



## COMMUNITY HEALTH NEEDS ASSESSMENT

Advancing Community Health and Well Being

# Full Health Indicators Report

## CLINICAL CARE

**Report Area:** Custer County, OK

Access to Primary Care	Diabetes Management Hemoglobin A1c Test	Lack of a Consistent Source of Primary Care
Cancer Screening - Mammogram	Facilities Designated as Health Professional	Lack of Prenatal Care
Cancer Screening - Pap Test	Shortage Areas	Pneumonia Vaccination
Cancer Screening - Sigmoidoscopy or	Federally Qualified Health Centers	Population Living in a Health Professional
Colonoscopy	High Blood Pressure Management	Shortage Area
Dental Care Utilization	HIV Screenings	Preventable Hospital Events

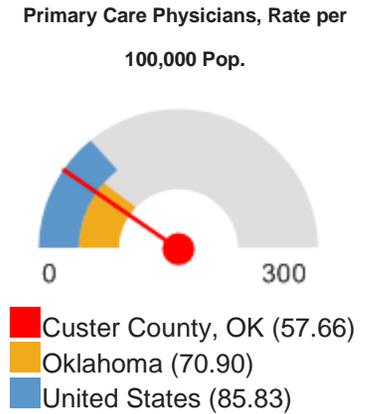
A lack of access to care presents barriers to good health. The supply and accessibility of facilities and physicians, the rate of uninsurance, financial hardship, transportation barriers, cultural competency, and coverage limitations affect access.

Rates of morbidity, mortality, and emergency hospitalizations can be reduced if community residents access services such as health screenings, routine tests, and vaccinations. Prevention indicators can call attention to a lack of access or knowledge regarding one or more health issues and can inform program interventions.

### Access to Primary Care

This indicator reports the number of primary care physicians per 100,000 population. This indicator is relevant because a shortage of health professionals contributes to access and health status issues.

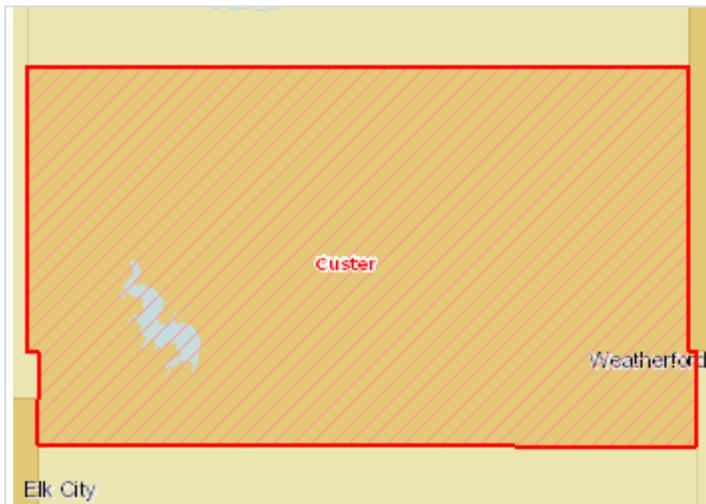
Report Area	Total Population, 2011	Total Primary Care Physicians, 2011	Primary Care Physicians, Rate per 100,000 Pop.
Custer County, OK	27,750	16	<b>57.66</b>
Oklahoma	3,791,508	2,688	70.90
United States	311,591,917	267,437	85.83



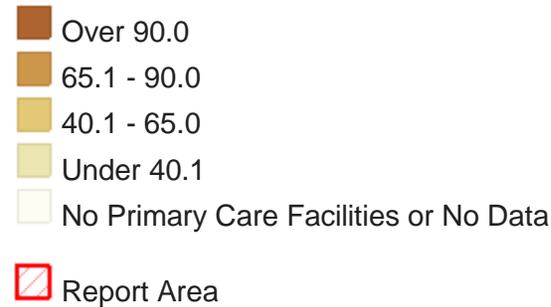
Note: This indicator is compared with the state average.

Data Source: US Department of Health & Human Services, Health Resources and Services Administration, [Area Health Resource File](#):

2011. Source geography: County.



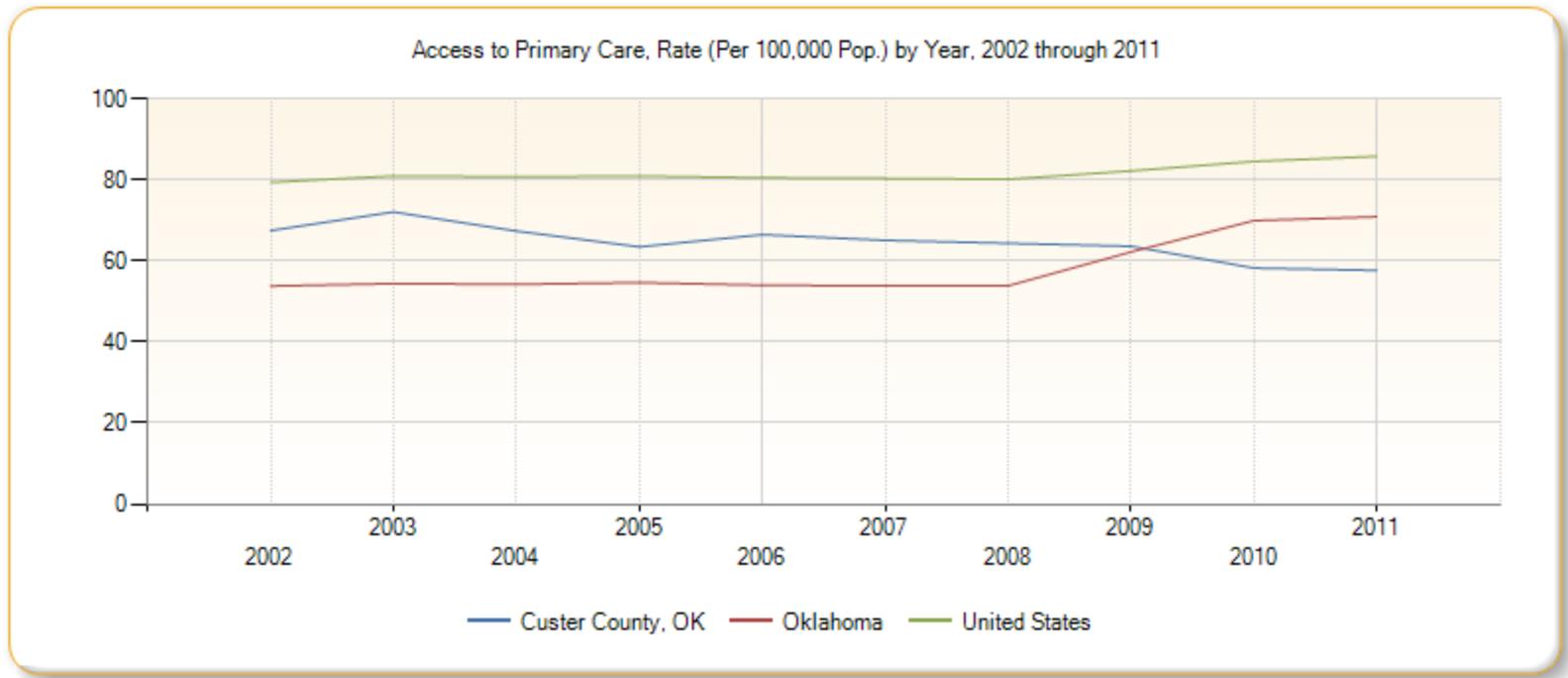
#### Access to Primary Care Physicians, Rate per 100,000 Pop. by County, AHRF 2011



#### Access to Primary Care, Rate (Per 100,000 Pop.) by Year, 2002 through 2011

Report Area	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Custer	67.49	72.11	67.38	63.47	66.49	65.11	64.36	63.63	58.25	57.66

Report Area	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
County, OK										
Oklahoma	53.81	54.42	54.24	54.65	54.01	53.85	53.87	62.22	69.97	70.90
United States	79.41	80.99	80.76	80.94	80.54	80.38	80.16	82.22	84.57	85.83

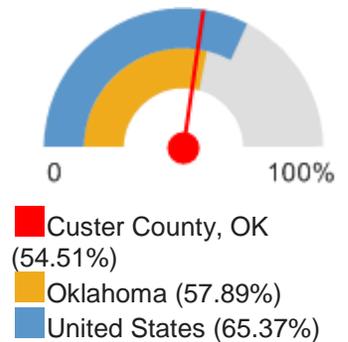


## Cancer Screening - Mammogram

This indicator reports the percentage of female Medicare enrollees, age 67-69 or older, who have received one or more mammograms in the past two years. This indicator is relevant because engaging in preventive behaviors allows for early detection and treatment of health problems. This indicator can also highlight a lack of access to preventive care, a lack of health knowledge, insufficient provider outreach, and/or social barriers preventing utilization of services.

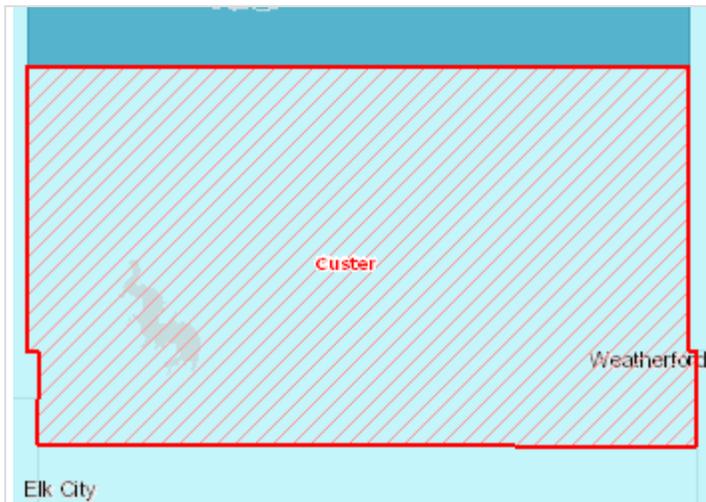
Report Area	Total Medicare Enrollees	Female Medicare Enrollees Age 67-69	Female Medicare Enrollees with Mammogram in Past 2 Years	Percent Female Medicare Enrollees with Mammogram in Past 2 Years
Custer County, OK	3,071	244	132	<b>54.51%</b>
Oklahoma	380,066	33,191	19,214	57.89%
United States	51,875,184	4,218,820	2,757,677	65.37%

Percent Female Medicare Enrollees with Mammogram in Past 2 Years

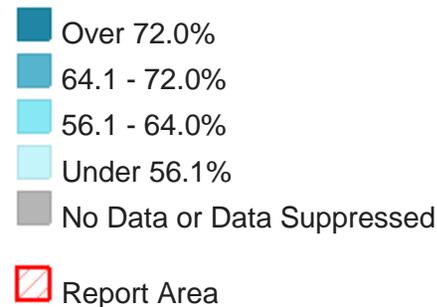


Note: This indicator is compared with the state average. Data breakout by demographic groups are not available.

Data Source: Dartmouth College Institute for Health Policy & Clinical Practice, [Dartmouth Atlas of Health Care](#): 2010. Source geography: County.



Mammogram (Past 2 Years), Percent of Female Medicare Enrollees, Age 67-69 by County, DA 2010

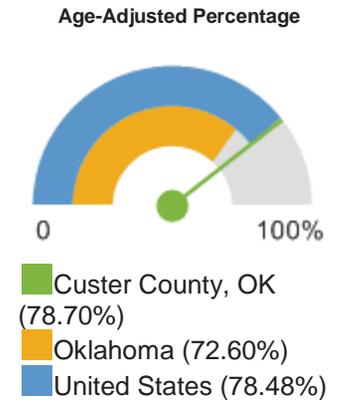


## Cancer Screening - Pap Test

This indicator reports the percentage of women aged 18 and older who self-report that they have had a Pap test in the past three years. This indicator is relevant because engaging in preventive behaviors allows for early detection and treatment of health problems. This indicator can

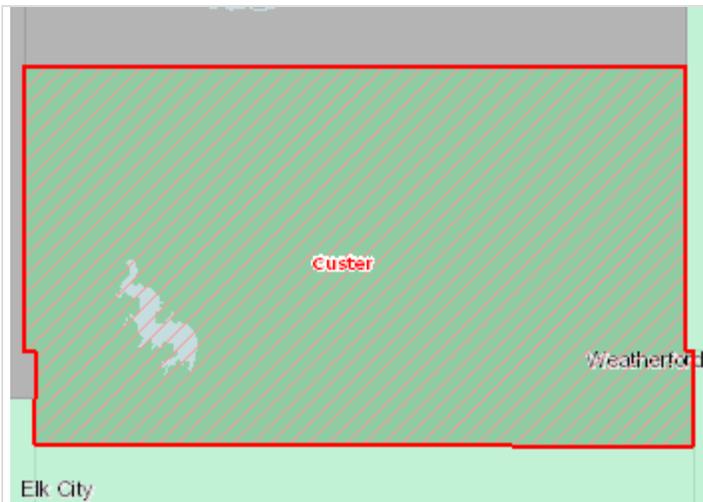
also highlight a lack of access to preventive care, a lack of health knowledge, insufficient provider outreach, and/or social barriers preventing utilization of services.

