSS 2013 Arizonans Respondents
Who Reported That They Are Current Smokers

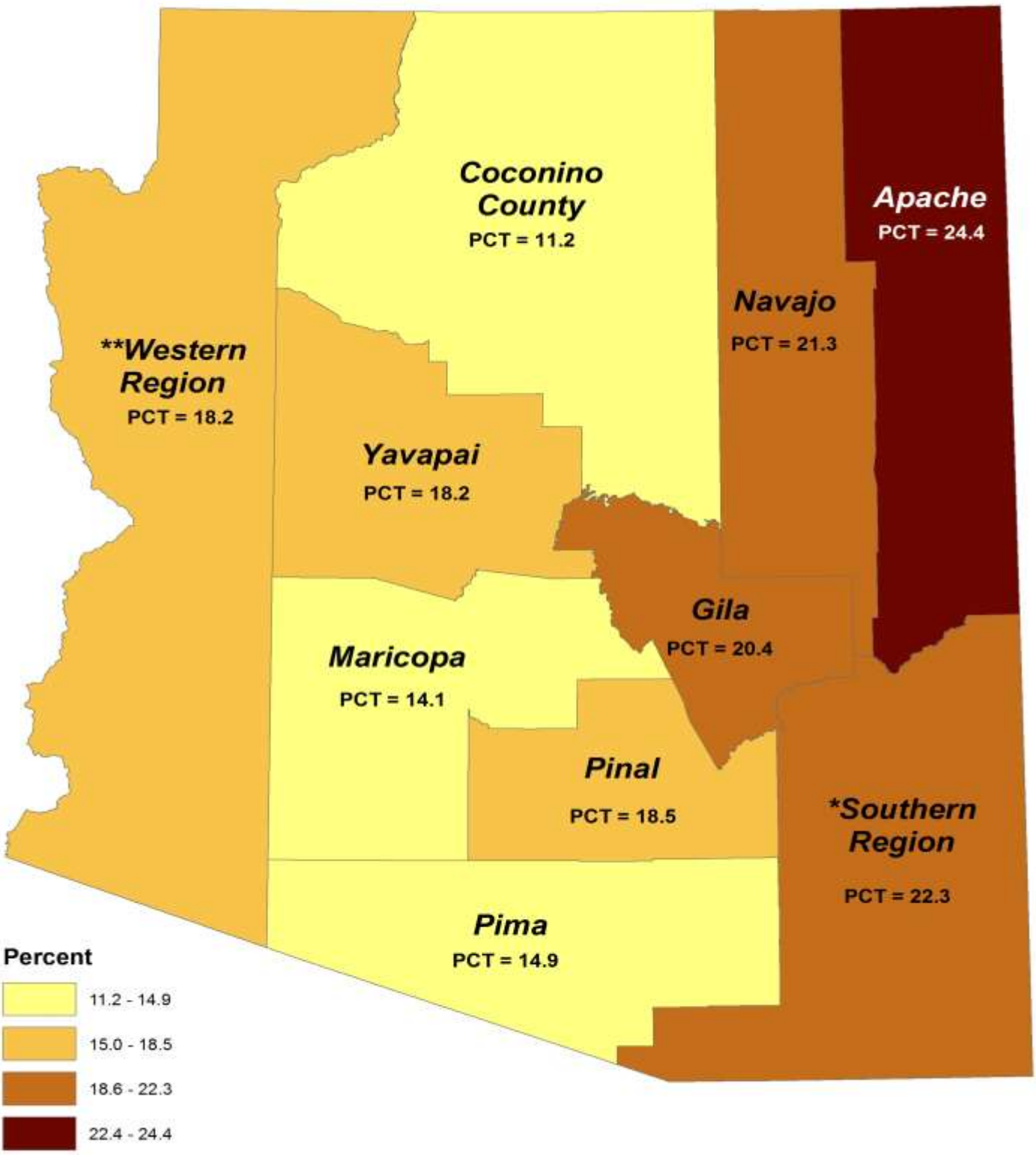
Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	19.0%	53		
Arizona	16.3%	622	14.3%	18.3%
Sex				
Male	19.3%	287	16.0%	22.6%
Female	13.5%	335	11.2%	15.8%
Age				
18-24	18.8%	48	12.4%	25.2%
25-34	16.3%	68	10.9%	21.6%
35-44	13.9%	79	9.6%	18.3%
45-54	26.2%	142	20.2%	32.2%
55-64	17.0%	150	12.7%	21.2%
65+	7.9%	135	5.6%	10.2%
Marital Status				
Married	11.3%	204	8.8%	13.9%
Divorced	23.2%	158	18.0%	28.5%
Widowed	17.7%	69	11.7%	23.6%
Separated	35.2%	29	18.9%	51.5%
Never Married	19.7%	125	14.7%	24.6%
Unmarried Couple	26.4%	34	14.2%	38.6%
Education Attainment				
Less than high school	24.7%	90	16.8%	32.6%
High School/GED	19.2%	221	15.4%	22.9%
Some College/Technical School	17.6%	222	14.3%	21.0%
College/Technical School Graduate	5.9%	88	4.0%	7.8%
Employment Status				
Employed for Wages	16.3%	219	13.1%	19.5%
Self Employed	22.7%	46	12.2%	33.3%
Out of Work	31.6%	74	22.4%	40.8%
Homemaker	9.6%	29	4.6%	14.6%
Student	13.6%	18	5.6%	21.6%
Retired	8.8%	136	6.5%	11.0%
Unable to Work	25.9%	99	17.4%	34.5%
Income				
Less than $10,000	29.8%	68	19.5%	40.0%
$10,000 to $14,999	20.1%	60	11.6%	28.6%
$15,000 to $19,999	26.5%	60	16.4%	36.7%
$20,000 to $24,999	32.0%	96	22.7%	41.3%
$25,000 to $34,999	15.4%	70	10.2%	20.5%
$35,000 to $49,999	13.3%	76	8.7%	18.0%
$50,000 to $74,999	10.6%	50	6.1%	15.2%
Above $75,000	7.9%	53	4.8%	10.9%
Race				
White Non-Hispanic	16.0%	453	13.9%	18.0%
Black/African American	15.2%	16	5.2%	25.3%
Hispanic	16.9%	90	11.5%	22.2%
Asian/Pacific Islander	4.6%	2	0.0%	13.8%
American Indian	23.2%	29	13.8%	32.5%
Other	26.7%	32	14.8%	38.7%

The table to the left displays the proportions of Arizonans who reported that they currently smoke cigarettes by sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Who Reported They Were Current Cigarette Smokers, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Health Risk Behaviors: Alcohol Abuse - Heavy Drinkers

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, and injuries from falls and motor vehicle crashes. Exceeding moderate alcohol consumption (heavy drinking) provides no health benefit; in fact, 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 for women. [46] The proportion of Arizona respondents surveyed who reported being a heavy drinker in 2013 (5.9%) is similar to the national median (**Figure 17A**).

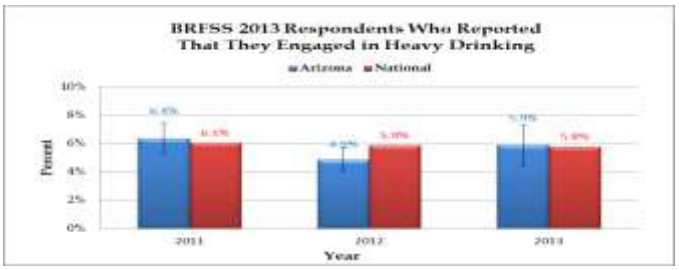


Figure 17A. Arizona and National 2011-2013 BRFSS respondents who were classified as heavy drinkers as per CDC guidelines. Heavy drinking is defined as: Adult men having more than two drinks per day and adult women having more than one drink per day.

Arizona is in the second-highest category among U.S. states for reported heavy drinking (see **Figure 17B**).

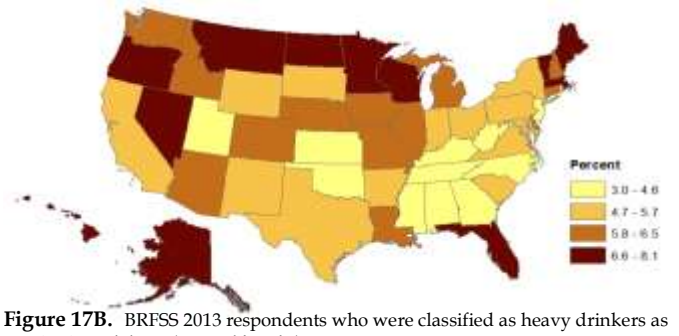


Figure 17B. BRFSS 2013 respondents who were classified as heavy drinkers as per CDC guidelines (natural breaks).

It is estimated that one in four individuals who are heavy drinkers 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 2013 hospital discharge data, there were 41,865 discharges that were related to alcohol abuse or dependence; of those, 803 died in the hospital. Furthermore, 5,918 of these patients were injured in a motor vehicle crash; however, it is not clear whether the patients were wearing a seat belt. The medical charges associated with alcohol abuse and dependence was more than $1.9 billion, with the average length of stay ranging from 5.2 to 7.6 days The highest number of discharges related to alcohol abuse and dependency appeared among those ages 55+, which were 16,490. The number of crash-related discharges and patients who died was highest in those over 55+ years old, at 466. The hospital data demonstrate the impact that heavy drinking can make. Of those whom were alcohol related discharges, the deaths were not exclusive to car crashes. The crash-related incidents reflect the same prior ICD-9 selected alcohol related discharges but for those whom were selected based upon an E-code reflecting their motor vehicle inpatient and emergency department discharge (see **Table 9**).

Alcohol Abuse & Dependency Related Inpatient & Emergency Department Discharges					
Age	**Number of Discharges**	**Died**	**Crash Related**	**Charges**	**Average Length of Stay (Days)**
<18	811		68 (8.4 %)	$14,001,686	7.6
18-24	2,214	12	505 (22.8%)	$77,586,487	5.2
25-39	7,887	85	1,334 (16.9%)	$300,723,916	5.2
40-54	14,463	240	1,887 (13.0%)	$628,311,028	5.4
55+	16,490	466	2,124 (12.9%)	$913,432,848	5.7
Total	**41,865**	**803**	**5,918 (14.1%)**	**$1,934,055,965**	

Table 9. Summary of 2013 inpatient and emergency department discharges that contained the following ICD-9 codes: 303.00, 303.01, 303.02, 303.03, 303.90, 303.91, 303.92, 303.93, 305.00, 305.01, 305.02, and 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 2013, there were 10,200 hospitalizations had discharges that were related to alcohol-induced psychoses. Furthermore, the discharges were predominantly related to withdrawal: 90.7% (n=9,253) of the alcohol induced psychoses e related to withdrawal (see **Figure 17C**).

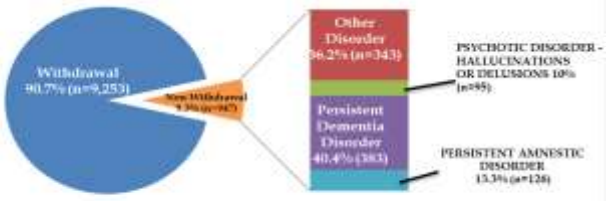


Figure 17C. Arizona Hospital 2013 inpatient and emergency department containing ICD-9 codes 291.0, 291.1, 291.2, 291.3, 291.4, 291.5, 291.81, 291.82, 291.89 and 291.9.

46 U.S. Department of Agriculture and U.S. Department of Health and Human Services. Dietary Guidelines for Americans, 2010. 7th Edition, Washington, DC: U.S. Government Printing Office, December 2010.
47. Shivani, R.; Goldsmith, R.J.; and Anthenelli, R.M. Alcoholism and psychiatric disorders: Diagnostic challenges. *Alcohol Research & Health* 26:90–98, 2002.

Health Risk Behaviors: Alcohol Abuse - Heavy Drinkers

BRFSS 2013 Arizonans Respondents
Who Reported That They Are Heavy Drinkers

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	5.8%	53	0.0%	0.0%
Arizona	5.9%	238	4.5%	7.3%
Sex				
Male	7.9%	110	5.3%	10.5%
Female	3.9%	128	2.7%	5.2%
Age				
18-24	6.0%	9	1.6%	10.3%
25-34	10.8%	28	4.6%	16.9%
35-44	4.9%	22	2.1%	7.6%
45-54	5.3%	38	2.8%	7.9%
55-64	5.9%	51	3.2%	8.6%
65+	4.6%	90	3.1%	6.2%
Marital Status				
Married	4.0%	95	2.7%	5.3%
Divorced	5.2%	45	2.7%	7.6%
Widowed	9.0%	40	4.7%	13.3%
Separated	3.0%	8	0.0%	6.7%
Never Married	11.7%	42	6.4%	17.0%
Unmarried Couple	6.1%	7	0.6%	11.6%
Education Attainment				
Less than highschool	6.5%	20	0.8%	12.3%
High School/GED	7.1%	69	4.4%	9.9%
Some College/Technical School	5.1%	69	3.0%	7.1%
College/Technical School Graduate	5.5%	80	3.4%	7.6%
Employment Status				
Employed for Wages	5.2%	81	3.5%	7.0%
Self Employed	14.4%	19	2.5%	26.3%
Out of Work	11.0%	18	4.1%	17.9%
Homemaker	2.8%	14	0.5%	5.1%
Student	3.9%	3	0.0%	9.2%
Retired	5.5%	90	3.7%	7.2%
Unable to Work	3.0%	13	0.5%	5.5%
Income				
Less than $10,000	7.1%	14	0.8%	13.5%
$10,000 to $14,999	5.5%	10	0.1%	10.8%
$15,000 to $19,999	2.7%	13	0.0%	5.4%
$20,000 to $24,999	7.8%	25	2.7%	12.8%
$25,000 to $34,999	5.1%	27	1.3%	8.9%
$35,000 to $49,999	5.2%	40	2.5%	7.9%
$50,000 to $74,999	6.0%	40	3.1%	8.9%
Above $75,000	6.5%	40	2.1%	10.9%
Race				
White Non-Hispanic	6.9%	195	5.3%	8.5%
Black/African American	0.3%	1	0.0%	0.8%
Hispanic	5.2%	26	1.1%	9.4%
Asian/Pacific Islander	1.3%	1	0.0%	3.8%
American Indian	11.4%	6	1.1%	21.7%
Other	9.5%	9	0.8%	18.2%

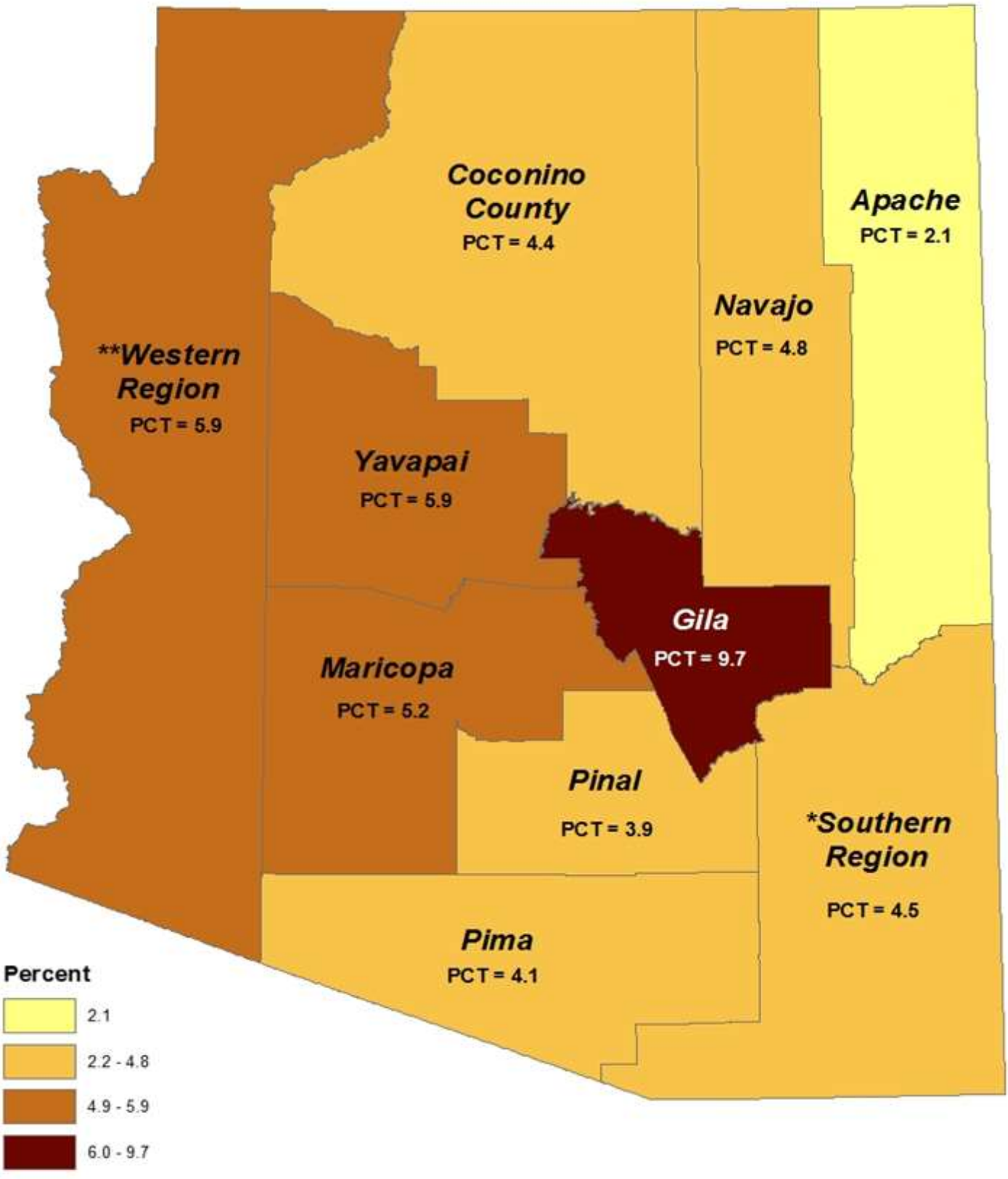
Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizonans who are heavy drinkers by sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Who Reported They Were a Heavy Drinker, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Health Risk Behaviors: Alcohol Abuse - Binge Drinkers

For men, binge drinking is defined as having five or more drinks on one occasion; for women, binge drinking is defined as having four or more drinks on one occasion. It is the most common form of drinking in the U.S. It is estimated that 1 in 7 adults binge drink about three to four times a month. Furthermore, it is a common risk behavior among all stages of life.[48] Since 2011, Arizonans surveyed who reported any binge drinking was slightly below the national median (**Figure 18A**).

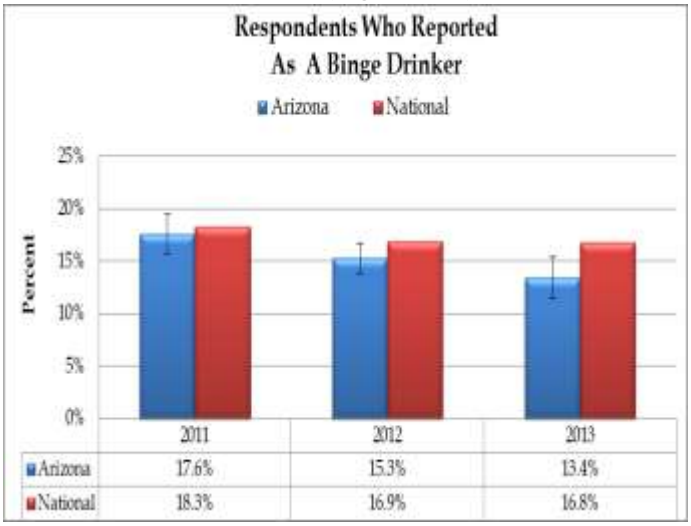


Figure 18A. Arizona and National 2011-2013 BRFSS respondents who responded that they participate in binge drinking as per CDC guidelines.

When comparing states in the U.S., Arizona is in the lowest category for reported binge drinking among survey respondents (**Figure 18B**).

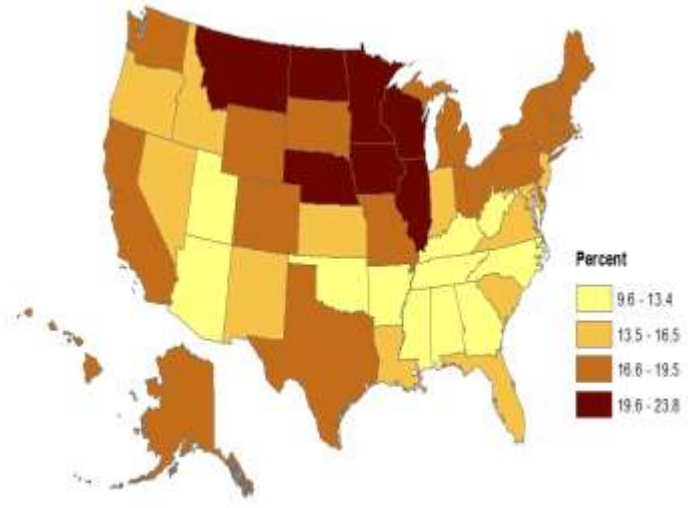


Figure 18B. U.S. map classified respondents who reported on the average, consumed four or more drinks ranked the lowest class in comparison to the nation (natural breaks).

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.

But Arizona is in the second highest category for the average maximum number of drinks consumed on a single occasion by survey respondents reporting binge drinking (see **Figure 18C**).

Figure 18C. US map classified average maximum number of drinks consumed by binge drinkers in the 2013 BRFSS by state, (natural breaks).

Since 2011, Arizonans reported binge drinking with similar frequency to the national median. Both nationally and in Arizona, men binge drink more frequently than women. In 2013, Arizona male respondents reported binge drinking more often than the national median for men (see **Figure 18D**).

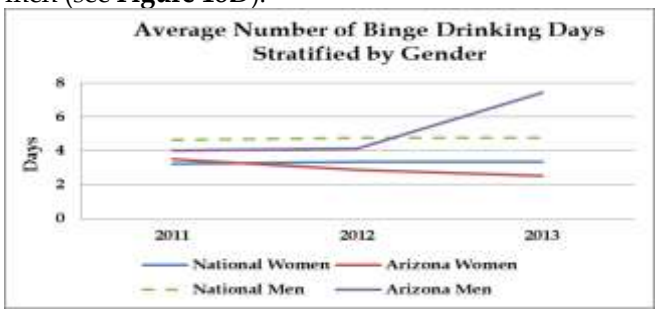


Figure 18D. Arizona versus National (overall, men, women) whom are binge drinkers and the average number of binge drinking days- BRFSS 2013.

In 2013, there were 84 hospitalizations that were associated with alcohol poisoning, 479 cases of alcoholic cardiomyopathy, 286 cases of alcoholic polyneuropathy, 79 cases of fetal alcohol syndrome, and 10,477 cases of alcohol-induced liver damage – a total of 11,405 discharges associated with alcohol-induced liver disease. Alcohol consumption during pregnancy can cause miscarriages, still births, and fetal alcohol syndrome. Fetal alcohol syndrome is a lifelong affliction that is 100% preventable. The total medical charges associated with alcohol-related conditions were more than $626 million, with an average length of stay ranging from 4.5 to 11.1 days (see **Table 10**).

Alcohol Related Inpatient & Emergency Department Discharges			
Condition	Number of Discharges	Charges	Average Length of Stay (Days)
Fetal Alcohol Syndrome	79	$4,757,737	11.1
Alcohol Poisoning	84	$3,249,795	4.5
Alcoholic Cardiomyopathy	479	$34,382,018	6.9
Alcoholic Polyneuropathy	286	$13,612,540	5.1
Alcohol Induced Liver Damage	10,477	$570,546,838	5.6
Total	**11,405**	**$626,548,929**	

Table 10. Inpatient and emergency department discharges from 2013 that contained the following ICD-9 codes: for Fetal Alcohol Syndrome: 760.71; Alcohol Poisoning: 980.9; Alcoholic Cardiomyopathy: 425.5; Alcoholic Polyneuropathy: 357.5; Alcohol Induced Liver Damage: 571.0 571.1 571.2 and 571.3.

