

# MONAHRQ<sup>®</sup> Data Guide for Preventable Hospitalizations



*Focusing on Chronic Disease Conditions*



**MONAHRQ® Data Guide for Preventable Hospitalizations**

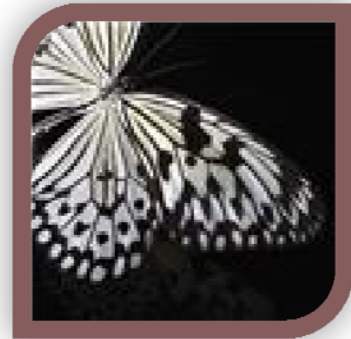
*Focusing on Chronic Disease Conditions*

**11/21/2012**



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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® uses hospital discharge data from inpatient stays to generate maps and tables in four distinct ways: Hospital Quality, Hospital Utilizations, Avoidable Hospital Stays, and County Rates for Hospital Use (Figure 1). This guide focuses on the Avoidable Hospital Stays section and concentrates on chronic disease conditions.



Figure 1. MONAHRQ® Reporting Website Information Sections

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. By identifying potential access, quality-of-care, or self-management problems, specific interventions can be planned, implemented, and evaluated. 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;
- Diabetes - uncontrolled, short-term complications, long-term complications, and amputations; and
- Heart conditions - angina, congestive heart failure, and hypertension.

## 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. More than \$18 million dollars in health care costs could have been saved with just a 10% drop in the nearly 30,000 preventable hospitalizations that occurred in Oklahoma in 2010. 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

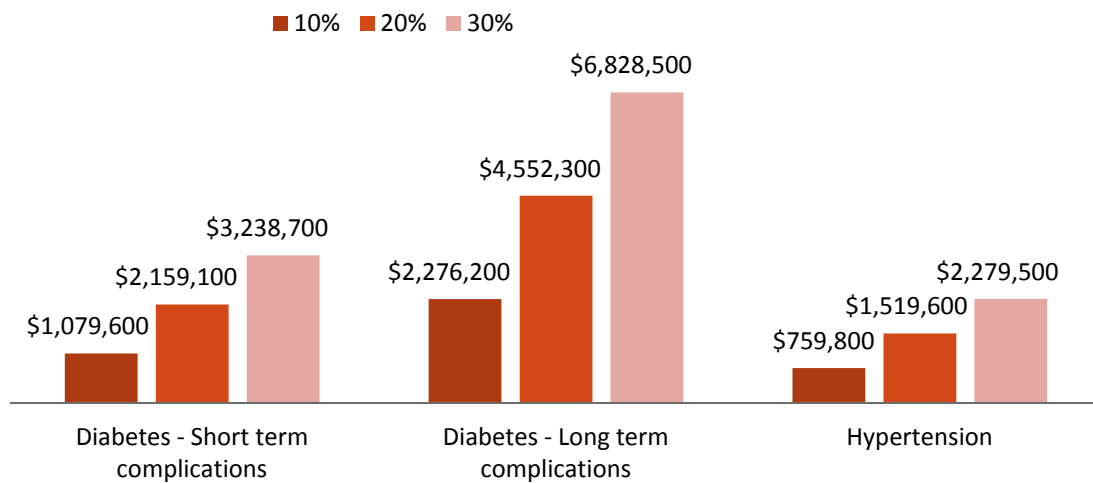


Figure 2. Estimated Cost Savings for Select Conditions, MONAHRQ® - Avoidable Hospital Stays, Oklahoma, 2010.



## 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.

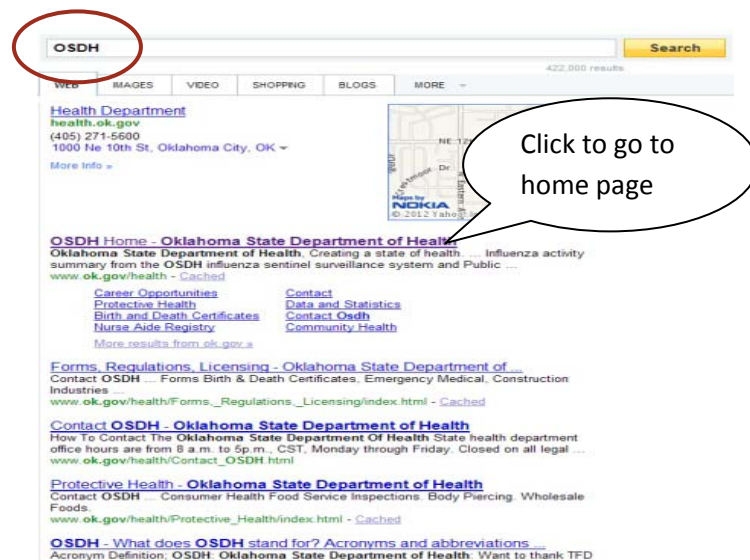


Figure 3. Search engine results for "OSDH" with identified link to OSDH Home page.

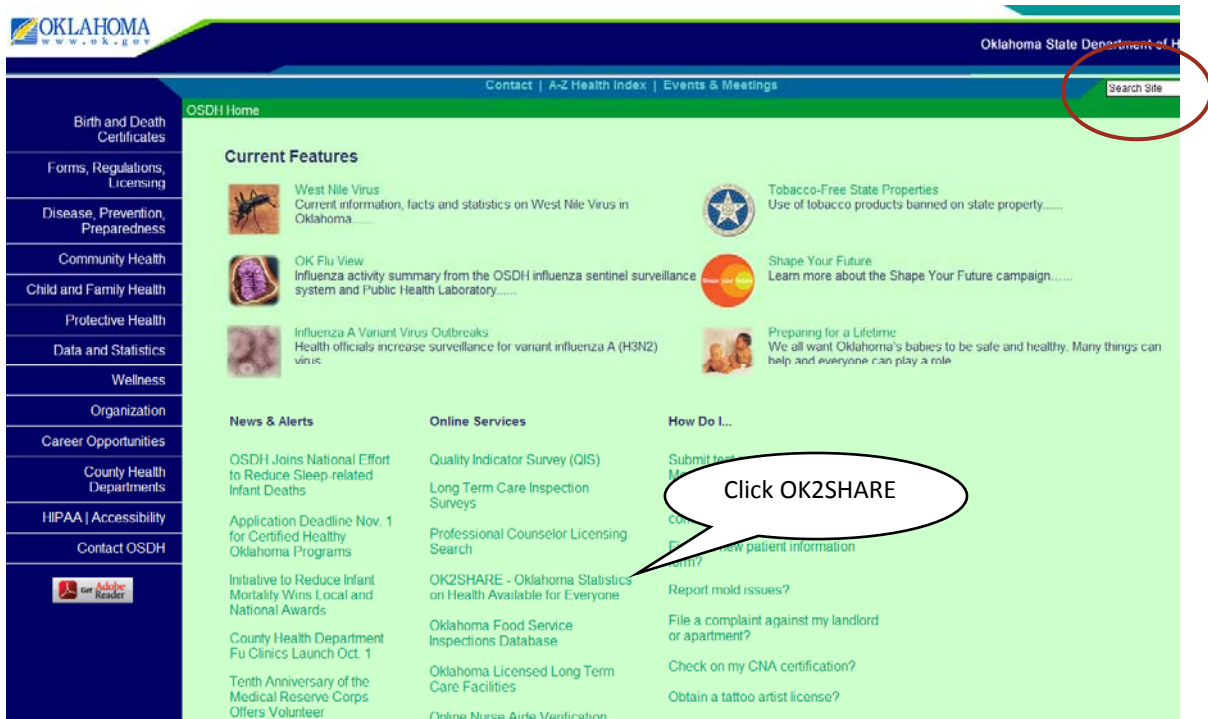


Figure 4: Two ways to get to OK2SHARE from [www.ok.health.gov](http://www.ok.health.gov) – Online Services link or search the site (circled).