Report Area	Female Population Age 18	Estimated Number with Regular Pap Test	Crude Percentage	Age-Adjusted Percentage
Custer County, OK	17,704	13,809	78%	<b>78.70%</b>
Oklahoma	2,154,209	1,525,180	70.80%	72.60%
United States	176,847,182	137,191,142	77.58%	78.48%

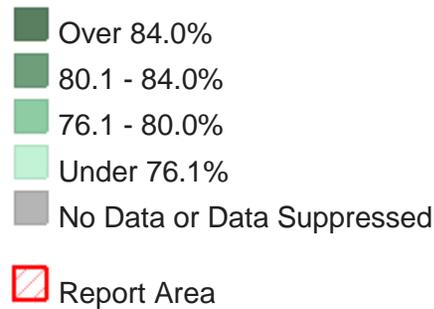


Note: This indicator is compared with the state average. Data breakout by demographic groups are not available.

Data Source: Centers for Disease Control and Prevention, [Behavioral Risk Factor Surveillance System](#): 2006-12. Accessed via the [Health Indicators Warehouse](#). Source geography: County.



### Cervical Cancer Screening (Past 3 Years), Percent of Women Age 18 by County, BRFSS 2006-12

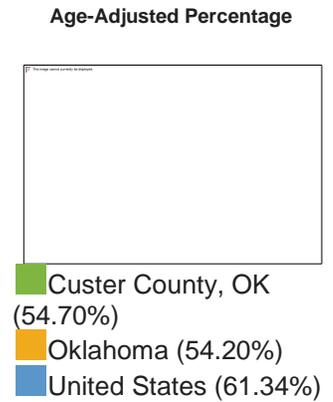


### Cancer Screening - Sigmoidoscopy or Colonoscopy

This indicator reports the percentage of adults 50 and older who self-report that they have ever had a sigmoidoscopy or colonoscopy. This indicator is relevant because engaging in preventive behaviors allows for early detection and treatment of health problems. This indicator can

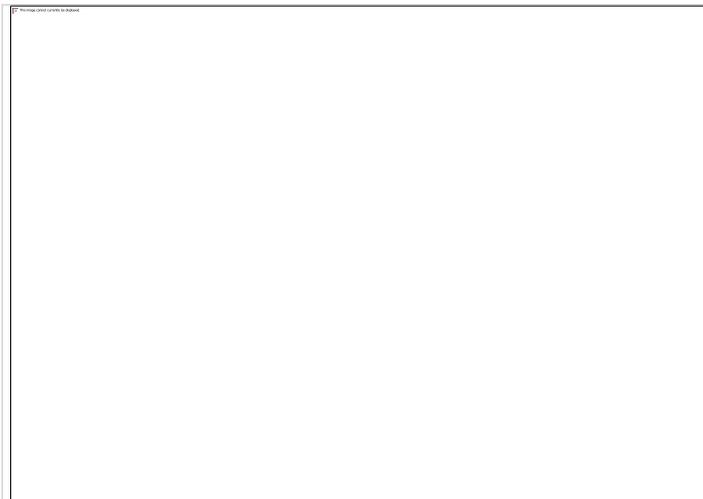
also highlight a lack of access to preventive care, a lack of health knowledge, insufficient provider outreach, and/or social barriers preventing utilization of services.

Report Area	Total Population Age 50	Estimated Population Ever Screened for Colon Cancer	Crude Percentage	Age-Adjusted Percentage
Custer County, OK	6,362	3,378	53.10%	<b>54.70%</b>
Oklahoma	930,101	536,668	57.70%	54.20%
United States	75,116,406	48,549,269	64.63%	61.34%



Note: This indicator is compared with the state average. Data breakout by demographic groups are not available.

Data Source: Centers for Disease Control and Prevention, [Behavioral Risk Factor Surveillance System](#): 2006-12. Accessed via the [Health Indicators Warehouse](#). Source geography: County.



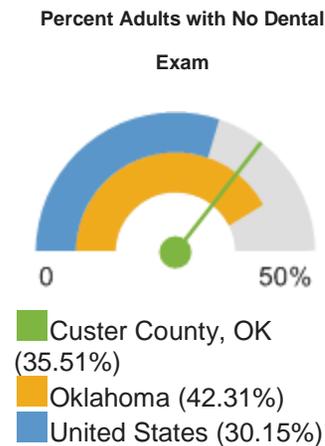
**Colon Cancer Screening (Ever), Percent of Adults Age 50 by County, BRFSS 2006-12**

- Over 62.0%
- 55.1 - 62.0%
- 48.1 - 55.0%
- Under 48.1%
- No Data or Data Suppressed
- Report Area

Dental Care Utilization

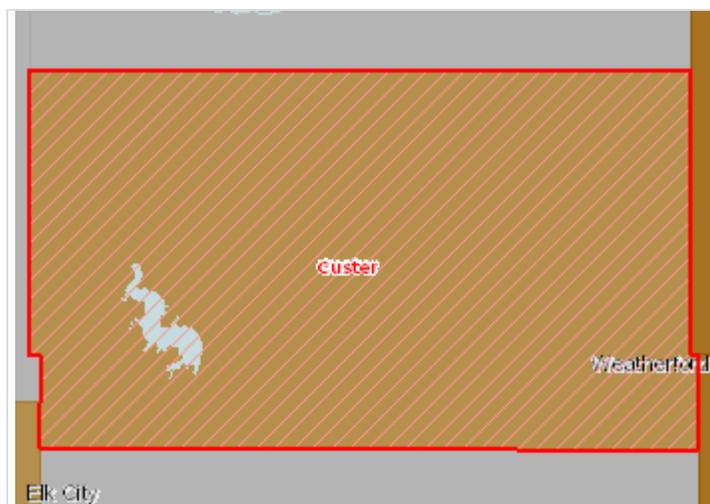
This indicator reports the percentage of adults aged 18 and older who self-report that they have not visited a dentist, dental hygienist or dental clinic within the past year. This indicator is relevant because engaging in preventive behaviors decreases the likelihood of developing future health problems. This indicator can also highlight a lack of access to preventive care, a lack of health knowledge, insufficient provider outreach, and/or social barriers preventing utilization of services.

Report Area	Total Population (Age 18 )	Total Adults Without Recent Dental Exam	Percent Adults with No Dental Exam
Custer County, OK	20,722	7,358	35.51%
Oklahoma	2,793,624	1,181,932	42.31%
United States	235,375,690	70,965,788	30.15%



Note: This indicator is compared with the state average.

Data Source: Centers for Disease Control and Prevention, [Behavioral Risk Factor Surveillance System](#): 2006-10. Additional data analysis by [CARES](#). Source geography: County.

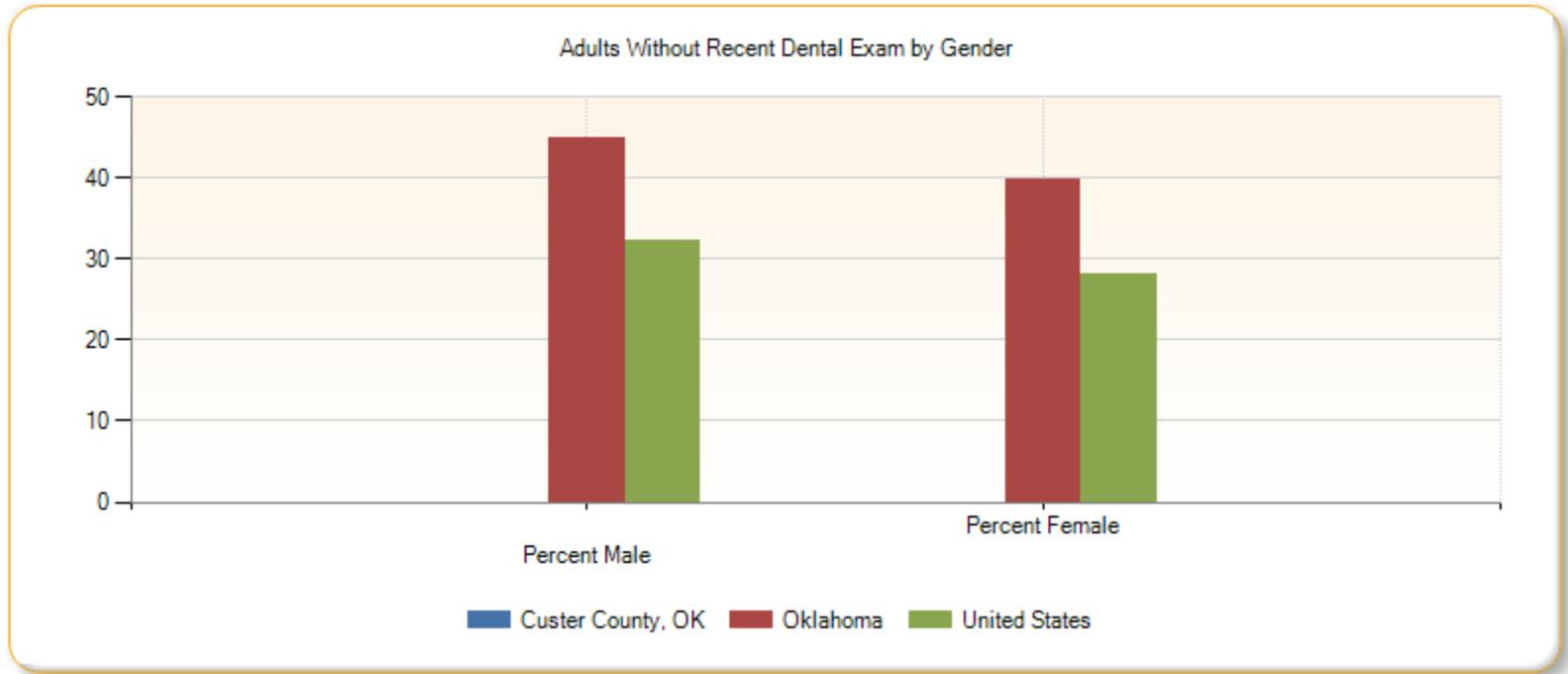


Adults Age 18 Without Dental Exam in Past 12 Months, Percent by County, BRFSS 2006-10

- Over 42.0%
- 34.1 - 42.0%
- 26.1 - 34.0%
- Under 26.1%
- No Data or Data Suppressed
- Report Area

**Adults Without Recent Dental Exam by Gender**

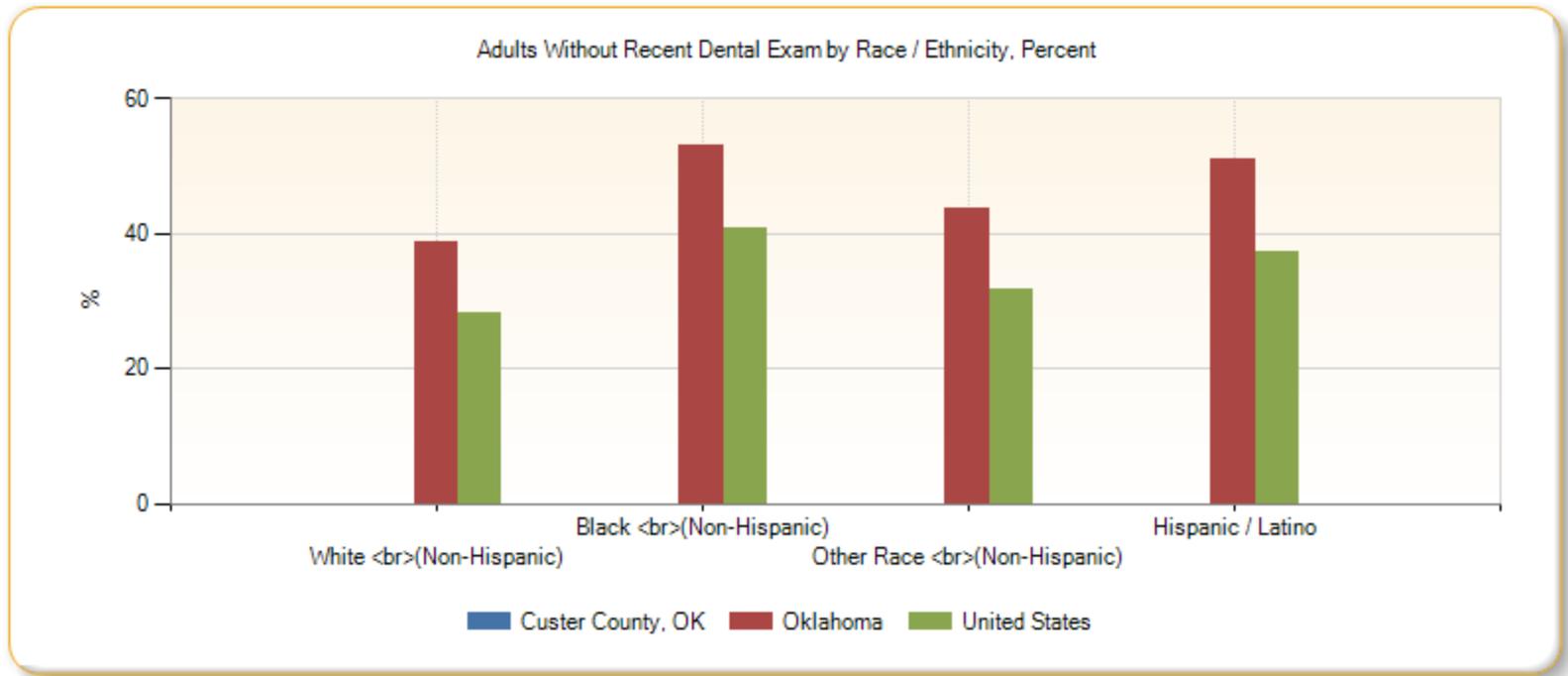
Report Area	Total Male	Total Female	Percent Male	Percent Female
Custer County, OK	no data	no data	no data	no data
Oklahoma	603,193	570,106	44.82%	39.92%
United States	36,311,042	34,083,921	32.30%	28.12%