Health Risk Behaviors: Alcohol Abuse - Binge Drinkers

BRFSS 2013 Arizonans Respondents
Who Reported That They Participate in Binge Drinking

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**16.8%**	53		
Arizona	**13.4%**	439	11.4%	15.4%
Sex				
Male	18.0%	270	14.6%	21.4%
Female	9.1%	169	6.9%	11.3%
Age				
18-24	17.7%	52	11.5%	23.8%
25-34	21.3%	78	14.1%	28.4%
35-44	14.3%	67	9.7%	18.9%
45-54	15.2%	89	10.5%	20.0%
55-64	8.3%	82	5.4%	11.2%
65+	5.5%	71	3.2%	7.9%
Marital Status				
Married	10.1%	173	7.7%	12.5%
Divorced	13.6%	77	9.0%	18.2%
Widowed	6.8%	26	3.0%	10.6%
Separated	15.4%	17	1.7%	29.0%
Never Married	21.6%	126	15.9%	27.3%
Unmarried Couple	20.0%	20	9.3%	30.7%
Education Attainment				
Less than high school	14.5%	48	7.2%	21.7%
High School/GED	14.3%	124	10.3%	18.4%
Some College/Technical School	12.2%	124	9.1%	15.3%
College/Technical School Graduate	13.8%	143	10.6%	16.9%
Employment Status				
Employed for Wages	16.0%	215	13.0%	19.0%
Self Employed	19.7%	33	7.5%	31.9%
Out of Work	21.7%	42	12.7%	30.7%
Homemaker	10.3%	25	4.9%	15.8%
Student	16.0%	20	5.0%	26.9%
Retired	5.9%	77	3.6%	8.1%
Unable to Work	6.1%	27	2.8%	9.4%
Income				
Less than $10,000	12.2%	21	4.3%	20.2%
$10,000 to $14,999	13.3%	25	5.2%	21.4%
$15,000 to $19,999	12.0%	29	4.7%	19.3%
$20,000 to $24,999	16.1%	50	9.0%	23.2%
$25,000 to $34,999	17.8%	51	10.4%	25.2%
$35,000 to $49,999	11.5%	73	7.6%	15.4%
$50,000 to $74,999	11.8%	50	7.2%	16.3%
Above $75,000	15.7%	97	10.6%	20.8%
Race				
White Non-Hispanic	13.8%	329	11.7%	15.9%
Black/African American	4.5%	5	0.0%	9.6%
Hispanic	12.3%	62	7.3%	17.4%
Asian/Pacific Islander	12.9%	2	0.0%	35.1%
American Indian	22.5%	20	11.5%	33.4%
Other	20.9%	21	9.8%	32.0%

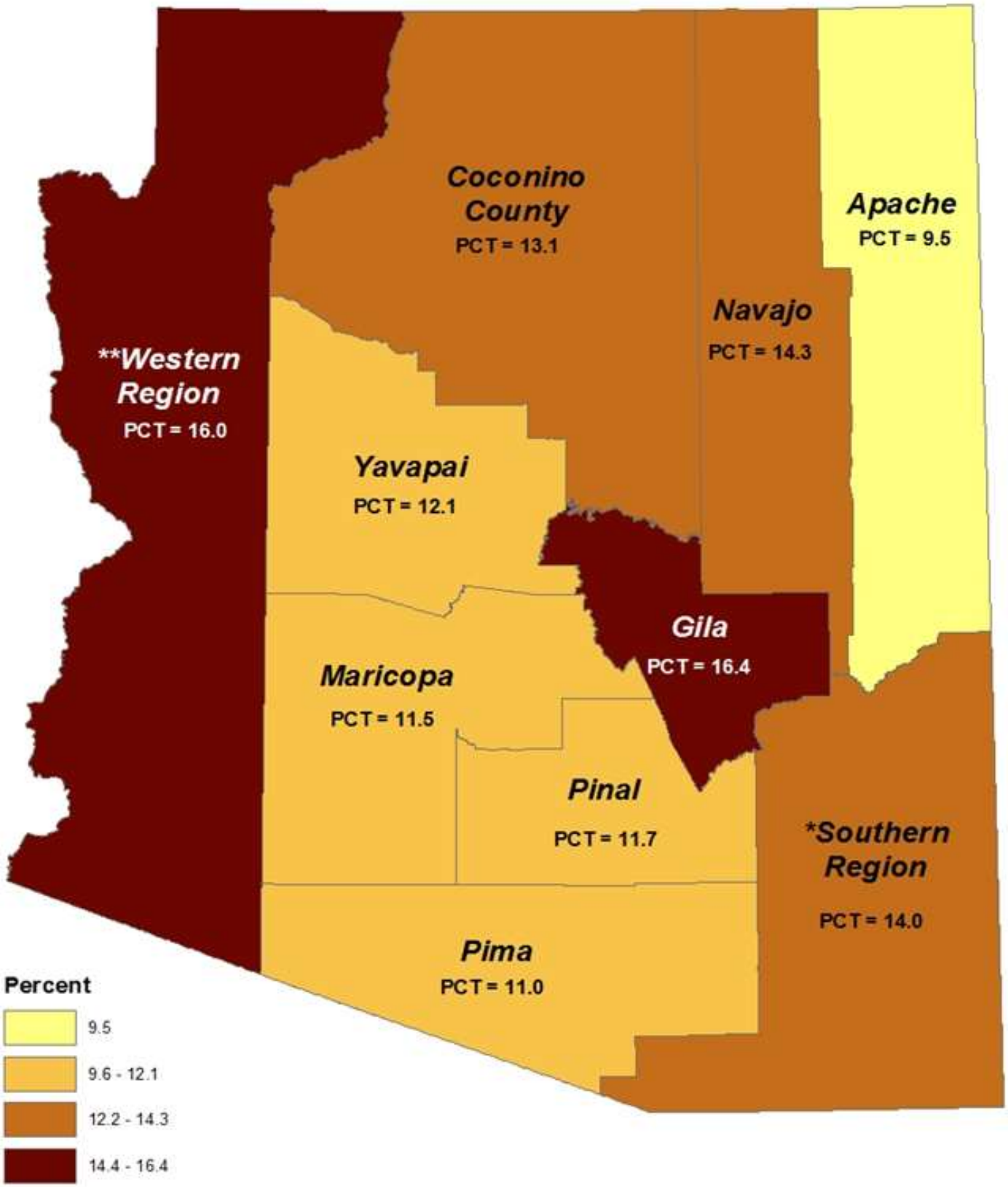
Use caution in interpreting cell sizes less than 50. N* is unweighted

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

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Who Reported That They Participated in Binge Drinking, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Arizona Department of Health Services

Beneficial Health Practices

Certain health 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 2013 Arizona BRFSS section includes an analysis of the following:

- **Physical Activity (variables _PAREC1, _PASTAE1)** coded variable measuring a person's level of participation in moderate or vidgorous activities according to established guidelines. Physical activity decreases the risk of heart attack, colon cancer, diabetes and high blood pressure and may decrease the risk of stroke.

- **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.

- **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.

- **Fruit and Vegetable Consumption (variables FRUITJU1, FRUIT1, FVBEANS, FVGREEN, FVORANG, 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 9)

Beneficial Health Practices: Physical Activity

In the past, the BRFSS physical activity questions focused on the amount of time a person participated in moderate or vigorous activities. The new physical activity questions remove ambiguity in these categories; the new questions; they ask if the interviewee participates in specific activities.

According to the American College of Sports Medicine's Fitness Advisory Board, Arizona (data are based upon Maricopa and Pinal Counties) is ranked 32nd in the nation in terms of promoting physical fitness. Some areas where Arizona did well included: having a high percentage of state land designated as parkland, higher park-related expenditures per capita, and having lower smoking and heart disease mortality.[49]

To further improve the health of Arizonans it is the goal of ADHS to increase physical activity throughout the state. Physical activity decreases the risk of heart attack, colon cancer, diabetes and high blood pressure, and may decrease the risk of stroke. It also helps with weight control, contributes to healthy bones, muscles and joints; reduces the incidence of falls among the elderly; helps to relieve the pain of arthritis; decreases symptoms of anxiety and depression; and can decrease the need for hospitalizations, physician visits and medications. Moreover, physical activity does not need to be strenuous to be beneficial.[50] Since 2011, Arizona BRFSS respondents reporting physical activity levels that met at least one guideline were comparable to the national median (see **Figure 19A**).

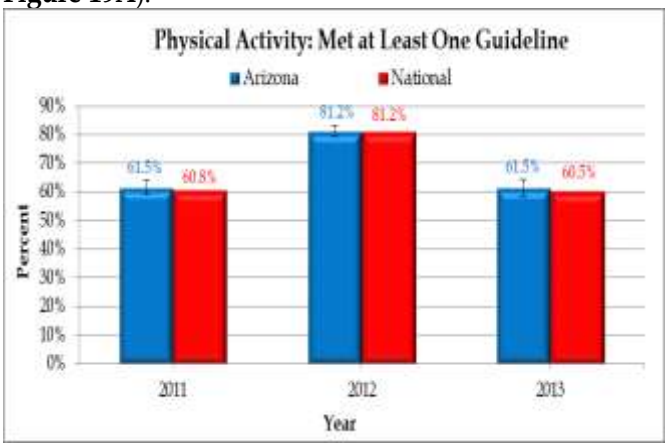


Figure 19A. Arizona versus National 2013 BRFSS respondents reported meeting at least one physical activity guideline.

Regular exercise also can contribute to the functional independence of the elderly and improve the quality of life for people of all ages.[51] In 2013, Arizona survey respondents reported physical activity levels comparable to national medians. The number of Arizona respondents whose physical activity met both guidelines (aerobic and muscle strengthening) was slightly above national medians (see **Figure 19B**).

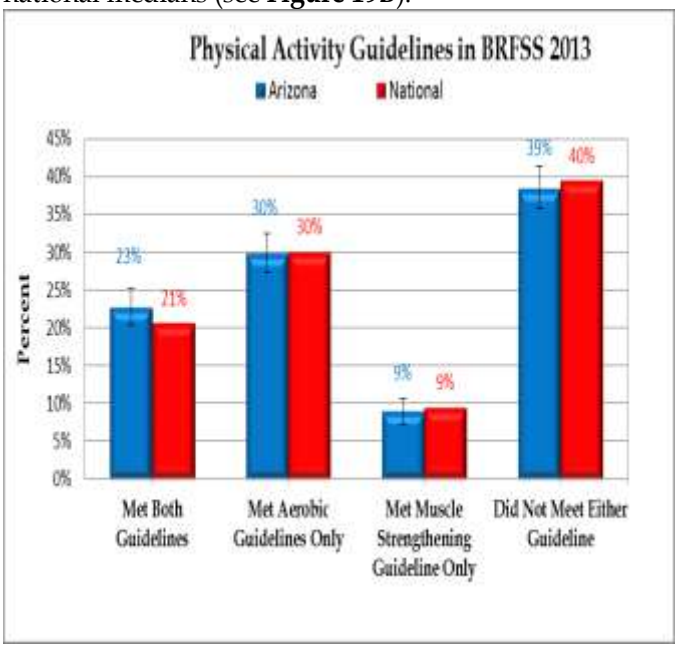


Figure 19B. Arizona versus National 2013 respondents reported physical activity by BRFSS guidelines.

Arizonans surveyed that met at least one guideline were in the second highest category when compared to all the states in the nation (see **Figure 19C**).

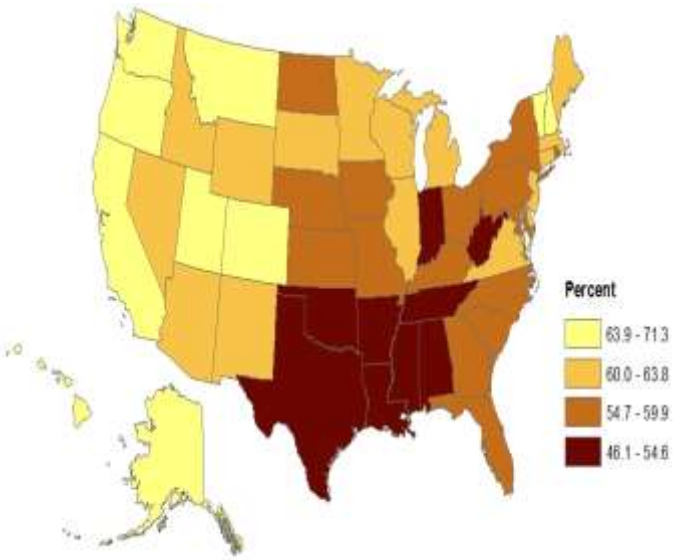


Figure 19C. Arizonans reported second highest class compared to nation (natural breaks).

[49] American College of Sports Medicine. Acsm American Fitness Index™ Health and Community Fitness Status of the 50 Largest Metropolitan Areas 2011 Edition. Accessed 2/1/2013. http://www.americanfitnessindex.org/docs/reports/2011_afi_report_final.pdf

[50] U.S. Department of Health and Human Services. Center for Disease Control and Prevention, The Burden of Chronic Diseases and Their Risk Factors: National and State Perspectives. CDC. 2004.

[51] Katz S. Branch LG, Branson MH., et al., Active Life Expectancy. N Engl J Med. 1983; 309: 1218-1224.

Beneficial Health Practices: Physical Activity

BRFSS 2013 Arizonans Respondents
Who Reported As Having Met One or More Physical Activity Requirements

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**60.5%**			
Arizona	**61.5%**	2349	58.7%	64.3%
Sex				
Male	65.6%	1030	61.3%	69.8%
Female	57.6%	1319	53.9%	61.3%
Age				
18-24	67.5%	151	58.9%	76.1%
25-34	67.6%	231	60.4%	74.9%
35-44	57.4%	240	49.4%	65.4%
45-54	54.9%	329	48.2%	61.7%
55-64	57.5%	494	51.1%	63.9%
65+	64.3%	904	60.1%	68.6%
Marital Status				
Married	60.1%	1206	56.1%	64.1%
Divorced	60.1%	359	53.0%	67.1%
Widowed	60.6%	311	53.9%	67.3%
Separated	38.5%	33	20.7%	56.3%
Never Married	68.7%	354	62.6%	74.7%
Unmarried Couple	55.7%	75	41.3%	70.0%
Education Attainment				
Less than highschool	42.3%	153	53.4%	64.3%
High School/GED	58.8%	534	61.6%	70.5%
Some College/Technical School	66.0%	742	65.8%	73.5%
College/Technical School Graduate	69.6%	912	65.8%	73.5%
Employment Status				
Employed for Wages	62.9%	760	58.6%	67.1%
Self Employed	68.7%	189	57.8%	79.6%
Out of Work	71.2%	139	61.7%	80.8%
Homemaker	52.1%	167	42.1%	62.0%
Student	53.7%	70	38.3%	69.1%
Retired	66.0%	871	61.7%	70.4%
Unable to Work	43.4%	143	31.7%	55.0%
Income				
Less than $10,000	55.5%	113	43.9%	67.1%
$10,000 to $14,999	52.1%	121	37.3%	66.9%
$15,000 to $19,999	45.1%	153	33.6%	56.6%
$20,000 to $24,999	55.2%	198	46.2%	64.3%
$25,000 to $34,999	60.1%	283	51.8%	68.4%
$35,000 to $49,999	65.7%	335	58.9%	72.6%
$50,000 to $74,999	63.1%	315	55.9%	70.2%
Above $75,000	71.9%	533	66.9%	76.9%
Race				
White Non-Hispanic	64.5%	1836	61.7%	67.4%
Black/African American	46.0%	44	29.7%	62.3%
Hispanic	57.7%	278	50.5%	64.9%
Asian/Pacific Islander	46.7%	21	20.4%	72.9%
American Indian	60.8%	100	50.5%	71.0%
Other	62.3%	70	46.8%	77.7%

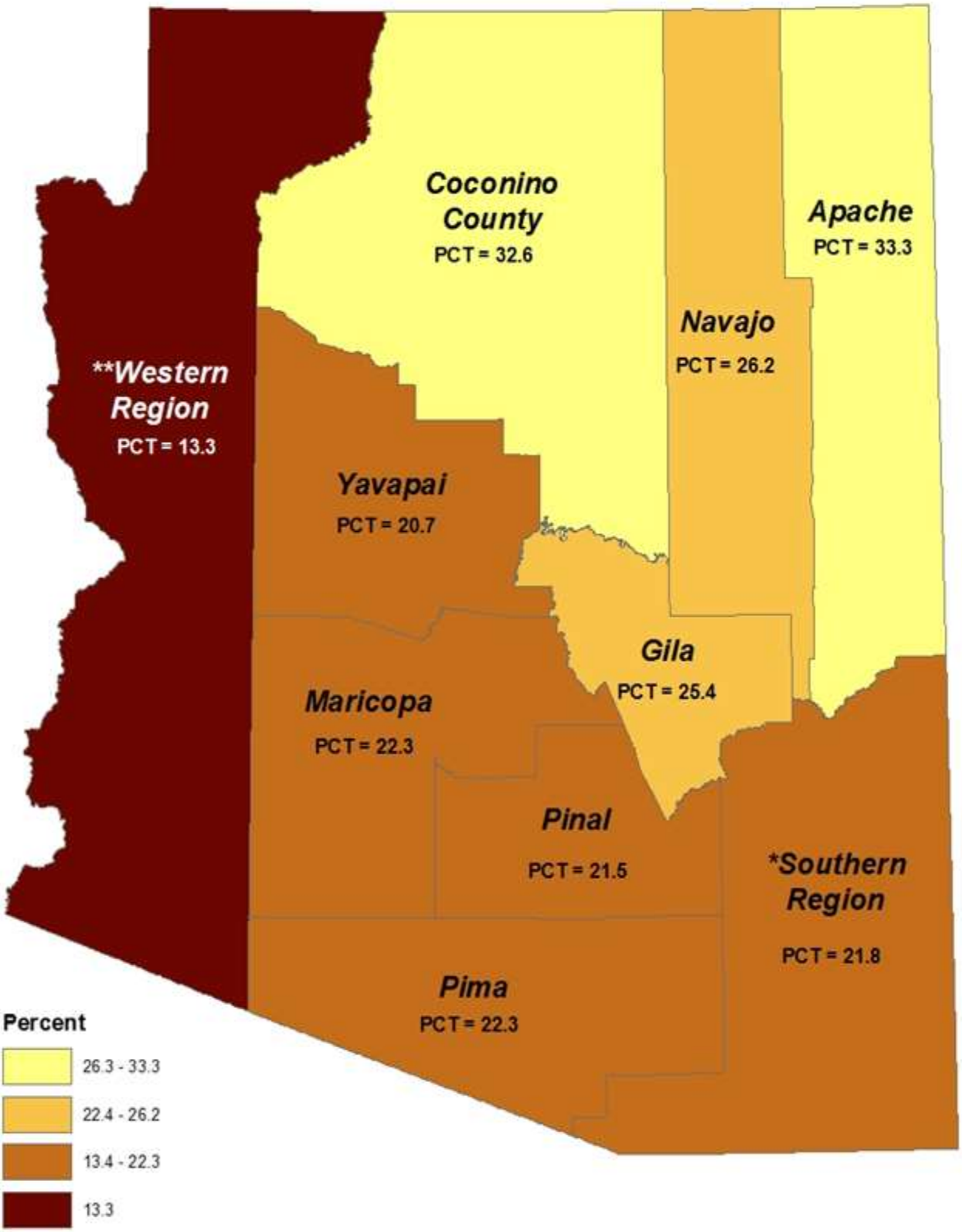
Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizonans who met one or more physical activity requirements by sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Who Reported They Met One or More Physical Activity Requirement, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

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.[52] 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 Preventive Services Task Force (USPSTF) recommends that all women who are planning to or can potentially become pregnant take a daily supplement containing folic acid. In 2013, 41.8% of surveyed Arizona women of child-bearing age reported taking a supplement containing folic acid (see **Figure 20A**).

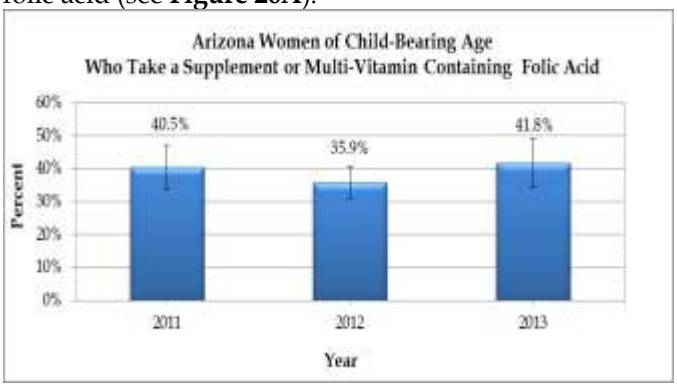


Figure 20A. Arizona 2011-2013 BRFSS female respondents of child-bearing age reported taking a supplement containing folic acid. Note: BRFSS questions regarding folic acid supplement or multi-vitamin containing folic acid was not asked in the BRFSS survey from 2008-2009.

The USPSTF recommends daily supplementation due to the fact that approximately 50% of all U.S. pregnancies are unplanned.[53] Less than half (41.8%) of women of child-bearing age knew that folic acid prevents birth defects. However, only 22.9% of women follow the USPSTF guideline of daily supplementation (see **Figure 20B**).

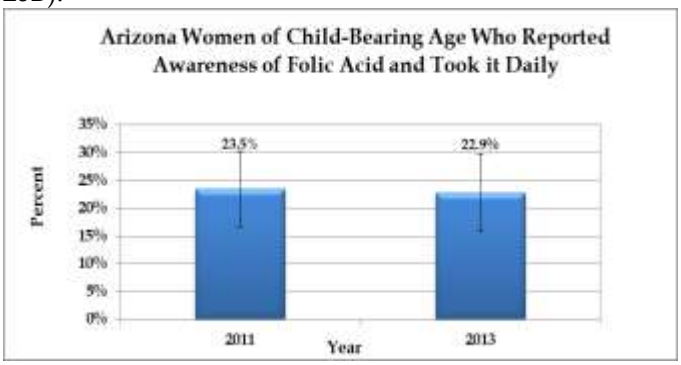


Figure 20B. Arizona 2011 and 2013 BRFSS female respondents of child-bearing age who knew that folic acid prevents birth defects and who took a folic acid supplement daily. Women of child bearing age are between the ages of 18 and 44.

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.[54] The data indicates that there is a racial disparity when assessing folic acid awareness and supplementation. From 2003-2010 lower percentages of Arizona Hispanic, Black and American Indian women surveyed reported taking a folic acid supplement than White Non-Hispanics (**Figure 20C**).

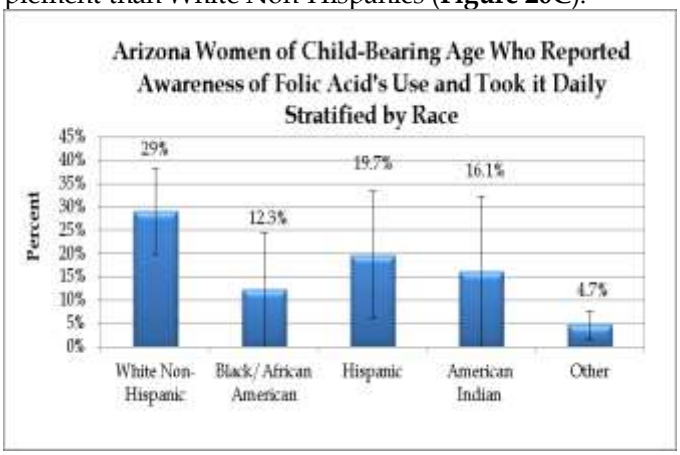


Figure 20C. Arizona BRFSS 2013 data assessing female respondents of child-bearing age who reported that they knew that folic acid prevents birth defects and/or take a supplement by race.

Since 2011, the percent of women surveyed who take a folic acid supplement is higher when they are aware of its benefits than when they are unaware (see **Figure 20D**).

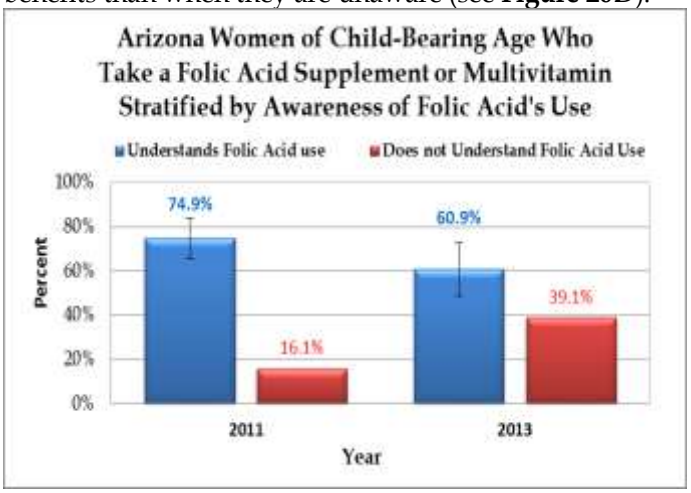


Figure 20D. Arizona BRFSS 2013 female respondents of child-bearing age who reported taking folic acid supplement by awareness status. Note: Unknown and refused responses =1.9%

52. *Draft Update Summary: Folic Acid for the Prevention of Neural Tube Defects: Preventive Medication*. U.S. Preventive Services Task Force. October 2014. http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryDraft/folic-acid-for-the-prevention-of-neural-tube-defects-preventive-medication

53. Division of Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention. Birth Defects Data & Statistics. http://www.cdc.gov/ncbddd/birthdefects/data.html

54. Decline in the Prevalence of Spina Bifida and Anencephaly by Race/Ethnicity: Laura J. Williams, Sonja A. Rasmussen, Alina Flores, Russell S. Kirby, Larry D. Edmonds. Pediatrics Sep 2005, 116(3)580-586; doi: 10.1542/peds.2005-0592.

