

UPDATE MONAHRQ[®] Data Guide for Preventable Hospitalizations



*Focusing on Chronic Disease Conditions for
Years 2011-2013*

1/23/2015



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Introduction

Many communities are seeking to improve the access to health care and the quality of care available to their residents. One of the most important ways we can improve health care in Oklahoma is to reduce the need for some of the care by providing appropriate, high-quality preventive services. Hospital discharge data provide information on inpatient admissions for specific chronic diseases and other conditions. Evidence suggests that hospital admissions for specific chronic diseases and conditions are potentially avoidable, in part, through better preventive health care and disease self-management. Coalitions, health care providers, community leaders, and policy makers can use data to identify their community needs, target resources, and track the impact of programmatic and policy interventions.

MONAHRQ® is an interactive web-based system that converts health care data into user-friendly information. MONAHRQ® provides access to the latest hospital and other health care measure results, based on aggregated hospital discharge data from inpatient stays. The website has a number of easily understandable, evidence-based reports on health care quality, cost, and patient experience. These reports allow everyone to compare hospital performance, identify best practices or top performers, assess utilization rates, and compare to national benchmarks and standards. This increases transparency in the market, supports informed decision-making, and can help to drive improvement that results in higher quality care, lower costs, and more engaged patients.

MONAHRQ® gives access to reports such as:

- Maps of preventable hospitalizations and hospital service use rates for conditions and procedures, shown by county or state;
- Estimated cost savings that could be achieved by reducing potentially avoidable hospitalizations;
- Hospital profiles, showing locations, patient experience ratings, and cost by the top diagnosis groups at that hospital; and
- Comparison of hospital quality, plus inpatient utilization.

Maps and tables are generated in four distinct ways: quality ratings by health condition, quality ratings by hospital facility, rates of avoidable hospital stays, and rate of hospital service use. (Figure 1).

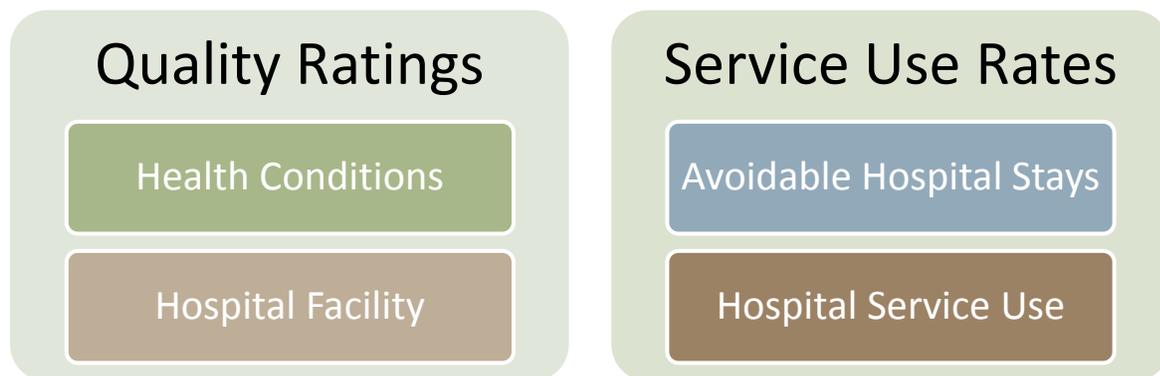


Figure 1. MONAHRQ® Reporting Website Information Sections

Each of the types of reports can be generated by health condition, hospital, or geographic area.

This guide focuses on chronic disease-related Avoidable Hospital Stays.

MONAHRQ® provides county and state level rates of potentially avoidable hospital stays (a.k.a. preventable hospitalizations). High rates of preventable hospitalizations are indicators of potential problems with access to quality care. In other words, information about preventable or avoidable hospital stays is about communities, not hospitals. The data is based upon where patients live, not on where hospitals are located. By identifying potential access, quality-of-care, or self-management problems, specific interventions can be planned, implemented, and evaluated. This information can be used by policy makers and public health workers. It can help them identify areas that might have problems with outpatient care and what types of problems these are. The information includes estimates of cost savings if preventable hospital stays are reduced by 10%, 20%, 30% or more. This can help motivate efforts to improve community health care and reduce avoidable hospital stays.

For the community, this means that individuals can stay healthy longer by preventing or delaying disease and disease complications. Good out-of-hospital care and early intervention can prevent complications or worsening of several chronic diseases; thus preventing the need for hospitalization. The chronic diseases accountable for potentially avoidable hospitalizations are:

- Chronic lung conditions:
 - Chronic obstructive pulmonary disease and adult asthma and
 - Young adult asthma;
- Diabetes:
 - Short-term complications,
 - Long-term complications,
 - Uncontrolled, and
 - Lower limb amputations; and
- Heart conditions:
 - Hypertension, high blood pressure,
 - Congestive heart failure, and
 - Angina, heart or chest pain.



Issues at Hand

A fair amount of time has probably been spent on identifying access to care as an issue of concern.

However, before programs are planned and strategies are implemented, it is important to examine the specifics of the issue and to make some critical data-driven decisions. Many different factors should be considered in the decision-making process. Some of the more significant factors are:

- What are the diseases of concern?
- How often does the issue occur?
- How many people are affected?
- Who is affected?



Rates of preventable hospitalizations are indicators of population-level access to primary care or community care. For chronic diseases, some hospitalizations could be avoided with regular and appropriate care that prevents the conditions from worsening. People who are uninsured, lower income, minority, and self-report limited access to care have higher rates of preventable hospitalizations. The cost associated with the hospital admissions that could have been avoided through high-quality outpatient care is high. Figure 2 shows the estimated cost savings from preventing 10, 20, and 30 % of the hospitalizations associated with complications from diabetes and hypertension.

Estimated Cost Savings by Percentage Reduction in Hospitalizations

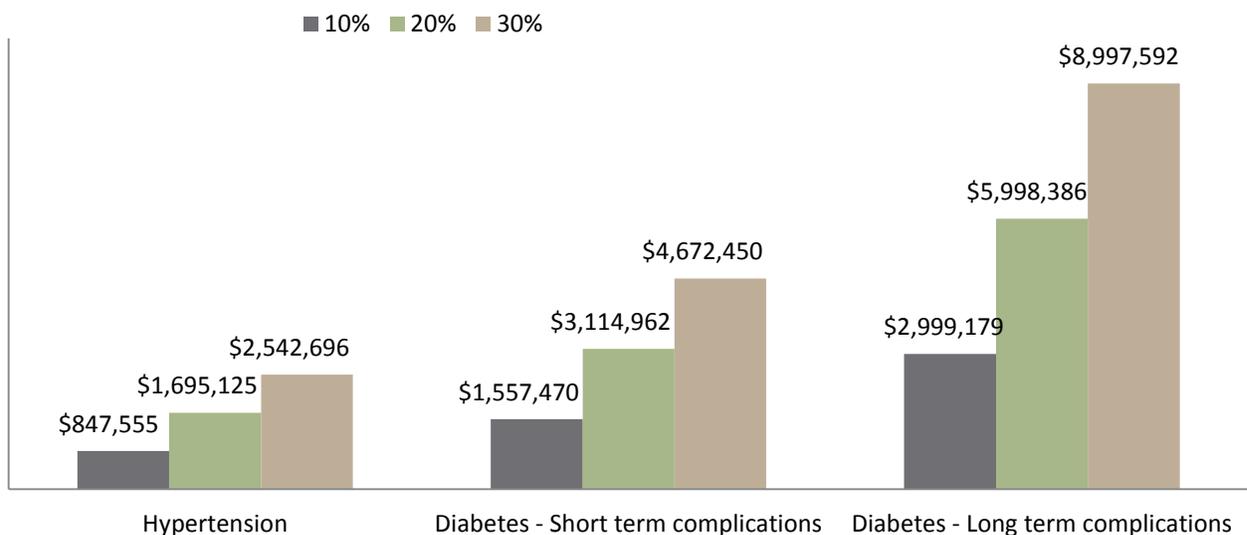


Figure 2. Estimated Cost Savings for Select Conditions, MONAHRQ® - Avoidable Hospital Stays, Oklahoma, 2011.



Data at Your Fingertips

This guide focuses on the advantage and application of using easily available information to guide community decisions addressing access to care. The MONAHRQ® system uses the Prevention Quality Indicators (PQIs) – or ambulatory (out-of-hospital) care sensitive conditions – to identify hospital admissions that were potentially preventable. The PQIs can be used as a "screening tool" to help flag potential community health system issues that need further investigation and to provide a quick check on primary care access or other community services.

Icons Used In This Guide

This guide helps with accessing the necessary information in the easiest manner. Several icons are used throughout the text to help you pinpoint information that calls for close attention as you move through the material:



The tip icon points out pieces of information for getting the most out of MONAHRQ®.



The time saver icon helps you target information that is worth remembering to help you use the internet databases.



The Warning icon describes a potential problem you may encounter when using MONAHRQ®.

Getting Started

MONAHRQ® is accessed through the Oklahoma State Department of Health’s website at <http://www.ok.gov/health/>. The web site can also be accessed through any search engine using the keyword “OSDH” (circled). Just click on the OSDH Home – Oklahoma State Department of Health link (Figure 3).

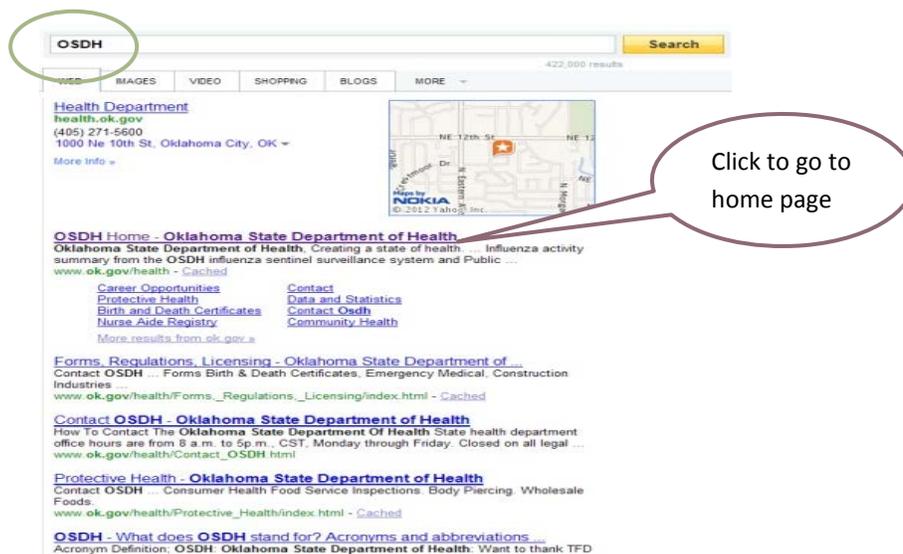


Figure 3. Search engine results for “OSDH” with identified link to OSDH Home page.



Begin by clicking the link to OK2SHARE - Oklahoma Statistics on Health Available to Everyone.

The link is located in the Online Services section of the website (Figure 4).

- You can also search for OK2SHARE using the search site box located at the top right of the front page (circled). Click on the link provided by the search.