**Adults Without Recent Dental Exam by Race / Ethnicity, Percent**

Report Area	White (Non-Hispanic)	Black (Non-Hispanic)	Other Race (Non-Hispanic)	Hispanic / Latino
Custer County, OK	no data	no data	no data	no data
Oklahoma	38.82%	53.18%	43.63%	50.92%

Report Area	White (Non-Hispanic)	Black (Non-Hispanic)	Other Race (Non-Hispanic)	Hispanic / Latino
United States	28.08%	40.65%	31.75%	37.39%

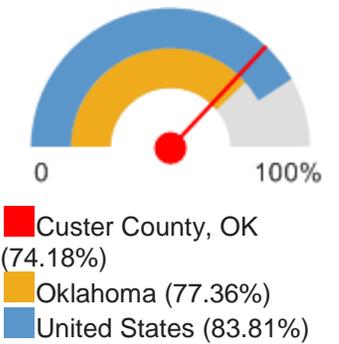


### Diabetes Management Hemoglobin A1c Test

This indicator reports the percentage of diabetic Medicare patients who have had a hemoglobin A1c (hA1c) test, a blood test which measures blood sugar levels, administered by a health care professional in the past year. In the report area, 269 Medicare enrollees with diabetes have had an annual exam out of 364 Medicare enrollees in the report area with diabetes, or 74.18%. This indicator is relevant because engaging in preventive behaviors allows for early detection and treatment of health problems. This indicator can also highlight a lack of access to preventive care, a lack of health knowledge, insufficient provider outreach, and/or social barriers preventing utilization of services.

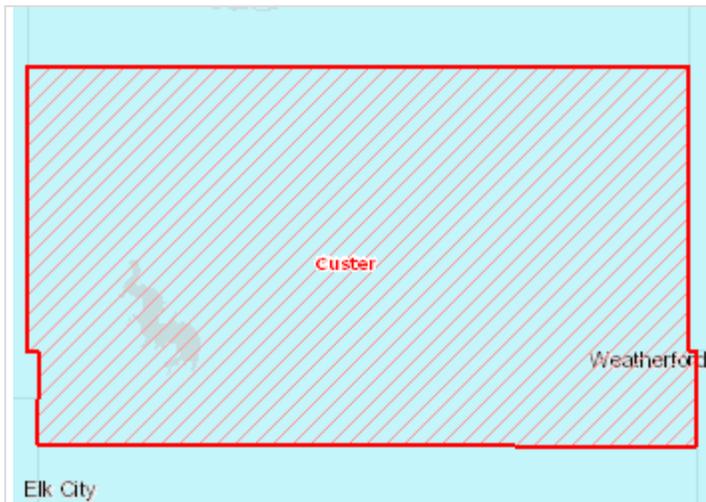
Report Area	Total Medicare Enrollees	Medicare Enrollees with Diabetes	Medicare Enrollees with Diabetes with Annual Exam	Percent Medicare Enrollees with Diabetes with Annual Exam
Custer County, OK	3,071	364	269	<b>74.18%</b>
Oklahoma	380,066	48,614	37,609	77.36%
United States	51,875,184	6,218,804	5,212,097	83.81%

Percent Medicare Enrollees with Diabetes with Annual Exam

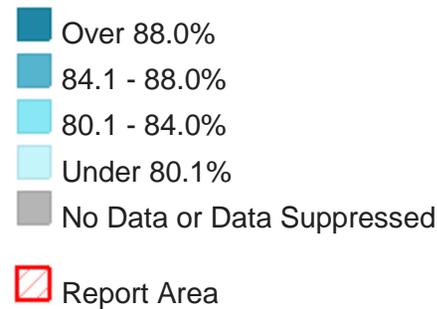


Note: This indicator is compared with the state average. Data breakout by demographic groups are not available.

Data Source: Dartmouth College Institute for Health Policy & Clinical Practice, [Dartmouth Atlas of Health Care](#): 2010. Source geography: County.



Patients with Annual HA1C Test (Diabetes), Percent of Medicare Enrollees with Diabetes by County, DA 2010



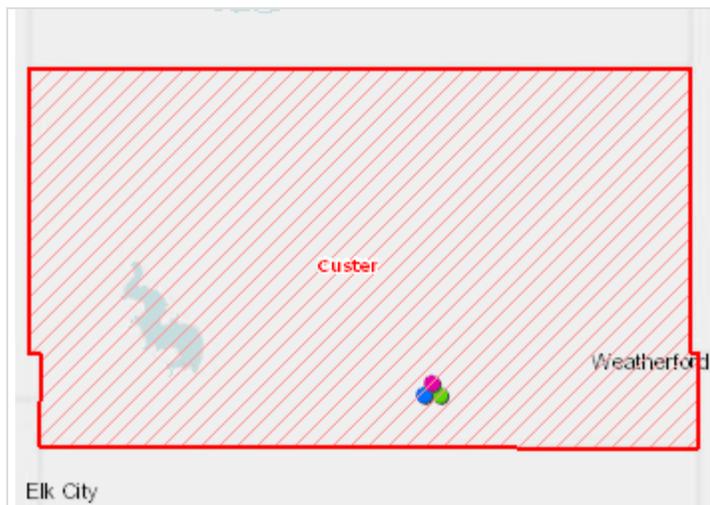
## Facilities Designated as Health Professional Shortage Areas

This indicator reports the number and location of health care facilities designated as "Health Professional Shortage Areas" (HPSAs), defined as having shortages of primary medical care, dental or mental health providers. This indicator is relevant because a shortage of health professionals contributes to access and health status issues.

Report Area	Primary Care Facilities	Mental Health Care Facilities	Dental Health Care Facilities	Total HPSA Facility Designations
Custer County, OK	1	1	1	3
Oklahoma	97	97	87	281
United States	3,313	2,751	2,704	8,768

*Note: Data breakout by demographic groups are not available.*

*Data Source: US Department of Health & Human Services, Health Resources and Services Administration, [Health Professional Shortage Areas](#): April 2014. Source geography: Address.*



**Facilities Designated as HPSAs by Location, HRSA HPSA Database April 2014**

- Primary Care
- Mental Health
- Dental Care
- Report Area

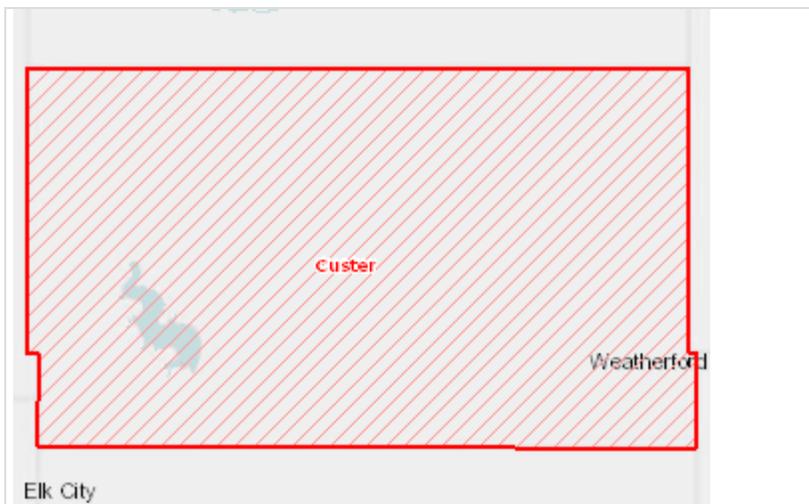
### Federally Qualified Health Centers

This indicator reports the number of Federally Qualified Health Centers (FQHCs) in the community. This indicator is relevant because FQHCs are community assets that provide health care to vulnerable populations; they receive extra funding from the federal government to promote access to ambulatory care in areas designated as medically underserved.

Report Area	Total Population	Number of Federally Qualified Health Centers	Rate of Federally Qualified Health Centers per 100,000 Population
Custer County, OK	27,469	0	0
Oklahoma	3,751,351	75	2
United States	312,471,327	6,482	2.07

Note: Data breakout by demographic groups are not available.

Data Source: US Department of Health & Human Services, Center for Medicare & Medicaid Services, [Provider of Services File](#): 2013. Source geography: Address.

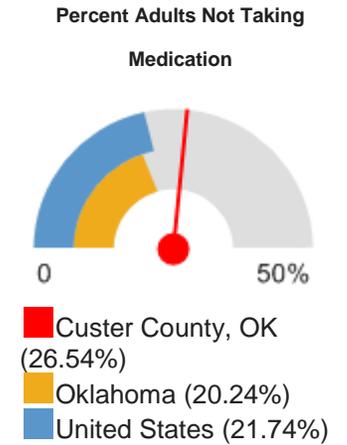


- Federally Qualified Health Centers by Location, POS 2013
- Report Area

## High Blood Pressure Management

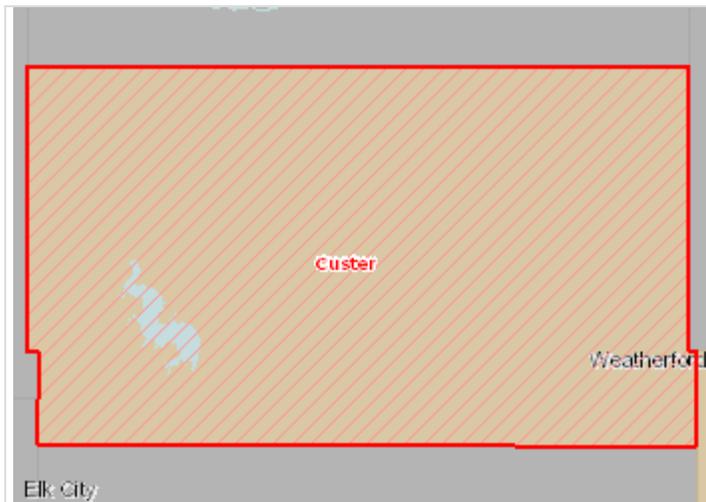
In the report area, 26.54% of adults, or 5,500, self-reported that they are not taking medication for their high blood pressure according to the CDC's Behavioural Risk Factor Surveillance System (2006-2010). This indicator is relevant because engaging in preventive behaviors decreases the likelihood of developing future health problems. When considered with other indicators of poor health, this indicator can also highlight a lack of access to preventive care, a lack of health knowledge, insufficient provider outreach, and/or social barriers preventing utilization of services.

Report Area	Total Population (Age 18 )	Total Adults Not Taking Blood Pressure Medication (When Needed)	Percent Adults Not Taking Medication
Custer County, OK	20,722	5,500	<b>26.54%</b>
Oklahoma	2,793,624	565,511	20.24%
United States	235,375,690	51,175,402	21.74%



Note: This indicator is compared with the state average.

Data Source: Centers for Disease Control and Prevention, [Behavioral Risk Factor Surveillance System](#): 2006-10. Additional data analysis by [CARES](#). Source geography: County.