Beneficial Health Practices: Folic Acid Use and Awareness

BRFSS 2013 Arizonans Women Respondents of Child-Bearing Age Who Take a Supplement Containing Folic Acid

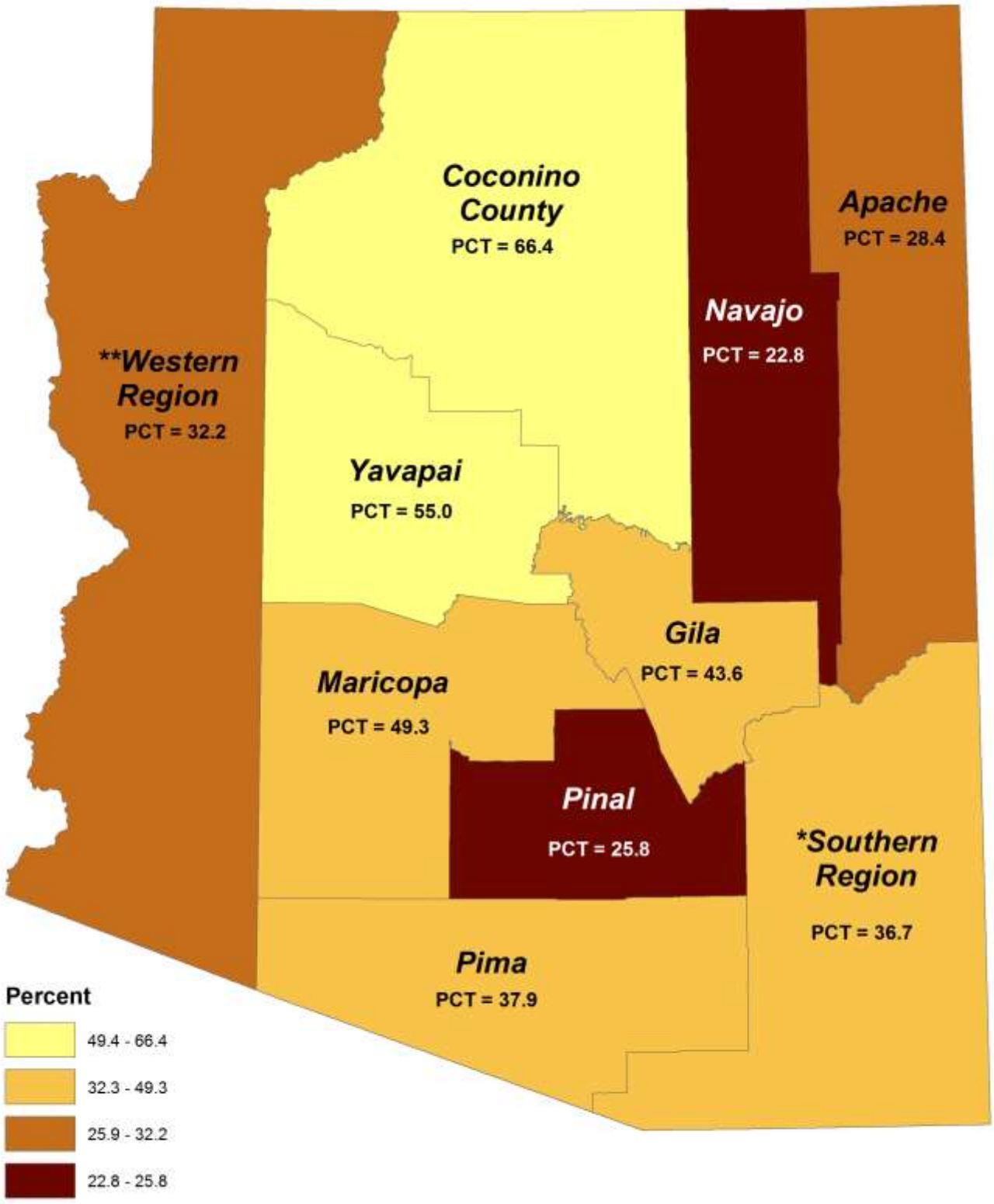
Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
Arizona	**41.8%**	168	34.4%	49.1%
Age				
18-24	22.7%	18	7.8%	37.6%
25-34	47.2%	57	33.2%	61.2%
35-44	52.2%	93	41.9%	62.5%
Marital Status				
Married	53.0%	98	43.4%	62.6%
Divorced	39.7%	19	24.2%	55.3%
Separated	55.6%	6	27.7%	83.6%
Never Married	29.4%	36	15.9%	42.9%
Unmarried Couple	35.5%	8	10.7%	60.2%
Education Attainment				
Less than high school	35.9%	11	2.6%	69.2%
High School/GED	28.2%	31	14.8%	41.6%
Some College/Technical School	42.7%	53	31.3%	54.1%
College/Technical School Graduate	59.4%	73	48.2%	70.7%
Employment Status				
Employed for Wages	45.6%	89	36.1%	55.1%
Self Employed	66.9%	14	46.4%	87.5%
Out of Work	26.1%	14	6.3%	45.8%
Homemaker	48.6%	34	30.0%	67.1%
Student	25.4%	11	5.7%	45.0%
Retired				
Unable to Work	64.5%	6	32.1%	96.9%
Income				
Less than $10,000	27.4%	10	14.4%	40.3%
$10,000 to $14,999	21.2%	11	10.1%	32.3%
$15,000 to $19,999	22.8%	5	0.0%	51.6%
$20,000 to $24,999	29.7%	13	7.5%	51.9%
$25,000 to $34,999	44.1%	21	21.2%	67.0%
$35,000 to $49,999	42.5%	17	15.1%	69.9%
$50,000 to $74,999	41.9%	26	24.8%	59.0%
Above $75,000	78.2%	56	65.7%	90.7%
Race				
White Non-Hispanic	50.5%	109	40.6%	60.5%
Black/African American	52.8%	7	8.4%	97.3%
Hispanic	27.8%	34	16.4%	39.3%
Asian/Pacific Islander	65.1%	3		
American Indian	22.2%	6	3.5%	40.8%
Other	60.8%	9	16.5%	100.0%

Use caution in interpreting cell sizes less than 50. N* is unweighted

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

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Female Respondents of Child-Bearing Age Who Reported Taking a Supplement Containing Folic Acid, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Beneficial Health Practices: Folic Acid Awareness

BRFSS 2013 Arizona Women Respondents of Child-Bearing Age Who Reported that Folic Acid Prevents Birth Defects

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
Arizona	**53.9%**	166	45.9%	62.0%
Age				
18-24	35.2%	19	18.2%	52.3%
25-34	53.0%	59	39.8%	66.1%
35-44	65.5%	88	54.7%	76.3%
Marital Status				
Married	64.6%	103	54.3%	74.8%
Divorced	54.9%	16	26.9%	82.9%
Separated	27.8%	4	1.6%	54.0%
Never Married	38.3%	34	22.4%	54.2%
Unmarried Couple	40.6%	9	24.6%	56.6%
Education Attainment				
Less than high school	68.3%	10	55.0%	81.6%
High School/GED	48.2%	30	30.2%	66.3%
Some College/Technical School	45.5%	50	31.9%	59.1%
College/Technical School Graduate	62.0%	76	48.7%	75.4%
Employment Status				
Employed for Wages	51.2%	88	40.4%	62.0%
Self Employed	47.0%	11	21.6%	72.4%
Out of Work	53.0%	12	24.7%	81.3%
Homemaker	65.5%	37	50.8%	80.2%
Student	43.1%	14	18.9%	67.2%
Retired				
Unable to Work	75.2%	4		
Income				
Less than $10,000	47.3%	8	33.9%	60.7%
$10,000 to $14,999	49.8%	8	18.1%	81.5%
$15,000 to $19,999	32.7%	8	12.6%	52.8%
$20,000 to $24,999	28.4%	13	9.1%	47.6%
$25,000 to $34,999	30.0%	12	10.1%	50.0%
$35,000 to $49,999	66.8%	18	44.7%	88.9%
$50,000 to $74,999	51.1%	25	28.9%	73.2%
Above $75,000	71.3%	54	54.4%	88.2%
Race				
White Non-Hispanic	60.0%	109	50.1%	69.8%
Black/African American	88.7%	6	63.3%	100.0%
Hispanic	51.0%	40	35.0%	67.1%
Asian/Pacific Islander				
American Indian	19.5%	4	0.0%	42.7%
Other	39.3%	7	0.0%	83.0%

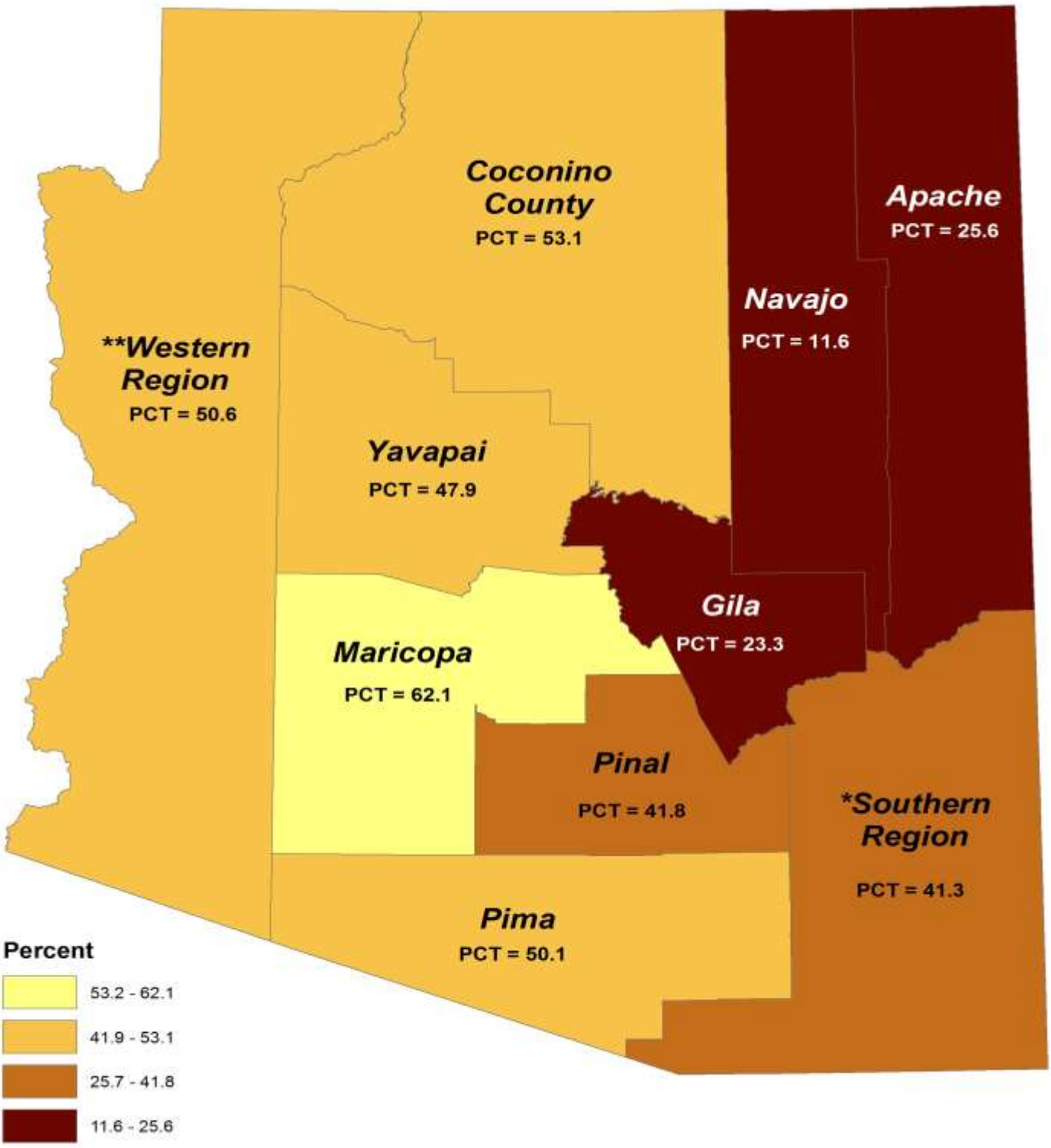
Use caution in interpreting cell sizes less than 50. N* is unweighted

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

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Female Respondents of Child-Bearing Age Who Reported They Were Aware a Supplement Contains Folic Acid, by County & Region-BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Beneficial Health Practices: Fruit and Vegetables

The U.S. Department of Agriculture (USDA) has made dietary recommendations to promote healthy eating. 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 21A**). The "My Plate" works as a guide to show how much of your plate the food groups should comprise in each meal. However, the daily recommendation of fruit and vegetable intake has not changed substantially. The USDA recommends that men and women eat 4½ - 5 cups of fruits and vegetables daily. Individuals who exercise a lot should consume more fruits and vegetables.[55,56] According to the Centers for Disease Control, 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 was a slight decline in the percent of adults meeting the recommended fruit intake.[57]

Figure 21A. 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.[53]

In 2011, the BRFSS changed the format of the fruit and vegetable question. The new questions are more inclusive and significantly different from previous years. Therefore, it is not possible to harmonize questions from previous years with those in the current survey. Arizonans surveyed who reported eating 5 or more daily servings of fruits and vegetables placed Arizona in the second-highest category for daily consumption of fruits and vegetables compared to other states in the nation (see **Figure 21B**).

Figure 21B. Arizonans eating 5 or more daily servings of fruit and vegetables was second-highest class to the nation. Figure 21B map displays (natural breaks).

In 2013, 17.2% of BRFSS respondents reported eating 5 or more servings of fruits and vegetables daily, similar to the national median, but declining slightly since 2011 (see **Figure 21C**).

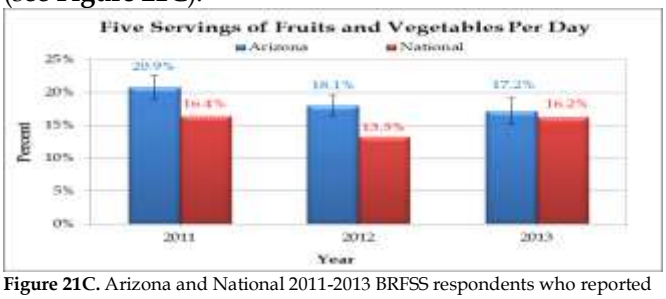


Figure 21C. Arizona and National 2011-2013 BRFSS respondents who reported that they consumed five or more servings of fruits and vegetables daily.

Estimates indicate that on average, U.S. adults consume fruit 1.1 times a day and vegetables 1.6 times per day.[58] The average reported daily servings of fruits and vegetables consumed by survey respondents has not changed significantly since 2011. In 2013 Arizonans surveyed reported they consumed an average of 3.4 servings of fruits and vegetables each day. The average number of fruit servings consumed daily was 1.4, and the average number of vegetables consumed daily was 2.0 (see **Figure 21D**).

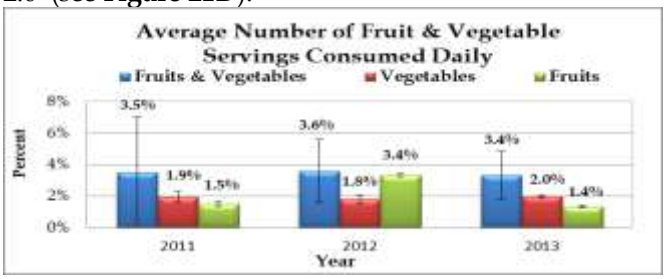


Figure 21D. Arizonans who reported consuming the average number of servings daily – BRFSS (2011- 2013).

55. "Food Pyramid." United States Department of Agriculture, n.d. Web. 18 Mar. 2014. <http://www.nal.usda.gov/fnic/Fpyr/pyramid.gif>.
56 "ChooseMyPlate.gov." ChooseMyPlate.gov. United States Department of Agriculture, n.d. Web. 16 Mar. 2014. <http://www.choosemyplate.gov/>.
57 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

58 "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 Vegetables

Arizonans Who Consumed Five or More Servings of Fruits and Vegetables Every Day in the 2013 BRFSS

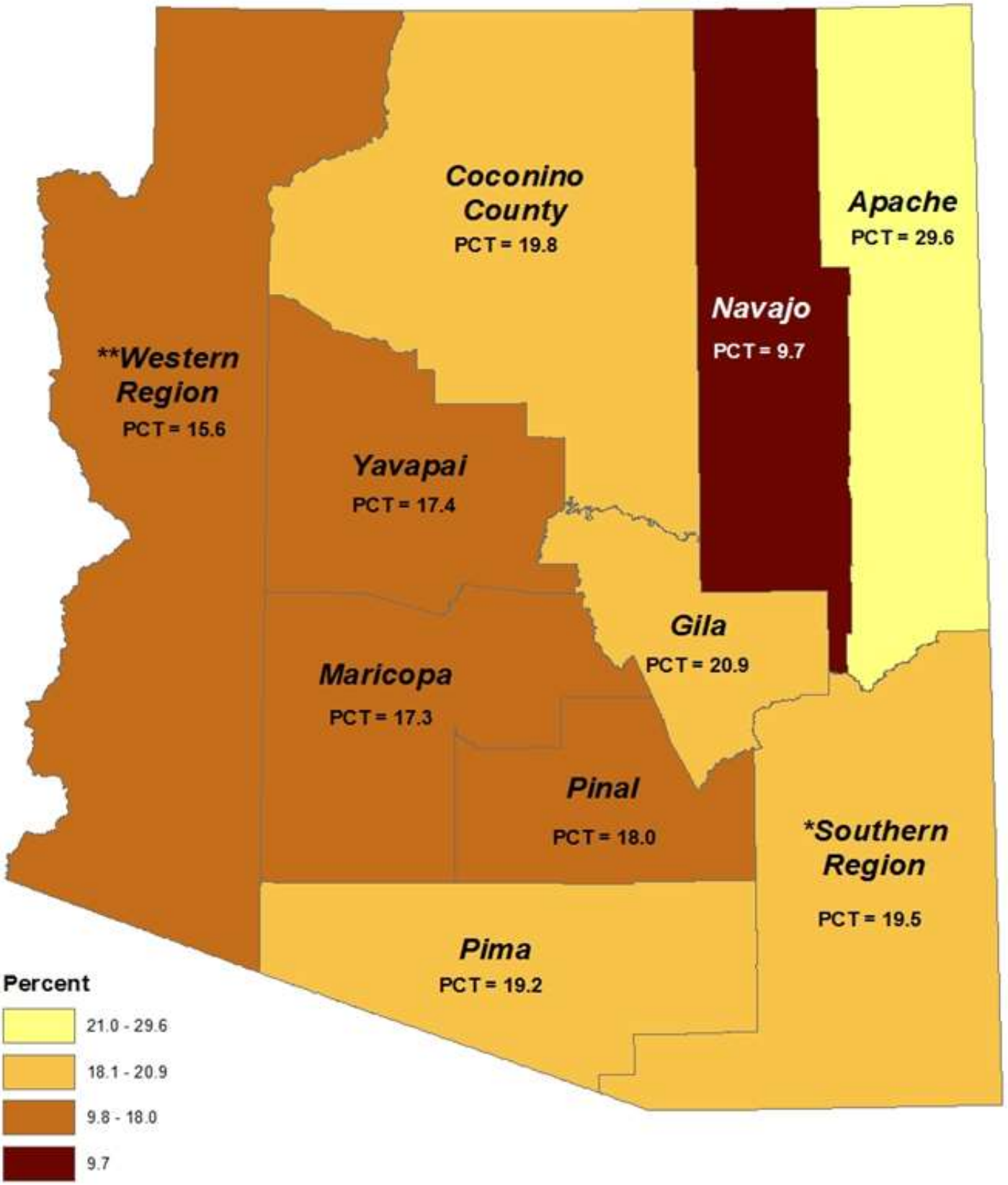
Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**16.2%**	53		
Arizona	**17.2%**	718	15.1%	19.2%
Sex				
Male	12.5%	205	9.7%	15.3%
Female	21.7%	513	18.7%	24.7%
Age				
18-24	15.7%	38	9.1%	22.4%
25-34	22.2%	80	15.6%	28.8%
35-44	21.1%	83	15.1%	27.2%
45-54	14.3%	105	10.4%	18.3%
55-64	12.8%	151	9.7%	15.9%
65+	16.3%	261	13.3%	19.3%
Marital Status				
Married	18.9%	385	16.1%	21.7%
Divorced	15.6%	100	9.5%	21.7%
Widowed	14.7%	98	10.3%	19.1%
Separated	7.1%	12	1.7%	12.4%
Never Married	17.1%	99	12.1%	22.1%
Unmarried Couple	12.2%	21	4.8%	19.5%
Education Attainment				
Less than high school	12.2%	47	6.7%	17.8%
High School/GED	14.9%	133	10.8%	19.1%
Some College/Technical School	17.7%	224	14.0%	21.3%
College/Technical School Graduate	21.9%	311	18.4%	25.3%
Employment Status				
Employed for Wages	19.6%	257	16.0%	23.2%
Self Employed	17.4%	57	10.4%	24.4%
Out of Work	13.2%	36	7.1%	19.2%
Homemaker	17.6%	58	10.5%	24.8%
Student	11.5%	18	3.5%	19.4%
Retired	15.5%	245	12.5%	18.4%
Unable to Work	16.5%	45	8.5%	24.5%
Income				
Less than $10,000	23.1%	35	11.7%	34.6%
$10,000 to $14,999	17.4%	44	7.9%	26.9%
$15,000 to $19,999	14.6%	47	7.8%	21.5%
$20,000 to $24,999	9.6%	54	5.6%	13.5%
$25,000 to $34,999	12.4%	73	8.1%	16.8%
$35,000 to $49,999	20.2%	108	13.8%	26.7%
$50,000 to $74,999	17.7%	93	12.3%	23.2%
Above $75,000	17.9%	161	13.4%	22.3%
Race				
White Non-Hispanic	17.3%	549	15.0%	19.5%
Black/African American	7.8%	9	0.0%	16.0%
Hispanic	18.1%	99	13.0%	23.2%
Asian/Pacific Islander	15.4%	6	0.0%	35.7%
American Indian	20.7%	32	12.7%	28.8%
Other	18.9%	23	8.9%	29.0%

Use caution in interpreting cell sizes less than 50. N* is unweighted

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

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Respondents Who Reported Consuming Five or More Servings of Fruits and Vegetables Every Day, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

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 include an analysis of the following:

- **Cholesterol (variable _CHOLCHK) –** Never receiving a diagnosis of high cholesterol is a positive outcome and receiving a diagnosis of high cholesterol is considered a negative outcome.
- **High Blood Pressure (variable _RFHYPE5)** Never receiving a diagnosis of high blood pressure is considered a positive outcome and receiving a diagnosis of high blood pressure is considered a negative outcome.
- **Obesity (variable _BMI5CAT) -** Not being obese is considered a positive outcome and being obese is considered a negative outcome.
- **Pre-diabetes (variable PDIABTST) –** Never receiving a diagnosis for pre-diabetes is considered a positive outcome and receiving a diagnosis of pre-diabetes is considered a negative outcome.
- **Diabetes (variable DIABETE3) - N**ever receiving a diagnosis of diabetes is considered a positive outcome and receiving a diagnosis of diabetes is considered a negative outcome.
- **Special Equipment (variable USEEQUIP) –** Never having a health problem or impairment that required special equipment is a positive outcome and having a health problem that required special equipment is considered a negative outcome.
- **Chronic Obstructive Pulmonary Disease (COPD) (variable CHCCOPD1) -** Never receiving a diagnosis of having COPD, emphysema or chronic bronchitis is considered a positive outcome, and receiving a diagnosis of having COPD, emphysema or chronic bronchitis is considered a negative outcome.
- **Cardiovascular Disease: Heart Attack (variable CVDINFR4) -** Never receiving a diagnosis of a heart attack is considered a positive outcome and receiving a diagnosis of a heart attack is considered a negative outcome.
- **Cardiovascular Disease: Angina (variables CVDCRHD4) -** Never receiving a diagnosis of angina is considered a positive outcome and receiving a diagnosis of angina is considered a negative outcome.
- **Stroke (variable CVDSTRK3) -** Never receiving a diagnosis of a stroke is considered a positive outcome and receiving a diagnosis of a stroke is considered a negative outcome.
- **Asthma ariable ASTHMA3) -** Never receiving a diagnosis of asthma is considered a positive outcome and receiving a diagnosis of asthma is 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 9)

Health Conditions and Limitations: Cholesterol Check

Having high blood cholesterol puts an individual at risk for heart disease, which is the leading cause of death in the United States. About one in six adults in the U.S. has high blood cholesterol levels[59]. While there are no symptoms of high cholesterol, some preventable risk factors include smoking, obesity, poor diet and lack of physical activity. Although a simple blood test can assess the level of cholesterol, many people have never had their cholesterol checked and are unaware that they are at risk. The 2013 BRFSS survey asked respondents to indicate whether they have ever had their cholesterol checked (see **Figure 22A**).

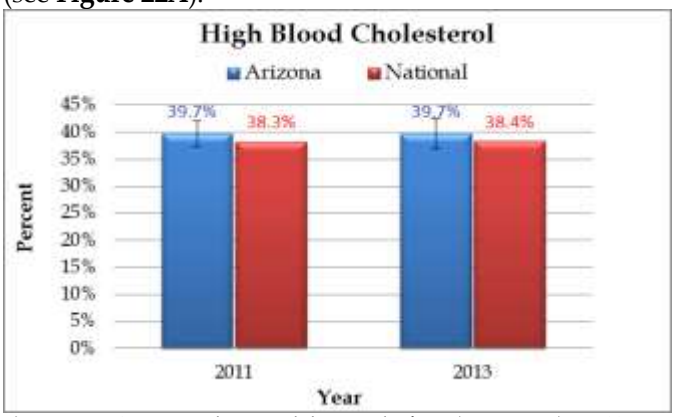


Figure 22A. Arizona and National data results from (2011 – 2013) BRFSS question: Have you EVER been told by a doctor, nurse or other health professional that your blood cholesterol is high?

Collecting data on cholesterol, the BRFSS provides Arizona with a tool to assess the interventions programs targeting nutrition, physical activity, obesity and tobacco use. Survey response results from 2013 presented by race/ethnicity group are presented in **Figure 22B**.

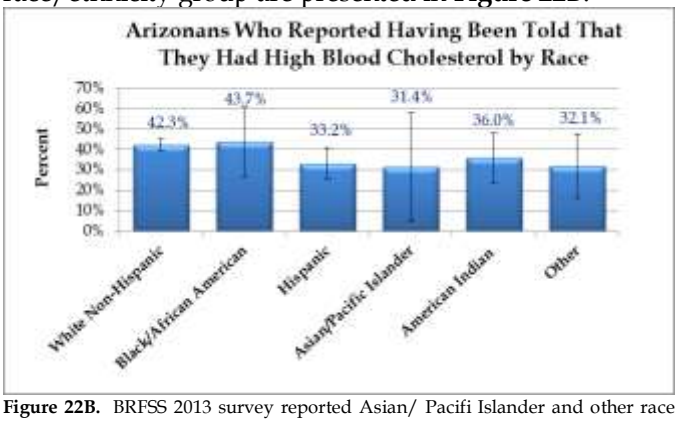


Figure 22B. BRFSS 2013 survey reported Asian/ Pacifi Islander and other race categories being the lowest to report that they were told that they had high blood cholesterol, at 31.4%.

Arizona is in the lowest category among all US states surveyed reporting high blood cholesterol in 2013 (**Figure 22C**).

Figure 22C Displays both Arizona and National data showing who indicated that they had their cholesterol checked within 12 months to five or more years ago by state (natural breaks), BRFSS -2013.

Cholesterol is a waxy, fat-like substance that your body needs. When you have too much in your blood, it can build up on the walls of your arteries. This can lead to heart disease and stroke. There are steps you can take to prevent high cholesterol—or to reduce your levels if they are high. Examples include eating a healthy diet, not being overweight and getting enough exercise [60]

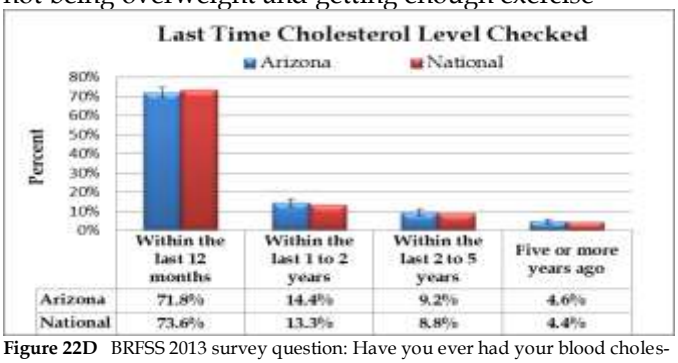


Figure 22D BRFSS 2013 survey question: Have you ever had your blood cholesterol checked? About how long has it been since you last had your blood cholesterol checked?

Figure 22E show BRFSS 2013 Arizona survey results for most recent cholesterol testing, and elevated cholesterol by income category.