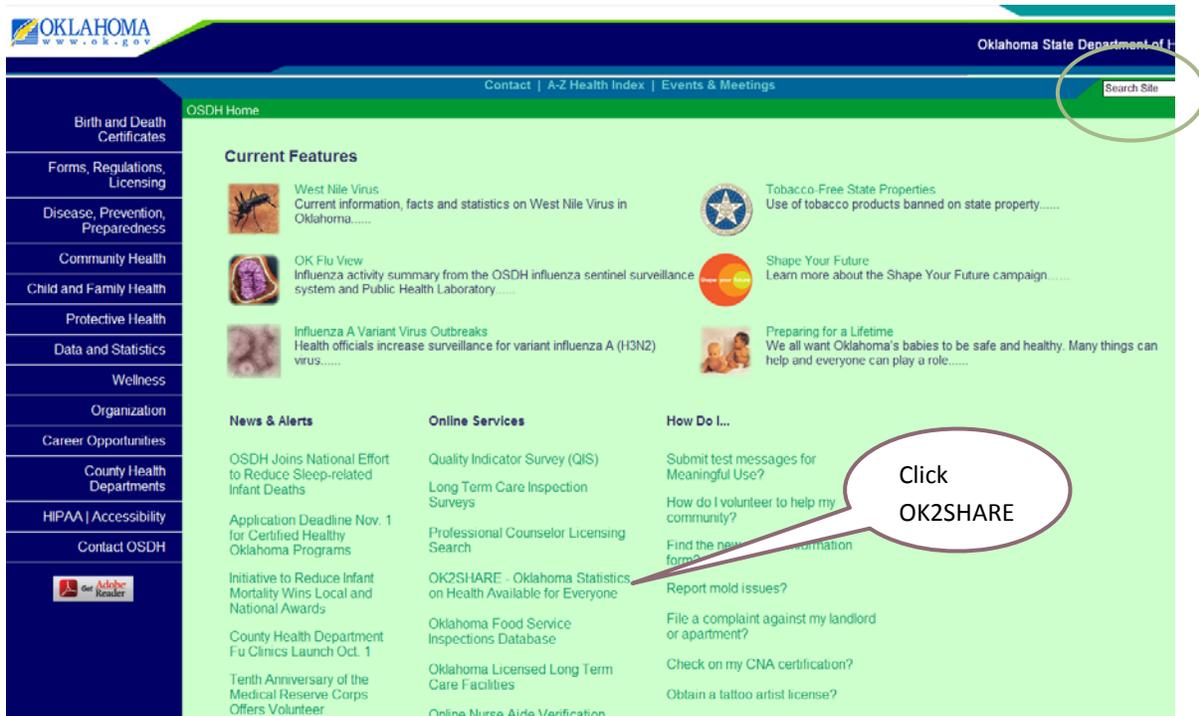


Figure 4: Two ways to get to OK2SHARE from www.ok.health.gov – Online Services link or search the site (circled).



You can create a shortcut button that you only have to click once to access OK2SHARE. Open Internet Explorer, and then browse to OK2SHARE. Once the application is displayed on the screen, select the **Favorites** menu on the Internet Explorer browser. Next, select **Add to Favorites**. In the Add Favorite window, select or create a folder, and click **OK** to create the favorite in the folder. A shortcut button, **Add to Favorites**, appears in the Favorites toolbar on the browser. Click to add OK2SHARE to the Favorites toolbar.

To use MONAHRQ® in OK2SHARE, you must agree to how the data will be used.

- The data use agreement is to protect the rights of individuals and their health information. As a user of the data, you are agreeing to:
 - Use these data for statistical reporting and analysis only,
 - Not make an attempt to learn the identity of any individual included in these data, and
 - Make no disclosure or other use of the identity of any person discovered inadvertently, and advise the OK2SHARE administrator of any such discovery.
- Please read and accept the appropriate use agreement for internet databases to use the OK2SHARE service. Click the **Accept** button to access OK2SHARE.

In OK2SHARE, make a few more selections to access MONAHRQ® (Figure 5).

- On the left side of the screen, click **Hospital & ASC** under QUERIES.
- A drop-down list opens for database selection. **Select Quality Reports (MONAHRQ®)**.
- **Click the year** of the data from the drop-down list (circled).
- The MONAHRQ® or Quality Reports will open.



Figure 5: The QUERIES list opens the Hospitals drop-down list to select MONAHRQ®. Click the year for the data selection (circled).

For hospitalizations in the years 2011-2013, use the following instructions.

General Navigation

The main menu contains navigation elements to help you move around the application (Figure 6). These include navigation tabs across the top of the central a picture. Click the “Service Use Rates” tab (circled) to get to the Avoidable Hospital Stays section option.



Figure 6: Main menu lists the major components of MONAHRQ®. Click the click the Service Use Rates tab (circled).



On the Service Use Rates page, click the Find More Information box under the Avoidable Hospital Stays title (Figure 7).

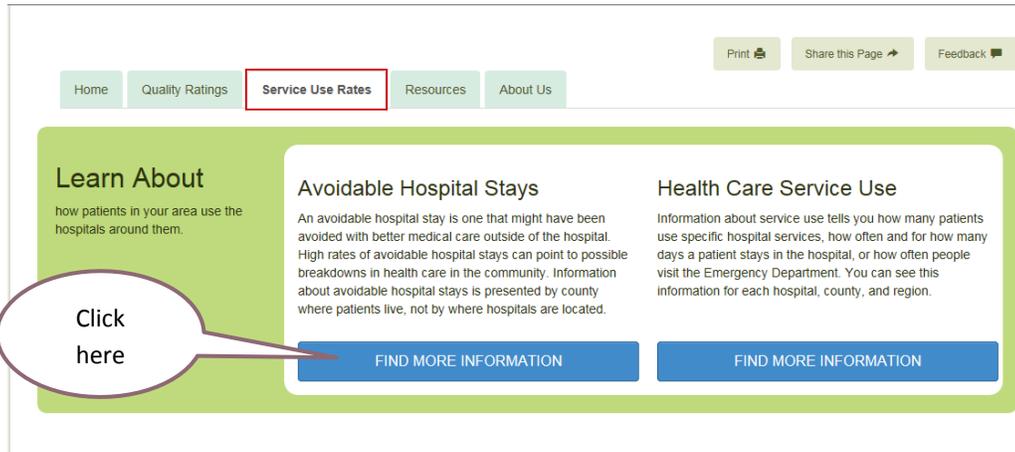


Figure 7. Click the blue box under Available Hospital Stays.

Generate a table for specific preventable hospitalization conditions (Figure 8).

- **Click Condition/Topic** by clicking the tab underneath Find By heading (circled).
- Each health condition is listed in a dropdown list in step 2. Choose Condition. **Click Condition** of interest.
- For each health condition, there are several measures. Click the button to **select the measure** of interest.
- Once selections are made, the data report table is automatically generated. **Scroll down the page to see the table.**

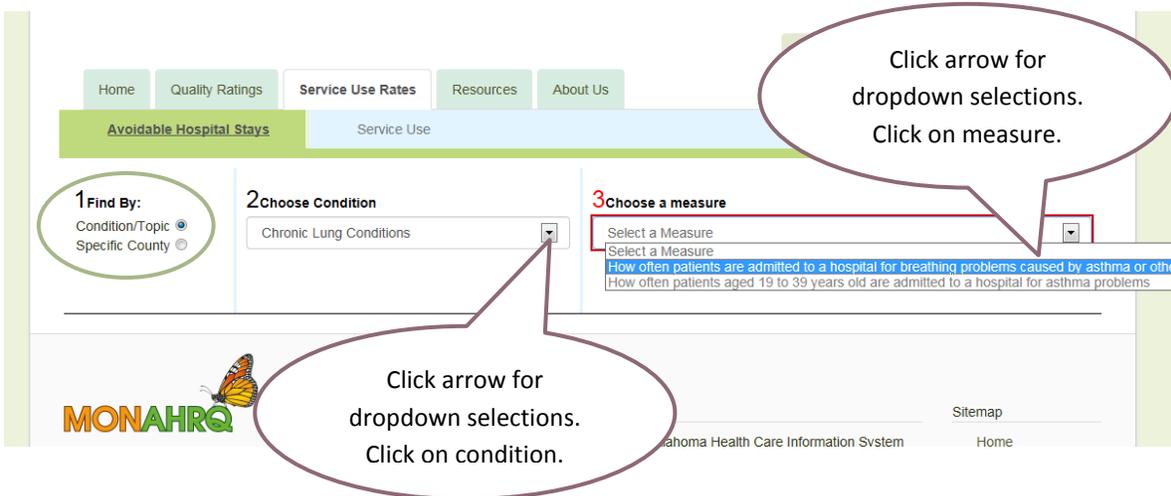


Figure 8. Click the circle to select the health condition/topic. Next, select condition from dropdown list. Then, select measure for selected health condition to generate a data report.



Data Tables

A preventable hospital stay is one that might have been avoided with better medical care or self-management outside of the hospital. For example, a diabetes patient who receives good care from her primary care provider has adequate resources for medication, routinely measures blood glucose, etc. might not need a hospital stay for diabetes complications. Hospital stays like these are not always preventable, but some are potentially avoidable.

Information can be downloaded other applications. Table contains (Figure 9):

- **County:** Each county is listed by name in the table. The county is the county of residence of the patients who had hospital stays for the selected condition.
- **Number of Hospital Stays:** The number of hospital stays for county residents for whom the event or outcome of interest occurred (e.g., hospitalized for chronic obstructive pulmonary disease or asthma). This number is the numerator.
- **Number of County Residents:** The number of county residents based on US Census Bureau data. It is the number of people who are potentially capable of experiencing the condition of interest. This number is the denominator.
- **Observed Rate per 100,000 Residents:** The numerator divided by the denominator. This rate is unadjusted.
- **Risk-Adjusted Rate per 100,000 Residents:** Risk-adjustment is a statistical process that adjusts the rate based upon how sick the patient was before entering the hospital.
- **Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays:** The final five columns in the table may show estimated cost savings associated with a 10, 20, 30, 40, and 50% reduction in potentially avoidable hospital stays. A customized savings can be calculated by a user-specified percentage.
- **“c”:** Values based on 10 or fewer discharges are not shown to protect confidentiality of patients. The data are replaced with “c” within the table.
- **Data can be sorted using selections in dropdown list.** Sort selections include counties alphabetically listed, number of hospital stays, county population, risk-adjusted rates, or cost savings.

County	Yearly Rates of Hospital Stays				Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays.					
	Number of Hospital Stays	Number of County Residents	Observed Rate per 100,000 Residents	Risk-Adjusted Rate per 100,000 Residents	10%	20%	30%	40%	50%	
Adair County	c	16,391	c	c	c	c	c	c	c	\$

Figure 10. Table presents data on a selected health condition. The data can be sorted by clicking to select sort option from dropdown list.

The report can be printed from the website by clicking the **Print** button at the top of the page (circled) or the report can be **copied to another application** (Figure 11.)

- Click **Select Report for Copying**. The area for copying will be highlighted.
- **Right click** on the mouse to access a pop-up edit menu. **Left click Copy**.
- **Open Word, Excel,** or other application and **click Paste**.

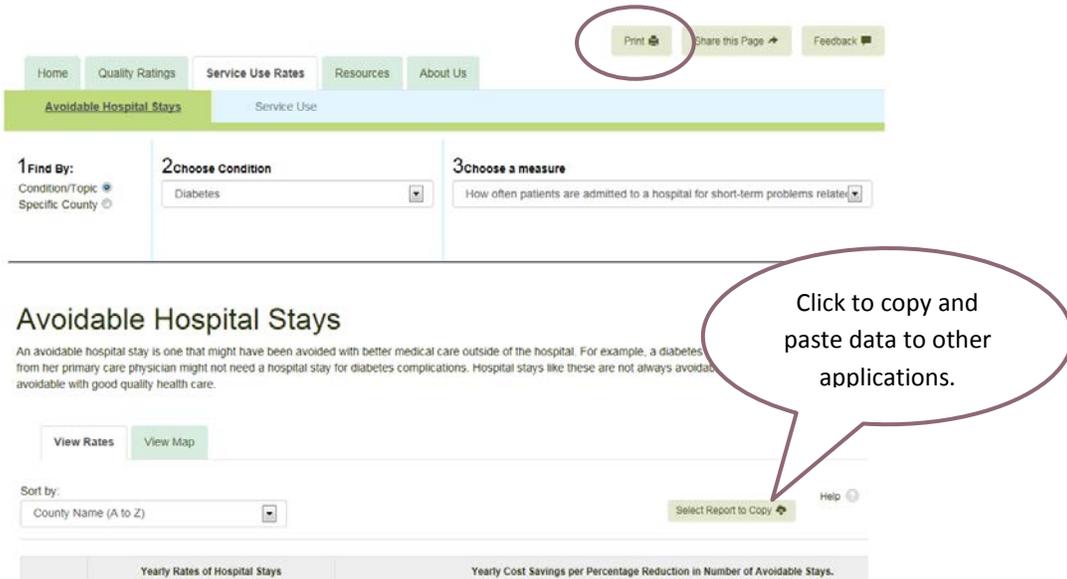


Figure 11. Print the report using the Print Button (circled) or click the Select Report to Copy to copy to report to Word, Excel, or other application.