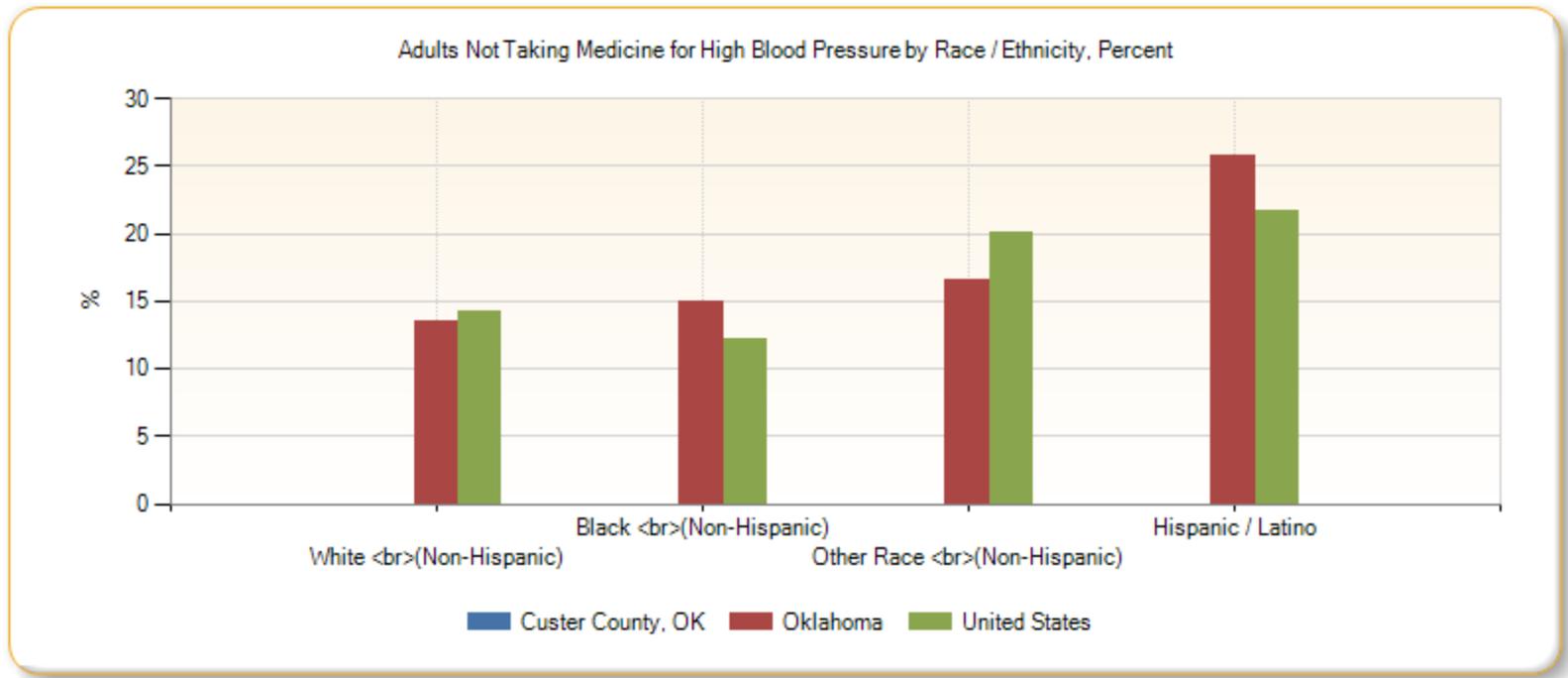
Adults Age 18 with High Blood Pressure, Not Taking Medication, Percent by County, BRFSS 2006-10



Adults Not Taking Medicine for High Blood Pressure by Race / Ethnicity, Percent

Report Area	White (Non-Hispanic)	Black (Non-Hispanic)	Other Race (Non-Hispanic)	Hispanic / Latino
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Report Area	White (Non-Hispanic)	Black (Non-Hispanic)	Other Race (Non-Hispanic)	Hispanic / Latino
Custer County, OK	no data	no data	no data	no data
Oklahoma	13.48%	14.91%	16.60%	25.79%
United States	14.31%	12.19%	20.10%	21.72%

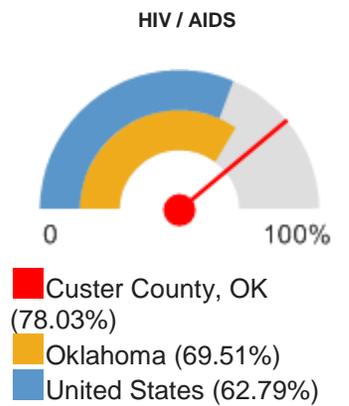


## HIV Screenings

This indicator reports the percentage of adults age 18-70 who self-report that they have never been screened for HIV. This indicator is relevant because engaging in preventive behaviors allows for early detection and treatment of health problems. This indicator can also highlight a lack of access to preventive care, a lack of health knowledge, insufficient provider outreach, and/or social barriers preventing utilization of services.

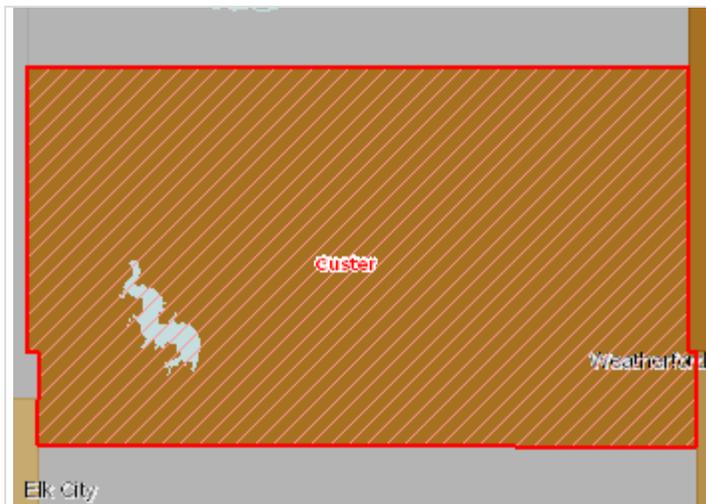
Report Area	Survey Population (Smokers Age 18)	Total Adults Never Screened for HIV / AIDS	Percent Adults Never Screened for HIV / AIDS
Custer County, OK	18,039	14,076	<b>78.03%</b>
Oklahoma	2,671,944	1,857,242	69.51%
United States	214,984,421	134,999,025	62.79%

Percent Adults Never Screened for HIV / AIDS

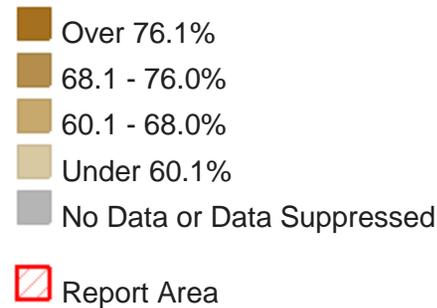


Note: This indicator is compared with the state average.

Data Source: Centers for Disease Control and Prevention, [Behavioral Risk Factor Surveillance System](#): 2011-12. Additional data analysis by [CARES](#). Source geography: County.



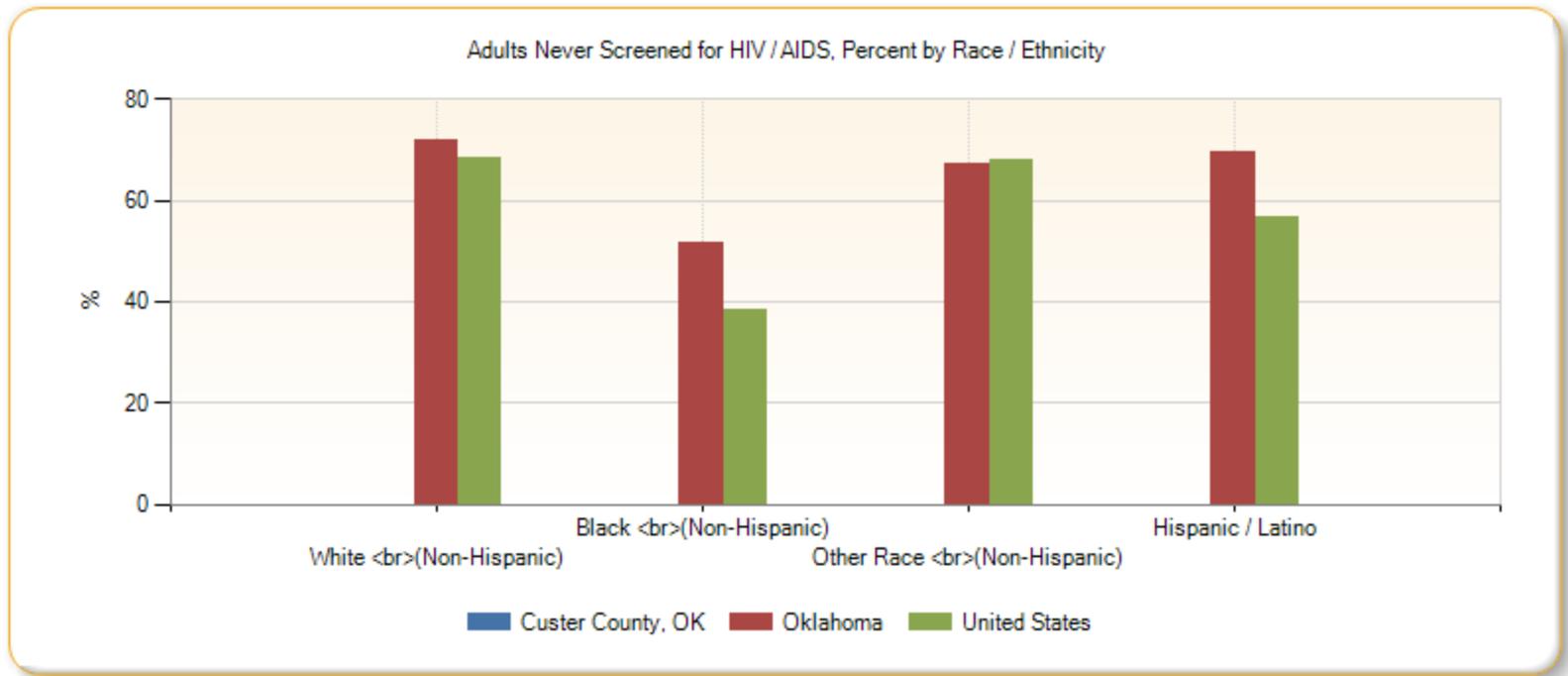
Adults Age 18 Never Screened for HIV / AIDS, Percent by County, BRFSS 2011-12



Adults Never Screened for HIV / AIDS, Percent by Race / Ethnicity

Report Area	White (Non-Hispanic)	Black (Non-Hispanic)	Other Race (Non-Hispanic)	Hispanic / Latino
Custer County, OK	no data	no data	no data	no data

Report Area	White (Non-Hispanic)	Black (Non-Hispanic)	Other Race (Non-Hispanic)	Hispanic / Latino
Oklahoma	71.83%	51.78%	67.19%	69.66%
United States	68.19%	38.56%	67.84%	56.71%

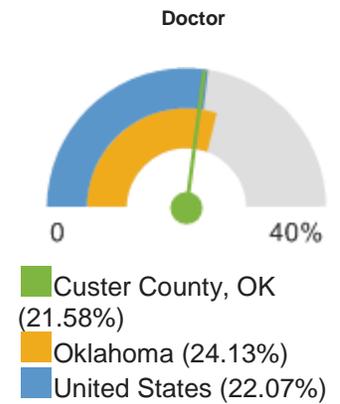


### Lack of a Consistent Source of Primary Care

This indicator reports the percentage of adults aged 18 and older who self-report that they do not have at least one person who they think of as their personal doctor or health care provider. This indicator is relevant because access to regular primary care is important to preventing major health issues and emergency department visits.

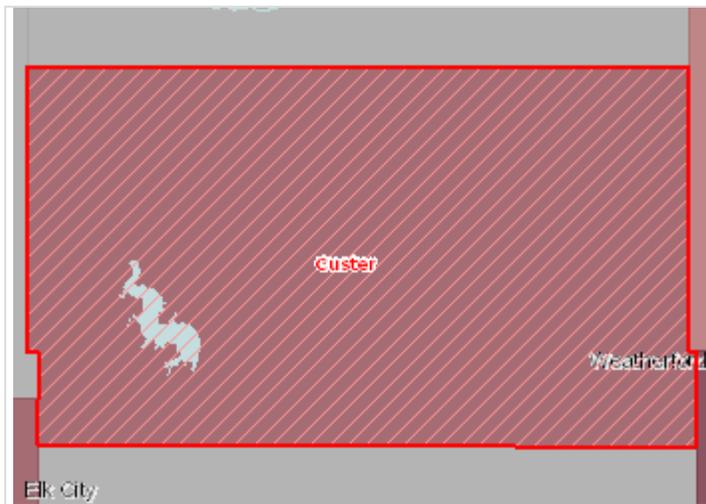
Report Area	Survey Population (Adults Age 18 )	Total Adults Without Any Regular Doctor	Percent Adults Without Any Regular Doctor
Custer County, OK	21,130	4,560	21.58%
Oklahoma	2,843,159	686,103	24.13%
United States	236,884,668	52,290,932	22.07%

Percent Adults Without Any Regular

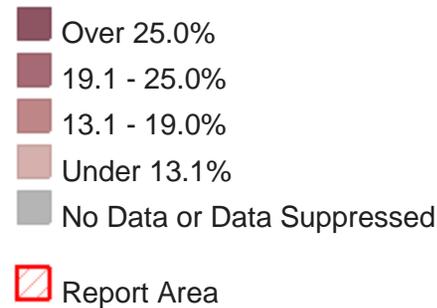


Note: This indicator is compared with the state average.