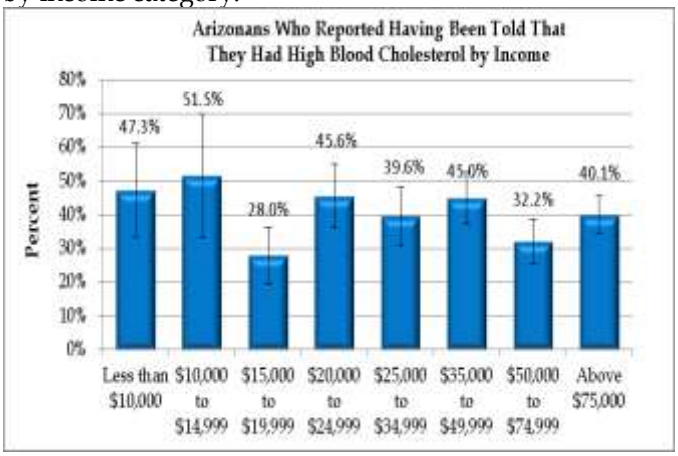


Figure 22E. BRFSS 2013 survey reportedArizonans having been told that they had high blood cholesterol categorized by income category.

[59]U.S. Department of Health and Human Services, Center for Disease Control and Prevention, High Cholesterol Understand your Risk, Internet Accessed June 10, 2010, http://www.cdc.gov/cholesterol/docs/ConsumerEd_Cholesterol.pdf

[60]MayoClinic.org. Diseases and Conditions. High Blood Pressure (Hypertension). Accessed Jan 20, 2013. http://www.mayoclinic.org/diseases-conditions/high-blood-pressure/basics/symptoms/con-20019580

Health Conditions and Limitations: Cholesterol Check

Arizonans Who Reported That They Were Told by a Health Professional That They Had High Cholesterol

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	38.4%	53		
Arizona	39.7%	1600	36.9%	42.5%
Sex				
Male	41.8%	655	37.4%	46.3%
Female	37.8%	945	34.2%	41.4%
Age				
18-24	5.9%	6	0.0%	11.9%
25-34	19.7%	45	11.8%	27.5%
35-44	29.3%	91	21.8%	36.9%
45-54	38.5%	216	32.2%	44.8%
55-64	54.1%	426	48.3%	59.9%
65+	55.8%	816	51.6%	60.0%
Marital Status				
Married	40.4%	829	36.7%	44.1%
Divorced	48.9%	286	42.0%	55.8%
Widowed	52.6%	304	45.7%	59.5%
Separated	47.3%	39	28.1%	66.5%
Never Married	20.3%	104	13.8%	26.7%
Unmarried Couple	40.6%	30	21.6%	59.6%
Education Attainment				
Less than highschool	41.8%	131	30.9%	52.7%
High School/GED	39.0%	404	33.1%	44.8%
Some College/Technical School	41.9%	509	37.0%	46.8%
College/Technical School Graduate	36.4%	550	32.5%	40.2%
Employment Status				
Employed for Wages	33.1%	396	28.5%	37.7%
Self Employed	36.5%	94	26.8%	46.2%
Out of Work	31.8%	66	20.5%	43.1%
Homemaker	36.1%	109	26.0%	46.2%
Student	12.5%	10	2.0%	23.0%
Retired	54.4%	736	50.0%	58.8%
Unable to Work	55.1%	183	44.4%	65.8%
Income				
Less than $10,000	47.3%	91	33.3%	61.2%
$10,000 to $14,999	51.5%	115	33.2%	69.9%
$15,000 to $19,999	28.0%	115	19.5%	36.5%
$20,000 to $24,999	45.6%	140	36.2%	55.0%
$25,000 to $34,999	39.6%	172	30.7%	48.5%
$35,000 to $49,999	45.0%	250	37.3%	52.7%
$50,000 to $74,999	32.2%	187	25.7%	38.8%
Above $75,000	40.1%	311	34.5%	45.7%
Race				
White Non-Hispanic	42.3%	1300	39.3%	45.3%
Black/African American	43.7%	32	26.7%	60.8%
Hispanic	33.2%	174	25.4%	41.0%
Asian/Pacific Islander	31.4%	13	4.9%	57.9%
American Indian	36.0%	47	23.7%	48.2%
Other	32.1%	34	16.4%	47.7%

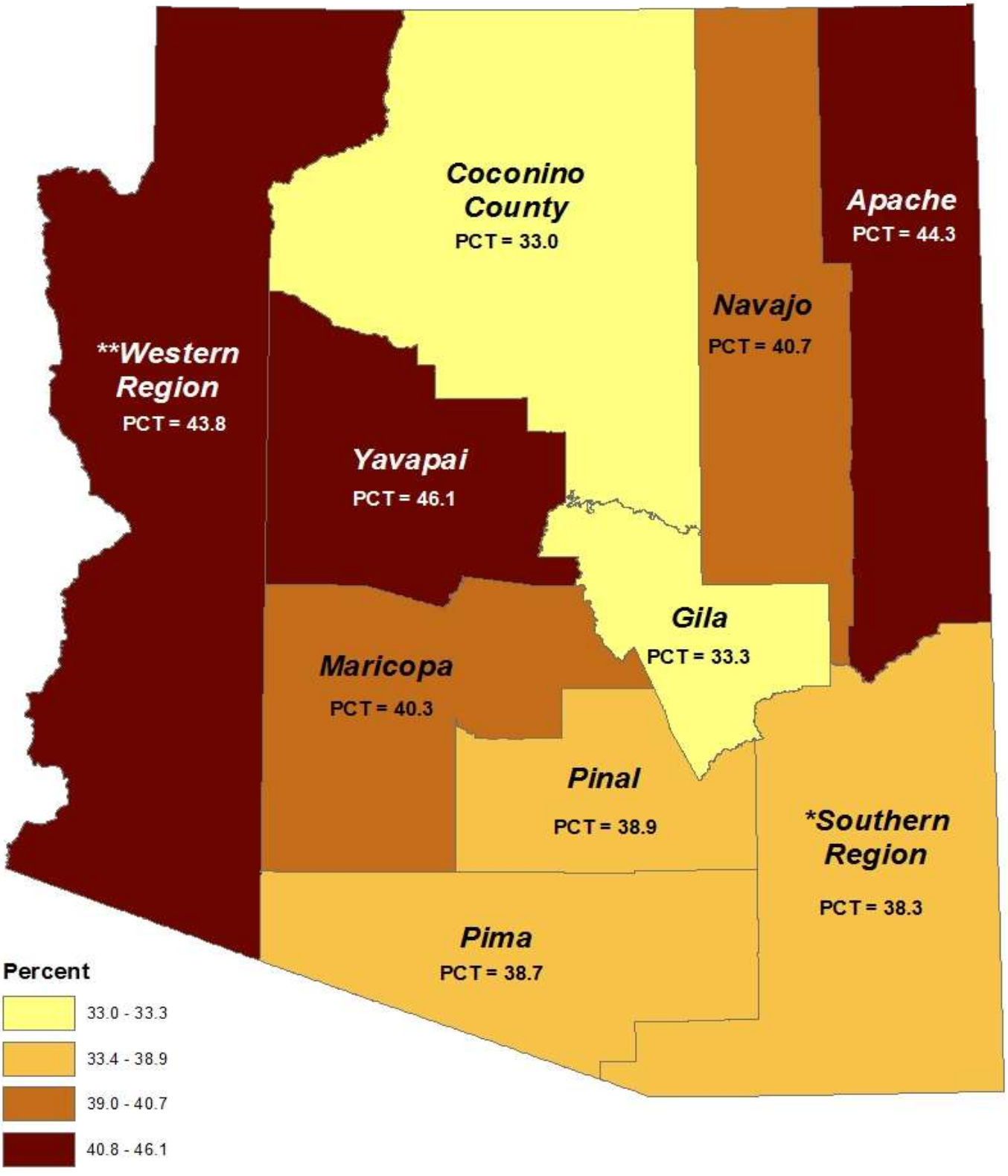
Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizonans who reported that they had high cholesterol by age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Who Reported Being Told They Have High Cholesterol, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Health Conditions and Limitations: High Blood Pressure

About 70 million American adults (29%) have high blood pressure—that's **1 of every 3** adults in the United States. High blood pressure increases the risk for heart disease and stroke, the first and third leading causes of death in the United States.[61] High blood pressure is called the "silent killer" because it often has no warning signs or symptoms, and many people don't realize they have it[62]. High blood pressure significantly increases the risk for heart disease and stroke, which are among the top three leading causes of death in the United States. That's why it is important to get your blood pressure checked regularly. Measuring your blood pressure is quick and painless, and it is the only way to know whether your pressure is high. You can check your blood pressure at a doctor's office, at a pharmacy or at home.[63]

High blood pressure has been associated with smoking, obesity, lack of physical activity, and too much salt in the diet overconsumption of alcohol, stress, age, genetics, thyroid disorders and chronic kidney disease. [64] Arizonans reported in 2013 having high blood pressure at levels similar to the national median (see **Figure 23A**).

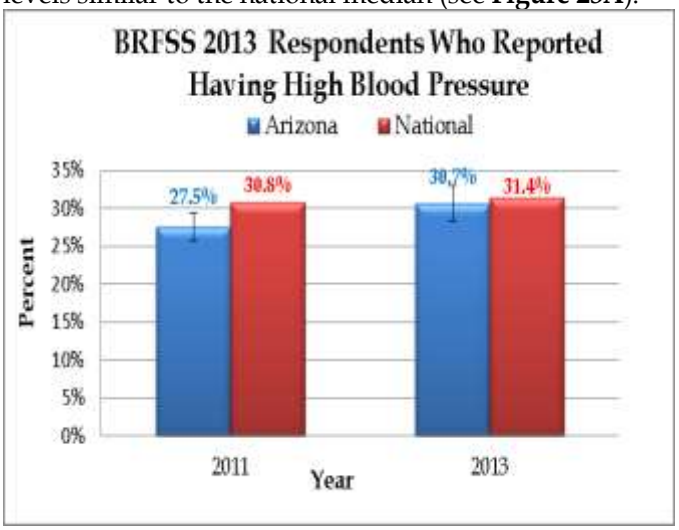


Figure 23A. BRFSS 2013 Survey question: (Have you ever been told by a doctor, nurse, or other health professionals that you have high blood pressure?)

Arizona survey respondents reported high blood pressure at levels placing them in the second lowest category in the nation (see **Figure 23B).**

Figure 23B. BRFSS 2013 data showing adults reporting that they had high blood pressure. Figure 23B map displays by state, (natural breaks).

In 2013, similar proportions of Arizonan males and females surveyed reported having high blood pressure **(**see **Figure 23C).**

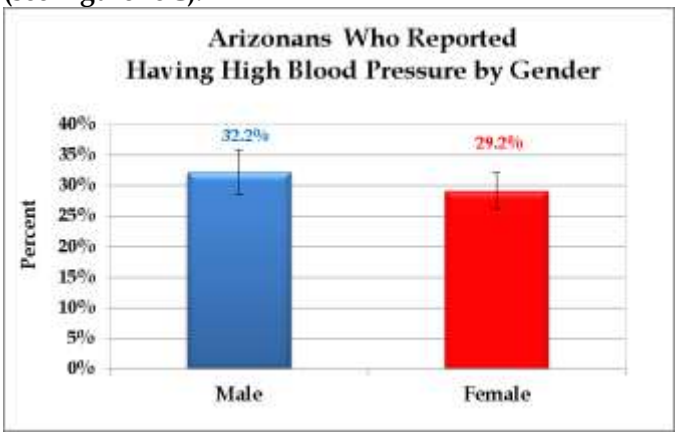


Figure 23C. Arizonans who reported having high blood pressure by gender, BRFSS-2013.

BRFSS 2013 survey Arizona respondents reported having high blood pressure by income category.

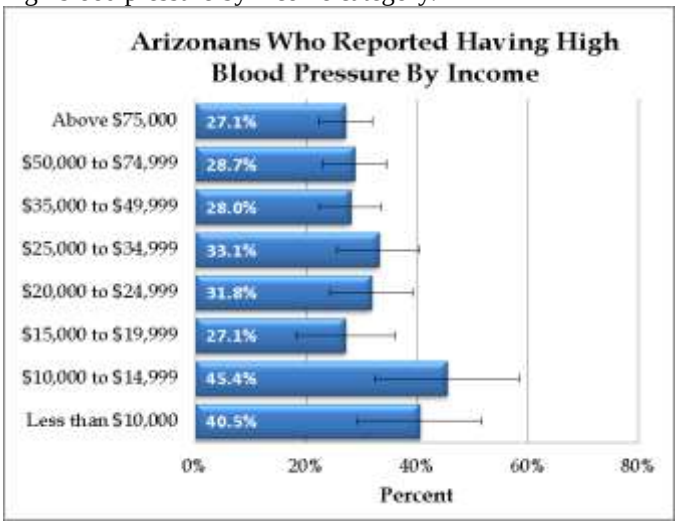


Figure 23D. Arizonans who reported having high blood pressure by income - BRFSS 2013.

[61] Nwankwo T, Yoon SS, Burt V, Gu Q. Hypertension among adults in the US: National Health and Nutrition Examination Survey, 2011-2012. NCHS Data Brief, No. 133. Hyattsville, MD: National Center for Health Statistics, Centers for Disease Control and Prevention, US Dept of Health and Human Services, 2013.

[62] U.S. Department of Health and Human Services, Center for Disease Control and Prevention, High Blood Pressure facts: Internet access: November 14, 2014. http://www.cdc.gov/bloodpressure/measure.htm

[63] U.S. Department of Health and Human Services, Center for Disease Control and Prevention, High Blood Pressure facts: Internet access: November 14, 2014. http://www.cdc.gov/bloodpressure/docs/consumered_hbp.pdf

[64] MayoClinic.org. Diseases and Conditions. High Blood Pressure (Hypertension). Accessed Jan 20, 2013. http://www.mayoclinic.org/diseases-conditions/high-blood-pressure/basics/symptoms/con-20019580.

Health Conditions and Limitations: High Blood Pressure

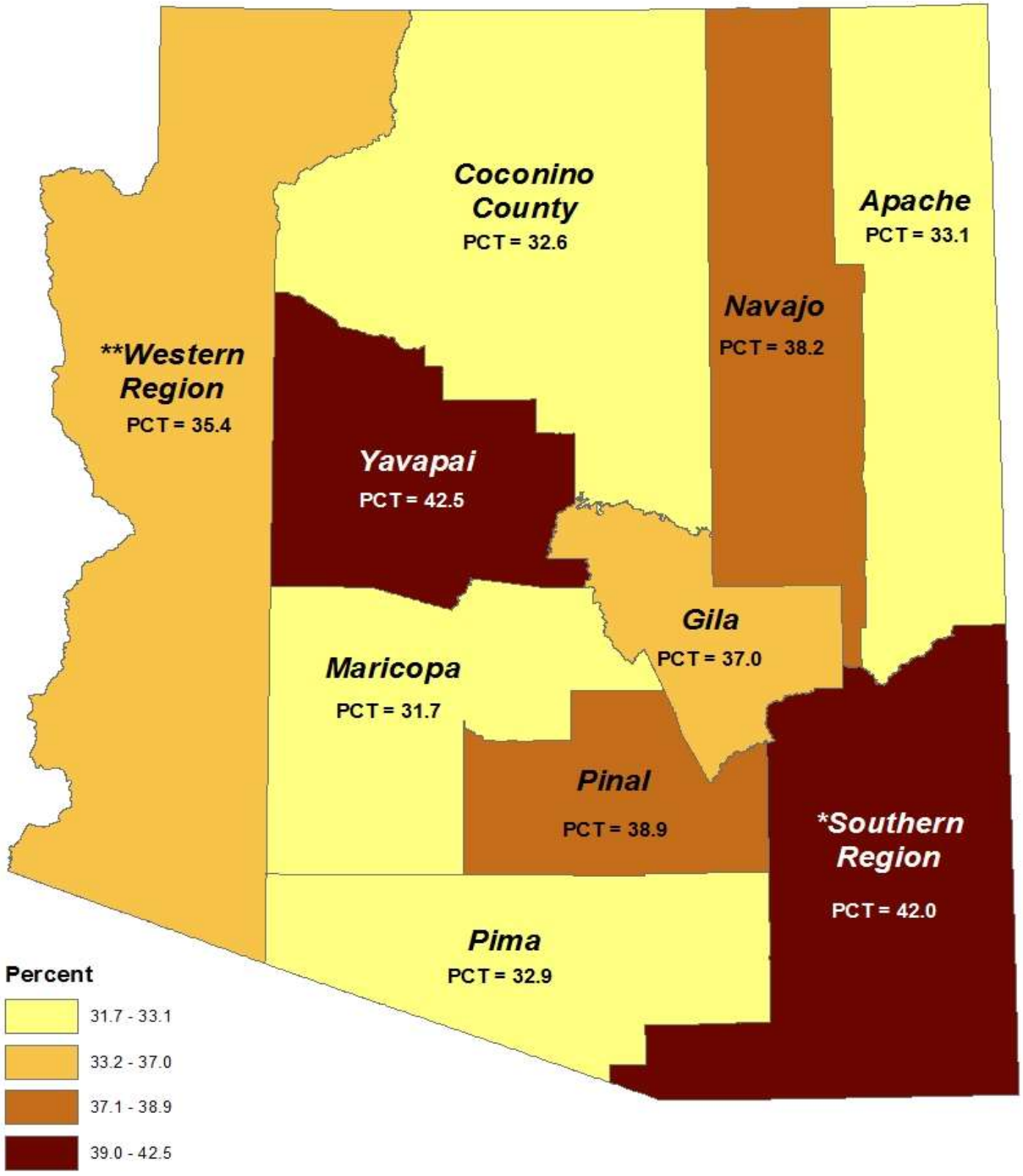
Arizonans Who Reported Having High Blood Pressure				
			Confidence Interval	
Characteristic	Percent	N	Lower Mean	Upper Mean
National	31.4%	53		
Arizona	30.7%	1720	28.4%	33.0%
Sex				
Male	32.2%	741	28.6%	35.9%
Female	29.2%	979	26.3%	32.1%
Age				
18-24	9.7%	17	2.2%	17.2%
25-34	12.0%	51	7.7%	16.3%
35-44	21.2%	92	15.1%	27.3%
45-54	31.4%	225	25.8%	37.1%
55-64	43.9%	398	38.1%	49.7%
65+	58.0%	937	53.9%	62.2%
Marital Status				
Married	32.5%	830	29.3%	35.8%
Divorced	41.8%	324	35.4%	48.3%
Widowed	59.3%	352	52.4%	66.1%
Separated	31.9%	36	16.2%	47.6%
Never Married	16.5%	131	11.4%	21.5%
Unmarried Couple	14.7%	35	7.5%	21.9%
Education Attainment				
Less than high school	22.3%	50	12.5%	32.2%
High School/GED	31.0%	230	25.7%	36.2%
Some College/Technical School	39.9%	319	34.5%	45.3%
College/Technical School Graduate	39.3%	388	34.6%	44.1%
Employment Status				
Employed for Wages	20.9%	142	15.9%	25.9%
Self Employed	35.8%	61	23.7%	48.0%
Out of Work	23.0%	27	11.0%	34.9%
Homemaker	33.6%	67	22.5%	44.7%
Student	9.9%	1	0.0%	27.5%
Retired	48.4%	632	44.0%	52.8%
Unable to Work	23.6%	63	14.0%	33.2%
Income				
Less than $10,000	17.1%	27	8.3%	26.0%
$10,000 to $14,999	36.5%	57	18.7%	54.3%
$15,000 to $19,999	29.6%	62	20.2%	39.0%
$20,000 to $24,999	26.9%	86	18.9%	34.9%
$25,000 to $34,999	34.1%	117	25.0%	43.2%
$35,000 to $49,999	43.9%	175	35.9%	51.9%
$50,000 to $74,999	38.9%	137	30.4%	47.4%
Above $75,000	34.9%	182	28.3%	41.4%
Race				
White Non-Hispanic	37.8%	866	34.6%	41.0%
Black/African American	46.3%	21	25.6%	67.0%
Hispanic	22.8%	65	14.2%	31.4%
Asian/Pacific Islander	16.4%	5	0.0%	35.7%
American Indian	30.9%	14	7.9%	53.8%
Other	33.0%	24	16.0%	50.0%

Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizonans who reported that they had high blood pressure by age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Respondents Who Reported Being Told They Have High Blood Pressure, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

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. Obesity is a risk factor for all of these conditions, plus arthritis-related disabilities. Furthermore, one in three cancer-related deaths can also be attributed to obesity.[65] Obesity has attained epidemic proportions in the United States more than doubling in the past two decades.[66] To assess obesity, the BRFSS collects data on self-reported height and weight; the BMI formula for body mass index (Kg/m² > 30) is then used to define obesity. About one in four Arizonans surveyed (26.8% in 2013) were obese, levels similar to or slightly below the national median since 2011 (see **Figure 24A**).

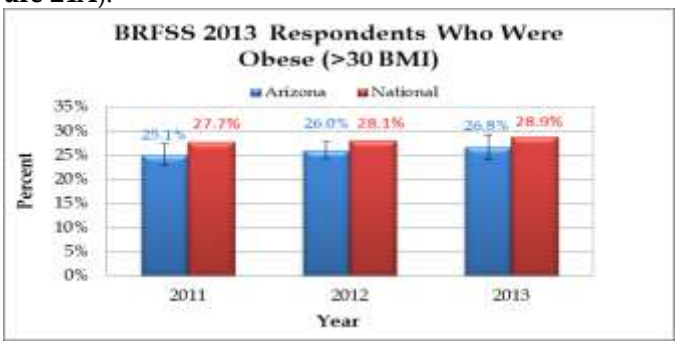


Figure 24A. Arizona and National 2011-2013 BRFSS respondents who were obese based on self-reported height and weight.

Arizona falls into the second lowest class for obesity nationally (see **Figure 24B**).

Figure 24B. BRFSS 2013 survey respondents who are categorized as being obese. Figure 24B map displays natural breaks.

Research has shown that low income households are less likely to live in communities that support healthy eating, and that stores in low-income communities are more likely to stock foods that are of lower quality, but are more filling. Furthermore, individuals from low-income households have expressed that fresh fruits and vegetables are desirable but impractical due to cost.[67] The effects of the unavailability of healthy foods can be seen in the rise of obesity in low income households. BRFSS data from 2000-2010 showed that respondents in low-income households were the most likely to report being obese. Recent data since 2011 show similar patterns with highest obesity levels reported by the respondents in the lowest income group, and the lowest levels reported in the highest income groups (see **Figure 24C**).

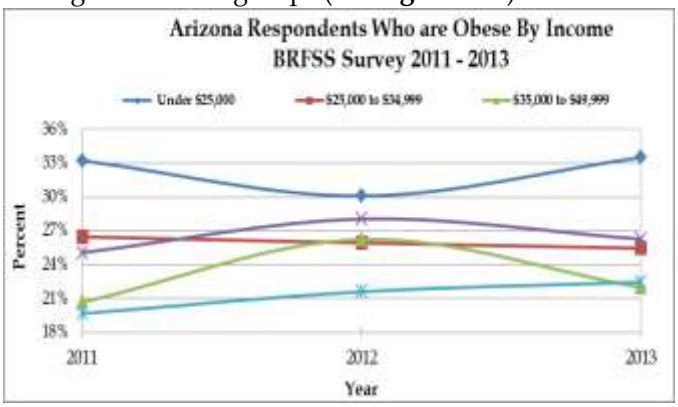


Figure 24C. Arizona 2011-2013 BRFSS respondents were categorized as being obese by income.

Although the disease burden associated with obesity is far reaching, being overweight and underweight can also have detrimental effects on health. In 2013, Arizona BRFSS reported being in the normal BMI range, at 35.8% (see **Figure 24D**).

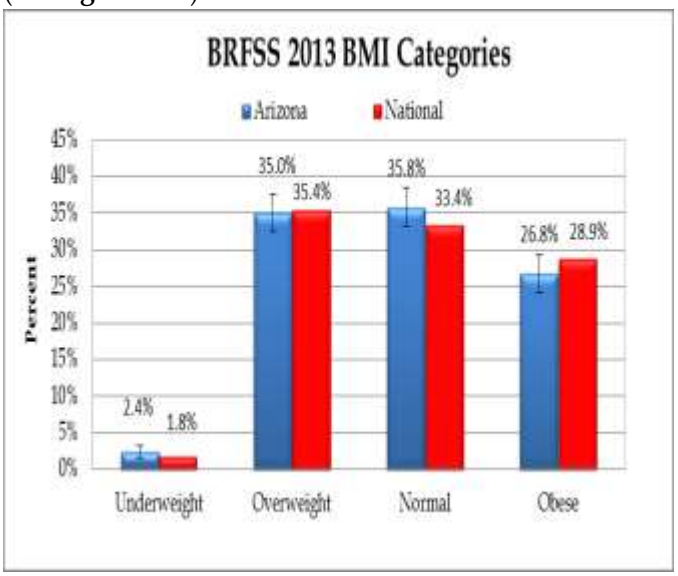


Figure 24D. BRFSS 2013 respondents reported BMI categories, Arizona and National comparisons. The BMI formula for body mass index (Kg/m2 > 30) was used to define obesity.

65. Trust for America's Health. Reports, F as in Fat: How Obesity Threatens America's Future 2012. Published Sep 2012. Accessed Sep 2013. http://healthyamericans.org/report/100/.
66. CDC. State-specific prevalence of obesity among adults---United States, 2009. MMWR 2010;59(30);951-955

67. Hendrickson D., Smith C., Eikenberry N. Fruit and vegetable access in four low-income food deserts communities in Minnesota. Agric. Hum. Values. 2006;23:371–383. doi: 10.1007/s10460-006-9002-8.