**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.

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



**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.



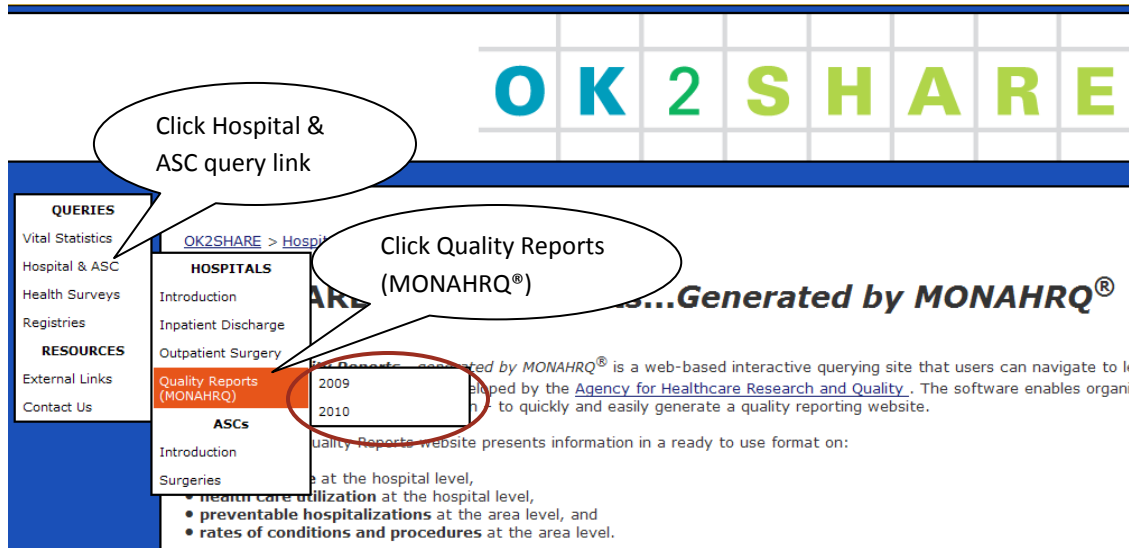


Figure 5: The QUERIES list opens the Hospitals drop-down list to select MONAHRQ®. Click the year for the data selection (circled).

In OK2SHARE, make a few more selections to access MONAHRQ®.

- 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.

### General Navigation

The main menu (see Figure 6) contains different navigation elements to help you move around the application. These include tab navigation across the top (circled) and a picture hyperlink to select the Avoidable Hospital Stays maps and tables.

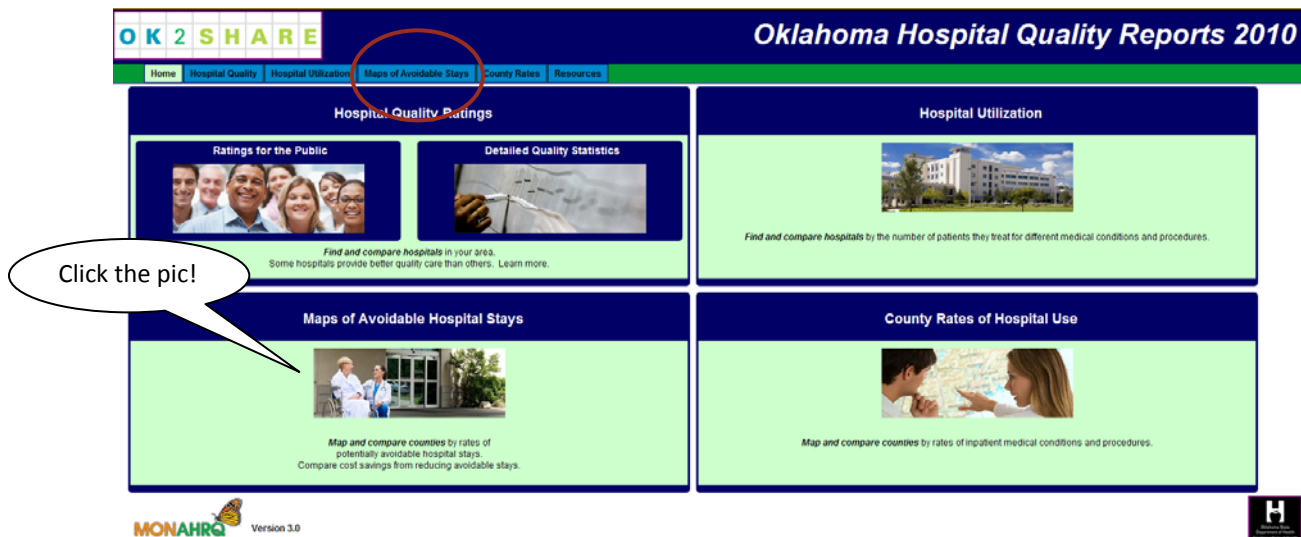


Figure 6: Main menu lists the four major components of MONAHRQ®. Click the picture or click the tab (circled) for Maps of Avoidable Stays.



For the 2009 and 2010 data, no Tribal Nation, Indian Health Service, or Veterans inpatient health care facilities are included in the numerators or rates. Therefore, rates may underestimate disease burden among American Indian and Veteran populations.

**Figure 7.** 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.

#### Generate a map for specific preventable hospitalization conditions.

- **Choose a health topic** (see Figure 7) by clicking the tab underneath the Maps of Avoidable Stays heading.
- Each health topic represents several health conditions. Click the button to **select the health condition** of interest located under the health topic tab.
- Once selections are made, click the **Get Report** button (circled) to generate a map for the selected health condition.



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.

*The health conditions are defined as Prevention Quality Indicators (PQI) by the Agency for Healthcare Research and Quality (AHRQ).*

*PQI measure the quality of community care, in other words, medical care or disease self-management outside of the hospital.*

*Data on preventable hospitalizations is based on where patients live, not on where hospitals are located.*