Data Source: Centers for Disease Control and Prevention, [Behavioral Risk Factor Surveillance System](#): 2011-12. Additional data analysis by [CARES](#). Source geography: County.



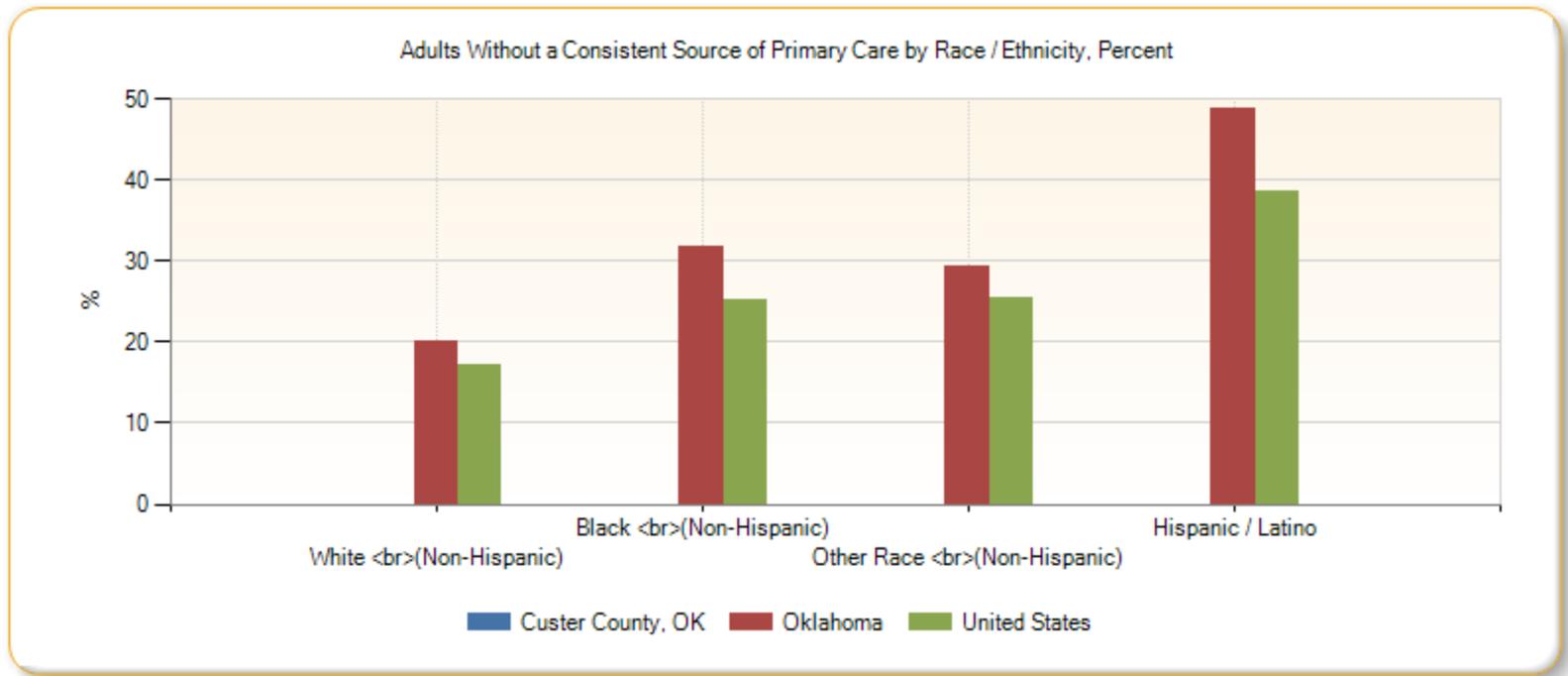
No Consistent Source of Primary Care, Percent of Adults Age 18 by County, BRFSS 2011-12



Adults Without a Consistent Source of Primary Care by Race / Ethnicity, Percent

Report Area	White (Non-Hispanic)	Black (Non-Hispanic)	Other Race (Non-Hispanic)	Hispanic / Latino
Custer County, OK	no data	no data	no data	no data

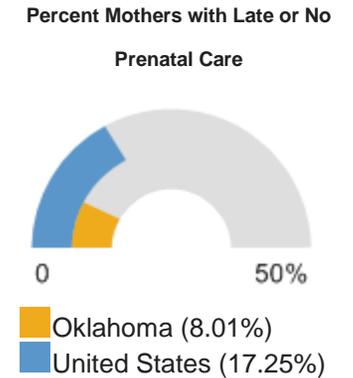
Report Area	White (Non-Hispanic)	Black (Non-Hispanic)	Other Race (Non-Hispanic)	Hispanic / Latino
Oklahoma	19.98%	31.78%	29.33%	48.74%
United States	17.15%	25.28%	25.47%	38.58%



## Lack of Prenatal Care

This indicator reports the percentage of women who do not obtain prenatal care during their first trimester of pregnancy. This indicator is relevant because engaging in prenatal care decreases the likelihood of maternal and infant health risks. This indicator can also highlight a lack of access to preventive care, a lack of health knowledge, insufficient provider outreach, and/or social barriers preventing utilization of services.

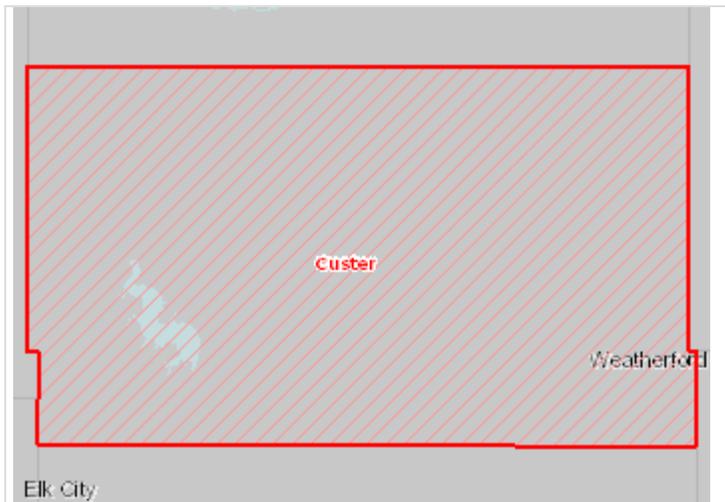
Report Area	Total Births	Mothers Starting Prenatal Care in First Semester	Mothers with Late or No Prenatal Care	Prenatal Care Not Reported	Percent Mothers with Late or No Prenatal Care
Custer County, OK	no data	no data	no data	no data	suppressed
Oklahoma	217,637	33,170	17,443	167,024	8.01%
United States	16,693,978	7,349,554	2,880,098	6,464,326	17.25%



Note: This indicator is compared with the state average. Data breakout by demographic groups are not available.

Data Source: Centers for Disease Control and Prevention, [National Vital Statistics System](#): 2007-10. Accessed via [CDC WONDER](#).

Source geography: County.



Mothers with Late or No Pre-Natal Care, Percent by County, NVSS 2007-10

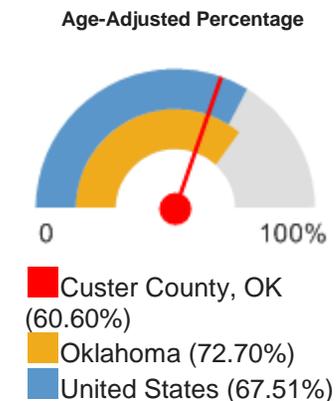


## Pneumonia Vaccination

This indicator reports the percentage of adults aged 65 and older who self-report that they have ever received a pneumonia vaccine. This indicator is relevant because engaging in preventive behaviors decreases the likelihood of developing future health problems. This indicator

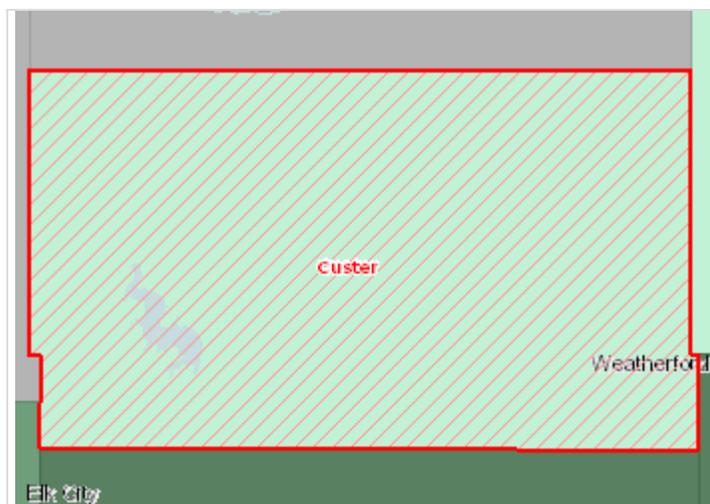
can also highlight a lack of access to preventive care, a lack of health knowledge, insufficient provider outreach, and/or social barriers preventing utilization of services.

Report Area	Total Population Age 65	Estimated Population with Annual Pneumonia Vaccination	Crude Percentage	Age-Adjusted Percentage
Custer County, OK	3,631	2,113	58.20%	<b>60.60%</b>
Oklahoma	499,547	360,673	72.20%	72.70%
United States	39,608,820	26,680,462	67.36%	67.51%



Note: This indicator is compared with the state average. Data breakout by demographic groups are not available.

Data Source: Centers for Disease Control and Prevention, [Behavioral Risk Factor Surveillance System](#): 2006-12. Accessed via the [Health Indicators Warehouse](#). Source geography: County.



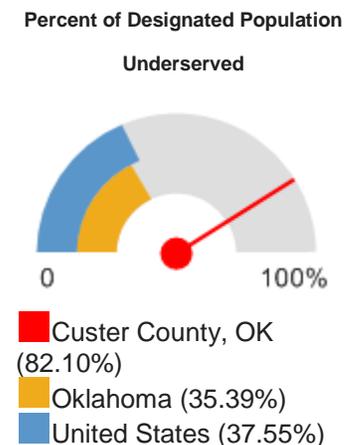
**Annual Pneumonia Vaccination, Percent of Adults Age 65 by County, BRFSS 2006-12**

- Over 72.0%
- 68.1 - 72.0%
- 64.1 - 68.0%
- Under 64.1%
- No Data or Data Suppressed
- Report Area

Population Living in a Health Professional Shortage Area

This indicator reports the percentage of the population that is living in a geographic area designated as a "Health Professional Shortage Area" (HPSA), defined as having a shortage of primary medical care, dental or mental health professionals. This indicator is relevant because a shortage of health professionals contributes to access and health status issues.

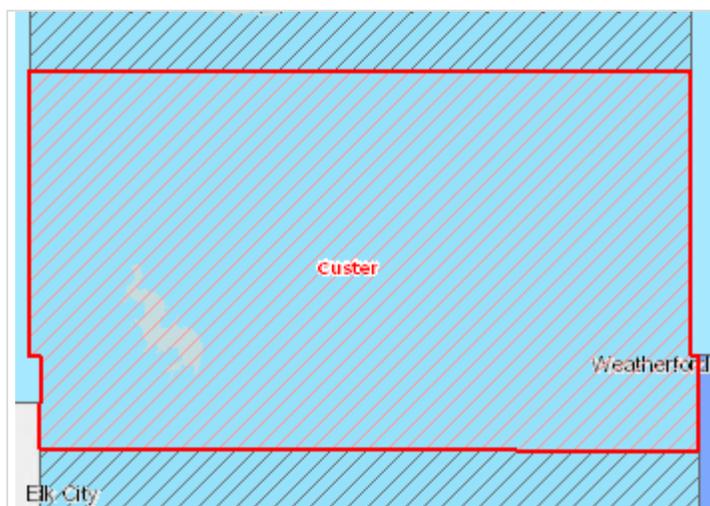
Report Area	Total Population Living in a HPSA	HPSA Designation Population	Underserved Population	Percent of Designated Population Underserved
Custer County, OK	27,469	9,779	8,029	<b>82.10%</b>
Oklahoma	2,810,825	1,083,137	383,339	35.39%
United States	107,167,492	58,371,691	21,919,540	37.55%



Note: This indicator is compared with the state average. Data breakout by demographic groups are not available.