Health Condition/Topic Maps

MONAHRQ® generates a state map based on your selections. The color code represents the number of hospital stays for each county for every 100,000 county residents (Figure 12).

- Map colors are assigned based upon **five equal groupings** of highest rates, higher rates, rates in the middle, lower rates, and lowest rates.
- **Darker colors represent higher rates**, and lighter colors represent lower rates. If there are not enough data to report a rate, the county color is grey.
- To view a map, **click the View Map tab** (circled).

Avoidable Hospital Stays

An avoidable hospital stay is one that might have been avoided with better medical care outside of the hospital. For example, a diabetes patient who receives good care from her primary care physician might not need a hospital stay for diabetes complications. Hospital stays like these are not always avoidable, but they are potentially avoidable with good quality health care.

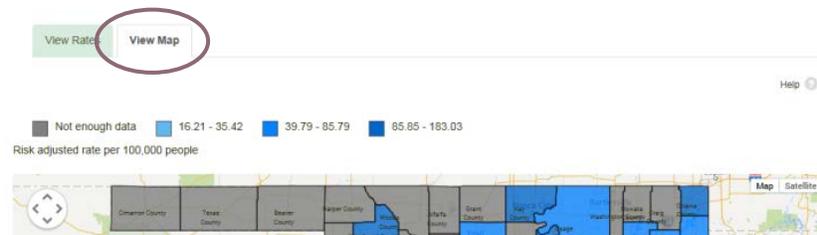


Figure 12. Click on the View Map tab (circled) to generate an Oklahoma risk-adjusted rate map.



Click the **View Rates** tab to return to the data table.



Click the **Print** button to print the map.

PrtScn can copy the screen view of the and Ctrl-v will “paste” the map as a picture in a Word document. Use the Crop option to size the map.

Condition/Topic by Specific County

MONAHRQ® can generate a county report that includes all measures for several conditions.

Generate the table for specific preventable hospitalization conditions (Figure 13).

- Click **Specific County**.
- Click box below **Choose County** and click on county name from dropdown list.
- **Choose Condition(s)** by checking each condition to be listed in the report. The report will include all of the measures for each condition selected.
- Click the **Search** button generate the county-specific report. **Scroll down the page to see the table.**

The screenshot shows the 'Find By' section of the MONAHRQ® interface. At the top right, there are buttons for 'Print', 'Share this Page', and 'Feedback'. Below these are navigation tabs: 'Home', 'Quality B', 'Resources', and 'Avoidable Hosp'. The 'Find By' section has two radio buttons: 'Condition/Topic' (selected) and 'Specific County'. Below the radio buttons is a 'Choose County' dropdown menu with 'Cleveland County' selected. To the right of the dropdown is a callout bubble labeled '2. Click County from dropdown list'. Below the dropdown is a 'Choose Condition(s)' section with a heading and a note: 'Choose the conditions you would like to compare from the table below. You may select one or many. When you are finished click "Search".' There are six checkboxes: 'Procedure Rates', 'Chronic Lung Condition', 'Patient Safety', 'Diabetes', 'Heart Conditions', and 'Other Conditions'. The 'Diabetes', 'Heart Conditions', and 'Summary scores' checkboxes are checked. Below the checkboxes is a green 'Search' button with a callout bubble labeled '4. Click Search'. A callout bubble labeled '1. Click Specific County' points to the 'Specific County' radio button. Another callout bubble labeled '3. Check Conditions' points to the 'Choose Condition(s)' section.

Figure 13. Click the tab to select the health topic. Next, click the button to select a specific health condition from within the topic. Click report (circled) to generate a map.

The report can be printed from the website by clicking the **Print** button at the top of the page or the report can be copied to another application (Figure 11.)

- Click **Select Report for Copying**. The area for copying will be highlighted.
- **Right click** on the mouse to access a pop-up edit menu. **Left click Copy**.
- **Open Word, Excel,** or other application and **click Paste**.



Maps cannot be viewed or printed for county-specific data reports.



Interpreting the Data

MONAHRQ® provides high-quality data for decision-making. The data represents the entire county's experience with preventable hospitalizations. The health conditions were selected through independent research and were determined to be reliable indicators for assessing the quality of chronic disease management in the community. The data provide a window into the community — to identify unmet community health care needs and to monitor how well complications of common chronic conditions are being avoided.



No Indian Health Service, Veterans Administration, or Tribal hospital inpatient data are included in the numerators, rates, or costs. Therefore, rates may underestimate disease burden among American Indian and Veteran populations.



The data excludes hospitalizations:

- Transferred from a hospital (different facility).
- Transferred from a Skilled Nursing Facility (SNF) or Intermediate Care Facility (ICF).
- Transferred from another health care facility.
- Hospitalized in another state.

Bring partners together to discuss data. Combine the data results from each of the health condition tables and maps. Look at the related conditions or hospitalizations that could be avoided in a similar manner to see a clearer picture of the community's experience. The comparison of several years of data might identify a pattern, which will continue without intervention to break the chain of events resulting in hospitalization.

Apply a health equity lens to interpret the data. Understanding more about those who experience preventable hospitalizations can better inform the decision-making process to prioritize approaches, identify health systems, or assess the health impact of potential approaches. Qualitative data can also offer a unique community or practitioner point of view on barriers to access to care or chronic disease self-management. Improving care coordination and reducing barriers for specific, highly burdened groups have been proven to reduce rates of preventable hospitalizations.

Evidence-based strategies save valuable time and resources by using interventions proven to work. For example, a community has high rates of avoidable hospitalizations for asthma/COPD and a recent study reported that half of persons with asthma/COPD continue to smoke cigarettes. Community partners can use the *Evidence-Based Strategies and Preventive Services* guide and update to easily identify strong evidence-based interventions that span the prevention spectrum from two sources, The *Guide to Community Preventive Services (Community Guide)* and the *Guide to Clinical Preventive Services*.



Contacting Technical Support

Support is provided for MONAHRQ® based on the technical issue you are experiencing.

For general questions about the OK2SHARE Quality Reports generated by MONAHRQ®:

- Contact Derek Pate, Director of Health Care Information, Oklahoma State Department of Health via e-mail at DerekP@health.ok.gov or call (405) 271-6225.

If you are experiencing problems with your network connection or internet connection:

- Contact your site network administrator or internet provider for assistance.

To learn more about the Prevention Quality Indicators (PQIs) or other Quality Indicators:

- Visit the Quality Indicators section of the Agency for Healthcare Research and Quality (AHRQ) website at <http://www.qualityindicators.ahrq.gov/>.



Details on Chronic Health Conditions

The following section presents the state map, health condition coding specifics, and abbreviated summary table of potential cost savings for **Oklahoma, 2013**. The following tables present the county codes used to label the health condition maps. Additional information can be found at www.qualityindicators.ahrq.gov.

Name	MONAHRQ Measure	Prevention Quality Indicator	National Quality Forum
Asthma in Younger Adults Admission Rate	How often patients aged 19 to 39 years old are admitted to a hospital for asthma problems	PQI 15	NQF 0283
Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate	How often patients are admitted to a hospital for breathing problems caused by asthma or other lung conditions	PQI 05	NQF 0275
Uncontrolled Diabetes Admission Rate	How often patients are admitted to a hospital to treat problems caused by high blood sugar	PQI 14	NQF 0638
Diabetes Short-Term Complications Admission Rate	How often patients are admitted to a hospital for short-term problems related to diabetes care	PQI 01	NQF 0272
Diabetes Long-Term Complications Admission Rate	How often patients are admitted to a hospital for long-term problems related to diabetes care	PQI 03	NQF 0274
Lower-Extremity Amputation Among Patients with Diabetes Rate	How often patients have their toe or foot removed because of problems caused by diabetes or high blood sugar	PQI 16	NQF 0285
Hypertension Admission Rate	How often patients are admitted to a hospital for problems related to high blood pressure	PQI 07	-
Heart Failure Rate	How often patients are admitted to a hospital for heart failure	PQI 08	NQF 0277
Angina Without Procedure Admission Rate	How often patients are admitted to a hospital to treat heart or chest, called angina	PQI 13	-
Prevention Quality Indicator Chronic Composite	How often patients are admitted to a hospital because a long-lasting (or chronic) condition is causing health problems	PQI 92	-

In the following tables and maps, lower rates represent better quality care (proper outpatient treatment and adherence to care).



Asthma in Younger Adults Admission Rates, Oklahoma, 2013

Hospital discharges for patients greater than 18 and less than 40 years old with ICD-9-CM principal diagnosis code of asthma. Excludes stays with any diagnosis code of cystic fibrosis and anomalies of the respiratory system.

County	Yearly # Hospital Stays	# County Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Canadian	13	36,989	35	34	\$11,971	\$23,943	\$35,914	\$47,886	\$59,858
Comanche	12	44,403	27	29	\$4,957	\$9,915	\$14,873	\$19,830	\$24,788
Muskogee	17	19,973	85	85	\$9,892	\$19,785	\$29,678	\$39,570	\$49,463
Oklahoma	126	232,281	54	55	\$72,627	\$145,255	\$217,882	\$290,510	\$363,137
Tulsa	89	185,109	48	48	\$45,744	\$91,488	\$137,233	\$182,977	\$228,722

Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.

* Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.



COPD or Asthma in Older Adults Admission Rates, Oklahoma, 2013

Hospital discharges for patients age 40 years and older with ICD-9-CM principal diagnosis code for COPD or asthma in adults age 40 years and older.

County	Yearly # Hospital Stays	# County Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Adair	157	10,759	1,459	1,473	\$53,731	\$107,463	\$161,195	\$214,927	\$268,659
Atoka	85	7,179	1,184	1,103	\$61,832	\$123,664	\$185,496	\$247,328	\$309,160
Beckham	56	10,073	555	568	\$77,794	\$155,589	\$233,383	\$311,178	\$388,972
Blaine	29	5,227	554	525	\$34,619	\$69,238	\$103,857	\$138,477	\$173,096
Bryan	250	20,884	1,197	1,107	\$224,791	\$449,583	\$674,375	\$899,167	\$1,123,958
Caddo	64	13,989	457	445	\$39,825	\$79,650	\$119,475	\$159,300	\$199,125
Canadian	207	55,032	376	396	\$211,250	\$422,501	\$633,752	\$845,003	\$1,056,254
Carter	241	23,005	1,047	1,001	\$251,392	\$502,784	\$754,176	\$1,005,568	\$1,256,960
Cherokee	78	21,786	358	340	\$70,170	\$140,340	\$210,511	\$280,681	\$350,851
Choctaw	135	7,991	1,689	1,527	\$105,023	\$210,047	\$315,071	\$420,095	\$525,118
Cleveland	266	110,964	239	247	\$230,772	\$461,545	\$692,317	\$923,090	\$1,153,862
Coal	11	2,994	367	327	\$7,982	\$15,965	\$23,948	\$31,930	\$39,913
Comanche	196	50,136	390	405	\$163,804	\$327,608	\$491,412	\$655,216	\$819,020
Cotton	21	3,178	660	629	\$16,001	\$32,003	\$48,005	\$64,006	\$80,008
Craig	81	8,128	996	944	\$56,601	\$113,202	\$169,804	\$226,405	\$283,007
Creek	278	36,199	767	738	\$215,537	\$431,074	\$646,611	\$862,149	\$1,077,686
Custer	52	11,439	454	419	\$55,309	\$110,619	\$165,929	\$221,238	\$276,548
Delaware	83	24,425	339	297	\$66,596	\$133,192	\$199,788	\$266,384	\$332,980
Ellis	11	2,188	502	449	\$10,513	\$21,026	\$31,539	\$42,053	\$52,566
Garfield	232	28,869	803	745	\$289,884	\$579,768	\$869,652	\$1,159,536	\$1,449,421