### Health Issue 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.

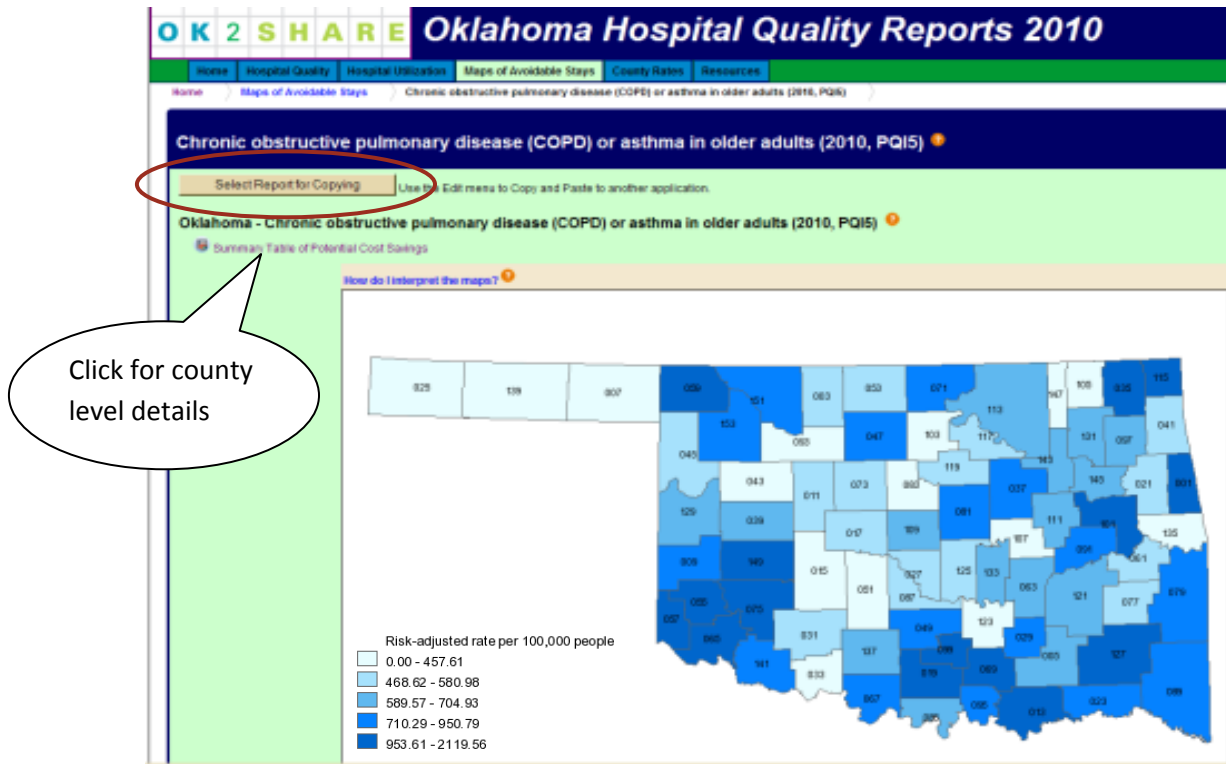


Figure 8. Generated map can be copied (circled). Click link to go to a detailed table that includes cost savings.

- 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. The county color is grey when there are not enough data to report a rate.
- Counties are labeled with numbers that represent the county names. **Scroll down the page to view a legend** that shows the county number next to the county name.

**You can copy and paste the map to another application.**

- 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** or other application and **click Paste**.

**To view the map data in a table format:**

- **Scroll down** to the bottom of the map page.
- In the bottom left corner, **click Select to access map data in Table Format**.

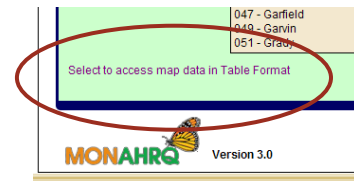


Figure 9. Table format link circled.

**Drill down to details.**

- **Click Summary Table of Potential Cost Savings** (see next section).

## Data Tables

A preventable hospital stay is one that might have been avoided with better medical care or self care 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.

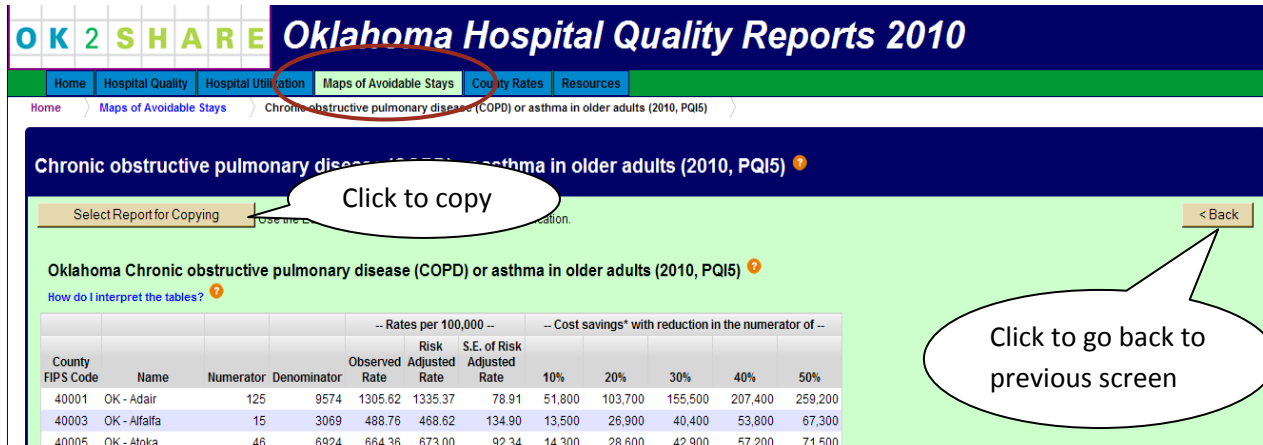


Figure 10. Table presents data on a selected health condition by county. Click the Back button to return to map. Click the tab (circled) to select a different health condition.

Information can be downloaded to Excel, Word, or other application. Table contains:

- **County FIPS Code:** The code that is used to label the counties on the state map.
- **Name:** The county of residence of the hospital discharges.
- **Numerator:** 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).
- **Denominator:** The number of county residents based on US Census Bureau data.
- **Observed rate:** The numerator divided by the denominator. This rate is unadjusted.
- **Risk adjusted rate:** Risk-adjustment is a statistical process that adjusts the rate based upon how sick the patient was before entering the hospital.
- **Potential cost savings:** 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.
- **“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.



Click the **Back** button to return to the map.

Click the **Maps of Avoidable Stays** (circled) to select another health topic and condition.

## 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.

**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 2009 and 2010 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.



## 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](mailto: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 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/>.



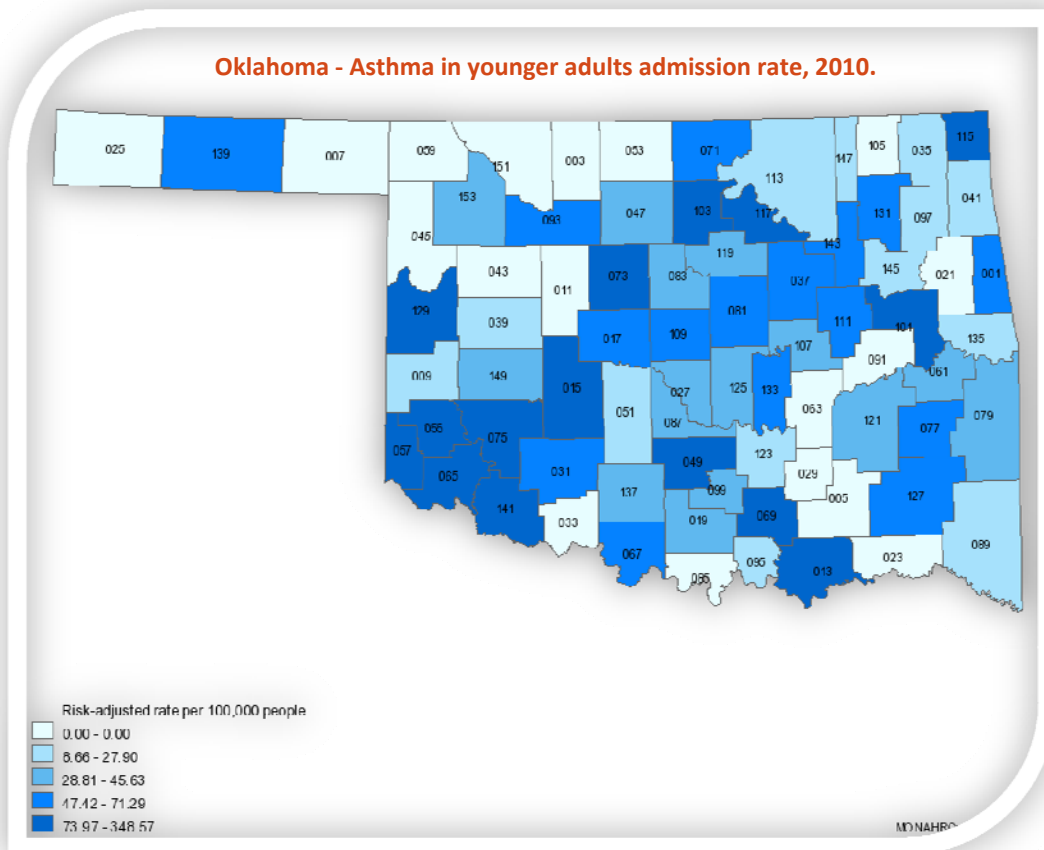
## Details on Health Conditions

The following section presents the state map, health condition coding specifics, and abbreviated summary table of potential cost savings for Oklahoma, 2010. The following tables present the county codes used to label the health condition maps. Counties with 10 or fewer discharges are not included in the tables to protect confidentiality of patients. Cost savings are based on charges that have been adjusted to costs, using hospital-specific cost-to-charge ratios.