Data Source: US Department of Health & Human Services, Health Resources and Services Administration, [Health Professional](#)

[Shortage Areas](#): April 2014. Source geography: HPSA.



### Health Professional Shortage Area Components, Percent Underserved (Primary Care) by Tract / County, HRSA HPSA Database April 2014

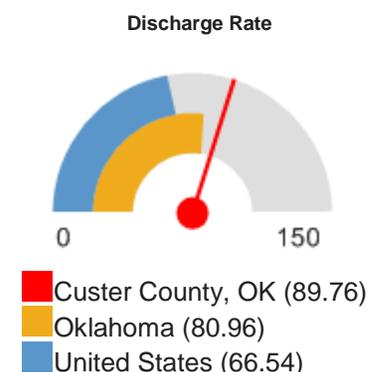
- Population Group; 100.0% Underserved
- Population Group; 50.1 - 99.9% Underserved
- Population Group; Under 50.1% Underserved
- Geographic Area; 100.0% Underserved
- Geographic Area; 50.1 - 99.9% Underserved
- Geographic Area; Under 50.1% Underserved
- Report Area

## Preventable Hospital Events

This indicator reports the discharge rate (per 1,000 Medicare enrollees) for conditions that are ambulatory care sensitive (ACS). ACS conditions include pneumonia, dehydration, asthma, diabetes, and other conditions which could have been prevented if adequate primary care resources were available and accessed by those patients. This indicator is relevant because analysis of ACS discharges allows demonstrating a possible “return on investment” from interventions that reduce admissions (for example, for uninsured or Medicaid patients) through better access to primary care resources.

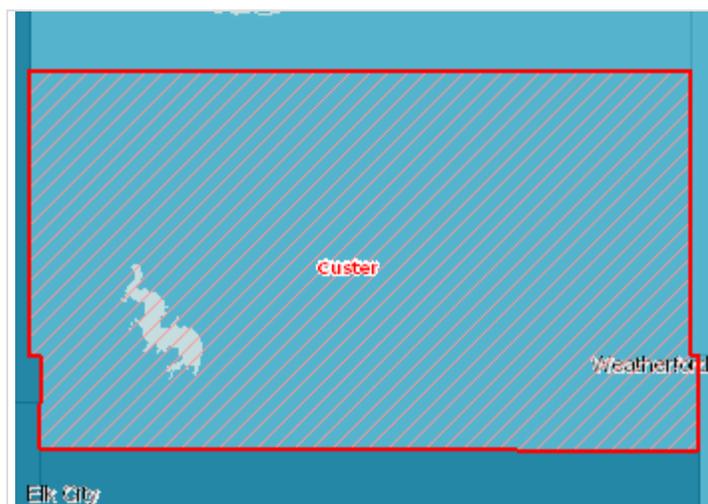
Report Area	Total Medicare Part A Enrollees	Ambulatory Care Sensitive Condition Hospital Discharges	Ambulatory Care Sensitive Condition Discharge Rate
Custer County, OK	3,211	288	<b>89.76</b>
Oklahoma	403,277	32,649	80.96
United States	56,167,590	3,737,659	66.54

Ambulatory Care Sensitive Condition

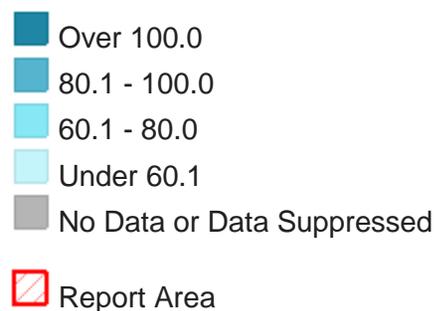


Note: This indicator is compared with the state average. Data breakout by demographic groups are not available.

Data Source: Dartmouth College Institute for Health Policy & Clinical Practice, [Dartmouth Atlas of Health Care](#): 2010. Source geography: County.



Ambulatory Care Sensitive Conditions, Rate (Per 1,000 Medicare Enrollees) by County, DA 2010



## FOOTNOTES

## Access to Primary Care

### **Data Background**

The Area Health Resource File (AHRF) is a database of information about the U.S. health care system, maintained and released annually by the U.S. Health and Human Services (HHS) Health Resources and Services Administration (HRSA). The AHRF contains more than 6,000 variables, aggregated for each of the nation's counties. The ARF contains information on health facilities, health professions, health status, economic activity, health training programs, measures of resource scarcity, and socioeconomic and environmental characteristics. In addition, the basic file contains geographic codes and descriptors which enable it to be linked to many other files and to aggregate counties into various geographic groupings.

The ARF integrates data from numerous primary data sources including: the American Hospital Association, the American Medical Association, the American Dental Association, the American Osteopathic Association, the Bureau of the Census, the Centers for Medicare and Medicaid Services (formerly Health Care Financing Administration), Bureau of Labor Statistics, National Center for Health Statistics and the Veteran's Administration.

For more information, please visit HRSA's [Area Health Resource File](#) website.

### **Methodology**

Physician data are acquired from the 2012-13 Health Resources and Services Administration (HRSA) Area Health Resource File (AHRF). These counts are tabulations from the 2011 *American Medical Association (AMA) Physician Masterfiles*. Doctors classified as "primary care physicians" by the AMA include: General Family Medicine MDs and DOs, General Practice MDs and DOs, General Internal Medicine MDs and General Pediatrics MDs. Physicians age 75 and over and physicians practicing sub-specialties within the listed specialties are excluded. Population data for this indicator are also acquired from the AHRF, and are based on U.S. Census Bureau 2011 Population Estimates.

Data is tabulated for physicians practicing patient care only. Patient care practitioners include office-based physicians, hospital residents (including clinical fellows), and hospital-based (FT) staff. Non-patient care practitioners include administrators, medical teachers, researchers, etc. Rates are calculated per 100,000 total population using the following formula:

$$\text{Provider Rate} = \left[ \frac{\text{Number of Primary Care Physicians}}{\text{Total Population}} \right] * 100,000$$

For detailed documentation or to view the original data, please view the documentation included in the 2012-2013 AHRF, which can be downloaded [here](#).

### **Notes**

#### **Race and Ethnicity**

Statistics by race and ethnicity are not provided for this indicator.

### **Data Limitations**

Reported data represent summaries limited by county boundaries. When comparing rates, consider the following:

- 1) Rates assume uniform distribution of both establishments and populations throughout the county and may not detect disparities in access for rural or minority populations.
- 2) Summaries may over-represent or under-represent county rates when populations or establishments are highly concentrated on county border lines.
- 3) Rates do not describe quality of the establishment or utilization frequency.

## Cancer Screening - Mammogram

### **Data Background**

The Dartmouth Atlas of Healthcare is an online repository of health data and maps based on information included in the massive Medicare database maintained by the Center for Medicare and Medicaid Services (CMS). The project uses Medicare claims data in conjunction with other demographic data to provide information and analysis about national, regional, and local markets, as well as hospitals and their affiliated physicians. The Dartmouth Atlas of Health Care is produced and maintained by The Dartmouth Institute for Health Policy and Clinical Practice.

For more information about this source, including methodologies and definitions, refer to the [Dartmouth Atlas of Healthcare](#) website.

### **Methodology**

The Dartmouth Institute analyzes data drawn from enrollment and claims files from the Medicare program. Analysis is restricted to the fee-for-service population over age 65; HMO patients are not included. Indicator data tables express the proportion of Medicare Part B patients screened for medical conditions based on the following formula:

$$\text{Percentage} = [\text{Number Screened}] / [\text{Total Patients}] * 100$$

When appropriate, statistical adjustments are carried out to account for differences in age, race and sex.

Access to the complete methodology is available in the Dartmouth Institute's [Report of the Dartmouth Atlas Project](#).

## Cancer Screening - Pap Test

### **Data Background**

The Behavioral Risk Factor Surveillance System (BRFSS) is

“... a collaborative project of the Centers for Disease Control and Prevention (CDC) and U.S. states and territories. The BRFSS, administered and supported by CDC's Behavioral Risk Factor Surveillance Branch, is an ongoing data collection program designed to measure behavioral risk factors for the adult population (18 years of age or older) living in households.”

*Citation: Centers for Disease Control and Prevention, Office of Surveillance, Epidemiology, and Laboratory Services. [Overview: BRFSS 2010](#).*

The health characteristics estimated from the BRFSS include data pertaining to health behaviors, chronic conditions, access and utilization of healthcare, and general health. Surveys are administered to populations at the state level and then delivered to the CDC and tabulated into county estimates by the BRFSS analysis team. Annual risk factor prevalence data are released for those geographic areas with 50 or more survey results and 10,000 or more total population (50 States, 170 Cities and Counties) in order to maintain the accuracy and confidentiality of the data. Multi-year estimates are produced by the NCHS to expand the coverage of data to approximately 2500 counties. These estimates are housed in the [Health Indicator Warehouse](#), the official repository of the nation's health data.

For more information on the BRFSS survey methods, or to obtain a copy of the survey questionnaires, please visit [the Behavioral Risk Factor Surveillance System](#) home page.

## Methodology

Indicator percentages are acquired for years 2006-2012 from Behavioral Risk Factor Surveillance System (BRFSS) prevalence data, which is housed in the Health Indicator Warehouse. Percentages are generated based on the valid responses to the following questions:

*"A Pap test is a test for cancer of the cervix. Have you ever had a Pap test?"*

Respondents are considered to have had a Pap test if they answer that they had ever had a test. Percentages are age-adjusted and only pertain to the non-institutionalized female population aged 18 and up. Population numerators (number of adults) are not provided in the Health Indicator Warehouse data tables and were generated using the following formula:

$$\text{[Persons having a Pap test]} = (\text{[Indicator Percentage]} / 100) * \text{[Total Population]} .$$

Adult population figures used in the data tables are acquired from the American Community Survey (ACS) 2007-2011 five year estimates. Additional detailed information about the BRFSS, including questionnaires, data collection procedures, and [data processing methodologies](#) are available on the BRFSS web site. For additional information about the multi-year estimates, please visit the [Health Indicator Warehouse](#).

## Notes

### Race and Ethnicity

Statistics by race and ethnicity are not provided for this indicator from the data source. Detailed race/ethnicity data may be available at a broader geographic level, or from a local source.

### Data Suppression

Suppression is used to avoid misinterpretation when rates are unstable. Data is suppressed when the total number of persons sampled (for each geographic area / population group combination) over the survey period is less than 50, or when the standard error of the estimate exceeds 10% of the calculated value.

## Data Background

The Behavioral Risk Factor Surveillance System (BRFSS) is

“... a collaborative project of the Centers for Disease Control and Prevention (CDC) and U.S. states and territories. The BRFSS, administered and supported by CDC's Behavioral Risk Factor Surveillance Branch, is an ongoing data collection program designed to measure behavioral risk factors for the adult population (18 years of age or older) living in households.”

*Citation: Centers for Disease Control and Prevention, Office of Surveillance, Epidemiology, and Laboratory Services. [Overview: BRFSS 2010](#).*

The health characteristics estimated from the BRFSS include data pertaining to health behaviors, chronic conditions, access and utilization of healthcare, and general health. Surveys are administered to populations at the state level and then delivered to the CDC and tabulated into county estimates by the BRFSS analysis team. Annual risk factor prevalence data are released for those geographic areas with 50 or more survey results and 10,000 or more total population (50 States, 170 Cities and Counties) in order to maintain the accuracy and confidentiality of the data. Multi-year estimates are produced by the NCHS to expand the coverage of data to approximately 2500 counties. These estimates are housed in the [Health Indicator Warehouse](#), the official repository of the nation's health data.

For more information on the BRFSS survey methods, or to obtain a copy of the survey questionnaires, please visit [the Behavioral Risk Factor Surveillance System](#) home page.

## Methodology

Indicator percentages are acquired for years 2006-2012 from Behavioral Risk Factor Surveillance System (BRFSS) prevalence data, which is housed in the Health Indicator Warehouse. Percentages are generated based on the valid responses to the following questions:

*"Sigmoidoscopy and colonoscopy are exams in which a tube is inserted in the rectum to view the colon for signs of cancer or other health problems. Have you ever had either of these exams? For a SIGMOIDOSCOPY, a flexible tube is inserted into the rectum to look for problems. A COLONOSCOPY is similar but uses a longer tube, and you are usually given medication through a needle in your arm to make you sleepy and told to have someone else drive you home after the test. Was your MOST RECENT exam a sigmoidoscopy or a colonoscopy? How long has it been since you had your last sigmoidoscopy or colonoscopy?"*

Respondents are considered to have had a Sigmoidoscopy/Colonoscopy if they answer that they had ever had a test. Percentages are age-adjusted and only pertain to the non-institutionalized population aged 50 and up. Population numerators (number of adults) are not provided in the Health Indicator Warehouse data tables and were generated using the following formula:

$$\text{[Persons having a Sigmoidoscopy/Colonoscopy]} = \text{([Indicator Percentage]} / 100) * \text{[Total Population]} .$$

Adult population figures used in the data tables are acquired from the American Community Survey (ACS) 2007-2011 five year estimates. Additional detailed information about the BRFSS, including questionnaires, data collection procedures, and [data](#)

[processing methodologies](#) are available on the BRFSS web site. For additional information about the multi-year estimates, please visit the [Health Indicator Warehouse](#).