County	Yearly # Hospital Stays	# County Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Garvin	74	13,875	533	488	\$49,388	\$98,776	\$148,164	\$197,552	\$246,940
Grady	77	26,620	289	290	\$72,025	\$144,050	\$216,075	\$288,100	\$360,125
Grant	35	2,549	1,373	1,194	\$36,414	\$72,828	\$109,242	\$145,656	\$182,070
Greer	33	3,101	1,064	986	\$24,502	\$49,005	\$73,508	\$98,010	\$122,513
Harmon	29	1,363	2,127	1,965	\$27,267	\$54,534	\$81,802	\$109,069	\$136,336
Haskell	26	6,615	393	353	\$14,332	\$28,665	\$42,998	\$57,331	\$71,663
Hughes	29	6,930	418	384	\$16,837	\$33,674	\$50,512	\$67,349	\$84,187
Jackson	98	11,541	849	829	\$91,713	\$183,427	\$275,140	\$366,854	\$458,567
Jefferson	36	3,364	1,070	955	\$41,178	\$82,356	\$123,534	\$164,712	\$205,890
Johnston	58	5,514	1,051	963	\$48,864	\$97,729	\$146,593	\$195,458	\$244,322
Kay	217	22,988	943	849	\$174,478	\$348,956	\$523,434	\$697,912	\$872,391
Kingfisher	38	7,512	505	482	\$61,683	\$123,366	\$185,049	\$246,732	\$308,415
Kiowa	92	4,875	1,887	1,759	\$59,979	\$119,958	\$179,938	\$239,917	\$299,897
Latimer	34	5,747	591	532	\$34,243	\$68,487	\$102,731	\$136,975	\$171,219
Le Flore	121	25,331	477	454	\$73,675	\$147,351	\$221,026	\$294,702	\$368,377
Lincoln	104	18,015	577	563	\$100,019	\$200,038	\$300,057	\$400,076	\$500,095
Logan	82	20,749	395	404	\$90,820	\$181,640	\$272,461	\$363,281	\$454,102
Love	24	4,908	489	452	\$22,904	\$45,808	\$68,712	\$91,616	\$114,520
Major	16	4,097	390	345	\$22,216	\$44,433	\$66,649	\$88,866	\$111,082
Marshall	101	9,012	1,120	994	\$70,716	\$141,432	\$212,149	\$282,865	\$353,581
Mayer	174	21,127	823	779	\$217,203	\$434,407	\$651,611	\$868,814	\$1,086,018
McClain	71	17,842	397	406	\$46,586	\$93,173	\$139,760	\$186,346	\$232,933



County	Yearly # Hospital Stays	# County Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
McCurtain	73	16,224	449	425	\$57,085	\$114,171	\$171,257	\$228,343	\$285,429
McIntosh	88	12,124	725	628	\$89,535	\$179,071	\$268,606	\$358,142	\$447,678
Murray	58	7,099	817	752	\$59,348	\$118,696	\$178,044	\$237,393	\$296,741
Muskogee	285	33,952	839	800	\$300,143	\$600,286	\$900,430	\$1,200,573	\$1,500,717
Noble	26	6,027	431	398	\$23,821	\$47,642	\$71,463	\$95,284	\$119,105
Nowata	20	5,730	349	319	\$16,017	\$32,034	\$48,051	\$64,068	\$80,085
Okfuskee	37	6,354	582	560	\$37,043	\$74,087	\$111,131	\$148,174	\$185,218
Oklahoma	1,811	319,503	566	562	\$1,584,538	\$3,169,076	\$4,753,614	\$6,338,152	\$7,922,690
Okmulgee	166	19,810	837	780	\$161,309	\$322,619	\$483,929	\$645,238	\$806,548
Osage	119	25,611	464	449	\$120,424	\$240,848	\$361,272	\$481,697	\$602,121
Ottawa	102	15,661	651	585	\$81,538	\$163,077	\$244,616	\$326,155	\$407,694
Pawnee	48	8,809	544	513	\$48,839	\$97,678	\$146,518	\$195,357	\$244,196
Payne	145	28,006	517	503	\$129,283	\$258,567	\$387,851	\$517,135	\$646,419
Pittsburg	186	24,132	770	704	\$124,550	\$249,101	\$373,652	\$498,203	\$622,754
Pontotoc	51	17,511	291	270	\$57,928	\$115,857	\$173,786	\$231,715	\$289,644
Pottawatomie	245	33,335	734	706	\$185,215	\$370,430	\$555,645	\$740,860	\$926,075
Pushmataha	76	6,492	1,170	1,025	\$46,856	\$93,713	\$140,570	\$187,426	\$234,283
Rogers	203	44,830	452	454	\$188,514	\$377,028	\$565,542	\$754,056	\$942,570
Seminole	82	12,579	651	609	\$87,614	\$175,229	\$262,844	\$350,459	\$438,073
Sequoyah	46	21,604	212	206	\$33,858	\$67,717	\$101,576	\$135,435	\$169,294
Stephens	190	23,211	818	741	\$157,969	\$315,939	\$473,909	\$631,879	\$789,849
Texas	35	8,040	435	447	\$48,157	\$96,314	\$144,471	\$192,629	\$240,786



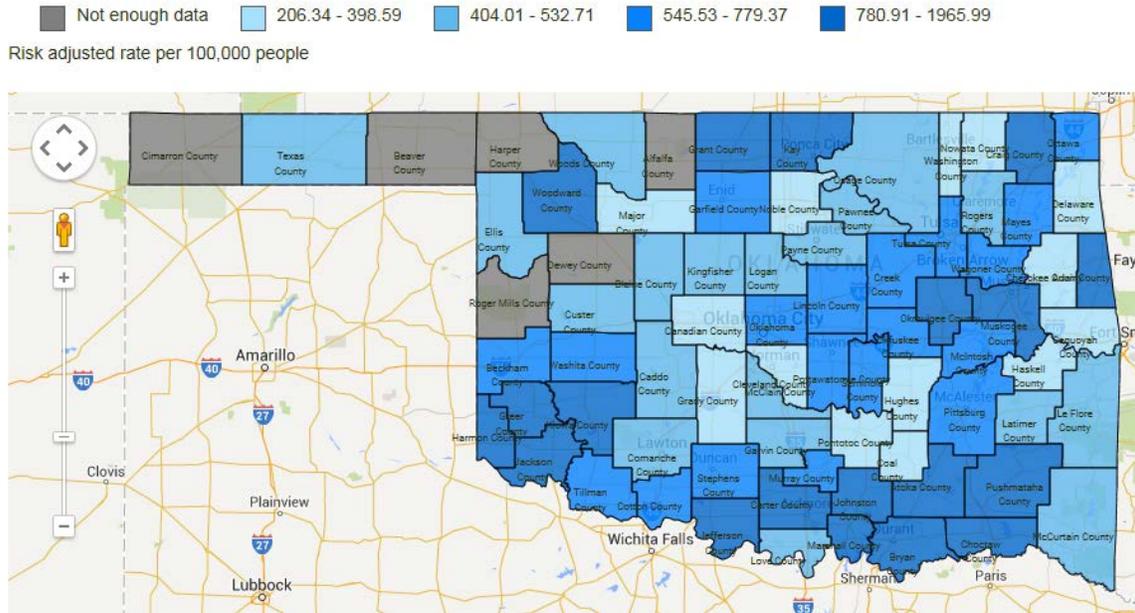
County	Yearly # Hospital Stays	# County Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Tillman	25	3,956	631	600	\$17,108	\$34,217	\$51,325	\$68,434	\$85,542
Tulsa	1,557	273,310	569	568	\$1,373,597	\$2,747,195	\$4,120,793	\$5,494,391	\$6,867,989
Wagoner	196	36,515	536	545	\$169,586	\$339,173	\$508,760	\$678,347	\$847,934
Washington	70	26,691	262	231	\$80,947	\$161,894	\$242,842	\$323,789	\$404,737
Washita	47	5,715	822	749	\$50,558	\$101,117	\$151,676	\$202,235	\$252,794
Woods	18	3,882	463	407	\$23,142	\$46,285	\$69,428	\$92,571	\$115,714
Woodward	80	9,575	835	818	\$84,257	\$168,515	\$252,773	\$337,031	\$421,288

Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.

* Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.



Map of COPD or Asthma in Older Adults Admission Rates, Oklahoma, 2013



Rates are calculated per 100,000 people.
 Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.
 Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.



Uncontrolled Diabetes Admission Rates, Oklahoma, 2013

Hospital discharges for patients age 18 years and older with ICD-9-CM principal diagnosis code for uncontrolled diabetes, without mention of a short-term or long-term complication. May be combined with diabetes short-term complications as a single indicator as a simple sum of the rates.

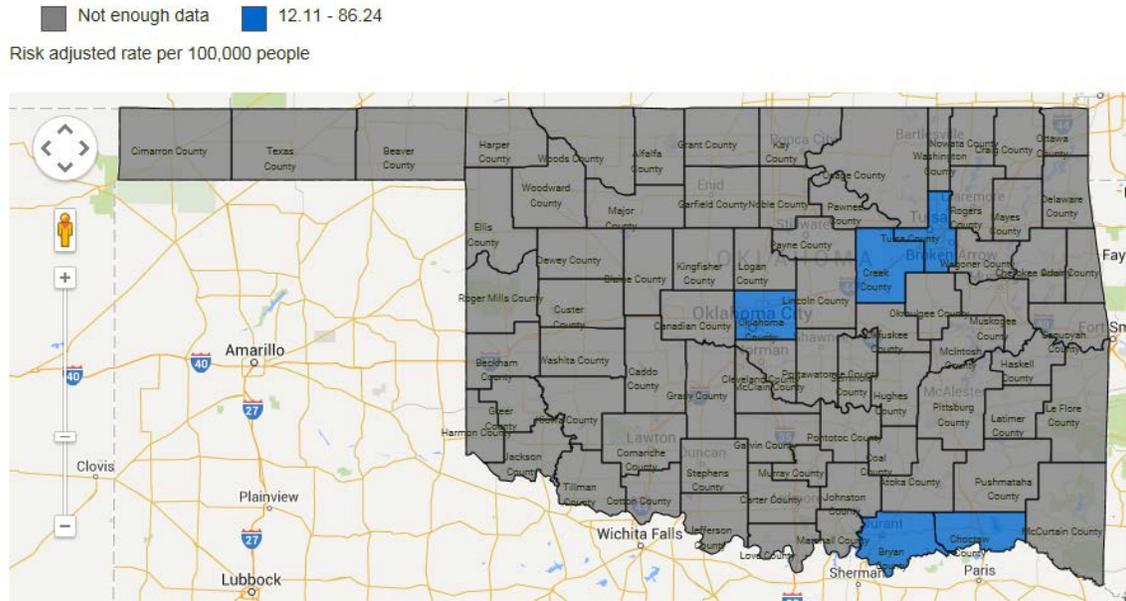
County	Yearly # Hospital Stays	# County Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Bryan	13	33,888	38	37	\$8,122	\$16,244	\$24,367	\$32,489	\$40,611
Choctaw	11	11,537	95	86	\$4,653	\$9,306	\$13,959	\$18,612	\$23,265
Creek	14	53,621	26	24	\$5,564	\$11,129	\$16,694	\$22,258	\$27,823
Oklahoma	65	551,784	11	12	\$34,594	\$69,188	\$103,783	\$138,377	\$172,971
Tulsa	57	458,419	123	12	\$31,489	\$62,978	\$94,467	\$125,956	\$157,445

Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.

* Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.



Map of Uncontrolled Diabetes Admission Rates, Oklahoma, 2013



Rates are calculated per 100,000 people.
 Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.
 Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.



Diabetes Short-Term Complications Admission Rates, Oklahoma, 2013

Hospital discharges for patients age 18 years and older with ICD-9-CM principal diagnosis code for diabetes mellitus with short-term complications (ketoacidosis, hyperosmolarity, coma).