**Table 1. County FIPS codes and County Names.**

001 - Adair	053 - Grant	105 - Nowata
003 - Alfalfa	055 - Greer	107 - Okfuskee
005 - Atoka	057 - Harmon	109 - Oklahoma
007 - Beaver	059 - Harper	111 - Okmulgee
009 - Beckham	061 - Haskell	113 - Osage
011 - Blaine	063 - Hughes	115 - Ottawa
013 - Bryan	065 - Jackson	117 - Pawnee
015 - Caddo	067 - Jefferson	119 - Payne
017 - Canadian	069 - Johnston	121 - Pittsburg
019 - Carter	071 - Kay	123 - Pontotoc
021 - Cherokee	073 - Kingfisher	125 - Pottawatomie
023 - Choctaw	075 - Kiowa	127 - Pushmataha
025 - Cimarron	077 - Latimer	129 - Roger Mills
027 - Cleveland	079 - Le Flore	131 - Rogers
029 - Coal	081 - Lincoln	133 - Seminole
031 - Comanche	083 - Logan	135 - Sequoyah
033 - Cotton	085 - Love	137 - Stephens
035 - Craig	087 - McClain	139 - Texas
037 - Creek	089 - McCurtain	141 - Tillman
039 - Custer	091 - McIntosh	143 - Tulsa
041 - Delaware	093 - Major	145 - Wagoner
043 - Dewey	095 - Marshall	147 - Washington
045 - Ellis	097 - Mayes	149 - Washita
047 - Garfield	099 - Murray	151 - Woods
049 - Garvin	101 - Muskogee	153 - Woodward
051 - Grady	103 - Noble	





### Asthma in Younger Adults Admission Rate – PQI #15

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.

#### ICD-9 Codes

- 493.00 Extrinsic asthma, unspecified
- 493.01 Extrinsic asthma with status asthmaticus
- 493.02 Extrinsic asthma with (acute) exacerbation
- 493.10 Intrinsic asthma, unspecified
- 493.11 Intrinsic asthma with status asthmaticus
- 493.12 Intrinsic asthma with (acute) exacerbation
- 493.20 Chronic obstructive asthma, unspecified
- 493.21 Chronic obstructive asthma with status asthmaticus
- 493.22 Chronic obstructive asthma with (acute) exacerbation
- 493.81 Exercise induced bronchospasm
- 493.82 Cough variant asthma
- 493.90 Asthma, unspecified type, unspecified
- 493.91 Asthma, unspecified type, with status asthmaticus
- 493.92 Asthma, unspecified type, with (acute) exacerbation

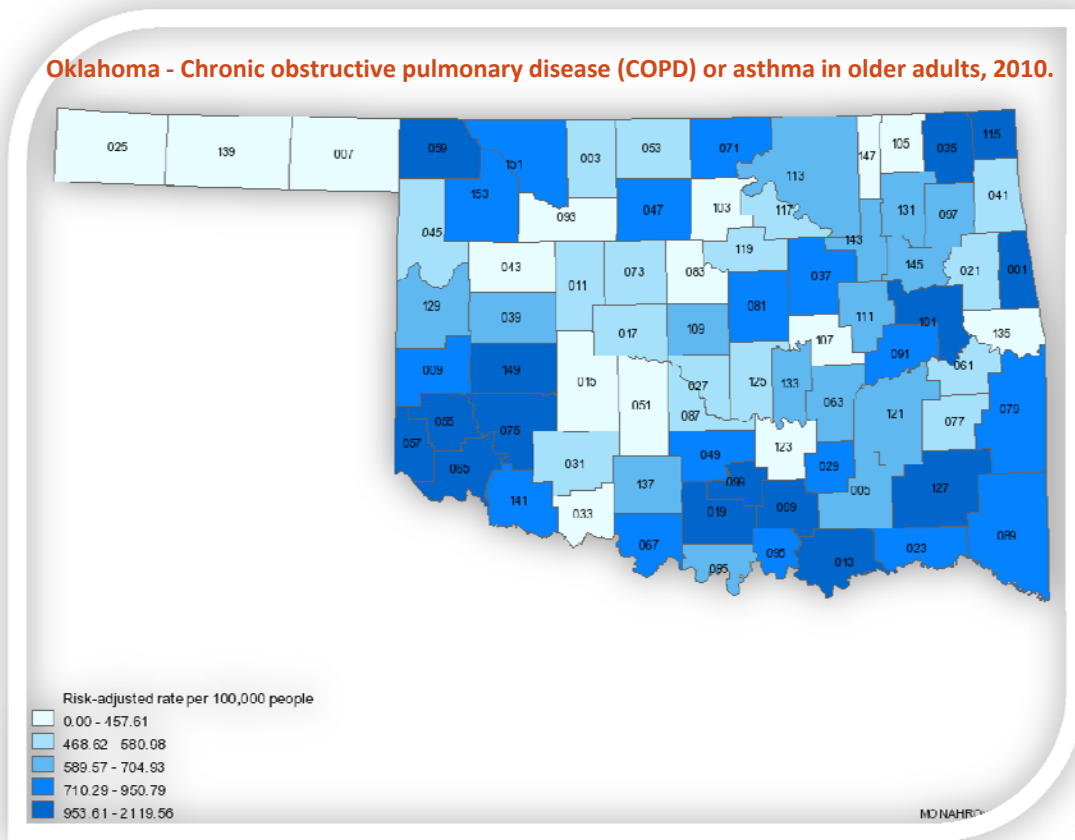


## Oklahoma - Asthma in younger adults admission rate (2010, PQI15)

County	Number of stays	Risk-adjusted rates per 100,000	Cost savings* with reduction in the number by %				
			10%	20%	30%	40%	50%
Bryan	11	87.41	\$3,800	\$7,700	\$11,500	\$15,400	\$19,200
Canadian	16	48.41	\$23,500	\$47,000	\$70,400	\$93,900	\$117,400
Cleveland	28	32.86	\$12,600	\$25,200	\$37,800	\$50,400	\$63,000
Comanche	18	50.95	\$5,800	\$11,700	\$17,500	\$23,300	\$29,100
Muskogee	21	105.57	\$8,300	\$16,600	\$24,900	\$33,100	\$41,400
Oklahoma	137	59.99	\$42,700	\$85,500	\$128,200	\$171,000	\$213,700
Rogers	16	68.17	\$5,500	\$10,900	\$16,400	\$21,900	\$27,300
Tulsa	92	49.51	\$37,500	\$74,900	\$112,400	\$149,900	\$187,400
State of Oklahoma	515	47.26	\$203,900	\$407,900	\$611,800	\$815,800	\$1,019,700

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 Rate – PQI #5**

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.