Health Conditions and Limitations: Obesity

Arizona BRFSS 2013 Survey Respondents Who Were Obese
BMI (Kg/m2 > 30)

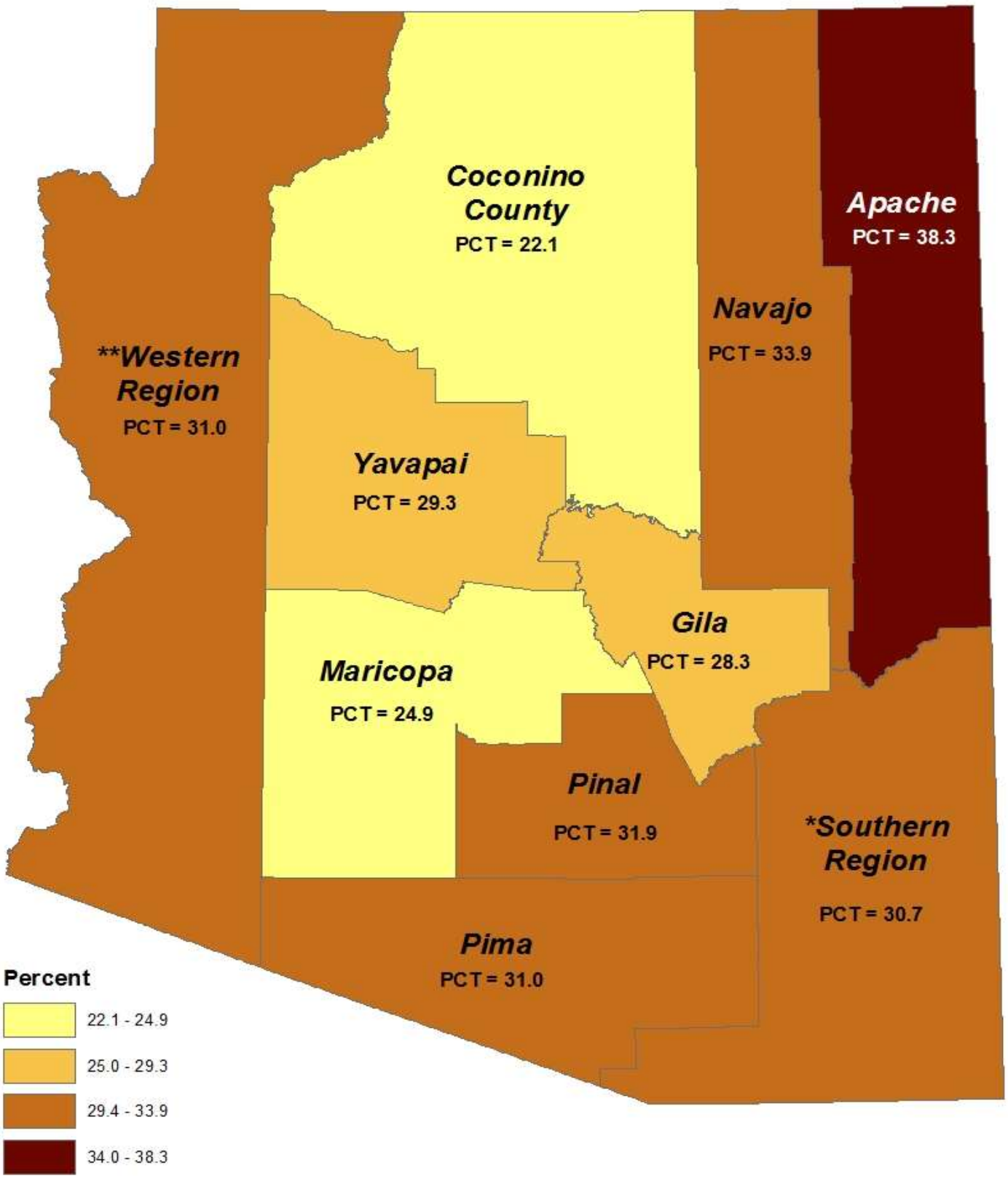
Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**28.9%**	53		
Arizona	**26.8%**	1067	24.2%	29.3%
Sex				
Male	26.5%	433	22.6%	30.4%
Female	27.1%	634	23.9%	30.3%
Age				
18-24	13.4%	38	8.3%	18.6%
25-34	29.6%	87	21.6%	37.5%
35-44	27.6%	115	20.3%	34.8%
45-54	34.6%	209	28.2%	40.9%
55-64	30.4%	273	25.3%	35.6%
65+	23.2%	345	19.5%	26.8%
Marital Status				
Married	27.7%	528	24.1%	31.2%
Divorced	32.0%	197	25.5%	38.5%
Widowed	20.7%	130	15.5%	25.9%
Separated	32.4%	37	17.6%	47.2%
Never Married	22.5%	134	16.5%	28.6%
Unmarried Couple	30.5%	34	17.8%	43.2%
Education Attainment				
Less than high school	42.5%	136	32.7%	52.3%
High School/GED	27.3%	306	22.6%	31.9%
Some College/Technical School	24.9%	324	21.1%	28.8%
College/Technical School Graduate	19.2%	296	16.1%	22.4%
Employment Status				
Employed for Wages	25.0%	362	21.3%	28.7%
Self Employed	33.5%	74	21.2%	45.9%
Out of Work	30.3%	80	21.7%	38.8%
Homemaker	25.4%	71	16.5%	34.4%
Student	22.8%	20	9.6%	35.9%
Retired	24.2%	330	20.3%	28.1%
Unable to Work	38.6%	125	26.9%	50.4%
Income				
Less than $10,000	38.5%	88	26.6%	50.5%
$10,000 to $14,999	27.3%	84	17.0%	37.6%
$15,000 to $19,999	37.8%	103	25.6%	50.0%
$20,000 to $24,999	30.4%	106	21.0%	39.7%
$25,000 to $34,999	25.5%	113	17.8%	33.1%
$35,000 to $49,999	22.0%	142	16.6%	27.4%
$50,000 to $74,999	26.3%	134	20.1%	32.5%
Above $75,000	22.5%	175	17.1%	27.8%
Race				
White Non-Hispanic	21.4%	706	19.1%	23.8%
Black/African Ameri	34.5%	36	20.1%	48.8%
Hispanic	36.7%	200	29.4%	43.9%
Asian/Pacific Islander	18.7%	5	0.0%	41.2%
American Indian	53.0%	81	42.0%	64.1%
Other	19.7%	39	11.2%	28.3%

Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizona BRFSS survey respondents who were categorized as being obese (based on calculated BMI) by sex, age, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Respondents Who Reported Being Obese, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Health Conditions and Limitations: Pre-Diabetes

Pre-diabetes is the condition that can lead to type 2 diabetes and heart disease.[68] Pre-diabetes is where the blood glucose is higher than normal but not high enough to be diagnosed as diabetes. According to the CDC and the American Diabetes Association (ADA), a person with certain risk factors is more likely to develop pre-diabetes and type II diabetes[69]. Those risk factors include excess weight, high cholesterol, low physical activity, those age 45 years and above, and members of racial/ethnic minority groups. National pre-diabetes prevalence estimates indicate that over 35% of racial/ethnic groups met at least one of the ADA diagnostic criteria and risk factors.[70]

Pre-diabetes is reversible, and through lifestyle modifications, a person can deter the onset of type 2 diabetes. Lifestyle recommendations include a balanced diet of less saturated fats, increase in physical activity with a goal of losing 7% of your total weight, and active screening and monitoring of blood glucose levels with a primary care physician. Other opportunities include enrolling in the National Diabetes Program (DPP), a 16-week evidenced-based program that delivers effective type 2 diabetes prevention lifestyle interventions for people at risk.[71] Arizonans surveyed in the BRFSS 2013 reported being diagnosed with pre-diabetes at levels (8.0%) similar to the national median (7.9%) (see **Figure 25A**).

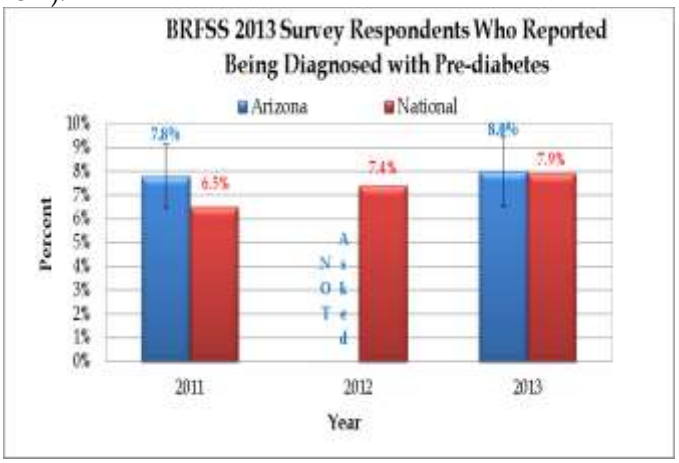


Figure 25A. Arizona 2013 BRFSS survey respondents who reported having been told by a health care provider that they were diagnosed with Pre-diabetes. Arizona did not ask questions regarding pre-diabetes in 2012.

When comparing to the nation, the data shows that Arizona falls into the second lowest class for respondents reporting being diagnosed with pre-diabetes (See **Figure 25B**).

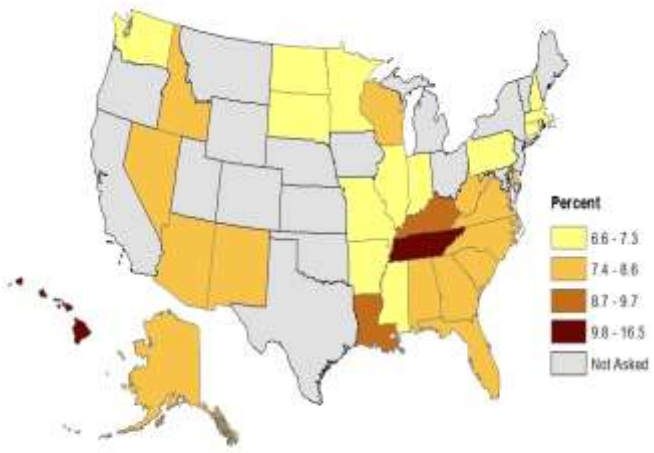
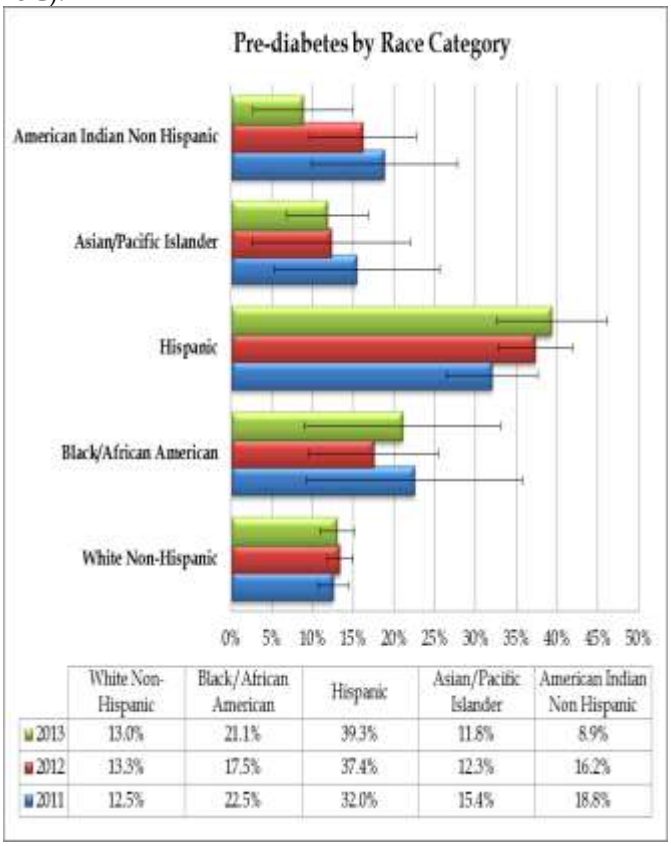


Figure 25B. National map displays natural breaks and results from BRFSS 2013 survey respondents who reported being diagnosed with Pre-Diabetes.

Hispanics in Arizona reported having diagnosing with pre-diabetes at the highest rates than other race categories, at 32%. Blacks in Arizona reported second highest to being diagnose to pre-diabetes, at 21.1% (see **Figure 25C**).



	White Non-Hispanic	Black/African American	Hispanic	Asian/Pacific Islander	American Indian Non Hispanic
2013	13.0%	21.1%	39.3%	11.8%	8.9%
2012	13.3%	17.5%	37.4%	12.3%	16.2%
2011	12.5%	22.5%	32.0%	15.4%	18.8%

Figure 25C. Arizona BRFSS 2011- 2013 survey respondents reported having been told that they were diagnosed with pre-diabetes.

[68] American Diabetes Association. (2012) http://professional.diabetes.org/content/PML/All_About_Prediabetes_24dee6ff-cbf0-4a55-80b7-9d5d29de0bd7/All_About_Prediabetes.pdf

[69] Centers for Disease Control and Prevention (CDC)-Prediabetes (2015) http://www.cdc.gov/diabetes/basics/prediabetes.html.

[70] Sentell, T., He, G., Gregg, EW., Schillinger, D. (2012) Racial/ethnic variation in prevalence estimates for United States pre-diabetes under alternative 2010 American Diabetes Association criteria: 1988-2008. *Ethnicity and Disease*. (22) 451-458.

[71] National Diabetes Prevention Program. (2015) http://www.cdc.gov/diabetes/prevention/recognition/about.htm.

Health Conditions and Limitations: Pre-Diabetes

Arizonans Who Reported Having Been Told by a Doctor or other Health Professional That You Have Pre-Diabetes or Borderline Diabetes in the 2013				
Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	7.9%	34		
Arizona	8.0%	346	6.6%	9.4%
Sex				
Male	7.1%	136	5.2%	9.0%
Female	8.8%	210	6.7%	10.9%
Age				
18-24	1.8%	4	0.0%	3.7%
25-34	6.6%	14	2.2%	11.0%
35-44	7.9%	24	3.2%	12.6%
45-54	8.5%	60	5.3%	11.6%
55-64	11.0%	94	7.9%	14.2%
65+	10.8%	150	8.1%	13.4%
Marital Status				
Married	9.0%	177	6.8%	11.2%
Divorced	8.1%	61	4.7%	11.4%
Widowed	8.2%	52	5.0%	11.3%
Separated	20.5%	14	6.6%	34.3%
Never Married	4.2%	29	1.6%	6.8%
Unmarried Couple	10.2%	12	1.7%	18.7%
Education Attainment				
Less than highschool	3.9%	18	1.6%	6.2%
High School/GED	8.0%	85	4.9%	11.1%
Some College/Technical School	9.0%	117	6.2%	11.9%
College/Technical School Graduate	9.1%	125	6.8%	11.5%
Employment Status				
Employed for Wages	6.4%	95	4.4%	8.4%
Self Employed	12.9%	30	5.2%	20.6%
Out of Work	10.2%	16	3.0%	17.3%
Homemaker	6.0%	18	0.2%	11.8%
Student	3.1%	5	0.0%	6.6%
Retired	12.1%	148	9.2%	14.9%
Unable to Work	7.7%	33	3.4%	12.1%
Income				
Less than $10,000	8.2%	16	3.7%	12.7%
$10,000 to $14,999	7.7%	23	1.9%	13.5%
$15,000 to $19,999	5.0%	23	2.1%	7.8%
$20,000 to $24,999	16.9%	37	8.0%	25.7%
$25,000 to $34,999	7.1%	42	3.4%	10.7%
$35,000 to $49,999	7.9%	52	4.9%	10.9%
$50,000 to $74,999	9.5%	44	5.5%	13.5%
Above $75,000	6.8%	64	3.6%	10.1%
Race				
White Non-Hispanic	7.5%	259	6.1%	9.0%
Black/African American	7.3%	10	2.3%	12.3%
Hispanic	8.2%	51	4.6%	11.7%
Asian/Pacific Islan	16.0%	5	0.0%	36.4%
American Indian Non	10.4%	11	2.4%	18.3%
Other	5.9%	10	1.1%	10.7%

Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizonans reported that they were told by a health professional that they had Pre-Diabetes. The data are reported by age categories, marital status, educational attainment, employment status, income and race/ethnicity.

Respondents were more likely to report having Pre-Diabetes

- Were Female
- Were over 55 years old
- Had some college/technical school education
- Were self employed
- Had income between $20,000 and $25,000

Individuals who reported their race as Asian/Pacific Islander reported that they were diagnosed diabetes, at 16%.

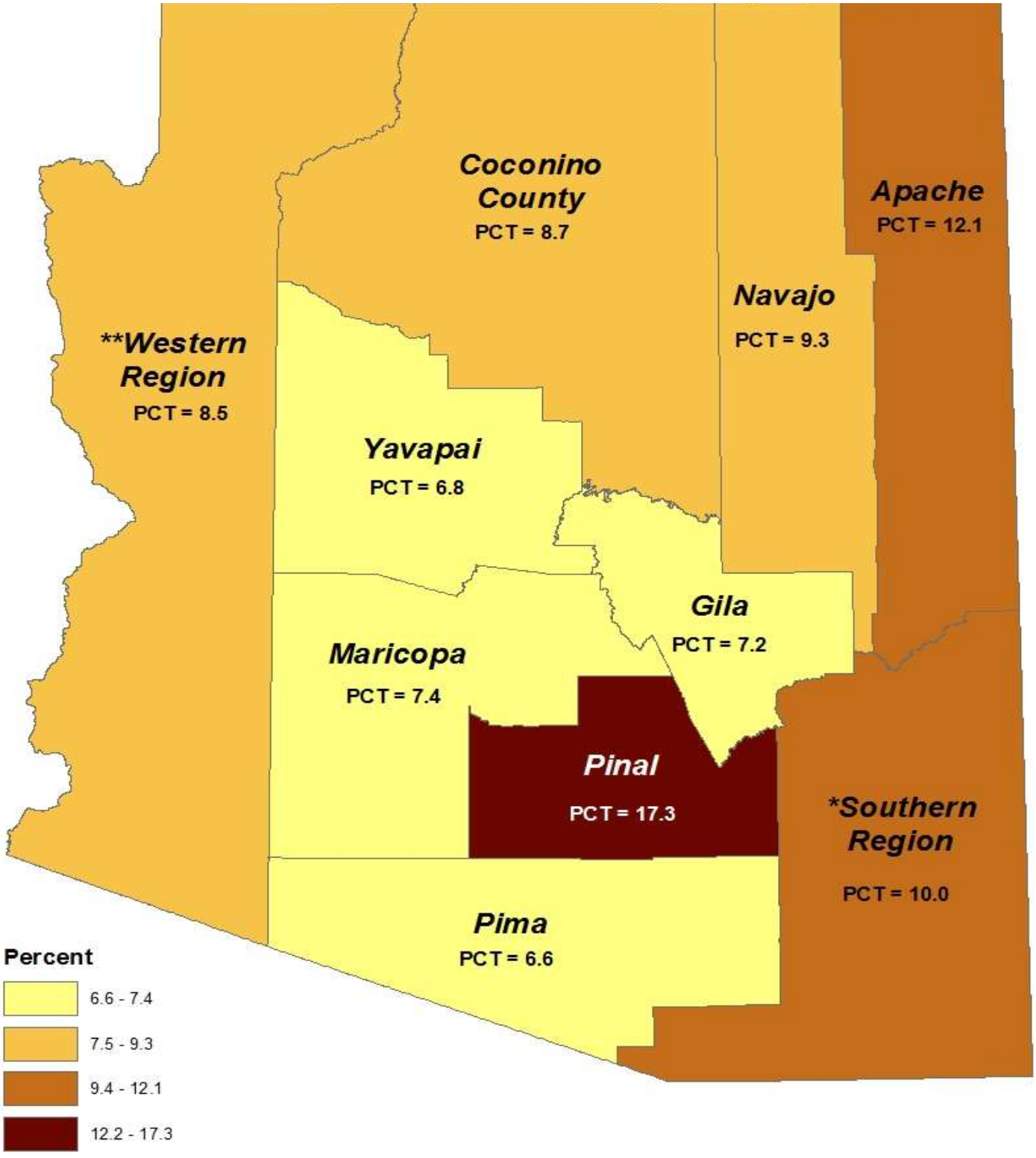
Respondents were less likely to be diagnosed with Pre-Diabetes

- Were male
- Were income above $75,000

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Who Reported Being Diagnosed with Pre-Diabetes, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Health Conditions and Limitations: Diabetes

Currently, more than 17 million Americans have diabetes. 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.[72] 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.[72]

The hormones which appear during pregnancy can cause glucose intolerance. This is known as gestational diabetes. It typically goes away after childbirth.[73] Therefore, individuals who were diagnosed with gestational diabetes are not categorized as diabetics in this summary. In 2013, one in ten (10.7%) Arizonans surveyed reported they had a health professional diagnose them with diabetes; similar to the national median (see **Figure 26A**).

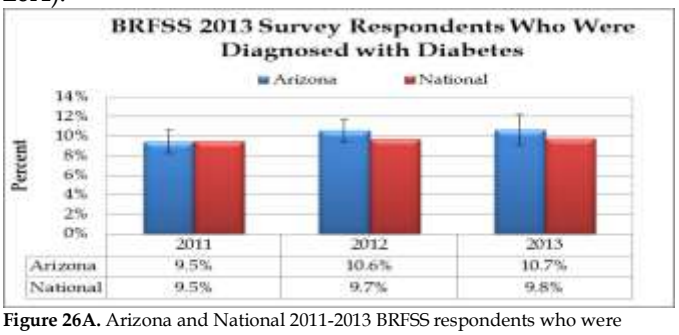


Figure 26A. Arizona and National 2011-2013 BRFSS respondents who were diagnosed with diabetes.

Arizona is in the second-highest category for proportion of those surveyed who reported a diabetes diagnosis when compared to the other states of the U.S. (see **Figure 26B**).

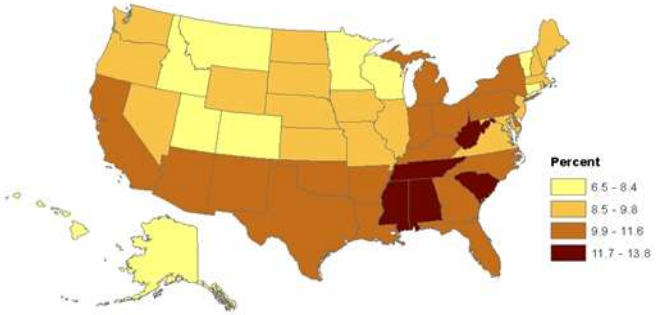


Figure 26B. BRFSS 2013 survey respondents who reported being diagnosed with diabetes. Figure 26B displays U.S. map (natural breaks).

In 2013, there were 151,800 emergency department or inpatient hospitalizations that were directly related to diabetes. The individuals hospitalized for diabetes spent an average length of stay of between 4.8 and 8.9 days in either the emergency room or an inpatient hospital. The visits accrued charges totaling more than $8 billion (see **Table 11**).

Diabetes Related Inpatient & Emergency Department Discharges			
Payer Type	**Number of Discharges**	**Total Charges**	**Average Length of Stay (Days)**
Charity	475	$30,762,858	8.9
Medicaid	18,869	$887,291,819	5.0
Medicare	90,904	$5,044,279,121	5.1
Other	5,011	$298,216,137	5.0
Private Insurance	27,433	$1,502,808,583	4.8
Self-Pay	9,108	$458,601,225	4.9
Total	**151,800**	**$8,221,959,743**	

Table 11. Arizona's 2013 emergency department and inpatient hospitalizations admissions related to diabetes, which contained the ICD-9 codes 250 (all).

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.[74,75] Survey data since 2011 indicates that current smokers and former smokers have a similar prevalence of diabetes, while former smokers have higher diabetes prevalence (see **Figure 26C**).

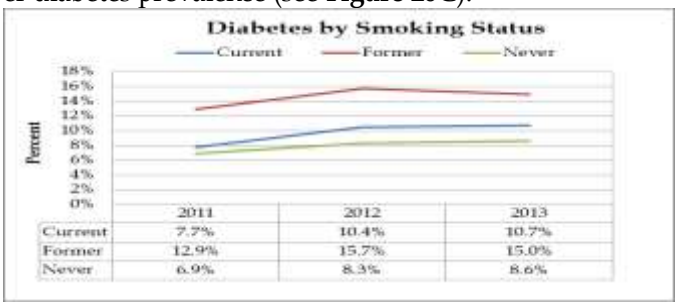


Figure 26C. Arizona BRFSS 2013 survey respondents who reported having diabetes by smoking status.

Arizona hospital's 2013 data for show that nearly three quarters of all diabetes-related encounters were for Type II diabetes that was not uncontrolled (**Figure 26D**).

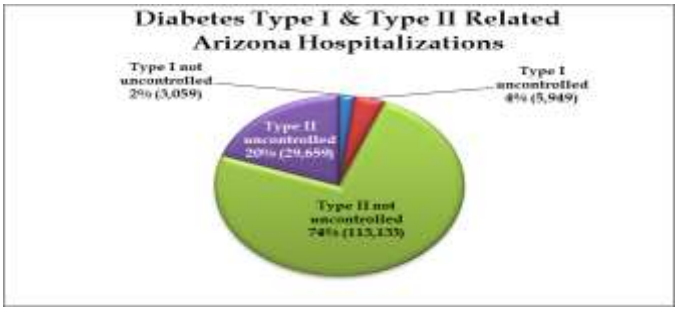


Figure 26D. Arizona's hospital 2013 encounters, both emergency department and admissions, which contained the ICD-9 code 250 (all) with a 5th digit sub-classification- 0: type 11 not uncontrolled; 1: Type 1 [juvenile type] not uncontrolled; 2: type II uncontrolled; 3: Type 1 [juvenile type] uncontrolled.

72. Centers for Disease Control and Prevention. National Diabetes Surveillance System website. http://www.cdc.gov/diabetes/pdfs/library/diabetesreportcard2014.pdf Accessed February 26, 2015.
73. U.S. National Library of Medicine. Literature. Gestational Diabetes. http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001898/

74. Xie X, Liu Q, Wu J, Wakuie M. Impact of cigarette smoking in type 2 diabetes development. Acta Pharmacol Sin. 2009. doi: 10.1038/aps.2009.49
75 Rohit N Kulkarni. The islet beta-cell. Int J Biochem Cell Biol. 2004 Mar;36(3):365-71. doi: 10.1016/j.biocel.2003.08.010.