County	Yearly # Hospital Stays	# Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Bryan	34	33,888	100	101	\$23,340	\$46,680	\$70,020	\$93,360	\$116,700
Caddo	18	21,835	82	83	\$16,249	\$32,499	\$48,749	\$64,999	\$81,249
Canadian	44	91,971	47	47	\$33,493	\$66,987	\$100,480	\$133,974	\$167,468
Carter	44	36,048	122	125	\$38,577	\$77,155	\$115,733	\$154,311	\$192,889
Cherokee	12	36,782	32	32	\$10,624	\$21,248	\$31,872	\$42,496	\$53,120
Cleveland	56	207,621	26	25	\$49,003	\$98,007	\$147,010	\$196,014	\$245,017
Comanche	94	94,539	99	95	\$80,435	\$160,871	\$241,307	\$321,743	\$402,179
Creek	37	53,621	69	71	\$32,007	\$64,015	\$96,023	\$128,031	\$160,039
Delaware	13	33,760	38	41	\$8,114	\$16,228	\$24,343	\$32,457	\$40,572
Garfield	56	45,925	121	124	\$49,306	\$98,613	\$147,920	\$197,227	\$246,533
Grady	35	41,519	84	85	\$33,759	\$67,518	\$101,277	\$135,036	\$168,795
Jackson	22	19,212	114	114	\$15,495	\$30,990	\$46,485	\$61,980	\$77,475
Kay	25	34,468	72	75	\$15,735	\$31,470	\$47,206	\$62,941	\$78,677
Kiowa	11	7,104	154	162	\$3,479	\$6,959	\$10,439	\$13,918	\$17,398
Lincoln	18	26,319	68	70	\$15,236	\$30,472	\$45,708	\$60,944	\$76,181
Mayes	12	31,745	37	39	\$20,100	\$40,201	\$60,302	\$80,403	\$100,504
McCurtain	12	24,448	49	50	\$7,308	\$14,616	\$21,925	\$29,233	\$36,541
McIntosh	18	16,369	109	119	\$11,239	\$22,479	\$33,719	\$44,959	\$56,199
Muskogee	44	53,925	81	83	\$44,152	\$88,304	\$132,456	\$176,608	\$220,761
Okfuskee	12	9,511	126	129	\$15,737	\$31,475	\$47,213	\$62,951	\$78,689

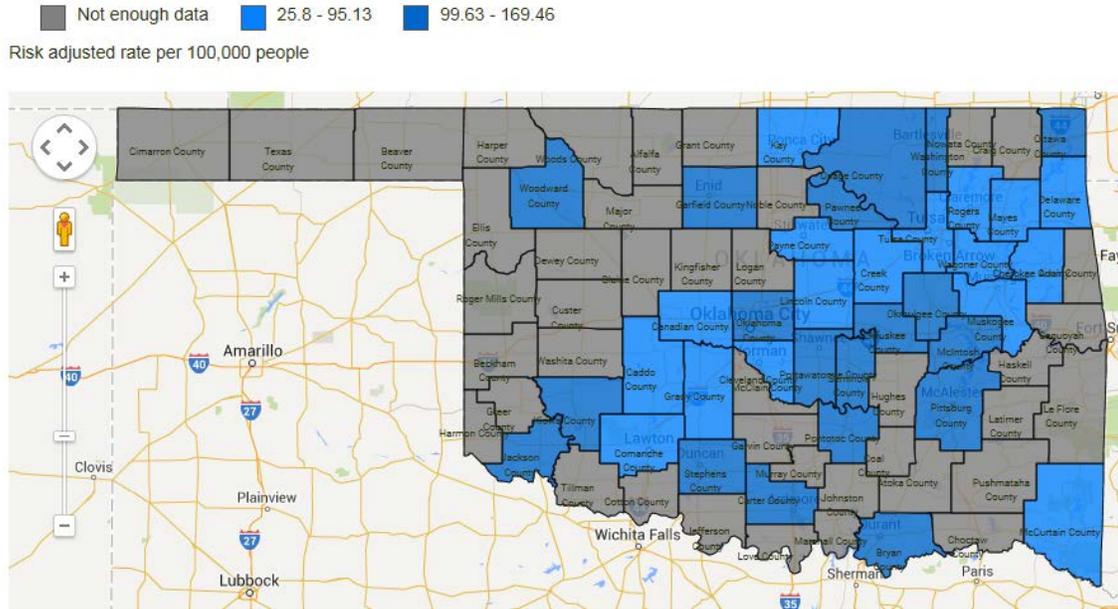
County	Yearly # Hospital Stays	# Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Oklahoma	641	551,784	116	115	\$514,803	\$1,029,606	\$1,544,409	\$2,059,212	\$2,574,015
Okmulgee	36	30,278	118	122	\$25,950	\$51,901	\$77,852	\$103,803	\$129,753
Osage	42	37,127	113	117	\$36,410	\$72,821	\$109,231	\$145,642	\$182,053
Ottawa	23	23,806	96	100	\$15,921	\$31,843	\$47,765	\$63,686	\$79,608
Pawnee	12	12,644	94	99	\$7,839	\$15,678	\$23,518	\$31,357	\$39,197
Payne	32	62,526	51	46	\$32,914	\$65,829	\$98,744	\$131,659	\$164,574
Pittsburg	48	36,504	131	136	\$31,542	\$63,085	\$94,627	\$126,170	\$157,712
Pontotoc	40	29,090	137	137	\$33,812	\$67,624	\$101,436	\$135,248	\$169,060
Pottawatomie	78	53,225	146	148	\$54,683	\$109,366	\$164,050	\$218,733	\$273,417
Rogers	27	69,259	38	39	\$21,507	\$43,014	\$64,521	\$86,029	\$107,536
Seminole	31	18,930	163	169	\$26,779	\$53,558	\$80,338	\$107,117	\$133,896
Stephens	36	34,911	103	107	\$23,237	\$46,475	\$69,712	\$92,950	\$116,188
Tulsa	436	458,419	95	94	\$428,544	\$857,089	\$1,285,634	\$1,714,17	\$2,142,724
Wagoner	53	57,855	91	93	\$39,051	\$78,103	\$117,155	\$156,207	\$195,259
Washington	43	39,826	107	113	\$45,361	\$90,722	\$136,084	\$181,445	\$226,806
Woodward	19	15,919	119	119	\$14,153	\$28,306	\$42,459	\$56,613	\$70,766

Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.

* Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.



Map of Diabetes Short-Term Complications Admission Rates, Oklahoma, 2013



Rates are calculated per 100,000 people.
 Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.
 Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.



Diabetes Long-Term Complications Admission Rates, Oklahoma, 2013

Hospital discharges for patients age 18 years and older with ICD-9-CM principal diagnosis code for diabetes mellitus with long-term complications (renal, eye, neurological, circulatory, or other).

County	Yearly # Hospital Stays	# Resident	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Adair	30	16,819	178	170	\$11,731	\$23,462	\$35,194	\$46,925	\$58,657
Atoka	15	10,983	136	123	\$26,189	\$52,378	\$78,568	\$104,757	\$130,947
Bryan	54	33,888	159	152	\$63,175	\$126,351	\$189,527	\$252,703	\$315,879
Caddo	17	21,835	776	73	\$25,664	\$51,329	\$76,993	\$102,658	\$128,322
Canadian	63	91,971	68	70	\$95,580	\$191,161	\$286,741	\$382,322	\$477,902
Carter	53	36,048	147	137	\$89,807	\$179,615	\$269,423	\$359,230	\$449,038
Cherokee	13	36,782	35	35	\$19,609	\$39,218	\$58,827	\$78,437	\$98,046
Choctaw	24	11,537	208	178	\$17,553	\$35,107	\$52,661	\$70,215	\$87,769
Cleveland	91	207,621	43	49	\$132,945	\$265,890	\$398,835	\$531,780	\$664,725
Comanche	46	94,539	48	55	\$53,363	\$106,726	\$160,089	\$213,452	\$266,815
Craig	16	11,768	135	119	\$18,270	\$36,541	\$54,812	\$73,083	\$91,354
Creek	53	53,621	98	88	\$75,796	\$151,592	\$227,388	\$303,184	\$378,981
Custer	18	21,156	85	90	\$22,383	\$44,767	\$67,151	\$89,535	\$111,918
Delaware	19	33,760	56	45	\$31,620	\$63,241	\$94,862	\$126,482	\$158,103
Garfield	31	45,925	67	63	\$45,232	\$90,464	\$135,696	\$180,929	\$226,161
Garvin	13	20,940	62	55	\$12,923	\$25,846	\$38,769	\$51,692	\$64,615
Grady	22	41,519	52	50	\$27,312	\$54,624	\$81,936	\$109,249	\$136,561
Hughes	14	10,625	131	117	\$26,552	\$53,105	\$79,658	\$106,211	\$132,764
Jackson	21	19,212	109	109	\$21,233	\$42,466	\$63,699	\$84,932	\$106,165

County	Yearly # Hospital Stays	# Resident	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Kay	25	34,468	72	63	\$24,778	\$49,556	\$74,334	\$99,112	\$123,890
Kiowa	20	7,104	281	244	\$20,526	\$41,053	\$61,579	\$82,106	\$102,632
Le Flore	22	38,687	56	52	\$16,033	\$32,066	\$48,100	\$64,133	\$80,167
Lincoln	23	26,319	87	78	\$37,424	\$74,848	\$112,272	\$149,696	\$187,121
Logan	19	32,651	58	56	\$22,814	\$45,628	\$68,442	\$91,257	\$114,071
Marshall	12	12,829	93	77	\$16,574	\$33,148	\$49,722	\$66,296	\$82,871
Mayes	24	31,745	75	67	\$51,955	\$103,911	\$155,866	\$207,822	\$259,778
McClain	22	27,147	81	76	\$21,237	\$42,475	\$63,712	\$84,950	\$106,187
McCurtain	20	24,448	81	73	\$23,016	\$46,033	\$69,049	\$92,066	\$115,083
McIntosh	14	16,369	85	67	\$18,753	\$37,506	\$56,259	\$75,012	\$93,765
Muskogee	54	53,925	100	94	\$71,013	\$142,026	\$213,039	\$284,052	\$355,065
Oklahoma	655	551,784	118	122	\$884,670	\$1,769,341	\$2,654,011	\$3,538,682	\$4,423,352
Okmulgee	48	30,278	158	144	\$68,641	\$137,283	\$205,924	\$274,566	\$343,207
Osage	37	37,127	99	88	\$47,061	\$94,122	\$141,184	\$188,245	\$235,306
Pawnee	11	12,644	87	75	\$11,513	\$23,027	\$34,540	\$46,054	\$57,567
Payne	22	62,526	35	44	\$34,750	\$69,501	\$104,252	\$139,003	\$173,753
Pittsburg	39	36,504	106	94	\$55,749	\$111,498	\$167,247	\$222,997	\$278,746
Pontotoc	34	29,090	116	114	\$57,478	\$114,957	\$172,435	\$229,914	\$287,392
Pottawatomie	70	53,225	131	126	\$89,966	\$179,932	\$269,898	\$359,864	\$449,830
Rogers	37	69,259	53	50	\$58,281	\$116,563	\$174,845	\$233,127	\$291,408
Seminole	20	18,931	105	95	\$27,999	\$55,998	\$83,997	\$111,996	\$139,995
Stephens	40	34,911	114	101	\$45,279	\$90,559	\$135,839	\$181,119	\$226,399



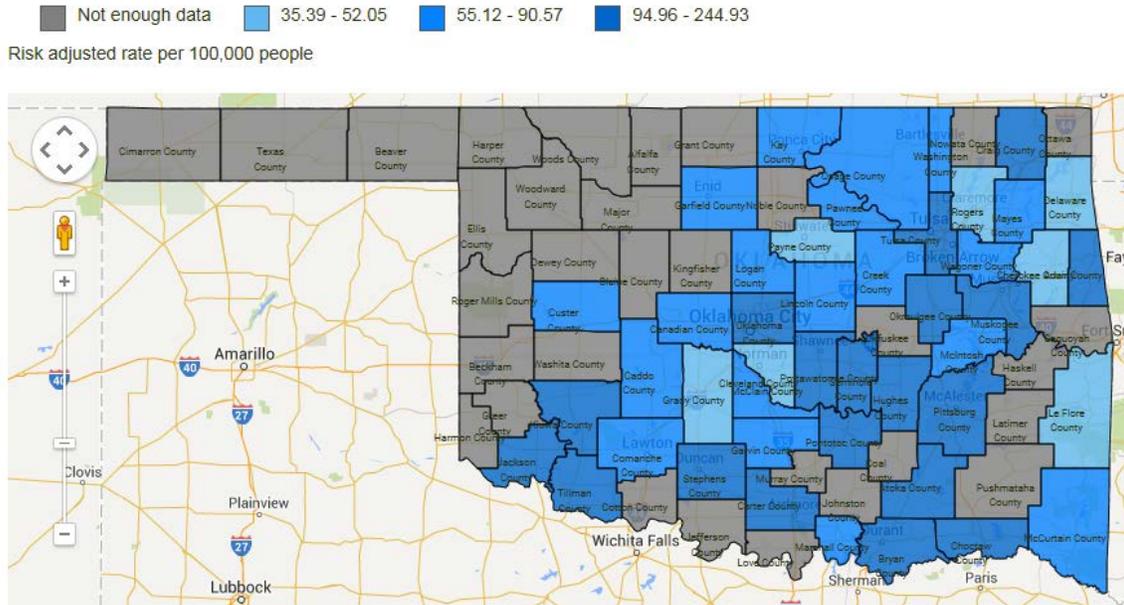
County	Yearly # Hospital Stays	# Resident	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Tillman	12	5,786	207	184	\$14,256	\$28,513	\$42,769	\$57,026	\$71,282
Tulsa	519	458,419	113	114	\$724,460	\$1,448,921	\$2,173,382	\$2,897,842	\$3,622,303
Wagoner	54	57,855	93	90	\$55,454	\$110,908	\$166,362	\$221,817	\$277,271
Washington	26	39,826	65	56	\$32,859	\$65,719	\$98,578	\$131,438	\$164,298

Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.

* Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.



Map of Diabetes Long-Term Complications Admission Rates, Oklahoma, 2013



Rates are calculated per 100,000 people.

Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.

Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.



Lower-Extremity Amputation Among Patients with Diabetes Rates, Oklahoma, 2013

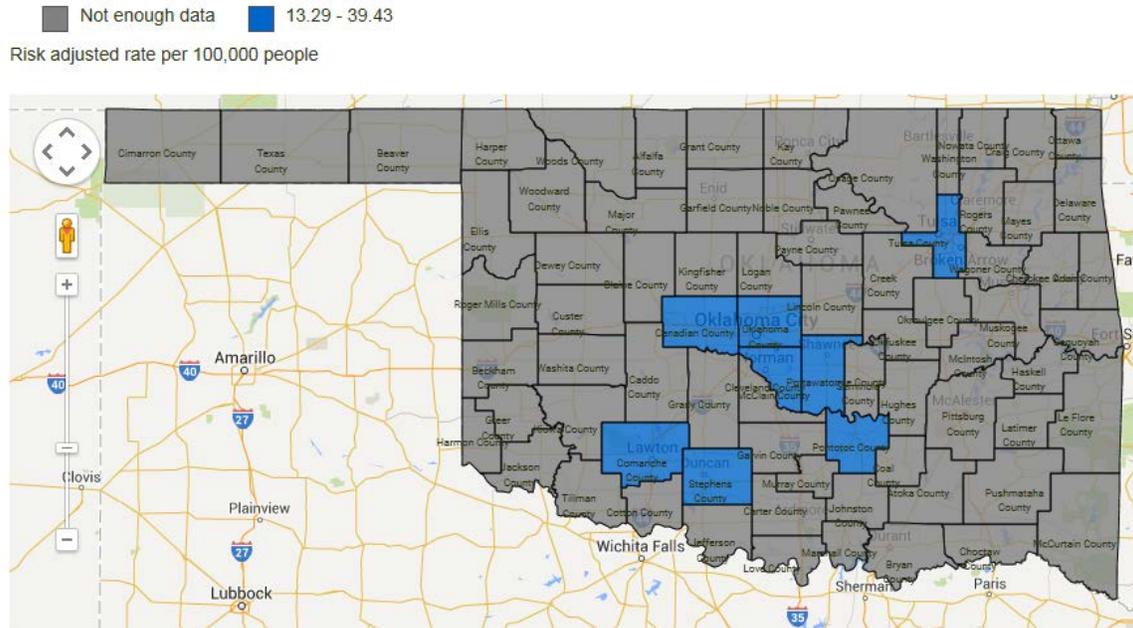
Hospital discharges for patients age 18 years and older with ICD-9-CM procedure code for lower-extremity amputation and diagnosis code of diabetes in any field. Excludes stays with any diagnosis of traumatic amputation of the lower extremity or with a toe amputation procedure.

County	Yearly # Hospital Stays	# Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Canadian	19	91,971	20	21	\$40,981	\$81,963	\$122,945	\$163,927	\$204,909
Cleveland	24	207,621	11	13	\$53,652	\$107,305	\$160,957	\$214,610	\$268,262
Comanche	16	94,539	16	19	\$46,607	\$93,215	\$139,823	\$186,431	\$233,039
Oklahoma	110	551,784	19	20	\$328,758	\$657,517	\$986,276	\$1,315,035	\$1,643,793
Pontotoc	12	29,090	41	39	\$24,020	\$48,040	\$72,060	\$96,080	\$120,100
Pottawatomie	16	53,225	30	28	\$66,163	\$132,326	\$198,490	\$264,653	\$330,817
Stephens	14	34,911	40	33	\$26,123	\$52,246	\$78,369	\$104,492	\$130,615
Tulsa	88	458,419	19	19	\$288,671	\$577,342	\$866,013	\$1,154,685	\$1,443,356

Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.

* Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.

Map of Lower-Extremity Amputation Among Patients with Diabetes Rates, Oklahoma, 2013



Rates are calculated per 100,000 people.
 Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.
 Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.



Hypertension Admission Rates, Oklahoma, 2013

Hospital discharges for patients age 18 years and older with ICD-9-CM principal diagnosis code for hypertension. Excludes stays with a cardiac procedure code and with any diagnosis of Stage I-IV kidney disease, only if accompanied by procedure code for preparation for hemodialysis (dialysis access procedures).

County	Yearly # Hospital Stays	# Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Adair	33	16,819	196	195	\$9,961	\$19,922	\$29,883	\$39,844	\$49,805
Bryan	25	33,888	73	71	\$19,099	\$38,199	\$57,299	\$76,399	\$95,499
Canadian	21	91,971	22	23	\$14,316	\$28,633	\$42,950	\$57,267	\$71,584
Carter	28	36,048	77	73	\$19,922	\$39,844	\$59,766	\$79,688	\$99,611
Cherokee	15	36,782	40	42	\$12,658	\$25,317	\$37,976	\$50,635	\$63,293
Choctaw	12	11,537	104	91	\$6,384	\$12,769	\$19,154	\$25,539	\$31,923
Cleveland	35	207,621	16.	19	\$31,972	\$63,945	\$95,918	\$127,890	\$159,863
Comanche	53	94,539	56	64	\$41,812	\$83,624	\$125,436	\$167,248	\$209,060
Creek	38	53,621	70	64	\$29,199	\$58,399	\$87,599	\$116,799	\$145,999
Custer	11	21,156	51	55	\$6,712	\$13,425	\$20,138	\$26,851	\$33,563
Delaware	13	33,760	38	32	\$9,448	\$18,897	\$28,345	\$37,794	\$47,242
Garfield	17	45,925	37	34	\$12,509	\$25,018	\$37,528	\$50,037	\$62,546
Grady	14	41,519	33	33	\$10,170	\$20,340	\$30,511	\$40,681	\$50,851
Johnston	12	8,394	142	132	\$5,920	\$11,840	\$17,760	\$23,680	\$29,600
Kiowa	16	7,104	225	203	\$7,154	\$14,308	\$21,462	\$28,616	\$35,770
Lincoln	11	26,319	41	38	\$6,466	\$12,932	\$19,398	\$25,864.	\$32,330
Marshall	13	12,828	101	86	\$9,517	\$19,035	\$28,553	\$38,071	\$47,589
Mayes	18	31,745	56	52	\$12,505	\$25,010	\$37,515	\$50,020	\$62,525
Muskogee	32	53,925	59	56	\$24,198	\$48,396	\$72,594	\$96,792	\$120,990

County	Yearly # Hospital Stays	# Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Oklahoma	323	551,784	58	60	\$242,981	\$485,962	\$728,943	\$971,925	\$1,214,906
Okmulgee	17	30,278	56	51	\$9,617	\$19,234	\$28,852	\$38,469	\$48,087
Osage	35	37,127	94	86	\$30,922	\$61,844	\$92,766	\$123,689	\$154,611
Ottawa	14	23,806	58	52	\$7,767	\$15,534	\$23,301	\$31,068	\$38,835
Payne	17	62,526	27	35	\$15,152	\$30,304	\$45,457	\$60,609	\$75,761
Pittsburg	14	36,504	38	34	\$9,698	\$19,396	\$29,094	\$38,792	\$48,490
Pottawatomie	35	53,225	65	64	\$25,982	\$51,964	\$77,947	\$103,929	\$129,911
Pushmataha	12	8,985	133	111	\$6,435	\$12,871	\$19,306	\$25,742	\$32,177
Rogers	27	69,259	38	38	\$19,240	\$38,481	\$57,721	\$76,962	\$96,203
Tulsa	321	458,419	70	70	\$225,866	\$451,733	\$677,600	\$903,467	\$1,129,334
Wagoner	22	57,855	38	38	\$14,303	\$28,606	\$42,910	\$57,213	\$71,517
Washington	21	39,826	52	45	\$13,530	\$27,060	\$40,591	\$54,121	\$67,652

Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.

* Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.



Heart Failure Admission Rates, Oklahoma, 2013

Hospital discharges for patients age 18 years and older with ICD-9-CM principal diagnosis code for heart failure. Excludes stays with a with a cardiac procedure code.

County	Yearly # Hospital Stays	# Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Adair	59	16,819	350	357	\$32,919	\$65,838	\$98,757	\$131,676	\$164,595
Alfalfa	17	4,530	375	290	\$22,691	\$45,383	\$68,075	\$90,766	\$113,458
Atoka	48	10,983	437	394	\$40,524	\$81,049	\$121,574	\$162,098	\$202,623
Beckham	66	17,423	378	405	\$93,214	\$186,429	\$279,644	\$372,859	\$466,074
Blaine	31	8,910	347	327	\$34,508	\$69,016	\$103,525	\$138,033	\$172,542
Bryan	120	33,889	354	329	\$104,714	\$209,428	\$314,143	\$418,857	\$523,572
Caddo	65	21,835	297	281	\$52,964	\$105,928	\$158,892	\$211,856	\$264,820
Canadian	126	91,971	137	157	\$107,431	\$214,863	\$322,294	\$429,726	\$537,158
Carter	115	36,048	319	296	\$128,131	\$256,263	\$384,395	\$512,527	\$640,659
Cherokee	72	36,782	195	198	\$79,087	\$158,175	\$237,263	\$316,351	\$395,439
Choctaw	132	11,537	1,144	937	\$117,301	\$234,602	\$351,903	\$469,204	\$586,505
Cleveland	230	207,621	110	138	\$316,514	\$633,028	\$949,542	\$1,266,057	\$1,582,571
Comanche	220	94,539	232	288	\$229,873	\$459,746	\$689,620	\$919,493	\$1,149,366
Cotton	12	4,621	259	229	\$8,984	\$17,968	\$26,952	\$35,937	\$44,921
Craig	50	11,768	424	358	\$38,879	\$77,758	\$116,638	\$155,517	\$194,397
Creek	207	53,621	386	343	\$237,364	\$474,728	\$712,092	\$949,456	\$1,186,821
Custer	73	21,156	345	335	\$73,179	\$146,358	\$219,538	\$292,717	\$365,896
Delaware	90	33,760	266	205	\$84,260	\$168,521	\$252,782	\$337,043	\$421,304
Dewey	13	3,626	358	263	\$21,374	\$42,749	\$64,124	\$85,499	\$106,874
Ellis	14	3,110	450	340	\$7,525	\$15,050	\$22,575	\$30,100	\$37,625