**ICD-9 Codes - COPD**

- 466.0 Acute bronchitis and secondary diagnosis of COPD
- 490 Bronchitis, not specified and COPD secondary diagnosis
- 491.0 Simple chronic bronchitis
- 491.1 Mucopurulent chronic bronchitis
- 491.20 Obstructive chronic bronchitis without exacerbation
- 491.21 Obstructive chronic bronchitis with exacerbation
- 491.8 Other chronic bronchitis
- 491.9 Unspecified chronic bronchitis
- 492.0 Emphysematous bleb
- 492.8 Emphysema, other
- 494. Bronchiectasis
- 494.0 Bronchiectasis without acute exacerbation
- 494.1 Bronchiectasis with acute exacerbation
- 496 Chronic airway obstruction, not elsewhere classified

**ICD-9 Codes - Asthma**

- 493.00 Extrinsic, unspecified
- 493.01 Extrinsic with status asthmaticus
- 493.02 Extrinsic with (acute) exacerbation
- 493.10 Intrinsic, unspecified
- 493.11 Intrinsic with status asthmaticus
- 493.12 Intrinsic with (acute) exacerbation
- 493.20 Chronic obstructive, unspecified
- 493.21 Chronic obstructive, status asthmaticus
- 493.22 Chronic obstructive, (acute) exacerbation
- 493.81 Exercise induced bronchospasm
- 493.82 Cough variant asthma
- 493.90 Unspecified type, unspecified
- 493.91 Unspecified type, status asthmaticus
- 493.92 Unspecified type, (acute) exacerbation

## Oklahoma - Chronic obstructive pulmonary disease or asthma in older adults (2010, PQI5)

County	Number of stays	Risk-adjusted rates per 100,000	Cost savings* with reduction in the number by %				
			10%	20%	30%	40%	50%
Adair	125	1335.37	\$51,800	\$103,700	\$155,500	\$207,400	\$259,200
Alfalfa	15	468.62	\$13,500	\$26,900	\$40,400	\$53,800	\$67,300
Atoka	46	673	\$14,300	\$28,600	\$42,900	\$57,200	\$71,500
Beckham	86	947.32	\$57,900	\$115,800	\$173,700	\$231,600	\$289,500
Blaine	31	539.6	\$32,700	\$65,400	\$98,000	\$130,700	\$163,400
Bryan	376	1924.32	\$167,800	\$335,600	\$503,400	\$671,200	\$838,900
Caddo	62	437.85	\$29,300	\$58,600	\$87,900	\$117,200	\$146,600
Canadian	232	511.66	\$196,300	\$392,500	\$588,800	\$785,000	\$981,300
Carter	233	974.4	\$159,900	\$319,900	\$479,800	\$639,700	\$799,700
Cherokee	101	515.74	\$65,300	\$130,700	\$196,000	\$261,300	\$326,700
Choctaw	71	870.56	\$35,500	\$71,000	\$106,500	\$142,000	\$177,500
Cleveland	528	580.98	\$390,100	\$780,200	\$1,170,400	\$1,560,500	\$1,950,600
Coal	28	937.35	\$10,900	\$21,800	\$32,700	\$43,600	\$54,500
Comanche	242	554.15	\$138,500	\$277,100	\$415,600	\$554,200	\$692,700
Cotton	12	366.27	\$5,200	\$10,400	\$15,600	\$20,900	\$26,100
Craig	82	960.21	\$50,100	\$100,100	\$150,200	\$200,300	\$250,300
Creek	336	950.79	\$189,400	\$378,800	\$568,200	\$757,700	\$947,100
Custer	71	613.84	\$41,000	\$82,000	\$123,000	\$163,900	\$204,900
Delaware	125	503.36	\$74,400	\$148,800	\$223,200	\$297,600	\$372,000
Dewey	12	434.14	\$8,100	\$16,200	\$24,300	\$32,400	\$40,500
Ellis	12	511.5	\$6,100	\$12,200	\$18,300	\$24,400	\$30,500
Garfield	222	756.03	\$197,900	\$395,700	\$593,600	\$791,500	\$989,300
Garvin	126	853.16	\$41,000	\$82,100	\$123,100	\$164,200	\$205,200
Grady	57	245.19	\$43,000	\$86,000	\$129,000	\$172,000	\$215,000
Grant	16	571.06	\$10,200	\$20,400	\$30,600	\$40,900	\$51,100
Greer	65	2119.56	\$50,000	\$100,000	\$150,000	\$200,000	\$250,000
Harmon	30	1970.25	\$12,000	\$23,900	\$35,900	\$47,800	\$59,800
Harper	26	1274.05	\$17,000	\$34,000	\$51,000	\$68,000	\$85,000
Haskell	31	474.28	\$9,800	\$19,600	\$29,400	\$39,300	\$49,100
Hughes	49	681.97	\$18,800	\$37,500	\$56,300	\$75,000	\$93,800
Jackson	119	1097.26	\$66,200	\$132,300	\$198,500	\$264,700	\$330,800
Jefferson	32	890.41	\$19,400	\$38,900	\$58,300	\$77,800	\$97,200
Johnston	70	1283.47	\$44,500	\$89,000	\$133,500	\$178,000	\$222,500
Kay	224	920.51	\$145,600	\$291,200	\$436,800	\$582,400	\$728,000
Kingfisher	35	482.56	\$10,900	\$21,800	\$32,700	\$43,600	\$54,500
Kiowa	65	1213.26	\$24,800	\$49,600	\$74,300	\$99,100	\$123,900
Latimer	30	539.53	\$9,100	\$18,300	\$27,400	\$36,500	\$45,700