Health Conditions and Limitations: Diabetes

Arizonans Dignosed with Diabetes in the 2013 BRFSS				
Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**9.8%**	53		
Arizona	**10.7%**	552	9.1%	12.2%
Sex				
Male	11.3%	247	8.7%	13.9%
Female	10.0%	305	8.3%	11.8%
Age				
18-24	2.1%	2	0.0%	5.9%
25-34	2.2%	12	0.7%	3.7%
35-44	3.8%	27	1.9%	5.7%
45-54	14.4%	81	9.8%	18.9%
55-64	18.2%	146	12.8%	23.7%
65+	20.5%	284	17.0%	24.0%
Marital Status				
Married	10.7%	254	8.4%	13.0%
Divorced	16.3%	110	12.0%	20.7%
Widowed	21.0%	107	14.7%	27.3%
Separated	10.5%	13	1.9%	19.1%
Never Married	5.7%	49	2.8%	8.6%
Unmarried Couple	7.0%	14	4.0%	9.9%
Education Attainment				
Less than high school	17.5%	73	10.4%	24.6%
High School/GED	10.7%	170	8.3%	13.2%
Some College/Technical School	9.1%	164	7.0%	11.1%
College/Technical School Graduate	8.6%	144	6.6%	10.6%
Employment Status				
Employed for Wages	7.2%	115	5.0%	9.4%
Self Employed	6.4%	24	2.5%	10.4%
Out of Work	7.6%	30	4.1%	11.1%
Homemaker	8.3%	34	4.0%	12.6%
Student	0.3%	1	0.0%	0.9%
Retired	19.9%	256	16.3%	23.6%
Unable to Work	25.4%	89	15.0%	35.7%
Income				
Less than $10,000	23.9%	53	12.5%	35.3%
$10,000 to $14,999	15.3%	38	3.5%	27.1%
$15,000 to $19,999	13.4%	52	6.3%	20.5%
$20,000 to $24,999	10.3%	68	6.1%	14.6%
$25,000 to $34,999	9.1%	51	5.3%	13.0%
$35,000 to $49,999	7.2%	65	4.3%	10.2%
$50,000 to $74,999	7.5%	50	4.8%	10.3%
Above $75,000	9.5%	85	6.8%	12.3%
Race				
White Non-Hispanic	9.7%	371	8.3%	11.2%
Black/African American	12.9%	20	5.4%	20.3%
Hispanic	12.1%	100	7.7%	16.6%
Asian/Pacific Islander	2.2%	3	0.0%	5%
American Indian	21.7%	42	12.5%	30.9%
Other	5.5%	16	1.4%	9.7%

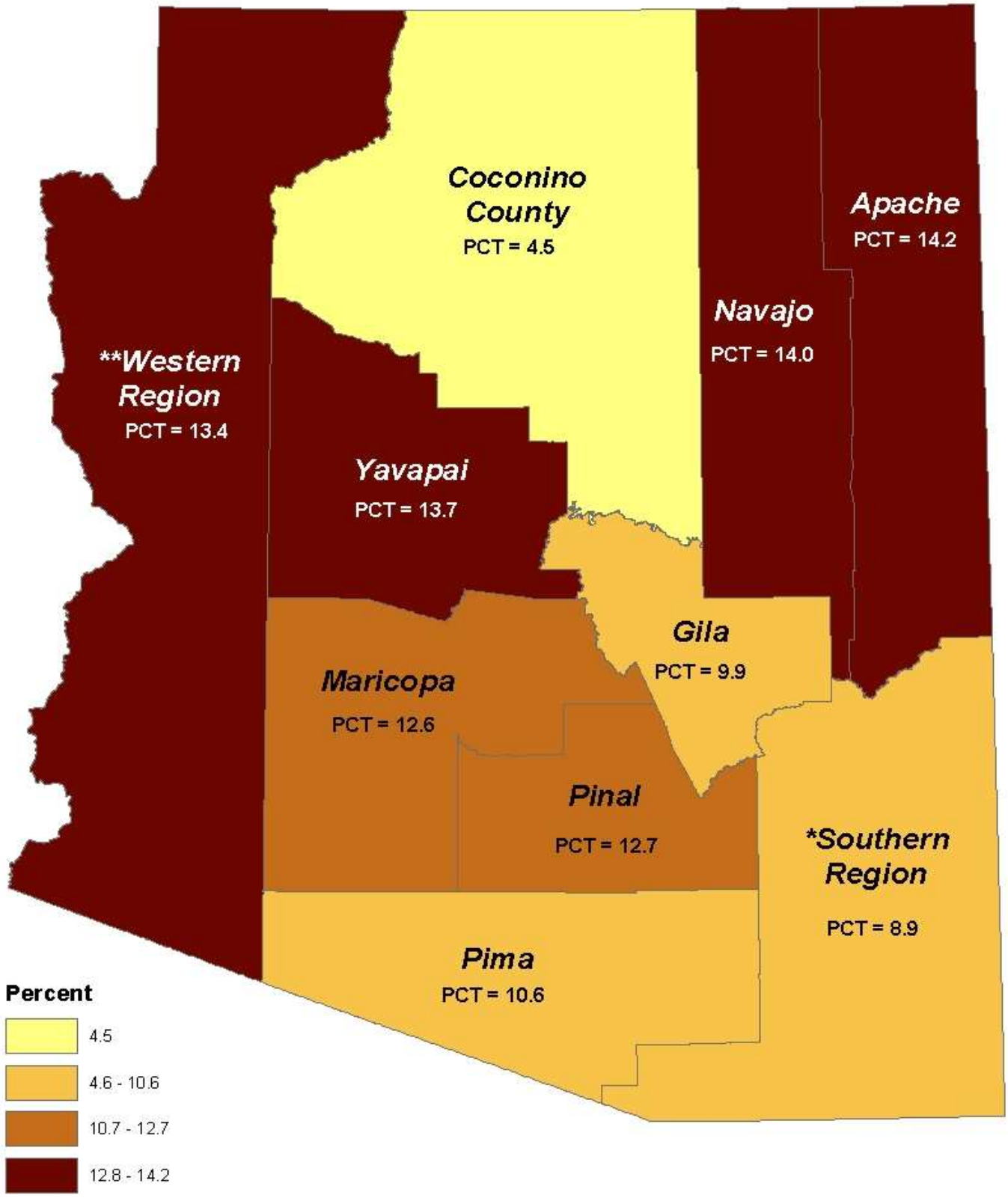
Use caution in interpreting cell sizes less than 50. N* is unweighted

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

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Who Reported Having Been Diagnosed With Diabetes by a Health Professional, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Health Conditions & Limitations:
Special Equipment Required

The National Response Framework defines *special needs populations* as follows: —Populations whose members may have additional needs before, during and after an incident in functional areas, including but not limited to: maintaining independence, communication, transportation, supervision and medical care. Individuals in need of additional response assistance may include those who have disabilities; who live in institutionalized settings; who are elderly; who are children; who are from diverse cultures; who have limited English proficiency or are non-English speaking; or who are transportation-disadvantaged. The proportion of Arizonans surveyed who indicated they needed special equipment for health reasons has been stable at around 8% since 2011, and is similar to the national median (**Figure 27A**).

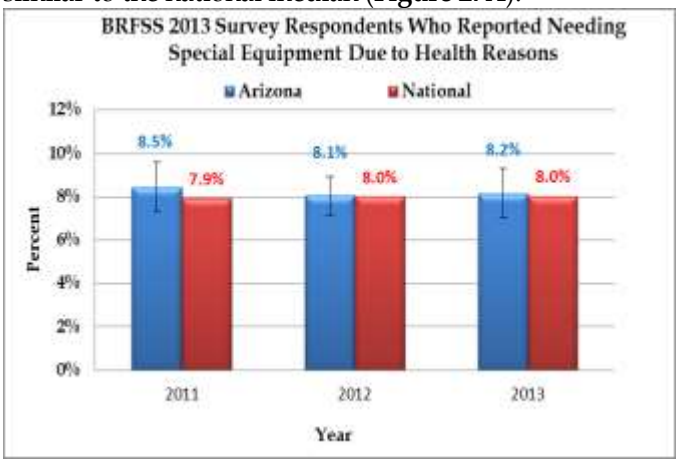


Figure 27A. BRFSS 2013 survey reported Arizona and National respondents who were of 18 years of age and older needing special equipment due to health reasons.

When compared to the nation, Arizona is in the second-lowest category for respondents reporting a need for special equipment, (**Figure 27B**).

Figure 27B. BRFSS 2013 survey respondents who reported that they needed special equipment due to health reasons. Figure 27- U.S. map displays natural breaks.

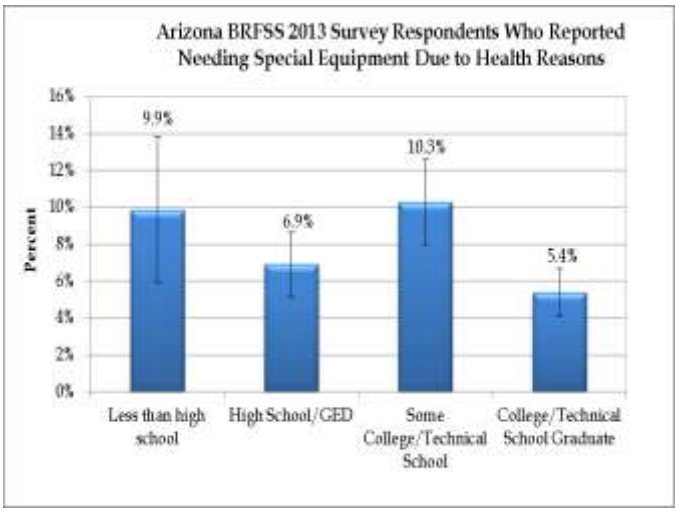


Figure 27C. Arizona BRFSS 2013 survey respondents who reported needing special equipment due to health reasons. The BRFSS 2013 question regarding special equipment: Do you now have any health problem that requires you to use special equipment, such as a cane, a wheelchair, a special bed, or a special telephone?

Understanding the prevalence of disability is important for public health programs to be able to address the needs of persons with disabilities.[76] Figures 27C and 27D present the BRFSS 2013 data results for Arizona respondents who reported needing special equipment for health reasons presented by educational attainment and by gender.

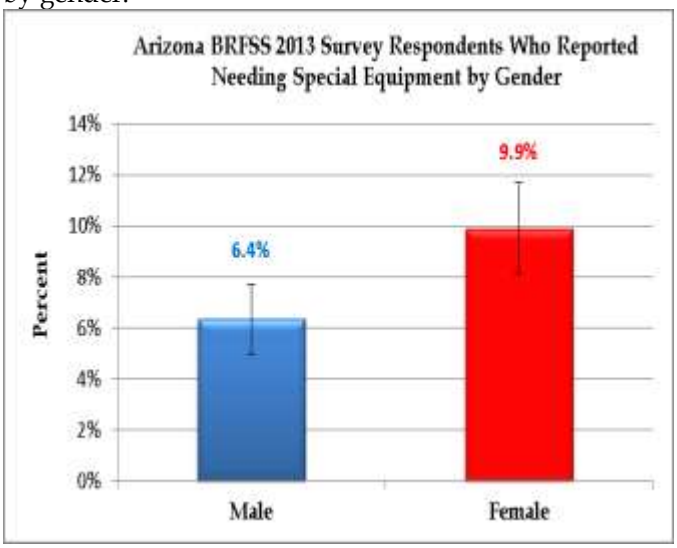


Figure 27D. Arizona BRFSS 2013 survey respondents who reported needing special equipment due to health reasons.

[76]MMR Prevalence of Disability and Disability Type Among Adults — United States, 2013*Weekly* July 31, 2015 / 64(29);777-783
http://www.cdc.gov/mmWR/preview/mmwrhtml/mm6429a2.htm

Health Conditions & Limitations:
Special Equipment Required

Arizonans Who Reported Needing Special Equipment Due to Health Reasons

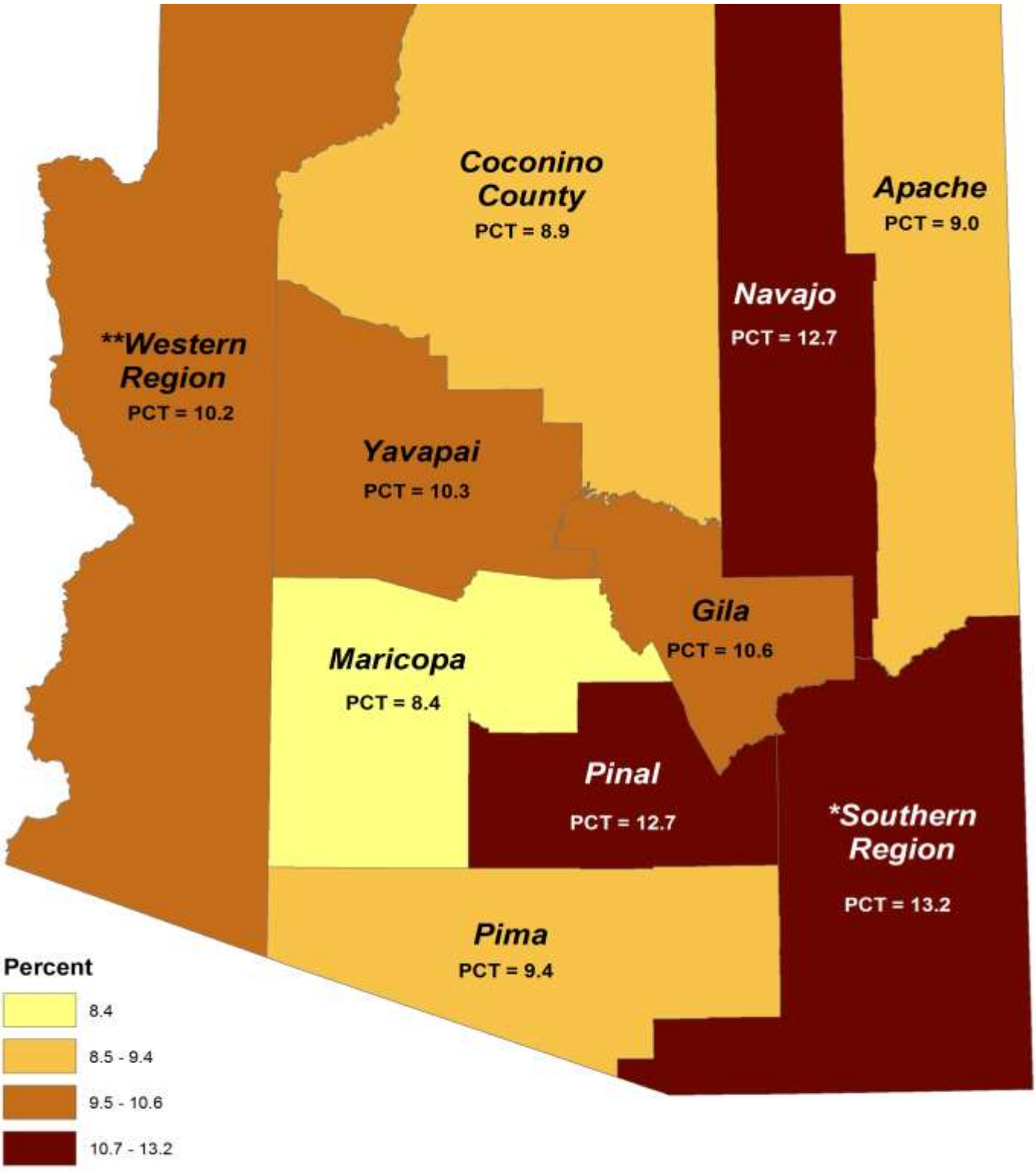
Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	8.0%	53		
Arizona	8.2%	567	7.0%	9.3%
Sex				
Male	6.4%	200	5.0%	7.7%
Female	9.9%	367	8.1%	11.7%
Age				
18-24	1.4%	1	0.0%	4.0%
25-34	1.3%	4	0.0%	3.3%
35-44	2.6%	23	1.1%	4.2%
45-54	8.6%	77	5.8%	11.4%
55-64	13.9%	137	10.4%	17.4%
65+	18.6%	325	15.5%	21.8%
Marital Status				
Married	6.2%	202	4.9%	7.4%
Divorced	14.9%	127	10.8%	18.9%
Widowed	28.7%	163	22.3%	35.1%
Separated	9.1%	18	4.0%	14.2%
Never Married	4.6%	43	1.9%	7.2%
Unmarried Couple	3.0%	9	0.4%	5.5%
Education Attainment				
Less than high school	9.9%	74	5.9%	13.8%
High School/GED	6.9%	155	5.2%	8.7%
Some College/Technical School	10.3%	191	8.0%	12.6%
College/Technical School Graduate	5.4%	146	4.1%	6.7%
Employment Status				
Employed for Wages	1.3%	42	0.7%	1.9%
Self Employed	4.0%	20	0.6%	7.3%
Out of Work	7.1%	16	1.2%	12.9%
Homemaker	7.4%	37	2.7%	12.2%
Student	0.1%	1	0.0%	0.2%
Retired	17.5%	269	14.3%	20.7%
Unable to Work	37.2%	179	27.8%	46.6%
Income				
Less than $10,000	23.0%	64	13.2%	32.9%
$10,000 to $14,999	11.2%	64	6.4%	16.0%
$15,000 to $19,999	13.4%	66	7.7%	19.2%
$20,000 to $24,999	12.1%	75	7.9%	16.4%
$25,000 to $34,999	10.4%	59	5.9%	14.9%
$35,000 to $49,999	6.1%	65	3.7%	8.5%
$50,000 to $74,999	3.1%	37	1.7%	4.4%
Above $75,000	3.2%	46	1.8%	4.5%
Race				
White Non-Hispanic	9.2%	442	7.8%	10.5%
Black/African American	7.7%	15	2.2%	13.2%
Hispanic	6.1%	61	3.5%	8.6%
American Indian	12.1%	25	4.4%	19.8%
Other	8.4%	24	4.0%	12.9%

Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizonans who needed special equipment due to health reasons by sex, age categories, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Respondents Who Reported Needing Special Equipment for Health Reasons, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Health Conditions & Limitations: Chronic Obstructive Pulmonary Disease (COPD)

Chronic Obtrusive Pulmonary Disease (COPD) is not one disease; it is an umbrella term that describes chronic lung conditions that cause pathological changes in the lungs. These changes occur in the large (central) airways, the peripheral bronchioles and the lung parenchyma. These changes essentially block airflow as the individual exhales, making it increasingly difficult to breathe. These changes are progressive, they are not fully reversible, and cannot be treated with inhaled steroids/corticosteroids (used to treat asthma). The primary treatment is the use of a bronchodilator; however, steroid inhalers can reduce COPD exacerbations and increase quality of life.[77] COPD is predominantly associated with smoking.[78]

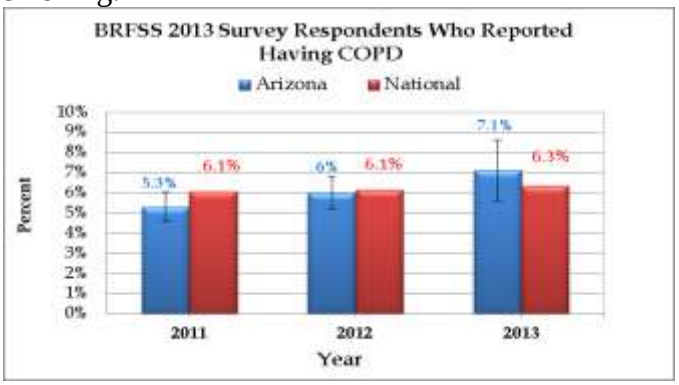


Figure 28A. Arizona BRFSS 2013 survey respondents who were told they have emphysema or chronic bronchitis.

According to the 2013 BRFSS, Arizonans are less likely to report that they have been diagnosed with COPD when compared to the nation as a whole (see **Figure 28B**).

Figure 28B. BRFSS 2013 survey respondents who reported that they were diagnose with COPD (natural breaks). Arizona is the second-highest category for COPD when compared to the nation.

The **Figure 28C** below shows similar levels of COPD among Arizonans by gender for 2013.

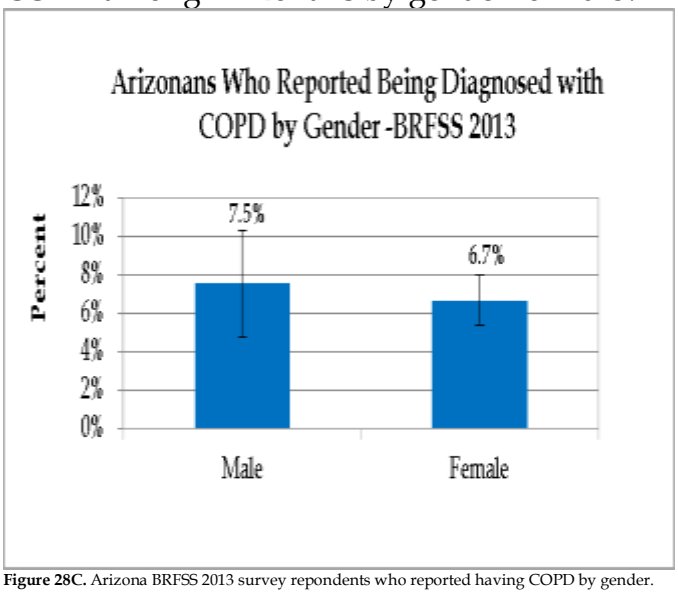


Figure 28C. Arizona BRFSS 2013 survey repondents who reported having COPD by gender.

[77] Cayley WE Jr. Use of inhaled corticosteroids to treat stable COPD. Am Fam Physician. 2008 Jun 1;77(11):1532-3

[78] National Clinic Guideline Centre (UK). Management of Chronic Obstructive Pulmonary Disease in Adults in Primary and Secondary Care. London: Royal College of Physicians (UK); 2010 Jun.

Health Conditions & Limitations: Chronic Obstructive Pulmonary Disease (COPD)

Arizonans Diagnosed with Chronic Obstructive Pulmonary Disease (COPD) in the 2013 BRFSS

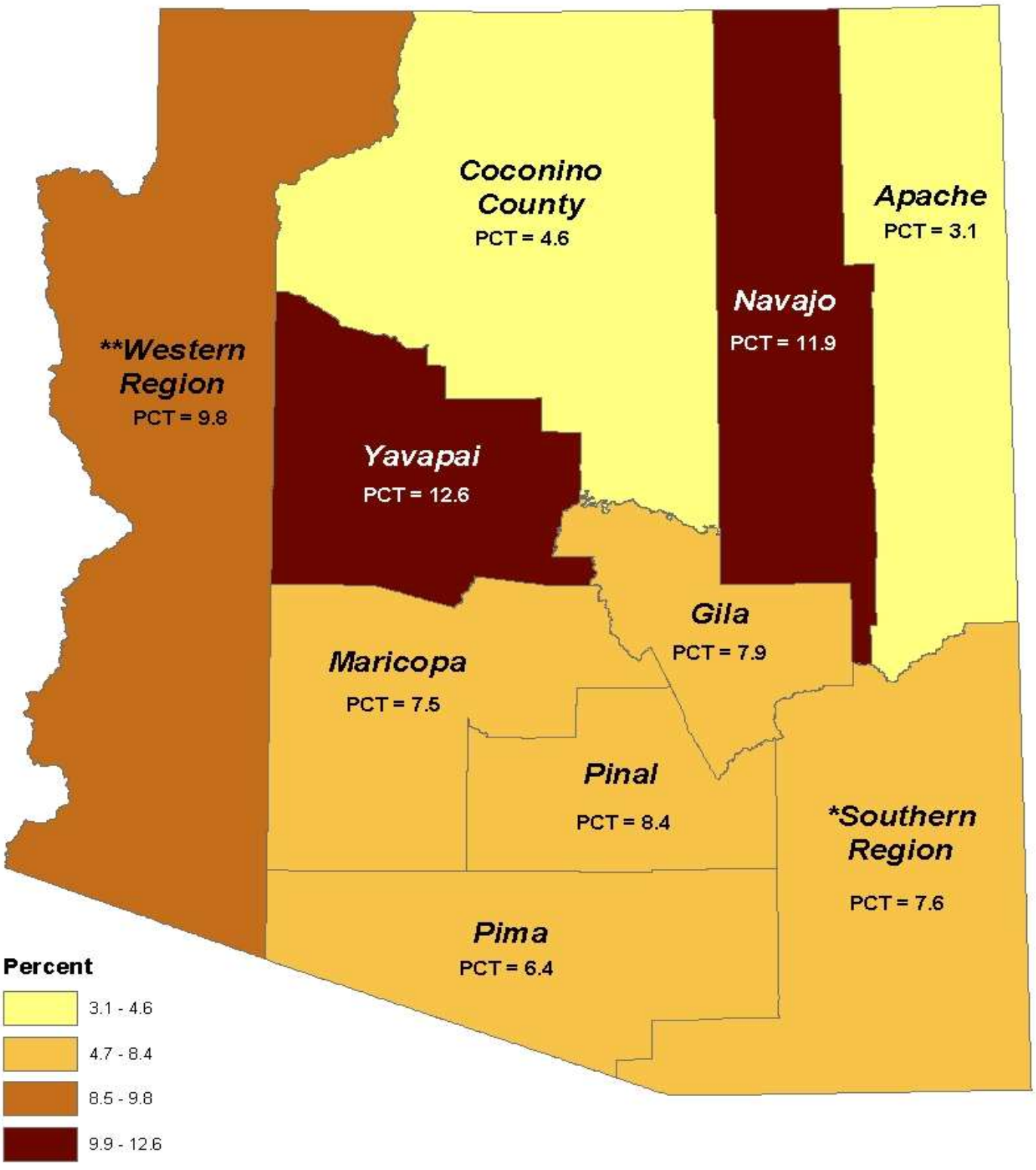
Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**6.3%**	53		
Arizona	**7.1%**	386	5.6%	8.6%
Sex				
Male	7.5%	128	4.8%	10.3%
Female	6.7%	258	5.4%	8.0%
Age				
18-24	0.6%	3	0.0%	1.4%
25-34	5.6%	14	1.5%	9.8%
35-44	6.4%	22	0.7%	12.1%
45-54	5.7%	49	3.4%	8.0%
55-64	10.1%	93	6.1%	14.2%
65+	12.0%	205	9.5%	14.5%
Marital Status				
Married	6.4%	144	4.1%	8.7%
Divorced	10.2%	87	6.7%	13.6%
Widowed	17.3%	92	11.8%	22.9%
Separated	9.1%	14	1.1%	17.0%
Never Married	4.8%	35	1.6%	8.0%
Unmarried Couple	2.9%	11	0.3%	5.5%
Education Attainment				
Less than highschool	13.2%	50	5.9%	20.6%
High School/GED	6.3%	119	4.3%	8.4%
Some College/Technical School	7.3%	140	5.2%	9.3%
College/Technical School Grad	3.7%	77	2.3%	5.0%
Employment Status				
Employed for Wages	4.7%	64	2.6%	6.8%
Self Employed	1.3%	11	0.1%	2.5%
Out of Work	8.8%	20	2.7%	15.0%
Homemaker	1.9%	14	0.5%	3.4%
Student	0.1%	1	0.0%	0.2%
Retired	11.2%	180	8.7%	13.7%
Unable to Work	26.7%	93	15.0%	38.3%
Income				
Less than $10,000	10.4%	32	3.1%	17.7%
$10,000 to $14,999	7.4%	46	3.3%	11.5%
$15,000 to $19,999	11.8%	34	0.5%	23.1%
$20,000 to $24,999	14.9%	56	7.4%	22.4%
$25,000 to $34,999	8.1%	46	3.5%	12.8%
$35,000 to $49,999	6.5%	54	3.8%	9.2%
$50,000 to $74,999	4.7%	30	2.1%	7.4%
Above $75,000	3.5%	31	1.4%	5.7%
Race				
White Non-Hispanic	7.6%	320	6.2%	8.9%
Black/African American	5.8%	5	0.0%	13.3%
Hispanic	7.4%	40	2.7%	12.0%
Asian/Pacific Islander	0.2%	1	0.0%	0.5%
American Indian	5.7%	11	0.4%	11.0%
Other	2.5%	9	0.6%	4.5%

Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizonans who reported that someone in the health profession told them that they had COPD. The data are reported by sex, age, marital status, educational attainment, employment status, income and race/ethnicity.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Respondents Reporting Being Diagnosed With Chronic Obstructive Pulmonary Disease (COPD), by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

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.[79] In 2013, 4.4% percent of Arizonans surveyed reported that a health professional told them they had a heart attack, similar to the national median (see **Figure 29A**).