County	Yearly # Hospital Stays	# Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Garfield	192	45,926	418	358	\$233,039	\$466,078	\$699,117	\$932,156	\$1,165,195
Garvin	68	20,940	324	272	\$49,760	\$99,520	\$149,281	\$199,041	\$248,802
Grady	78	41,519	187	192	\$80,987	\$161,974	\$242,961	\$323,948	\$404,935
Grant	20	3,439	581	391	\$24,072	\$48,145	\$72,218	\$96,291	\$120,364
Greer	23	5,063	454	371	\$18,640	\$37,280	\$55,921	\$74,561	\$93,202
Harmon	16	2,066	774	642	\$17,032	\$34,064	\$51,096	\$68,129	\$85,161
Harper	15	2,769	541	399	\$10,785	\$21,571	\$32,357	\$43,143	\$53,929
Haskell	24	9,851	243	197	\$21,170	\$42,341	\$63,512	\$84,682	\$105,853
Hughes	21	10,625	197	168	\$18,320	\$36,640	\$54,961	\$73,281	\$91,602
Jackson	103	19,214	536	537	\$108,306	\$216,613	\$324,919	\$433,226	\$541,532
Jefferson	19	4,863	390	305	\$17,545	\$35,090	\$52,636	\$70,181	\$87,726
Johnston	46	8,394	548	481	\$46,126	\$92,252	\$138,379	\$184,505	\$230,632
Kay	204	34,468	591	464	\$178,710	\$357,421	\$536,132	\$714,842	\$893,553
Kingfisher	27	11,447	235	204	\$47,185	\$94,370	\$141,555	\$188,741	\$235,926
Kiowa	73	7,104	1,027	900	\$53,651	\$107,303	\$160,954	\$214,606	\$268,258
Latimer	17	8,569	198	155	\$13,242	\$26,484	\$39,726	\$52,968	\$66,210
Le Flore	96	38,686	248	227	\$56,594	\$113,189	\$169,784	\$226,379	\$282,974
Lincoln	60	26,319	227	210	\$61,968	\$123,937	\$185,906	\$247,875	\$309,844
Logan	58	32,651	177	187	\$60,390	\$120,781	\$181,172	\$241,563	\$301,954
Love	15	7,341	204	176	\$19,756	\$39,512	\$59,268	\$79,024	\$98,780
Marshall	52	12,828	405	318	\$40,664	\$81,329	\$121,994	\$162,659	\$203,324
Mayes	108	31,746	340	306	\$124,796	\$249,592	\$374,388	\$499,184	\$623,980



County	Yearly # Hospital Stays	# Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
McClain	52	27,148	191	198	\$40,030	\$80,060	\$120,090	\$160,120	\$200,150
McCurtain	105	24,448	429	387	\$81,937	\$163,875	\$245,813	\$327,751	\$409,689
McIntosh	56	16,369	342	244	\$49,095	\$98,191	\$147,287	\$196,383	\$245,479
Murray	24	10,423	230	188	\$21,827	\$43,654	\$65,482	\$87,309	\$109,136
Muskogee	226	53,925	419	390	\$279,067	\$558,134	\$837,201	\$1,116,268	\$1,395,335
Noble	32	8,827	362	295	\$36,408	\$72,817	\$109,226	\$145,635	\$182,044
Nowata	19	8,184	232	184	\$29,763	\$59,526	\$89,289	\$119,052	\$148,815
Okfuskee	31	9,511	325	288	\$29,625	\$59,250	\$88,875	\$118,500	\$148,125
Oklahoma	1,556	551,784	281	294	\$1,518,539	\$3,037,078	\$4,555,617	\$6,074,157	\$7,592,696
Okmulgee	138	30,278	455	398	\$120,652	\$241,305	\$361,958	\$482,611	\$603,264
Osage	101	37,127	272	247	\$108,152	\$216,305	\$324,458	\$432,611	\$540,764
Ottawa	84	23,806	352	283	\$77,926	\$155,852	\$233,778	\$311,705	\$389,631
Pawnee	48	12,644	379	323	\$52,742	\$105,485	\$158,228	\$210,971	\$263,714
Payne	162	62,526	259	339	\$185,844	\$371,688	\$557,533	\$743,377	\$929,222
Pittsburg	113	36,505	309	256	\$99,974	\$199,948	\$299,922	\$399,896	\$499,870
Pontotoc	52	29,090	178	168	\$55,476	\$110,952	\$166,428	\$221,904	\$277,380
Pottawatomie	235	53,225	441	430	\$222,183	\$444,366	\$666,550	\$888,733	\$1,110,916
Pushmataha	45	8,985	500	370	\$27,141	\$54,282	\$81,423	\$108,565	\$135,706
Rogers	176	69,259	254	253	\$193,551	\$387,102	\$580,654	\$774,205	\$967,757
Seminole	80	18,930	421	365	\$79,035	\$158,071	\$237,107	\$316,143	\$395,178
Sequoyah	40	32,549	122	116	\$33,938	\$67,876	\$101,814	\$135,753	\$169,691
Stephens	125	34,911	358	290	\$107,259	\$214,518	\$321,777	\$429,037	\$536,296



County	Yearly # Hospital Stays	# Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Texas	12	14,535	82	95	\$13,255	\$26,511	\$39,767	\$53,022	\$66,278
Tillman	33	5,786	570	487	\$26,169	\$52,338	\$78,508	\$104,677	\$130,846
Tulsa	1,619	458,419	353	359	\$1,705,984	\$3,411,968	\$5,117,952	\$6,823,936	\$8,529,920
Wagoner	166	57,855	286	310	\$164,465	\$328,930	\$493,394	\$657,859	\$822,324
Washington	103	39,836	258	193	\$133,667	\$267,335	\$401,002	\$534,670	\$668,337
Washita	27	8,723	309	244	\$22,650	\$45,300	\$67,950	\$90,601	\$113,251
Woods	13	6,848	189	164	\$19,033	\$38,066	\$57,099	\$76,132	\$95,166
Woodward	46	15,919	288	290	\$52,585	\$105,170	\$157,756	\$210,341	\$262,927

Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.

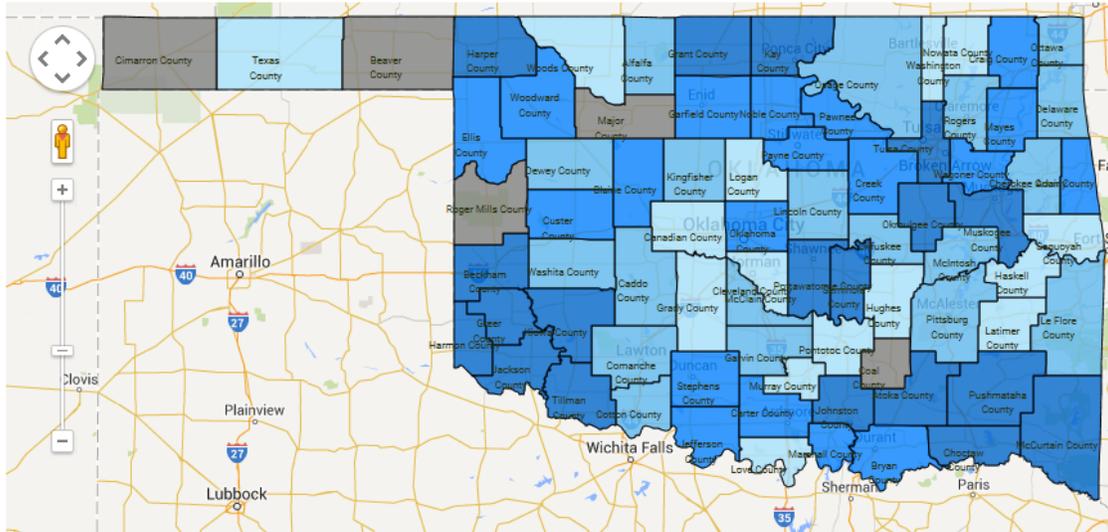
* Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.



Map of Heart Failure Admission Rates, Oklahoma, 2013

Not enough data
 95.08 - 197.05
 198.17 - 290.08
 290.31 - 358.58
 359.8 - 937.73

Risk adjusted rate per 100,000 people



Rates are calculated per 100,000 people.

Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.

Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.



Angina Without Procedure Admission Rates, Oklahoma, 2013

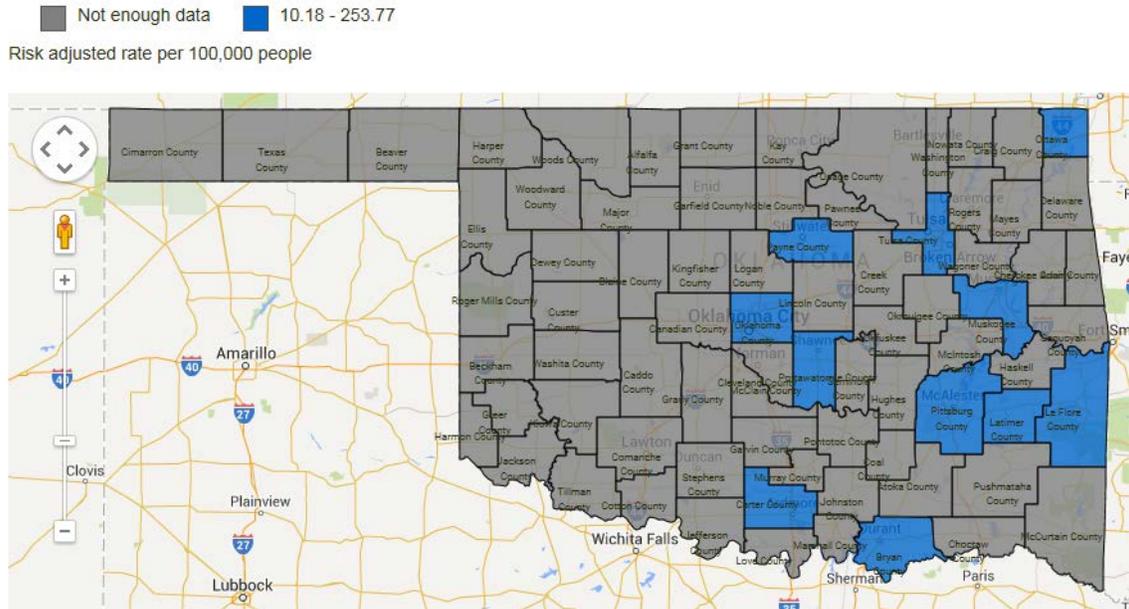
Hospital discharges for patients age 18 years and older with ICD-9-CM principal diagnosis code for angina. Excludes stays with a with a cardiac procedure code.

County	Yearly # Hospital Stays	# Residents	Annual Observed Rate	Annual Risk- Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Bryan	12	33,888	35	33	\$5,531	\$11,062	\$16,593	\$22,124	\$27,656
Carter	15	36,049	41	38	\$9,252	\$18,505	\$27,758	\$37,011	\$46,263
Latimer	25	8,569	291	253	\$17,662	\$35,325	\$52,987	\$70,650	\$88,312
Le Flore	14	38,686	36	33	\$6,393	\$12,786	\$19,179	\$25,572	\$31,965
Muskogee	15	53,925	27	26	\$12,010	\$24,021	\$36,031	\$48,042	\$60,052
Oklahoma	71	551,784	12	13	\$58,917	\$117,835	\$176,753	\$235,670	\$294,588
Ottawa	12	23,806	50	44	\$6,808	\$13,617	\$20,426	\$27,234	\$34,043
Payne	21	62,526	33	44	\$17,581	\$35,162	\$52,744	\$70,325	\$87,907
Pittsburg	12	36,504	32	28	\$6,443	\$12,887	\$19,331	\$25,775	\$32,218
Pottawatomie	11	53,225	20	19	\$7,468	\$14,937	\$22,406	\$29,874	\$37,343
Tulsa	46	458,419	10	10	\$35,140	\$70,280	\$105,419	\$140,559	\$175,699

Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.

* Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.

Map of Angina Without Procedure Admission Rates, Oklahoma, 2013



Rates are calculated per 100,000 people.
 Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.
 Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.



Summary Scores for Long-Lasting or Chronic Conditions, Oklahoma, 2013

Based on rates of admission for diabetes short-term complications, diabetes long-term complication, chronic obstructive pulmonary disease, hypertension, congestive heart failure, angina without procedure, uncontrolled diabetes, adult asthma, and lower-extremity amputation among patients with diabetes.