## Notes

### Race and Ethnicity

Statistics by race and ethnicity are not provided for this indicator from the data source. Detailed race/ethnicity data may be available at a broader geographic level, or from a local source.

### Data Suppression

Suppression is used to avoid misinterpretation when rates are unstable. Data is suppressed when the total number of persons sampled (for each geographic area / population group combination) over the survey period is less than 50, or when the standard error of the estimate exceeds 10% of the calculated value.

## Dental Care Utilization

### Data Background

The Behavioral Risk Factor Surveillance System (BRFSS) is

“... a collaborative project of the Centers for Disease Control and Prevention (CDC) and U.S. states and territories. The BRFSS, administered and supported by CDC's Behavioral Risk Factor Surveillance Branch, is an ongoing data collection program designed to measure behavioral risk factors for the adult population (18 years of age or older) living in households.”

*Citation: Centers for Disease Control and Prevention, Office of Surveillance, Epidemiology, and Laboratory Services. [Overview: BRFSS 2010](#).*

The health characteristics estimated from the BRFSS include data pertaining to health behaviors, chronic conditions, access and utilization of healthcare, and general health. Surveys are administered to populations at the state level and then delivered to the CDC. BRFSS annual survey data are publically available and maintained on the CDC's BRFSS [Annual Survey Data](#) web page.

For more information on the BRFSS survey methods, or to obtain a copy of the survey questionnaires, please visit [the Behavioral Risk Factor Surveillance System](#) home page.

### Methodology

Indicator percentages are acquired from analysis of annual survey data from the Behavioral Risk Factor Surveillance System (BRFSS) for years 2006-2010. Percentages are generated based on valid responses to the following questions:

>“How long has it been since you last visited a dentist or a dental clinic for any reason? Include visits to dental specialists, such as orthodontists.” and “How long has it been since you had your teeth cleaned by a dentist or dental hygienist?” This indicator represents the percentage of respondents who indicated that they had not seen any dentist or dental hygienist within the past year. Data only pertain to the non-institutionalized population aged 18 and up and are weighted to reflect the total county

population, including non-respondents, using the methods described in the BRFSS Comparability of Data documentation. Population numerators (estimated number of adults exercising each risk behavior) are not provided in the annual survey data and were generated for the data tables using the following formula:

$$\text{Adults Without Recent Dental Exam} = \left( \frac{\text{Indicator Percentage}}{100} \right) * [\text{Total Population}] .$$

The population figures used for these estimates are acquired from the American Community Survey (ACS) 2006-2010 five year estimates.

Additional detailed information about the BRFSS, including questionnaires, data collection procedures, and [data processing methodologies](#) are available on the Behavioral Risk Factor Surveillance System home page.

## Notes

### Data Suppression

Suppression is used to avoid misinterpretation when rates are unstable. Data is suppressed when the total number of persons sampled (for each geographic area / population group combination) over the survey period is less than 20. Data are unreliable when the total number of persons sampled over the survey period is less than 50. Confidence intervals are available when exploring the data through the map viewer.

### Race and Ethnicity

Race and ethnicity (Hispanic origin) are collected as two separate categories in the Behavioral Risk Factor Surveillance System (BRFSS) interview surveys based on methods established by the U.S. Office of Management and Budget (OMB) in 1997. Before the raw survey data files are released, self-identified race and ethnicity variables are recoded by National Center for Health Statistics (NCHS) analysts into the following categories: White, Non-Hispanic; Black, Non-Hispanic; Multiple Race, Non-Hispanic; Other Race, Non-Hispanic; and Hispanic or Latino. Due to sample size constraints, race and ethnicity statistics are only reported at the state and national levels.

## Diabetes Management Hemoglobin A1c Test

### Data Background

The Dartmouth Atlas of Healthcare is an online repository of health data and maps based on information included in the massive Medicare database maintained by the Center for Medicare and Medicaid Services (CMS). The project uses Medicare claims data in conjunction with other demographic data to provide information and analysis about national, regional, and local markets, as well as hospitals and their affiliated physicians. The Dartmouth Atlas of Health Care is produced and maintained by The Dartmouth Institute for Health Policy and Clinical Practice.

For more information about this source, including methodologies and definitions, refer to the [Dartmouth Atlas of Healthcare](#) website.

### Methodology

The Dartmouth Institute analyzes data drawn from enrollment and claims files from the Medicare program. Analysis is restricted to the fee-for-service population over age 65; HMO patients are not included. Indicator data tables express the proportion of Medicare Part B patients screened for medical conditions based on the following formula:

$$\text{Percentage} = \frac{[\text{Number Screened}]}{[\text{Total Patients}]} * 100$$

When appropriate, statistical adjustments are carried out to account for differences in age, race and sex.

Access to the complete methodology is available in the Dartmouth Institute's [Report of the Dartmouth Atlas Project](#).

## Facilities Designated as Health Professional Shortage Areas

### **Data Background**

Health Professional Shortage Areas (HPSAs) are designated by the US Health Resources and Services Administration (HRSA) as having shortages of primary medical care, dental or mental health providers. HPSAs may refer to an entire geographic area (a county or service area), a demographic group within a geographic area (low income population) or an institution (comprehensive health center, federally qualified health center or other public facility).

HPSAs are designated using several criteria, depending on the type of designation. For example, a HPSA may be designated on the basis that medical professionals in contiguous areas are over-utilized, excessively distant, or inaccessible to the population under consideration. HPSAs are also designated based on population-to-clinician ratios. This ratio is usually 3,500 to 1 for primary care, 5,000 to 1 for dental health care, and 30,000 to 1 for mental health care. All Federally Qualified Health Centers and Rural Health Clinics that provide access to care, regardless of patient ability to pay, receive automatic facility HPSA designation.

HPSAs are updated on a continuous basis through the US Health and Human Services (HHS) Health Resources and Services Administration (HRSA) GIS data warehouse. For more information about HPSAs, please visit the HRSA [Health Professional Shortage Area \(HPSA\)](#) web page.

### **Methodology**

Health Professional Shortage Area (HPSA) facility files were acquired from the US Health Resources and Services Administration (HRSA) GIS data warehouse. The point locations of these institutions, along with their designation type, were intersected with geographic areas to provide a count of the total number of facilities in an area.

### **Notes**

#### **Race and Ethnicity**

Statistics by race and ethnicity are not provided for this indicator from the data source. Detailed race/ethnicity data may be available at a broader geographic level, or from a local source.

## Federally Qualified Health Centers

### **Data Background**

Providers of Service (POS) data is compiled quarterly by Research and Planning Consultants, LP (RPC) for the Centers for Medicare and Medicaid Services (CMS). The Provider of Services (POS) Extract is created from the QIES (Quality Improvement Evaluation System) database. These data include provider number, name, and address and characterize the participating institutional providers. The data are collected through the Centers for Medicare & Medicaid Services (CMS) Regional Offices. The file contains an individual record for each Medicare-approved provider and is updated quarterly.

## Methodology

Population figures are acquired for this indicator from the U.S. Census Bureau, 2010 Decennial Census, Summary File 1. Addresses for all active federally qualified health centers (FQHCs) were acquired from the Centers for Medicare and Medicaid Services (CMS) Providers of Service (POS) data file from September 2013. FQHC addresses were geocoded using the ESRI ArcGIS Online API to obtain the coordinates (point-location) of each facility. The resulting point location file was intersected with standard geographic areas (tracts, counties, and states) to generate a count of the total FQHCs in each area.

## Notes

### Race and Ethnicity

Statistics by race and ethnicity are not provided for this indicator.

## High Blood Pressure Management

### Data Background

The Behavioral Risk Factor Surveillance System (BRFSS) is “... a collaborative project of the Centers for Disease Control and Prevention (CDC) and U.S. states and territories. The BRFSS, administered and supported by CDC's Behavioral Risk Factor Surveillance Branch, is an ongoing data collection program designed to measure behavioral risk factors for the adult population (18 years of age or older) living in households.”  
*Citation: Centers for Disease Control and Prevention, Office of Surveillance, Epidemiology, and Laboratory Services. [Overview: BRFSS 2010](#).*

The health characteristics estimated from the BRFSS include data pertaining to health behaviors, chronic conditions, access and utilization of healthcare, and general health. Surveys are administered to populations at the state level and then delivered to the CDC. BRFSS annual survey data are publically available and maintained on the CDC's BRFSS [Annual Survey Data](#) web page.

For more information on the BRFSS survey methods, or to obtain a copy of the survey questionnaires, please visit [the Behavioral Risk Factor Surveillance System](#) home page.

## Methodology

Indicator percentages are acquired from analysis of annual survey data from the Behavioral Risk Factor Surveillance System (BRFSS) for years 2006-2010. Percentages are generated based on valid responses to the following questions:

*"Have you EVER been told by a doctor, nurse or other health professional that you have high blood pressure?" and "Are you currently taking medicine for your high blood pressure?"*

This indicator represents the percentage of those persons who answered that 'yes' they have high blood pressure who also answered 'no', that they are not currently taking medication to control it. Data only pertain to the non-institutionalized population aged 18 and up and are weighted to reflect the total county population, including non-respondents, using the methods described in the BRFSS Comparability of Data documentation. Population numerators (estimated number of adults exercising each risk behavior) are not provided in the annual survey data and were generated for the data tables using the following formula:

$$\text{Adults Not Taking Blood Pressure Medication} = ([\text{Indicator Percentage}] / 100) * [\text{Total Adult Population}]$$

The population figures used for these estimates are acquired from the American Community Survey (ACS) 2006-2010 five year estimates.

Additional detailed information about the BRFSS, including questionnaires, data collection procedures, and [data processing methodologies](#) are available on the Behavioral Risk Factor Surveillance System home page.

## Notes

### Data Suppression

Suppression is used to avoid misinterpretation when rates are unstable. Data is suppressed when the total number of persons sampled (for each geographic area / population group combination) over the survey period is less than 20. Data are unreliable when the total number of persons sampled over the survey period is less than 50. Confidence intervals are available when exploring the data through the map viewer.

### Race and Ethnicity

Race and ethnicity (Hispanic origin) are collected as two separate categories in the Behavioral Risk Factor Surveillance System (BRFSS) interview surveys based on methods established by the U.S. Office of Management and Budget (OMB) in 1997. Before the raw survey data files are released, self-identified race and ethnicity variables are recoded by National Center for Health Statistics (NCHS) analysts into the following categories: White, Non-Hispanic; Black, Non-Hispanic; Multiple Race, Non-Hispanic; Other Race, Non-Hispanic; and Hispanic or Latino. Due to sample size constraints, race and ethnicity statistics are only reported at the state and national levels.

## HIV Screenings

### Data Background

The Behavioral Risk Factor Surveillance System (BRFSS) is

"... a collaborative project of the Centers for Disease Control and Prevention (CDC) and U.S. states and territories. The BRFSS, administered and supported by CDC's Behavioral Risk Factor Surveillance Branch, is an ongoing data collection program designed to measure behavioral risk factors for the adult population (18 years of age or older) living in households."

*Citation: Centers for Disease Control and Prevention, Office of Surveillance, Epidemiology, and Laboratory Services. [Overview: BRFSS 2010](#).*

The health characteristics estimated from the BRFSS include data pertaining to health behaviors, chronic conditions, access and utilization of healthcare, and general health. Surveys are administered to populations at the state level and then delivered to the CDC. BRFSS annual survey data are publically available and maintained on the CDC's BRFSS [Annual Survey Data](#) web page.

For more information on the BRFSS survey methods, or to obtain a copy of the survey questionnaires, please visit [the Behavioral Risk Factor Surveillance System](#) home page.

## Methodology

Indicator percentages are acquired from analysis of annual survey data from the Behavioral Risk Factor Surveillance System (BRFSS) for years 2011-2012. Percentages are generated based on valid responses to the following question:

*"Have you ever been tested for HIV? Do not count tests you may have had as part of a blood donation. Include testing fluid from your mouth."*

This indicator represents the percentage of those persons who answered "no", indicating that they have never been tested for HIV/AIDS. Data only pertain to the non-institutionalized population aged 18 and up and are weighted to reflect the total county population using the methods described in the BRFSS Comparability of Data documentation.