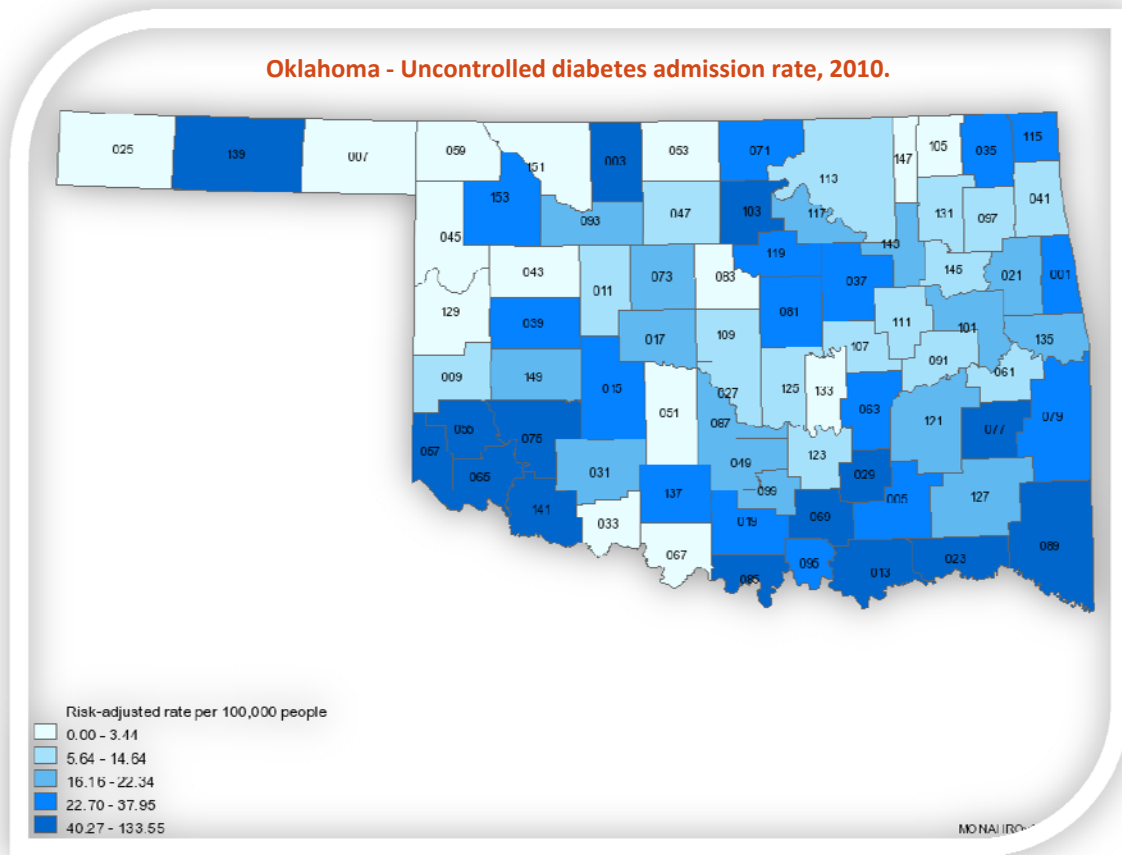
County	Number	Rate	10%	20%	30%	40%	50%
Le Flore	185	763.33	\$94,500	\$189,000	\$283,500	\$377,900	\$472,400
Lincoln	118	726.3	\$63,200	\$126,500	\$189,700	\$253,000	\$316,200
Logan	61	355.28	\$32,300	\$64,600	\$96,800	\$129,100	\$161,400
Love	34	684.17	\$36,100	\$72,100	\$108,200	\$144,300	\$180,300
McClain	76	485.58	\$47,400	\$94,700	\$142,100	\$189,400	\$236,800
McCurtain	131	807.38	\$66,600	\$133,200	\$199,800	\$266,400	\$333,000
McIntosh	92	710.29	\$86,600	\$173,300	\$259,900	\$346,500	\$433,100
Marshall	78	918.11	\$50,900	\$101,900	\$152,800	\$203,700	\$254,600
Mayes	145	702.39	\$89,600	\$179,200	\$268,900	\$358,500	\$448,100
Murray	67	953.61	\$55,500	\$111,000	\$166,500	\$222,000	\$277,500
Muskogee	431	1223.36	\$373,500	\$747,000	\$1,120,600	\$1,494,100	\$1,867,600
Noble	26	447.87	\$15,900	\$31,800	\$47,700	\$63,600	\$79,500
Nowata	24	413.4	\$20,000	\$40,100	\$60,100	\$80,100	\$100,200
Okfuskee	27	457.61	\$10,000	\$20,100	\$30,100	\$40,200	\$50,200
Oklahoma	1845	602.38	\$1,016,800	\$2,033,700	\$3,050,500	\$4,067,400	\$5,084,200
Okmulgee	124	633.33	\$69,000	\$138,100	\$207,100	\$276,100	\$345,200
Osage	135	625.84	\$74,700	\$149,500	\$224,200	\$298,900	\$373,700
Ottawa	173	1038.72	\$113,000	\$226,100	\$339,100	\$452,100	\$565,100
Pawnee	50	566.2	\$22,300	\$44,500	\$66,800	\$89,000	\$111,300
Payne	166	558.57	\$100,600	\$201,200	\$301,800	\$402,400	\$503,000
Pittsburg	144	592.24	\$79,000	\$158,100	\$237,100	\$316,200	\$395,200
Pontotoc	77	446.86	\$50,800	\$101,600	\$152,400	\$203,200	\$254,000
Pottawatomie	192	577.39	\$101,400	\$202,800	\$304,200	\$405,600	\$507,000
Pushmataha	81	1201.13	\$30,800	\$61,700	\$92,500	\$123,400	\$154,200
Roger Mills	13	684.55	\$3,200	\$6,400	\$9,600	\$12,800	\$16,100
Rogers	276	704.93	\$166,700	\$333,400	\$500,100	\$666,800	\$833,600
Seminole	75	594.86	\$15,300	\$30,500	\$45,800	\$61,100	\$76,300
Sequoyah	94	455.03	\$41,200	\$82,500	\$123,700	\$165,000	\$206,200
Stephens	141	598.38	\$74,900	\$149,800	\$224,800	\$299,700	\$374,600
Texas	32	444.88	\$25,700	\$51,400	\$77,000	\$102,700	\$128,400
Tillman	38	860.94	\$13,300	\$26,700	\$40,000	\$53,300	\$66,600
Tulsa	1511	589.57	\$807,800	\$1,615,600	\$2,423,400	\$3,231,300	\$4,039,100
Wagoner	193	673.35	\$136,700	\$273,500	\$410,200	\$547,000	\$683,700
Washington	35	124.41	\$25,100	\$50,100	\$75,200	\$100,200	\$125,300
Washita	63	985.51	\$44,500	\$88,900	\$133,400	\$177,900	\$222,300
Woods	37	857.88	\$23,400	\$46,800	\$70,200	\$93,600	\$117,000
Woodward	67	749.07	\$37,200	\$74,300	\$111,500	\$148,700	\$185,800
State of Oklahoma	11094	662.15	\$6,581,700	\$13,163,300	\$19,745,000	\$26,326,700	\$32,908,300

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.

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**Uncontrolled Diabetes Admission Rate - PQI #14**

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 ICD-9 Codes

- 250.02 Diabetes Mellitus without mention of complication, type II or unspecified type, uncontrolled
- 250.03 Diabetes Mellitus without mention of complication, type I, uncontrolled