County	Yearly # Hospital Stays	# Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Adair	300	16,819	1,783	1,764	\$117,077	\$234,154	\$351,232	\$468,309	\$585,387
Alfalfa	32	4,530	706	577	\$37,578	\$75,157	\$112,736	\$150,315	\$187,894
Atoka	170	10,983	1,547	1,402	\$144,174	\$288,348	\$432,522	\$576,696	\$720,870
Beaver	16	4,184	382	336	\$22,096	\$44,193	\$66,289	\$88,386	\$110,483
Beckham	148	17,423	849	899	\$199,605	\$399,211	\$598,817	\$798,422	\$998,028
Blaine	79	8,911	886	861	\$96,382	\$192,765	\$289,148	\$385,531	\$481,913
Bryan	512	33,889	1,510	1,420	\$462,111	\$924,223	\$1,386,335	\$1,848,446	\$2,310,558
Caddo	178	21,835	815	772	\$142,639	\$285,278	\$427,917	\$570,556	\$713,195
Canadian	491	91,971	533	577	\$503,020	\$1,006,040	\$1,509,060	\$2,012,080	\$2,515,100
Carter	515	36,049	1,428	1,336	\$560,362	\$1,120,725	\$1,681,088	\$2,241,450	\$2,801,813
Cherokee	205	36,782	5574	557	\$204,960	\$409,921	\$614,881	\$819,842	\$1,024,803
Choctaw	320	11,537	2,773	2,331	\$255,837	\$511,674	\$767,512	\$1,023,349	\$1,279,187
Cleveland	721	207,621	347	404	\$813,925	\$1,627,850	\$2,441,776	\$3,255,701	\$4,069,626
Coal	27	4,359	619	507	\$33,217	\$66,434	\$99,651	\$132,868	\$166,086
Comanche	643	94,539	680	794	\$609,666	\$1,219,333	\$1,829,000	\$2,438,667	\$3,048,334
Cotton	41	4,621	887	786	\$30,534	\$61,068	\$91,603	\$122,137	\$152,672
Craig	172	11,768	1,461	1,266	\$131,079	\$262,158	\$393,237	\$524,317	\$655,396
Creek	644	53,621	1,201	1,080	\$623,870	\$1,247,740	\$1,871,611	\$2,495,481	\$3,119,352
Custer	169	21,156	798	808	\$172,750	\$345,500	\$518,251	\$691,001	\$863,752

County	Yearly # Hospital Stays	# Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Delaware	234	33,760	693	549	\$214,117	\$428,235	\$642,353	\$856,471	\$1,070,589
Dewey	31	3,626	854	672	\$36,751	\$73,502	\$110,253	\$147,004	\$183,755
Ellis	34	3,110	1,093	875	\$23,797	\$47,594	\$71,391	\$95,188	\$118,985
Garfield	550	45,929	1,197	1,079	\$649,431	\$1,298,862	\$1,948,293	\$2,597,724	\$3,247,156
Garvin	180	20,940	859	746	\$134,647	\$269,295	\$403,943	\$538,591	\$673,239
Grady	243	41,519	585	578	\$235,580	\$471,159	\$706,7398	\$942,319	\$1,177,899
Grant	66	3,442	1,917	1,415	\$72,640	\$145,281	\$217,921	\$290,562	\$363,202
Greer	78	5,063	1,540	1,374	\$66,722	\$133,445	\$200,168	\$266,891	\$333,614
Harmon	60	2,068	2,901	2,513	\$63,111	\$126,223	\$189,334	\$252,446	\$315,558
Harper	37	2,769	1,336	1,077	\$24,517	\$49,034	\$73,551.	\$98,068	\$122,585
Haskell	64	9,851	649	549	\$54,420	\$108,841	\$163,262	\$217,683	\$272,104
Hughes	73	10,625	687	604	\$69,621	\$139,242	\$208,864	\$278,485	\$348,106
Jackson	265	19,214	1,379	1,378	\$251,758	\$503,517	\$755,276	\$1,007,034	\$1,258,793
Jefferson	73	4,863	1,501	1,230	\$77,788	\$155,577	\$233,365	\$311,154	\$388,942
Johnston	137	8,394	1,632	1,450	\$117,951	\$235,902	\$353,853	\$471,804	\$589,755
Kay	497	34,468	1,441	1,207	\$415,270	\$830,540	\$1,245,811	\$1,661,081	\$2,076,351
Kingfisher	93	11,447	812	728	\$148,754	\$297,508	\$446,262	\$595,016	\$743,771
Kiowa	232	7,105	3,265	2,860	\$153,044	\$306,089	\$459,133	\$612,178	\$765,223
Latimer	98	8,569	1,143	957	\$80,257	\$160,515	\$240,773	\$321,030	\$401,288
Le Flore	279	38,687	721	662	\$162,173	\$324,346	\$486,519	\$648,692	\$810,866
Lincoln	225	26,319	854	780	\$234,702	\$469,405	\$704,108	\$938,811	\$1,173,514
Logan	191	32,652	584	591	\$202,998	\$405,996	\$608,994	\$811,992	\$1,014,990



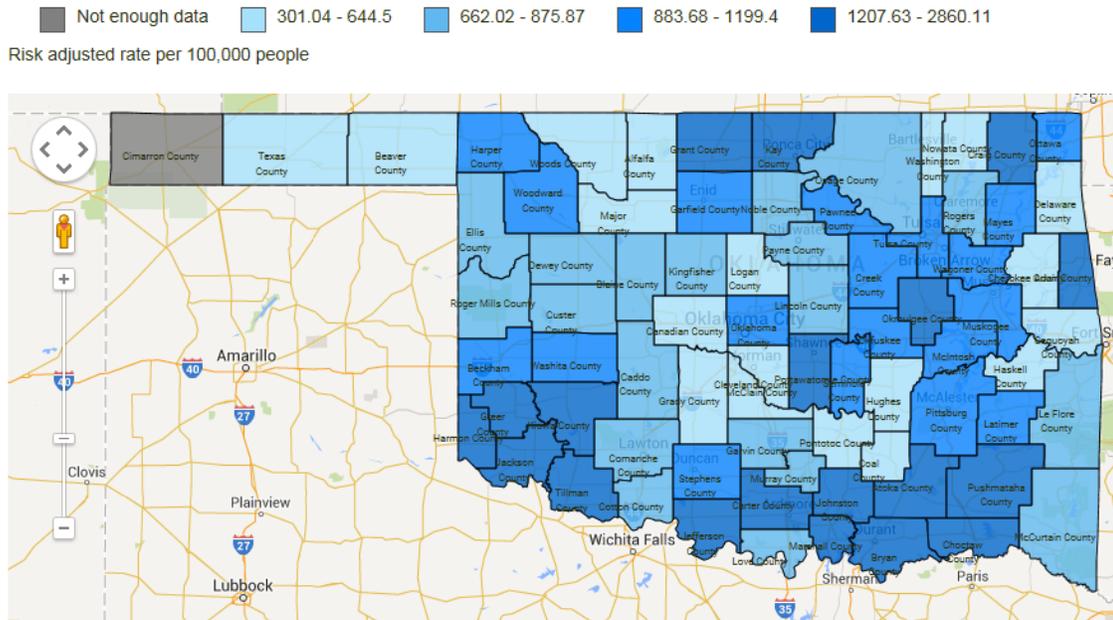
County	Yearly # Hospital Stays	# Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Love	58	7,341	790	694	\$57,776	\$115,552	\$173,328	\$231,104	\$288,880
Major	38	5,809	654	519	\$44,617	\$89,235	\$133,853	\$178,471	\$223,089
Marshall	193	12,833	1,503	1,223	\$148,483	\$296,967	\$445,451	\$593,935	\$742,418
Mayes	355	31,746	1,118	1,009	\$455,298	\$910,597	\$1,365,896	\$1,821,195	\$2,276,494
McClain	172	27,148	633	625	\$131,765	\$263,530	\$395,296	\$527,061	\$658,827
McCurtain	233	24,448	953	861	\$180,891	\$361,782	\$542,673	\$723,564	\$904,455
McIntosh	191	16,369	1,166	883	\$187,767	\$375,535	\$563,303	\$751,071	\$938,839
Murray	106	10,423	1,016	866	\$110,703	\$221,406	\$332,109	\$442,812	\$553,516
Muskogee	687	53,925	1,273	1,199	\$787,020	\$1,574,040	\$2,361,060	\$3,148,081	\$3,935,101
Noble	84	8,827	951	809	\$98,084	\$196,169	\$294,254	\$392,338	\$490,423
Nowata	55	8,186	671	556	\$69,177	\$138,355	\$207,533	\$276,711	\$345,888
Okfuskee	103	9,511	1,082	975	\$121,432	\$242,864	\$364,297	\$485,729	\$607,161
Oklahoma	5,297	551,784	959	994	\$5,056,118	\$10,112,237	\$15,168,356	\$20,224,475	\$25,280,594
Okmulgee	421	30,278	1,390	1,245	\$400,589	\$801,179	\$1,201,768	\$1,602,358	\$2,002,947
Osage	351	37,127	945	852	\$362,935	\$725,870	\$1,088,805	\$1,451,740	\$1,814,675
Ottawa	253	23,806	1,062	904	\$204,199	\$408,398	\$612,598	\$816,797	\$1,020,996
Pawnee	134	12,645	1,059	915	\$134,423	\$268,846	\$403,269	\$537,692	\$672,115
Payne	413	62,526	660	829	\$434,004	\$868,009	\$1,302,014	\$1,736,019	\$2,170,023
Pittsburg	423	36,505	1,158	1,002	\$337,254	\$674,508	\$1,011,762	\$1,349,016	\$1,686,270
Pontotoc	196	29,090	673	644	\$220,438	\$440,876	\$661,314	\$881,752	\$1,102,190
Pottawatomie	703	53,225	1,320	1,273	\$635,578	\$1,271,157	\$1,906,736	\$2,542,315	\$3,177,893
Pushmataha	158	8,985	1,758	1,373	\$100,897	\$201,794	\$302,691	\$403,588	\$504,486



County	Yearly # Hospital Stays	# Residents	Annual Observed Rate	Annual Risk-Adjusted Rate	Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays				
					10%	20%	30%	40%	50%
Roger Mills	28	2,773	1,009	855	\$36,808	\$73,616	\$110,424	\$147,233	\$184,041
Rogers	498	69,259	719	701	\$520,038	\$1,040,077	\$1,560,116	\$2,080,155	\$2,600,194
Seminole	232	18,931	1,225	1,086	\$233,880	\$467,760	\$701,640	\$935,520	\$1,169,400
Sequoyah	105	32,549	322	301	\$85,268	\$170,536	\$255,804	\$341,072	\$426,340
Stephens	422	34,911	1,208	1,029	\$357,909	\$715,819	\$1,073,728	\$1,431,638	\$1,789,547
Texas	62	14,536	426	473	\$78,792	\$157,584	\$236,376	\$315,168	\$393,960
Tillman	84	5,786	1,451	1,274	\$63,459	\$126,919	\$190,379	\$253,839	\$317,299
Tulsa	4,692	458,419	1,023	1,039	\$4,740,970	\$9,481,940	\$14,222,911	\$18,963,881	\$23,704,852
Wagoner	515	57,855	890	907	\$471,271	\$942,542	\$1,413,814	\$1,885,085	\$2,356,356
Washington	278	39,852	697	566	\$328,769	\$657,538	\$986,308	\$1,315,077	\$1,643,847
Washita	106	8,723	1,215	1,032	\$103,487	\$206,974	\$310,461	\$413,948	\$517,435
Woods	41	6,849	598	556	\$52,582	\$105,164	\$157,746	\$210,329	\$262,911
Woodward	165	15,919	1,036	1,035	\$174,456	\$348,913	\$523,370	\$697,827	\$872,284



Map of Chronic Disease Summary Scores, Oklahoma, 2013



Rates are calculated per 100,000 people.

Counties with 10 or fewer hospital stays are not included to protect confidentiality of patients.

Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.



NOTES



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