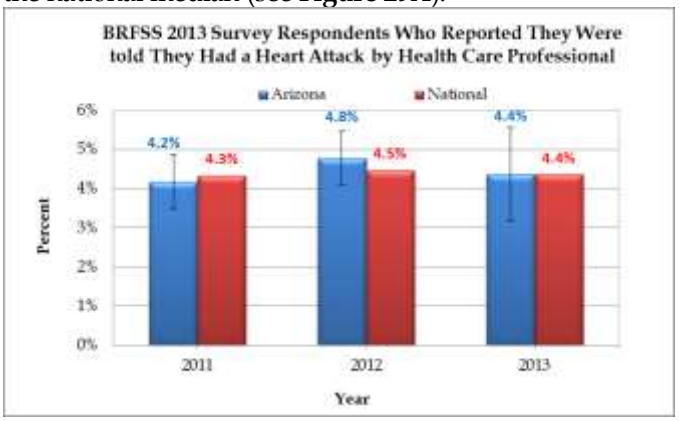


Figure 29A. Arizona and National 2011-2013 BRFSS respondents who reported a health care professional told them they had a heart attack.

Arizona is in the second lowest category for survey respondents reporting they had a heart attack when compared to the nation (see **Figure 29B**).

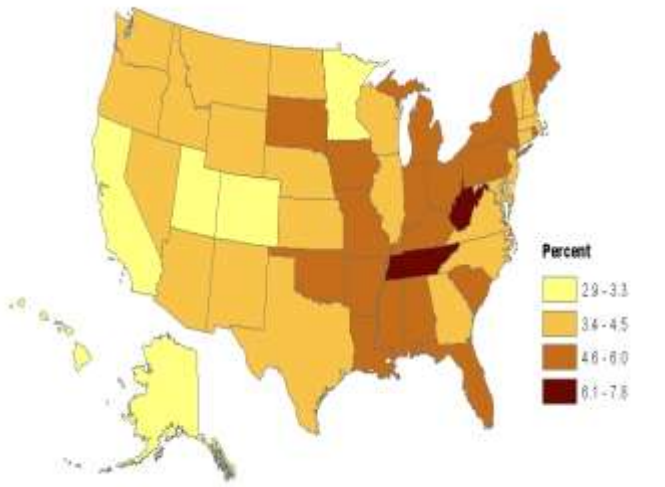


Figure 29B. BRFSS 2013 survey respondents who reported that a health care professional diagnosed told them they had suffered from a heart attack. Figure 29B map displays (natural breaks).

79. Hoyert DL, Xu JQ. Deaths: Preliminary data for 2011. National vital Statistics reports; vol 61 no 6. Hyattsville, MD: National Center for Health Statistics. 2012.

In 2013, there were 20,754 heart attack-related emergency department visits and inpatient hospitalizations, 1,301 of whom died in the hospital. The visits accrued charges totaling more than $1.9 billion. The average length of stay ranged from 4.3 to 5.8 days see (**Table 12A.**)

Arizona Inpatient & Emergency Department "Heart Attack Related" Hospital Discharges in 2013				
Payer Type	Number of Discharges	Died	Total Charges	Average Length of Stay (Days)
Charity	54	1	$5,604,401	5.8
Medicaid	1,369	58	$127,380,088	5.5
Medicare	13,042	978	$1,172,011,895	5.3
Other	573	36	$61,052,783	5.1
Private Insurance	4,199	151	$401,708,662	4.3
Self-Pay	1,517	77	$144,455,604	4.8
Total	20,754	1,301	$1,912,213,433	

Table 12 A. Arizona Inpatient & Emergency Department Hospital Discharge's HDD 2013 Arizona inpatient and emergency department hospital discharges related to heart attacks. Heart attacks were defined by the following ICD-9 codes: 410.00, 410.01, 410.02, 410.21, 410.22, 410.30, 410.31, 410.32, 410.40, 410.41, 410.42, 410.50, 410.51, 410.52, 410.60, 410.61, 410.62, 410.70, 410.71, 410.72, 410.80, 410.81, 410.82, 410.90, 410.91, 410.92 411.0, and 411.1.

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.[80]. Of the 20,754 discharges, 14,892 (71.8%) were initial heart attack episodes, 1,431 (6.9%) were subsequent episodes, and 364 (1.7%) were unspecified episodes. Initial episodes had the greatest economic impact.

Arizona Hospital Encounters, both Emergency and Admission for Heart Attacks			
	#of Discharges	Died	Charges
Initial Heart Attack Episode	14,892	1,175	$ 1,455,819,471.40
Subsequent Heart Attack Episode	1,431	66	$ 93,689,742.61
Unknown Heart Attack Episode Type	4,067	42	$ 334,425,503.95
Unsepcified Heart Attack Episode	364	18	$ 28,278,715.45
Total	20,754	1,301	$ 1,912,213,433.41

Table 12B. Arizona's hospital encounters by emergencies and admissions related to heart attacks. HDD 2013 Arizona inpatient and emergency department hospital discharges related to heart attacks. Heart attacks were defined by the following ICD-9 codes: 410.00, 410.01, 410.02, 410.21, 410.22, 410.30, 410.31, 410.32, 410.40, 410.41, 410.42, 410.50, 410.51, 410.52, 410.60, 410.61, 410.62, 410.70, 410.71, 410.72, 410.80, 410.81, 410.82, 410.90, 410.91, 410.92 411.0, and 411.1.

The 2013 hospital discharge data shows that the majority of heart attack-related hospitalizations were initial 14,892 episodes (see **Figure 29C**).

Figure 29C. Arizona's hospital 2013 encounters, both emergency department and admissions, which contained the ICD-9 code 410 with the 5th digit subclassification of the Episode Specification- Initial: 1, Subsequent: 2, Unspecified: 0 .

80. Optum. 2013 ICD-9-CM Expert for hospitals and Payers-Volumes 1,2 & 3. OptumInsight, Inc. 2012.

Health Conditions and Limitations: Cardiovascular: Heart Attack

BRFSS 2013 Arizonans Who Reported a Health Care Professional Told Them That They Had a Heart Attack

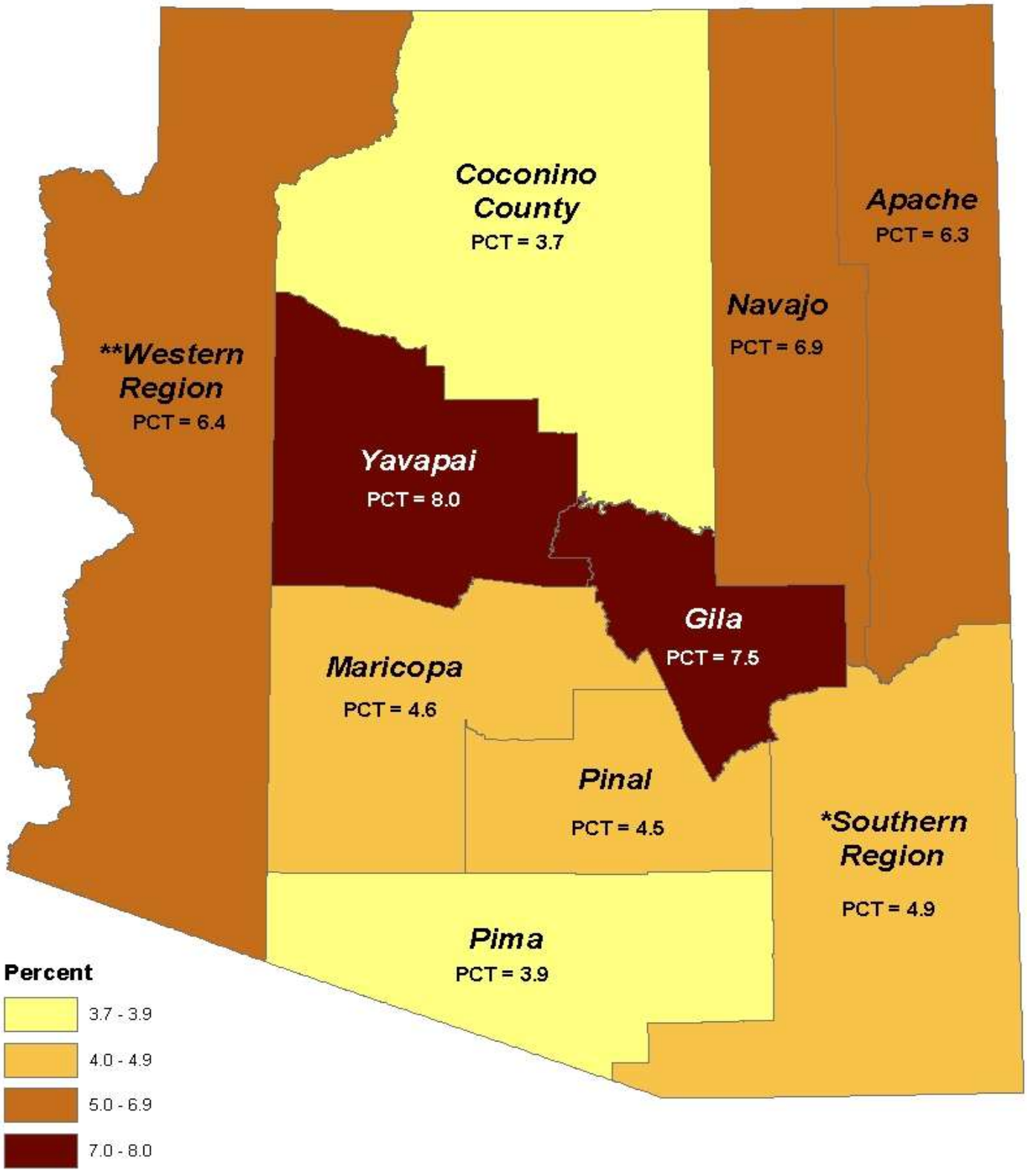
Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**4.4%**	53	0.0%	0.0%
Arizona	**4.4%**	279	3.2%	5.6%
Sex				
Male	**5.3%**	157	3.4%	7.7%
Female	**3.3%**	122	2.2%	4.3%
Age				
18-24	0.2%	2	0.0%	0.4%
25-34	0.2%	2	0.0%	0.5%
35-44	3.4%	4	0.0%	8.8%
45-54	3.2%	24	1.2%	5.2%
55-64	7.0%	63	3.9%	10.1%
65+	10.6%	184	8.2%	13.1%
Marital Status				
Married	4.6%	118	2.6%	6.6%
Divorced	7.0%	50	3.2%	10.9%
Widowed	15.7%	78	10.0%	21.5%
Separated	1.5%	6	0.2%	2.9%
Never Married	0.8%	23	0.4%	1.2%
Unmarried Couple	0.4%	3	0.0%	0.9%
Education Attainment				
Less than high school	8.7%	40	2.8%	14.6%
High School/GED	3.3%	77	2.1%	4.5%
Some College/Technical School	4.5%	97	3.0%	6.0%
College/Technical School Graduate	2.5%	63	1.6%	3.5%
Employment Status				
Employed for Wages	1.8%	29	0.7%	2.9%
Self Employed	1.8%	12	0.5%	3.0%
Out of Work	1.3%	7	0.0%	2.7%
Homemaker	1.9%	15	0.2%	3.7%
Retired	10.8%	161	8.0%	13.6%
Unable to Work	14.8%	54	3.6%	26.0%
Income				
Less than $10,000	5.3%	25	2.4%	8.3%
$10,000 to $14,999	8.8%	31	2.9%	14.6%
$15,000 to $19,999	10.1%	25	0.0%	21.6%
$20,000 to $24,999	5.9%	37	2.9%	9.0%
$25,000 to $34,999	5.4%	33	1.6%	9.3%
$35,000 to $49,999	4.3%	39	2.2%	6.4%
$50,000 to $74,999	2.1%	20	0.6%	3.6%
Above $75,000	2.3%	30	1.0%	3.7%
Race				
White Non-Hispanic	4.7%	230	3.8%	5.7%
Black/African American	2.2%	5	0.0%	4.4%
Hispanic	4.8%	27	1.0%	8.6%
American Indian	1.8%	8	0.3%	3.2%
Other	2.8%	9	0.7%	5.0%

Use caution in interpreting cell sizes less than 50. N* is unweighted

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

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Respondents Who Reported Being Told by a Health Professional That They Suffered a Heart Attack, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

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:[81,82]

- **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 30A**). 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.[83]

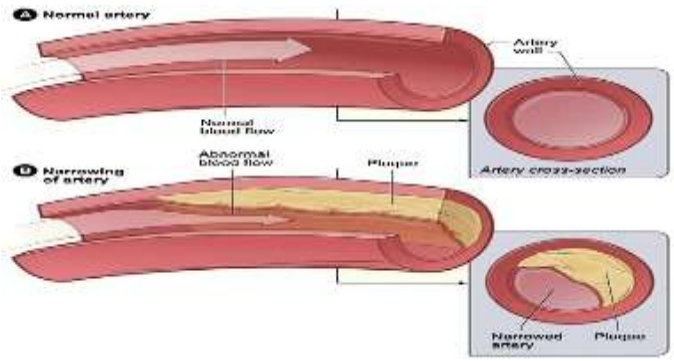


Figure 30A.

81. National Institutes of Health. National Heart, Lung, and Blood Institute. Explore Coronary Heart Disease: What is Coronary Heart Disease? Updated Oct 23, 2015. https://www.nhlbi.nih.gov/health/health-topics/topics/cad/
82. MayoClinic.org. Diseases and Conditions: Small vessel disease. Accessed Jan 20, 2013. http://www.mayoclinic.org/diseases-conditions/small-vessel-disease/home/ovc-20198376
83. National Institutes of Health. National Heart, Lung, and Blood Institute. Health Topics: What is Atherosclerosis? UpdatedAug 22, 2015. https://www.nhlbi.nih.gov/health/health-topics/topics/atherosclerosis/MayoClinic.org. Diseases and Conditions: Small vessel disease. Accessed Jan 20, 2013. http://www.mayoclinic.org/diseases-conditions/small-vessel-disease/home/ovc-20198376

The historical BRFSS data shows more Arizonans suffered from angina when compared to the nation (years 20015-2008). In 2009 and 2010, Arizona had a lower prevalence or was equal to the national prevalence. In 2013, 4.1% of Arizonans were diagnosed with angina, which was .4% lower than the national prevalence (see **Figure 30B**).

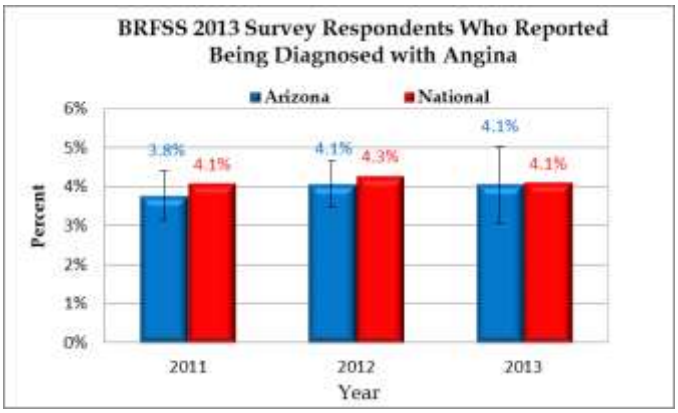


Figure 30B. Arizona and National 2011-2013 BRFSS respondents who reported a health care professional told them they had angina.

When compared to the nation as a whole, Arizona angina levels are in the second lowest class for individuals reporting being diagnosed with angina (see **Figure 30C**).

Figure 30C. BRFSS 2013 survey respondents who reported that a health professional told them they had angina. Figure 30C displays U.S. map (natural breaks).

In 2013, there were 2,486 emergency department visits and inpatient hospitalizations related to angina. Total charges accrued were nearly $163 million with an average length of stay ranging from 3.2 to 4.0 days (see **Table 13**).

Angina Related Inpatient & Emergency Department			
Payer Type	**Number of Discharges**	**Charges**	**Average Length of Stay (Days)**
Charity	2	$113,485	3.5
Medicaid	181	$9,929,889	3.8
Medicare	1,657	$107,978,459	4.0
Other	83	$5,842,358	3.9
Private Insurance	467	$33,237,992	3.2
Self-Pay	96	$5,886,272	4.3
Total	**2,486**	**$162,988,455**	

Table 13. Arizona 2013 emergency department and inpatient hospitalizations related to angina. Angina was defined by the following ICD-9 codes: 413.0, 413.1, and 413.9.

Health Conditions and Limitations: Cardiovascular: Angina

BRFSS 2013 Arizonans Who Reported A Health Care Professional Told Them That They had Suffered From Angina

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**4.1%**	53		
Arizona	**4.1%**	284	3.1%	5.0%
Sex				
Male	4.8%	142	3.1%	6.4%
Female	3.4%	142	2.4%	4.3%
Age				
18-24				
25-34	1.8%	2	0.0%	4.7%
35-44	0.2%	3	0.0%	0.5%
45-54	2.5%	20	0.9%	4.1%
55-64	7.3%	69	3.7%	11.0%
65+	10.8%	190	8.3%	13.2%
Marital Status				
Married	4.1%	133	2.7%	5.4%
Divorced	5.2%	44	2.4%	8.0%
Widowed	11.9%	75	7.8%	15.9%
Separated	5.1%	8	0.0%	12.2%
Never Married	0.8%	20	0.4%	1.3%
Unmarried Couple	7.4%	3	0.0%	18.6%
Education Attainment				
Less than highschool	4.7%	35	1.3%	8.0%
High School/GED	4.1%	70	1.8%	6.3%
Some College/Technical School	4.6%	100	3.1%	6.1%
College/Technical School Graduate	2.8%	78	1.9%	3.8%
Employment Status				
Employed for Wages	2.7%	30	0.9%	4.6%
Self Employed	2.3%	18	0.9%	3.8%
Out of Work	0.6%	8	0.1%	1.2%
Homemaker	2.2%	13	0.4%	4.1%
Student	9.4%	164	7.2%	11.7%
Retired	8.6%	50	4.8%	12.4%
Unable to Work	0.0%	0	0.0%	0.0%
Income				
Less than $10,000	3.1%	22	1.5%	4.8%
$10,000 to $14,999	3.4%	23	0.9%	5.8%
$15,000 to $19,999	3.1%	24	1.3%	5.0%
$20,000 to $24,999	4.8%	35	2.5%	7.1%
$25,000 to $34,999	7.1%	32	2.2%	12.1%
$35,000 to $49,999	4.8%	43	2.5%	7.1%
$50,000 to $74,999	2.1%	26	0.6%	3.5%
Above $75,000	1.9%	28	0.7%	3.0%
Race				
White Non-Hispanic	4.8%	232	3.8%	5.7%
Black/African American	4.1%	5	0.0%	9.7%
Hispanic	3.1%	30	0.4%	5.8%
Asian/Pacific Islander	0.7%	1	0.0%	2.2%
American Indian	2.2%	9	0.5%	4.0%
Other	1.8%	7	0.1%	3.5%

Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizonans who reported that a health professional told them that they suffered from angina. The data are reported 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 High School or had a GED

When stratifying by education the data shows that individuals who had high school diploma or GED were less likely to report having angina, at 4.1%

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

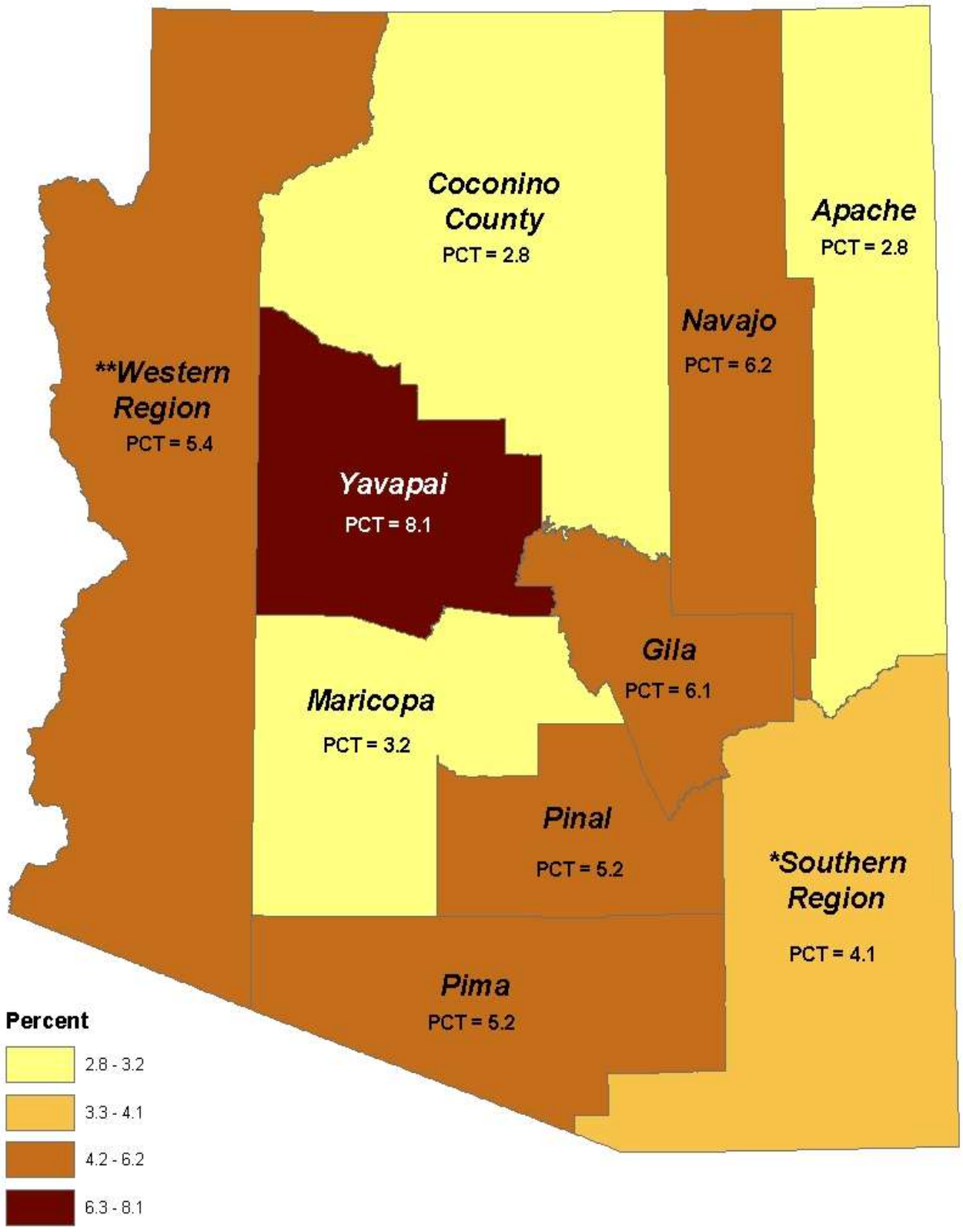
- Were male
- Were widowed
- Had some college or technical school

Individuals who were 65 and older were the most likely to report suffering from angina, at 10.8%.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Who Reported That a Health Professional Told Them They Suffered from Angina, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

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. in adults; strokes are considered a major cause of disability. The most recent national mortality data show that the main types of strokes are:

- **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 minutes)
  - -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." [84]

BRFSS 2013, 2.8% of Arizonans surveyed reported they have suffered from a stroke; the same as the national median (see **Figure 31A**).

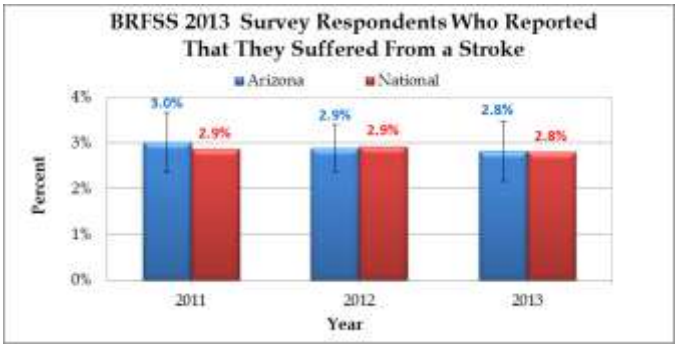


Figure 31A. Arizona and National 2011-2013 BRFSS respondents reported having suffered from a stroke.

Although Arizona had the same prevalence of stroke when compared to the nation, it fell into the second lowest class when examining all the states (see **Figure 31B**).

Figure 31B. BRFSS 2013 survey respondents who reported they had a stroke. Figure 31B displays U.S. map (natural breaks).

In 2013, there were 13,557 hemorrhagic or ischemic stroke-related hospital discharges (non-injury), 992 of whom died in the hospital. The stroke-related discharges accrued more than $1 billion in charges and had an average length of stay ranging from 5.3 to 10.3 days (see **Table 14)**.