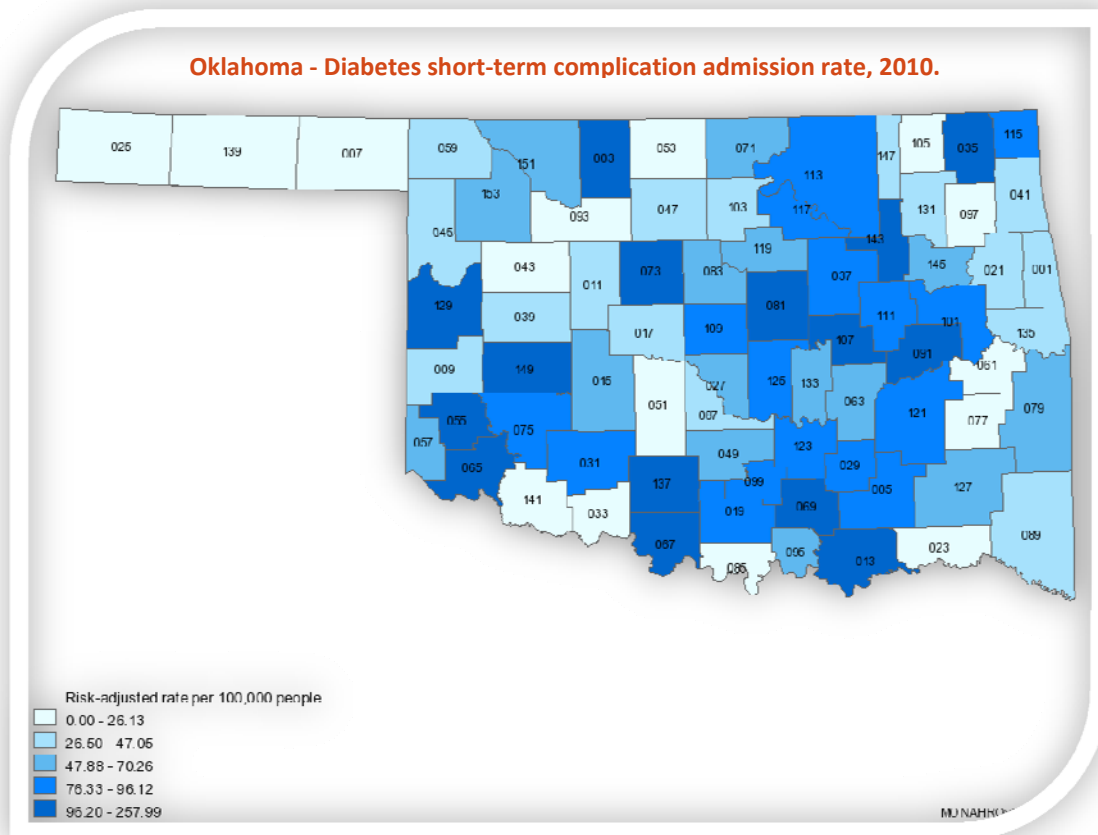


## Oklahoma - Uncontrolled diabetes admission rate (2010, PQI14)

County	Number of stays	Risk-adjusted rate per 100,000	Cost savings* with reduction in the number by %				
			10%	20%	30%	40%	50%
Bryan	24	78.01	\$5,500	\$11,100	\$16,600	\$22,200	\$27,700
Canadian	17	21.38	\$11,400	\$22,700	\$34,100	\$45,400	\$56,800
Choctaw	16	133.55	\$5,500	\$11,100	\$16,600	\$22,100	\$27,600
Cleveland	20	11.92	\$7,900	\$15,800	\$23,700	\$31,600	\$39,500
Comanche	13	17.12	\$6,900	\$13,800	\$20,700	\$27,500	\$34,400
Creek	19	34.37	\$7,500	\$15,000	\$22,500	\$30,100	\$37,600
Le Flore	12	31.41	\$3,600	\$7,200	\$10,900	\$14,500	\$18,100
McCurtain	12	47.25	\$5,100	\$10,200	\$15,300	\$20,400	\$25,500
Muskogee	12	21.9	\$5,800	\$11,700	\$17,500	\$23,400	\$29,200
Oklahoma	75	14.64	\$25,600	\$51,100	\$76,700	\$102,200	\$127,800
Payne	13	24.94	\$5,700	\$11,500	\$17,200	\$23,000	\$28,700
Tulsa	82	18.95	\$28,000	\$56,000	\$83,900	\$111,900	\$139,900
State of Oklahoma	535	19.59	\$199,300	\$398,500	\$597,800	\$797,000	\$996,300

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 Rate - PQI #1

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).

#### ICD-9 Codes

- 250.10 Diabetes with ketoacidosis, type II or unspecified type, not stated as uncontrolled
- 250.11 Diabetes with ketoacidosis, type I, not stated as uncontrolled
- 250.12 Diabetes with ketoacidosis, type II or unspecified type, uncontrolled
- 250.13 Diabetes with ketoacidosis, type I, uncontrolled
- 250.20 Diabetes with hyperosmolarity, type II or unspecified type, not stated as uncontrolled
- 250.21 Diabetes with hyperosmolarity, type I, not stated as uncontrolled
- 250.22 Diabetes with hyperosmolarity, type II or unspecified type, uncontrolled
- 250.23 Diabetes with hyperosmolarity, type I, uncontrolled
- 250.30 Diabetes with other coma, type II or unspecified type, not stated as uncontrolled
- 250.31 Diabetes with other coma, type I, not stated as uncontrolled
- 250.32 Diabetes with other coma, type II or unspecified type, uncontrolled
- 250.33 Diabetes with other coma, type I, uncontrolled

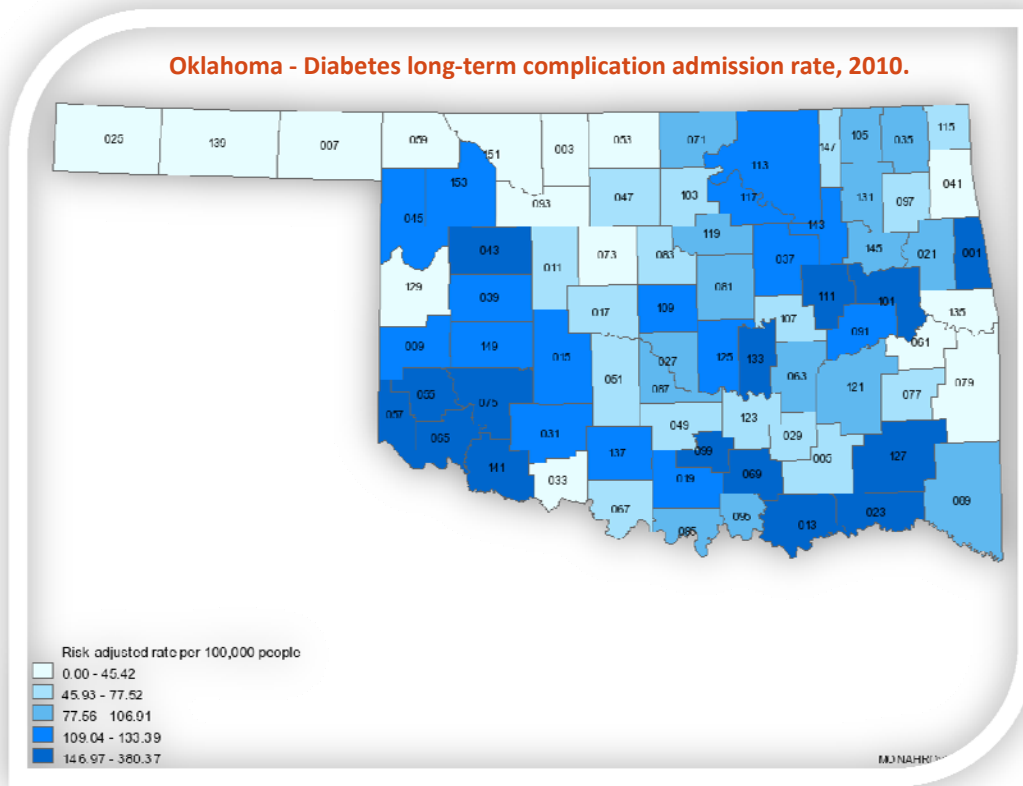


## Oklahoma - Diabetes short-term complication admission rate (2010, PQ11)

County	Number of stays	Risk-adjusted rate per 100,000	Cost savings* with reduction in the number by %				
			10%	20%	30%	40%	50%
Bryan	34	108.24	\$13,500	\$27,000	\$40,500	\$54,000	\$67,500
Caddo	16	70.26	\$10,800	\$21,600	\$32,300	\$43,100	\$53,900
Canadian	28	33.91	\$19,000	\$38,100	\$57,100	\$76,100	\$95,200
Carter	30	85.11	\$19,800	\$39,500	\$59,300	\$79,000	\$98,800
Cherokee	17	45.29	\$7,300	\$14,600	\$22,000	\$29,300	\$36,600
Cleveland	100	47.88	\$50,700	\$101,400	\$152,100	\$202,900	\$253,600
Comanche	77	87.16	\$57,200	\$114,300	\$171,500	\$228,700	\$285,900
Craig	12	105.42	\$4,300	\$8,700	\$13,000	\$17,300	\$21,600
Creek	49	95.09	\$28,000	\$56,100	\$84,100	\$112,200	\$140,200
Garfield	20	45.8	\$14,500	\$29,000	\$43,500	\$57,900	\$72,400
Garvin	13	65.86	\$3,700	\$7,400	\$11,200	\$14,900	\$18,600
Greer	12	257.99	\$3,900	\$7,900	\$11,800	\$15,700	\$19,600
Jackson	22	115.94	\$5,700	\$11,400	\$17,100	\$22,800	\$28,500
Kay	23	69.4	\$9,900	\$19,900	\$29,800	\$39,700	\$49,700
Le Flore	18	48.79	\$9,600	\$19,200	\$28,700	\$38,300	\$47,900
Lincoln	33	139.74	\$17,900	\$35,800	\$53,800	\$71,700	\$89,600
Logan	17	55.23	\$6,800	\$13,500	\$20,300	\$27,000	\$33,800
McIntosh	20	139.51	\$13,000	\$26,100	\$39,100	\$52,200	\$65,200
Muskogee	49	93.14	\$29,100	\$58,300	\$87,400	\$116,500	\$145,700
Okfuskee	11	134.38	\$3,600	\$7,100	\$10,700	\$14,200	\$17,800
Oklahoma	451	83.14	\$197,800	\$395,700	\$593,500	\$791,300	\$989,200
Okmulgee	28	96.09	\$13,000	\$25,900	\$38,900	\$51,800	\$64,800
Osage	28	81.14	\$17,200	\$34,500	\$51,700	\$69,000	\$86,200
Ottawa	18	76.33	\$11,600	\$23,200	\$34,800	\$46,400	\$58,100
Pawnee	11	91.89	\$5,500	\$11,000	\$16,500	\$22,000	\$27,600
Payne	40	53.2	\$17,400	\$34,800	\$52,200	\$69,600	\$87,000
Pittsburg	28	81.77	\$15,900	\$31,800	\$47,700	\$63,600	\$79,500
Pontotoc	25	86.17	\$11,700	\$23,500	\$35,200	\$47,000	\$58,700
Pottawatomie	51	96.12	\$23,100	\$46,100	\$69,200	\$92,300	\$115,300
Rogers	30	47.05	\$24,000	\$47,900	\$71,900	\$95,900	\$119,800
Stephens	41	128.66	\$15,600	\$31,300	\$46,900	\$62,600	\$78,200
Tulsa	465	102.45	\$265,900	\$531,700	\$797,600	\$1,063,500	\$1,329,300
Wagoner	30	56.36	\$18,100	\$36,200	\$54,300	\$72,400	\$90,500
Washington	13	34.53	\$11,000	\$22,000	\$33,000	\$44,000	\$55,000
Washita	11	127.81	\$5,900	\$11,900	\$17,800	\$23,700	\$29,700
State of Oklahoma	2063	73.42	\$1,079,600	\$2,159,100	\$3,238,700	\$4,318,300	\$5,397,900