Additional detailed information about the BRFSS, including questionnaires, data collection procedures, and [data processing methodologies](#) are available on the Behavioral Risk Factor Surveillance System home page.

## Notes

### Data Suppression

Suppression is used to avoid misinterpretation when rates are unstable. Data is suppressed when the total number of persons sampled (for each geographic area / population group combination) over the survey period is less than 20. Data are unreliable when the total number of persons sampled over the survey period is less than 50. Confidence intervals are available when exploring the data through the map viewer.

### Race and Ethnicity

Race and ethnicity (Hispanic origin) are collected as two separate categories in the Behavioral Risk Factor Surveillance System (BRFSS) interview surveys based on methods established by the U.S. Office of Management and Budget (OMB) in 1997. Before the raw survey data files are released, self-identified race and ethnicity variables are recoded by National Center for Health Statistics (NCHS) analysts into the following categories: White, Non-Hispanic; Black, Non-Hispanic; Multiple Race, Non-Hispanic; Other Race, Non-Hispanic; and Hispanic or Latino. Due to sample size constraints, race and ethnicity statistics are only reported at the state and national levels.

Lack of a Consistent Source of Primary Care

## Data Background

The Behavioral Risk Factor Surveillance System (BRFSS) is

“... a collaborative project of the Centers for Disease Control and Prevention (CDC) and U.S. states and territories. The BRFSS, administered and supported by CDC's Behavioral Risk Factor Surveillance Branch, is an ongoing data collection program designed to measure behavioral risk factors for the adult population (18 years of age or older) living in households.”

*Citation: Centers for Disease Control and Prevention, Office of Surveillance, Epidemiology, and Laboratory Services. [Overview: BRFSS 2010](#).*

The health characteristics estimated from the BRFSS include data pertaining to health behaviors, chronic conditions, access and utilization of healthcare, and general health. Surveys are administered to populations at the state level and then delivered to the CDC. BRFSS annual survey data are publically available and maintained on the CDC's BRFSS [Annual Survey Data](#) web page.

For more information on the BRFSS survey methods, or to obtain a copy of the survey questionnaires, please visit [the Behavioral Risk Factor Surveillance System](#) home page.

## Methodology

Indicator percentages are acquired from analysis of annual survey data from the Behavioral Risk Factor Surveillance System (BRFSS) for years 2011-2012. Percentages are generated based on valid responses to the following questions:

*" Do you have one person you think of as your personal doctor or health care provider? (If "No" ask "Is there more than one or is there no person who you think of as your personal doctor or health care provider?".)"*

This indicator represents the percentage of those persons who answered “no” to both parts of the question, indicating that they do not see any regular doctor. Data only pertain to the non-institutionalized population aged 18 and up and are weighted to reflect the total county population using the methods described in the BRFSS Comparability of Data documentation.

Additional detailed information about the BRFSS, including questionnaires, data collection procedures, and [data processing methodologies](#) are available on the Behavioral Risk Factor Surveillance System home page.

## Notes

### Data Suppression

Suppression is used to avoid misinterpretation when rates are unstable. Data is suppressed when the total number of persons sampled (for each geographic area / population group combination) over the survey period is less than 20. Data are unreliable when the total number of persons sampled over the survey period is less than 50. Confidence intervals are available when exploring the data through the map viewer.

### Race and Ethnicity

Race and ethnicity (Hispanic origin) are collected as two separate categories in the Behavioral Risk Factor Surveillance System (BRFSS) interview surveys based on methods established by the U.S. Office of Management and Budget (OMB) in 1997. Before the raw survey data files are released, self-identified race and ethnicity variables are recoded by National Center for Health Statistics (NCHS) analysts into the following categories: White, Non-Hispanic; Black, Non-Hispanic; Multiple Race, Non-Hispanic;

Other Race, Non-Hispanic; and Hispanic or Latino. Due to sample size constraints, race and ethnicity statistics are only reported at the state and national levels.

## Lack of Prenatal Care

### **Data Background**

The Division of Vital Statistics is a branch of the Centers for Disease Control and Prevention (CDC) National Center for Health Statistics (NCHS) responsible for maintaining birth and death records for the nation. Data are compiled for the National Vital Statistics System (NVSS) through a joint effort between the NCHS and various state and local health agencies, who are responsible for registering vital events – births, deaths, marriages, divorces, and fetal deaths. NVSS statistics are released annually in various data warehouses, including [CDC WONDER](#), [VitalStats](#), and the [Health Indicator Warehouse](#).

### **Methodology**

Counts for this indicator represent the annual average births over the 4-year period 2007-2010. Original data was tabulated by the Centers for Disease Control and Prevention (CDC) National Center for Health Statistics (NCHS) based on information reported on each birth certificate. Rates represent the number of births to mothers with no prenatal care, or prenatal care beginning after the first trimester. Rates are summarized based on the following formula

$$\text{Rate} = [\text{Late or No Prenatal Care Births}] / [\text{Total Births}] * 100$$

Data was acquired from the CDC WONDER database. For more information about this source, including data suppression information, please visit the [CDC WONDER Current Natality](#) data page, or refer to the NVSS [natality public use file documentation](#).

### **Notes**

#### **Data Suppression**

Suppression is used to protect confidentiality and to avoid misinterpretation when rates are unstable. Data is suppressed for all counties with fewer than 100,000 total population.

#### **Race and Ethnicity**

Race and ethnicity (Hispanic origin) are collected as two separate categories by state vital statistics registries based on methods established by the U.S. Office of Management and Budget (OMB) in 1997. All mortality statistics from the CDC WONDER databases are available by race alone (White, Black, Amer. Indian/AK Native, and Asian) ethnicity alone (Hispanic, Non-Hispanic), or by combined race and ethnicity. Data is reported separately for race alone and for ethnicity alone in order to maintain large enough sample sizes for the inclusion of small counties in the disaggregated data tables.

## Pneumonia Vaccination

### **Data Background**

The Behavioral Risk Factor Surveillance System (BRFSS) is

“... a collaborative project of the Centers for Disease Control and Prevention (CDC) and U.S. states and territories. The BRFSS, administered and supported by CDC's Behavioral Risk Factor Surveillance Branch, is an ongoing data collection program designed to measure behavioral risk factors for the adult population (18 years of age or older) living in households.”

*Citation: Centers for Disease Control and Prevention, Office of Surveillance, Epidemiology, and Laboratory Services. [Overview: BRFSS 2010](#).*

The health characteristics estimated from the BRFSS include data pertaining to health behaviors, chronic conditions, access and utilization of healthcare, and general health. Surveys are administered to populations at the state level and then delivered to the CDC and tabulated into county estimates by the BRFSS analysis team. Annual risk factor prevalence data are released for those geographic areas with 50 or more survey results and 10,000 or more total population (50 States, 170 Cities and Counties) in order to maintain the accuracy and confidentiality of the data. Multi-year estimates are produced by the NCHS to expand the coverage of data to approximately 2500 counties. These estimates are housed in the [Health Indicator Warehouse](#), the official repository of the nation's health data.

For more information on the BRFSS survey methods, or to obtain a copy of the survey questionnaires, please visit [the Behavioral Risk Factor Surveillance System](#) home page.

## Methodology

Indicator percentages are acquired for years 2006-2012 from Behavioral Risk Factor Surveillance System (BRFSS) prevalence data, which is housed in the Health Indicator Warehouse. Percentages are generated based on the valid responses to the following questions:

*"Have you EVER had a pneumonia shot? A pneumonia shot or pneumococcal vaccine is usually given only once or twice in a person's lifetime and is different from the flu shot. Have you ever had a pneumonia shot?"*

Respondents are considered to have had a pneumonia vaccination if they answer that they had ever had a vaccine. Percentages are age-adjusted and only pertain to the non-institutionalized population aged 65 and up. Population numerators (number of adults) are not provided in the Health Indicator Warehouse data tables and were generated using the following formula:

$$\text{[Persons having a Pneumonia vaccination]} = \left( \frac{\text{[Indicator Percentage]}}{100} \right) * \text{[Total Population]} .$$

Adult population figures used in the data tables are acquired from the American Community Survey (ACS) 2007-2011 five year estimates. Additional detailed information about the BRFSS, including questionnaires, data collection procedures, and [data processing methodologies](#) are available on the BRFSS web site. For additional information about the multi-year estimates, please visit the [Health Indicator Warehouse](#).

## Notes

### Race and Ethnicity

Statistics by race and ethnicity are not provided for this indicator from the data source. Detailed race/ethnicity data may be available at a broader geographic level, or from a local source.

## Data Suppression

Suppression is used to avoid misinterpretation when rates are unstable. Data is suppressed when the total number of persons sampled (for each geographic area / population group combination) over the survey period is less than 50, or when the standard error of the estimate exceeds 10% of the calculated value.

## Population Living in a Health Professional Shortage Area

### Data Background

Health Professional Shortage Areas (HPSAs) are designated by the US Health Resources and Services Administration (HRSA) as having shortages of primary medical care, dental or mental health providers. HPSAs may refer to an entire geographic area (a county or service area), a demographic group within a geographic area (low income population) or an institution (comprehensive health center, federally qualified health center or other public facility).

HPSAs are designated using several criteria, depending on the type of designation. For example, a HPSA may be designated on the basis that medical professionals in contiguous areas are over-utilized, excessively distant, or inaccessible to the population under consideration. HPSAs are also designated based on population-to-clinician ratios. This ratio is usually 3,500 to 1 for primary care, 5,000 to 1 for dental health care, and 30,000 to 1 for mental health care. All Federally Qualified Health Centers and Rural Health Clinics that provide access to care, regardless of patient ability to pay, receive automatic facility HPSA designation.

HPSAs are updated on a continuous basis through the US Health and Human Services (HHS) Health Resources and Services Administration (HRSA) GIS data warehouse. For more information about HPSAs, please visit the HRSA [Health Professional Shortage Area \(HPSA\)](#) web page.

### Methodology

Health Professional Shortage Area (HPSA) boundary files were acquired from the US Health Resources and Services Administration (HRSA) GIS data warehouse. Data from HRSA contained estimates of the total designation population, and the population underserved in each service area. Total designation populations vary based on HPSA designation, and may refer to the total area's full time equivalency\* population, or the population of a specific demographic (income, racial, ethnic) group. Population figures provided by HRSA represent the estimate at the time of last designation update, which in some cases is as early as 2008. The percentage of population underserved is based on the following formula:

$$\text{Percentage} = \frac{[\text{Underserved Population}]}{[\text{Total Designation Population}]} * 100$$

\* Total equivalency population:

HPSA Designation populations may exceed total census populations in areas with large transient populations as follows:

- Seasonal residents, i.e., those who maintain a residence in the area but inhabit it for only 2 to 8 months per year, may be included but must be weighted in proportion to the fraction of the year they are present in the area.

- Other tourists (non-resident) may be included in an area's population but only with a weight of 0.25, using the following formula: Effective tourist contribution to population = 0.25 x (fraction of year tourists are present in area) x (average daily number of tourists during portion of year that tourists are present).
- Migratory workers and their families may be included in an area's population, using the following formula: Effective migrant contribution to population = (fraction of year migrants are present in area) x (average daily number of migrants during portion of year that migrants are present)

For additional information, including designation procedures and access to the original data, please visit the HRSA [Health Professional Shortage Area \(HPSA\)](#) web page.

## Notes

### Race and Ethnicity

Statistics by race and ethnicity are not provided for this indicator from the data source. Detailed race/ethnicity data may be available at a broader geographic level, or from a local source.

## Preventable Hospital Events

### Data Background

The Dartmouth Atlas of Healthcare is an online repository of health data and maps based on information included in the massive Medicare database maintained by the Center for Medicare and Medicaid Services (CMS). The project uses Medicare claims data in conjunction with other demographic data to provide information and analysis about national, regional, and local markets, as well as hospitals and their affiliated physicians. The Dartmouth Atlas of Health Care is produced and maintained by The Dartmouth Institute for Health Policy and Clinical Practice.

For more information about this source, including methodologies and definitions, refer to the [Dartmouth Atlas of Healthcare](#) website.

### Methodology

The Dartmouth Institute analyzes data drawn from enrollment and claims files from the Medicare program. Analysis is restricted to the fee-for-service population over age 65; HMO patients are not included. Indicator data tables express the rate of Medicare Part A patients discharged from the hospital for preventable / ambulatory care sensitive (ACS) conditions like asthma, diabetes, pneumonia, or COPD, based on the following formula:

$$\text{Rate} = [\text{ACS Condition Discharges}] / [\text{Total Patients}] * 1,000$$

When appropriate, statistical adjustments are carried out to account for differences in age, race and sex.

Access to the complete methodology is available in the Dartmouth Institute's [Report of the Dartmouth Atlas Project](#).

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