Stroke Related Inpatient & Emergency Department Discharges

Payer Type	Number of Discharges	Died	Total Charges	Average Length of Stay (Days)
Charity	46	9	$5,142,268	10.3
Medicaid	1,009	73	$123,308,723	9.5
Medicare	8,799	611	$582,603,874	5.3
Other	376	47	$39,525,042	7.1
Private Insurance	2,360	161	$225,647,882	6.2
Self-Pay	967	91	$87,570,391	7.6
Total	**13,557**	**992**	**$1,063,798,180**	

Table 14. Emergency department and inpatient hospitalizations related to strokes in 2013. Strokes were defined by the following ICD-9 codes for Ischemic: 433.01, 433.21, 433.81, 433.91, 434.01, 434.11, and 434.91; Hemorrhagic: 430, 431, 432.0, 432.1 and 432.9.

The majority (70%) of stroke-related hospitalizations incidents were ischemic. Of the stroke related hospitalizations 24% were due to hemorrhage and about 6% were discharged with both ischemic and hemorrhagic stroke (see **Figure 31C**).

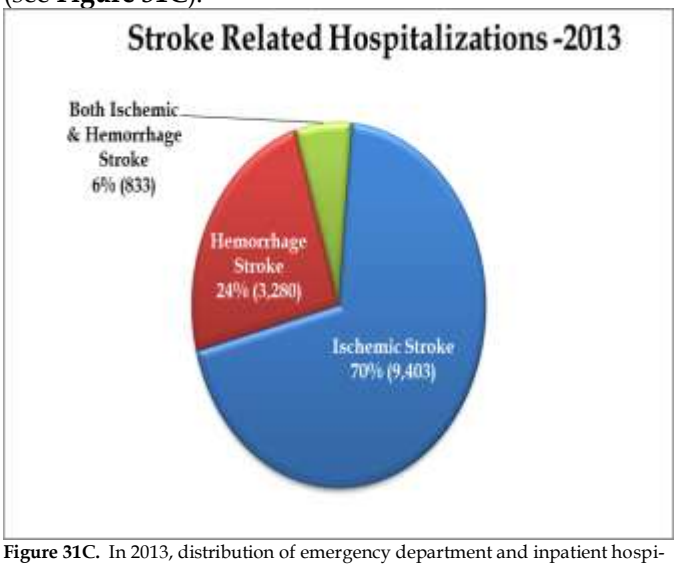


Figure 31C. In 2013, distribution of emergency department and inpatient hospitalizations related to strokes. ICD-9 codes for Ischemic: 433.01, 433.21, 433.81, 433.91, 434.01, 434.11, 434.91 and Hemorrhagic: 430, 431, 432.0, 432.1 and 432.9.

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.

84 National Center for Chronic Disease Prevention and Health Promotion, Division for Heart Disease and Stroke Prevention. CDC: Stroke. Updated Dec 6, 2013. http://www.cdc.gov/stroke/types_of_stroke.htm

Health Conditions and Limitations: Stroke

BRFSS 2013 Arizonans' Respondents
Who Reported Having Suffered from a Stroke

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**2.8%**	53		
Arizona	**2.8%**	210	2.2%	3.5%
Sex				
Male	2.5%	84	1.7%	3.3%
Female	3.2%	126	2.1%	4.2%
Age				
18-24	0.1%	1	0.0%	0.2%
25-34	2.1%	6	0.0%	4.3%
35-44	0.3%	3	0.0%	0.6%
45-54	2.2%	25	0.8%	3.6%
55-64	3.6%	42	2.1%	5.1%
65+	7.4%	133	5.4%	9.3%
Marital Status				
Married	2.4%	80	1.6%	3.2%
Divorced	5.0%	40	1.7%	8.3%
Widowed	10.5%	59	6.2%	14.9%
Separated	4.8%	14	1.6%	8.0%
Never Married	0.8%	14	0.1%	1.5%
Unmarried Couple	0.4%	1	0.0%	1.1%
Education Attainment				
Less than high school	3.0%	26	1.4%	4.6%
High School/GED	3.6%	62	2.1%	5.0%
Some College/Technical School	3.0%	67	1.6%	4.3%
College/Technical School Graduate	1.7%	53	1.0%	2.3%
Employment Status				
Employed for Wages	0.9%	16	0.3%	1.4%
Self Employed	0.5%	6	0.0%	1.1%
Out of Work	2.2%	9	0.1%	4.2%
Homemaker	1.9%	15	0.3%	3.4%
Student	0.2%	1	0.0%	0.5%
Retired	6.7%	115	4.8%	8.6%
Unable to Work	11.2%	47	5.1%	17.2%
Income				
Less than $10,000	8.2%	25	0.8%	15.6%
$10,000 to $14,999	4.5%	26	1.6%	7.3%
$15,000 to $19,999	1.4%	12	0.2%	2.6%
$20,000 to $24,999	3.7%	25	1.5%	6.0%
$25,000 to $34,999	3.3%	22	1.4%	5.3%
$35,000 to $49,999	1.9%	27	0.8%	3.1%
$50,000 to $74,999	1.1%	14	0.2%	1.9%
Above $75,000	1.5%	20	0.5%	2.5%
Race				
White Non-Hispanic	3.5%	170	2.6%	4.3%
Black/African American	1.9%	4	0.0%	4.1%
Hispanic	1.6%	20	0.2%	3.1%
Asian/Pacific Islander	1.3%	1	0.0%	4.1%
American Indian	3.1%	9	0.1%	6.2%
Other	2.4%	6	0.0%	4.9%

Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizonans who reported that a health professional told them that they suffered from a stroke. The data are reported by sex, age, 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 male
- Were a college graduate or had less than high school diploma.

Males were less likely to report that they had a stroke, at 2.5%.

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

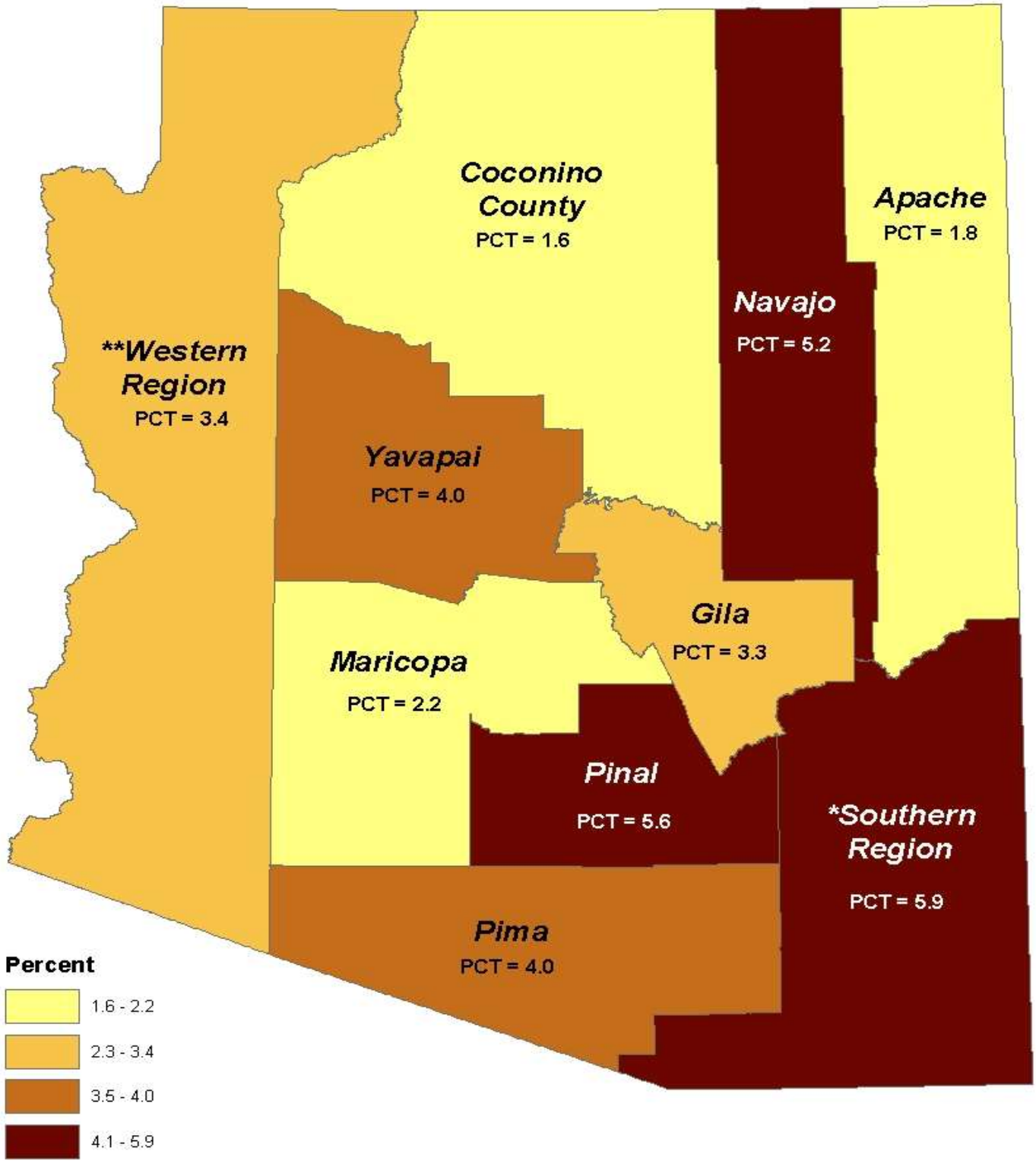
- Were female
- Were a college or a technical school graduate
- Were unable to work

Individuals who were unable to work were the most likely to report suffering from a stroke, at 11.2%.

The "Nationwide" estimates shown are median values across all states, not means.
"National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Who Reported Being Told They Had Suffered a Stroke, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

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 signs 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.[85] Therefore, continued monitoring of asthma prevalence is of great importance. In 2013, 14.6% of Arizonans surveyed reported being diagnosed with asthma, which is .5% higher than the national prevalence. (see **Figure 32A**).

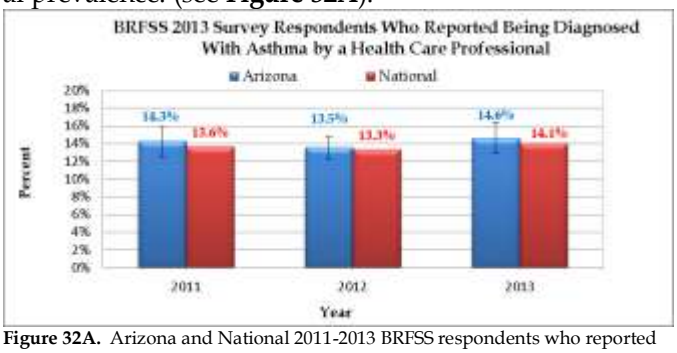


Figure 32A. Arizona and National 2011-2013 BRFSS respondents who reported that they have been diagnosed with asthma.

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 third highest class for individuals reporting that a health care professional has diagnosed with them asthma (see **Figure 32B**).

Figure 32B. BRFSS 2013 survey respondents who reported that a health care professional diagnosed them with asthma. Figure 32B displays U.S. map (natural breaks).

Asthma is estimated to cost the U.S. more than $50 billion in direct health care cost and $ billion in indirect costs. The estimated total cost to the U.S. is $56 billion annually. In 2013, there were 55,166 asthma-related emergency department visits and inpatient hospitalizations in Arizona. The average length of stay increased as age increased. The range was 3.8 days to 4.6 days. The asthma related discharges accounted for more than $2.3 billion dollars in charges (see **Table 15**).

Asthma Related Inpatient & Emergency Department Discharges			
Age	**Number of Discharges**	**Charges**	**Average Length of Stay (Days)**
<18	5,710	$153,763,941	3.8
18-24	4,065	$113,199,301	4.0
25-39	9,441	$306,355,119	4.3
40-54	10,858	$476,691,346	4.5
55+	25,092	$1,290,355,171	4.6
Total	**55,166**	**$2,340,364,879**	

Table 15. In 2013, emergency department and inpatient hospitalizations related to asthma reported 55,166 total discharges. Asthma was defined using the following ICD-9 codes: 493.00, 493.01, 493.02, 493.10, 493.11, 493.12, 493.20, 493.21, 493.22, 493.81, 493.82, 493.90, 493.91, and 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.[86] In the Arizona BRFSS 2013 survey, reported asthma among survey respondents was significantly lower among Hispanics and Asians when compared to the state mean. Other race/ethnicity groups and risk factor groups such as poverty were not significantly different from the state mean (see **Figure 32C**).

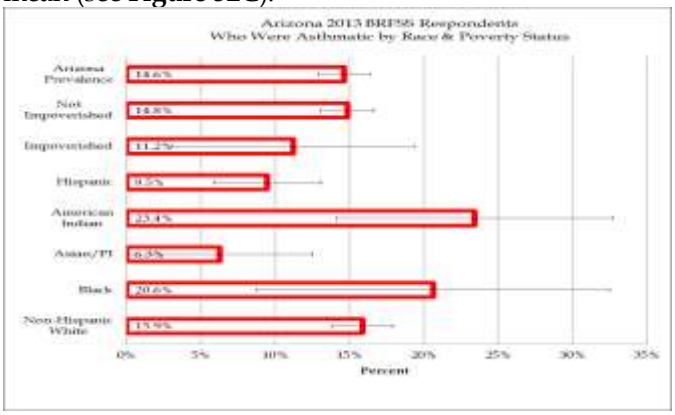


Figure 32C. BRFSS 2013 respondents who reported having asthma categorized by race and poverty.

85. National Asthma Education and Prevention Program, Third Expert Panel on the Diagnosis and Management of Asthma. Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma. Bethesda (MD): National Heart, Lung, and Blood Institute (US); 2007 Aug. Available from: http://www.ncbi.nlm.nih.gov/books/NBK7232/

86. EPA. President's Task Force on Environmental Health Risks and Safety Risks to Children: Coordinated Federal Action Plan to Reduce Racial and Ethnic Asthma Disparities. May 2012. https://www.epa.gov/sites/production/files/2014-08/documents/federal_asthma_disparities_action_plan.pdf

Health Conditions and Limitations: Asthma

Arizonans BRFSS Respondents Who Reported That They Have Been Diagnosed With Asthma

Characteristic	Percent	N	Confidence Interval Lower Mean	Upper Mean
National	**14.1%**	53		
Arizona	**14.6%**	640	12.9%	16.4%
Sex				
Male	12.8%	205	10.2%	15.5%
Female	16.4%	435	14.1%	18.6%
Age				
18-24	16.0%	45	10.3%	21.7%
25-34	14.9%	66	10.0%	19.8%
35-44	16.7%	87	12.0%	21.4%
45-54	15.0%	98	10.9%	19.1%
55-64	14.1%	150	10.0%	18.2%
65+	11.8%	194	9.1%	14.5%
Marital Status				
Married	13.4%	278	11.0%	15.8%
Divorced	18.9%	131	14.2%	23.5%
Widowed	12.9%	82	8.4%	17.3%
Separated	5.3%	14	1.3%	9.4%
Never Married	15.8%	99	11.5%	20.2%
Unmarried Couple	19.6%	32	9.8%	29.4%
Education Attainment				
Less than high school	10.3%	50	5.8%	14.9%
High School/GED	14.6%	162	11.2%	18.0%
Some College/Technical School	16.0%	218	12.8%	19.2%
College/Technical School Graduate	15.7%	208	12.6%	18.8%
Employment Status				
Employed for Wages	15.4%	214	12.5%	18.3%
Self Employed	14.2%	40	7.7%	20.8%
Out of Work	17.5%	39	10.0%	25.0%
Homemaker	9.9%	42	5.3%	14.5%
Student	15.5%	21	7.0%	24.0%
Retired	10.7%	179	8.3%	13.1%
Unable to Work	23.9%	103	16.0%	31.9%
Income				
Less than $10,000	17.1%	57	9.7%	24.5%
$10,000 to $14,999	19.9%	51	10.7%	29.0%
$15,000 to $19,999	13.1%	53	7.6%	18.6%
$20,000 to $24,999	13.8%	61	7.2%	20.4%
$25,000 to $34,999	13.4%	67	8.1%	18.8%
$35,000 to $49,999	12.5%	83	8.1%	16.9%
$50,000 to $74,999	15.5%	69	10.9%	20.2%
Above $75,000	15.9%	118	11.9%	19.9%
Race				
White Non-Hispanic	15.9%	482	13.8%	18.0%
Black/African American	20.6%	17	8.7%	32.5%
Hispanic	9.5%	66	5.9%	13.1%
Asian/Pacific Islander	6.3%	6	0.0%	13.4%
American Indian	23.4%	40	14.1%	32.7%
Other	28.2%	29	13.8%	42.7%

Use caution in interpreting cell sizes less than 50. N* is unweighted

The table to the left displays the proportions of Arizonans who reported that they were diagnosed with asthma 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 over 65 years old
- Were widowed
- Had less than a high school education
- Were homemakers
- Had a household income between $35,000 and $50,000
- Reported their race as Hispanic

Individuals who reported their race as Hispanics were the least likely to report having been diagnosed with asthma, at 9.5%.

Note: other race category that came in lower were Asian/Pacific Islander, at 6.3%; however, because the cell size was lower than 50 it should not be interpreted.

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

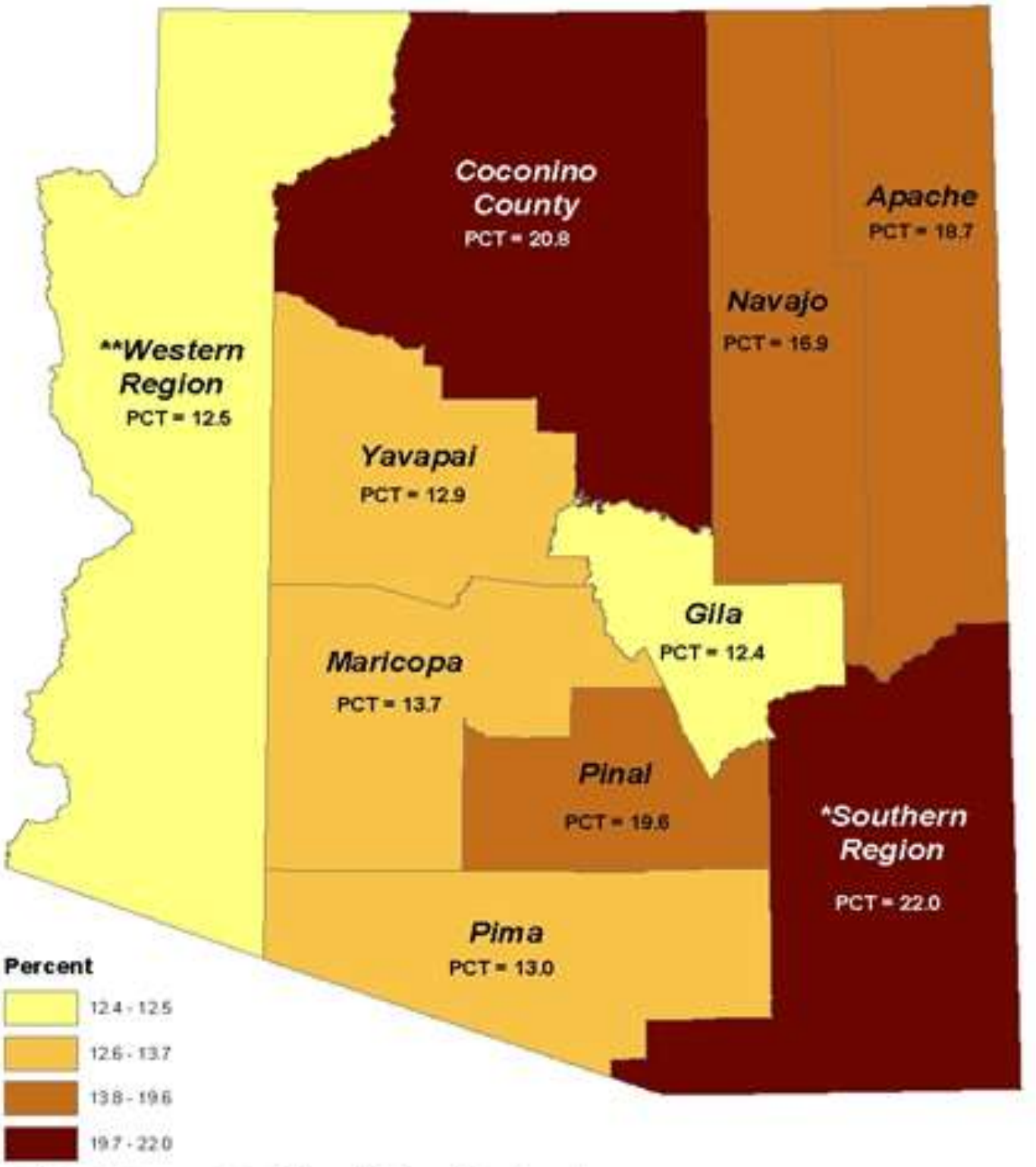
- Were female
- Were between the ages of 18 and 24
- Had some college or tech school
- Were unable to work
- Had a household income less than $15,000
- Reported their race as Hispanics.

Individuals who reported that they were unable to work were the most likely to report having been diagnosed with asthma, at 23.9%.

The "Nationwide" estimates shown are median values across all states, not means. "National" level estimates reported here use medians because no national stratum was defined in the 2013 BRFSS survey. Survey results at the national level were not adjusted or weighted to produce a national mean result.

Arizona Department of Health Services

Arizona Respondents Who Reported Being Told They Suffered From Asthma, by County & Region - BRFSS 2013



**Western Region contains: Mohave, La Paz and Yuma Counties

*Southern Region contains: Santa Cruz, Cochise, Graham and Greenlee Counties

Arizona BRFSS 2013 Respondent Profile

2013 ARIZONA RESPONDENT PROFILE						
GROUPS	**PERCENT**	**N***		**GROUPS**	**PERCENT**	**N***
TOTAL	100	4252		**EMPLOYMENT**		
SEX				Employed for wages	43.1	1395
Male	49.3	1756		Self-employed	7.6	307
Female	50.7	2496		Out of work	7.0	248
AGE				Homemaker	9.2	332
18-24	13.1	250		Student	6.1	122
25-34	17.8	390		Retired	19.1	1475
35-44	16.7	438		Unable to work	7.3	352
45-54	16.8	663		**INCOME**		
55-64	15.6	918		<$25,000	27.4	1230
65+	20	1593		$25,000-$34,999	11.0	471
MARITAL STATUS				$35,000-$49,999	12.5	590
Married	51.6	2137		$50,000-$74,999	12.4	531
Divorced	12	670		$75,000 or more	21.7	816
Widowed	5.9	590		**RACE/ETHNICITY**		
Separated	2.5	97		White, Non-Hispanic	60.1	3105
Never married	22.9	601		Black	4.2	95
Unmarried couple	4.4	131		Asian/ PI	0.1	8
EDUCATION				American Indian	6.2	234
Less than High School	15.7	388		Other	1.4	121
High School Graduate/GED	25.4	1127		Hispanic	26.4	605
Some College/Tech School	35.2	1298				
College Grad	23.4	1419				

Source: Arizona 2013 BRFSS Respondent Profile. The weighted number is a percent of weighted sample.
*N is unweighted.

Appendices

Arizona BRFSS Questionnaire, 2013

http://azdhs.gov/documents/preparedness/public-health-staistics/behavioral-risk-factor-surveillance/questionnaires/2013-BRFSS-questionnaire.pdf

Arizona BRFSS Landline and Cell Phone Codebook Report, 2013

http://azdhs.gov/documents/preparedness/public-health-statistics/behavioral-risk-factor-surveillance/code-book/az13code-llcp.pdf

Arizona BRFSS Calculated Variable Data Comparison Report, 2013

http://azdhs.gov/documents/preparedness/public-health-statistics/behavioral-risk-factor-surveillance/additional-resources/AZ13CDCR.pdf

Arizona BRFSS Core Variable Report, 2013

http://azdhs.gov/documents/preparedness/public-health-statistics/behavioral-risk-factor-surveillance/additional-resources/2013-core-variables-report.pdf

Arizona BRFSS Module Questions Data Report, 2013

http://azdhs.gov/documents/preparedness/public-health-statistics/behavioral-risk-factor-surveillance/additional-resources/2013-module-variables-reports.pdf

BRFSS 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

All-Cause Mortality

All-cause mortality is a term used by epidemiologists, or disease-tracking scientists, to refer to death from any cause.

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/

Cancer

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=HighCholesterol

Chronic obstructive pulmonary disease (COPD)

One of the most common lung diseases. There are two main forms 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 them they had diabe-

	tes. 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 a 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 to, and 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	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 com-

	plete 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, either 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/topics/basic/index.htm
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	The condition of having a hereditary tendency or high probability for developing diabetes mellitus, although neither symptoms nor test results confirms the presence of the disease. HTTP://dictionary.reference.com/browse/prediabetes?s=t
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.
Seat belt 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.
Special needs population	Populations whose members may have additional needs before, during and after an incident in functional areas, including but not limited to: maintaining independence, communication, transportation, supervision and medical care. Individuals in need of additional response assistance may include those who have disabilities; who live in institutionalized settings; who are elderly; who are children; who are from diverse cultures; who have limited English proficiency or are non-English speaking; or who are transportation-disadvantaged.
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.bing.com/Dictionary/search?q=define+stroke&qpvt=DEFINE+STROKE&FORM=DTPDIA
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].

Behavioral Risk Factor Surveillance System 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 2013 was 4,252 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. Special attention should be paid to confidence intervals of specific variable results when making inference about the Arizona general population based upon survey results. Whatever specific category survey results may be, the confidence interval provides a range within which the true measure of the Arizona population is 95% statistically certain to be found. 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: 2013 Arizona Respondent Profile.

NEW 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 2013, 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.

BRFSS ANNUAL QUESTIONNAIRE DEVELOPMENT

The State BRFSS Coordinators Working Group meets three times a year with the Behavioral Risk Factor Surveillance Branch Management. The questionnaire for landlines and cell phones is the same except for when the respondent is screened for the asthma follow-up question. The asthma follow-up questions are only asked on the land-line. 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 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/questionnaires.htm. If 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 2013

Due to significant changes in the BRFSS methodology as described above, Arizona's BRFSS estimates for 2011, 2012 and 2013 data SHOULD NOT be compared to estimates provided from previous years. Thus, Arizona's 2011 through 2013 data present a new baseline for Arizona BRFSS survey results. 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/brfss/annual_data/2011/2011_weighting.htm