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 Rate - PQI #3

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).

**ICD-9 Codes - Diabetes**

<p>250.40 Renal manifestations, type II or unspecified., not stated as uncontrolled</p> <p>250.41 Renal manifestations, type I, not stated as uncontrolled</p> <p>250.42 Renal manifestations, type II or unspecified type, uncontrolled</p> <p>250.43 Renal manifestations, type I, uncontrolled</p> <p>250.50 Ophthalmic manifestations, type II or unspecified type, not stated as uncontrolled</p> <p>250.51 Ophthalmic manifestations, type I, not stated as uncontrolled</p> <p>250.52 Ophthalmic manifestations, type II or unspecified type, uncontrolled</p> <p>250.53 Ophthalmic manifestations, type I, uncontrolled</p> <p>250.60 Neurological manifestations, type II or unspecified type, not stated as uncontrolled</p> <p>250.61 Neurological manifestations, type I, not stated as uncontrolled</p> <p>250.62 Neurological manifestations, type II or unspecified type, uncontrolled</p> <p>250.63 Neurological manifestations, type I, uncontrolled</p>	<p>250.70 Peripheral circulatory disorders, type II or unspecified type, not stated as uncontrolled</p> <p>250.71 Peripheral circulatory disorders, type I, not stated as uncontrolled</p> <p>250.72 Peripheral circulatory disorders, type II or unspecified type, uncontrolled</p> <p>250.73 Peripheral circulatory disorders, type I, uncontrolled</p> <p>250.80 Other specified manifestations, type II or unspecified type, not stated as uncontrolled</p> <p>250.81 Other specified manifestations, type I, not stated as uncontrolled</p> <p>250.82 Other specified manifestations, type II or unspecified type, uncontrolled</p> <p>250.83 Other specified manifestations, type I, uncontrolled</p> <p>250.90 Unspecified complications, type II or unspecified type, not stated as uncontrolled</p> <p>250.91 Unspecified complications, type I, not stated as uncontrolled</p> <p>250.92 Unspecified complications, type II or unspecified type, uncontrolled</p> <p>250.93 Unspecified complications, type I, uncontrolled</p>
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## Oklahoma - Diabetes long-term complication admission rate (2010, PQI3)

County	Number of stays	Risk-adjusted rate per 100,000	Cost savings* with reduction in the number by %				
			10%	20%	30%	40%	50%
Adair	44	286.01	\$19,400	\$38,800	\$58,200	\$77,500	\$96,900
Beckham	18	119.98	\$12,800	\$25,500	\$38,300	\$51,000	\$63,800
Bryan	62	198.44	\$24,300	\$48,600	\$72,900	\$97,200	\$121,400
Caddo	29	126.53	\$15,000	\$30,000	\$45,100	\$60,100	\$75,100
Canadian	52	67.2	\$35,200	\$70,400	\$105,600	\$140,800	\$176,000
Carter	42	110.71	\$52,700	\$105,300	\$158,000	\$210,700	\$263,300
Cherokee	29	91.07	\$28,400	\$56,700	\$85,100	\$113,500	\$141,800
Choctaw	25	200.12	\$16,200	\$32,400	\$48,700	\$64,900	\$81,100
Cleveland	130	82.1	\$133,800	\$267,600	\$401,300	\$535,100	\$668,900
Comanche	84	114.82	\$60,600	\$121,200	\$181,700	\$242,300	\$302,900
Craig	11	83.06	\$7,900	\$15,900	\$23,800	\$31,800	\$39,700
Creek	75	133.27	\$65,200	\$130,500	\$195,700	\$261,000	\$326,200
Custer	23	125.38	\$13,300	\$26,600	\$39,900	\$53,200	\$66,500
Delaware	17	45.2	\$9,100	\$18,200	\$27,300	\$36,300	\$45,400
Garfield	27	58.46	\$15,300	\$30,500	\$45,800	\$61,100	\$76,400
Garvin	17	74.62	\$7,900	\$15,700	\$23,600	\$31,500	\$39,300
Grady	26	67.65	\$16,100	\$32,300	\$48,400	\$64,600	\$80,700
Greer	13	266.19	\$8,000	\$16,100	\$24,100	\$32,100	\$40,200
Hughes	12	105.44	\$8,100	\$16,100	\$24,200	\$32,200	\$40,300
Jackson	38	212.89	\$21,700	\$43,400	\$65,200	\$86,900	\$108,600
Johnston	17	199.98	\$11,200	\$22,400	\$33,600	\$44,700	\$55,900
Kay	39	103.54	\$19,600	\$39,100	\$58,700	\$78,200	\$97,800
Kiowa	23	282.27	\$11,900	\$23,800	\$35,700	\$47,600	\$59,500
Le Flore	13	33.52	\$8,500	\$17,000	\$25,500	\$34,100	\$42,600
Lincoln	21	80.94	\$8,700	\$17,500	\$26,200	\$35,000	\$43,700
Logan	18	63.11	\$9,200	\$18,500	\$27,700	\$36,900	\$46,200
McClain	22	86.27	\$19,800	\$39,700	\$59,500	\$79,300	\$99,200
McCurtain	27	104.75	\$15,600	\$31,200	\$46,800	\$62,400	\$78,000
McIntosh	24	125.28	\$22,500	\$44,900	\$67,400	\$89,900	\$112,300
Marshall	12	92.43	\$4,700	\$9,500	\$14,200	\$19,000	\$23,700
Mayes	22	67.61	\$13,600	\$27,300	\$40,900	\$54,500	\$68,100
Murray	16	146.97	\$14,000	\$27,900	\$41,900	\$55,800	\$69,800
Muskogee	99	177.57	\$108,100	\$216,300	\$324,400	\$432,600	\$540,700
Oklahoma	616	121.9	\$434,700	\$869,400	\$1,304,200	\$1,738,900	\$2,173,600
Okmulgee	63	204.09	\$65,200	\$130,400	\$195,600	\$260,800	\$325,900
Osage	44	123.75	\$46,700	\$93,400	\$140,000	\$186,700	\$233,400

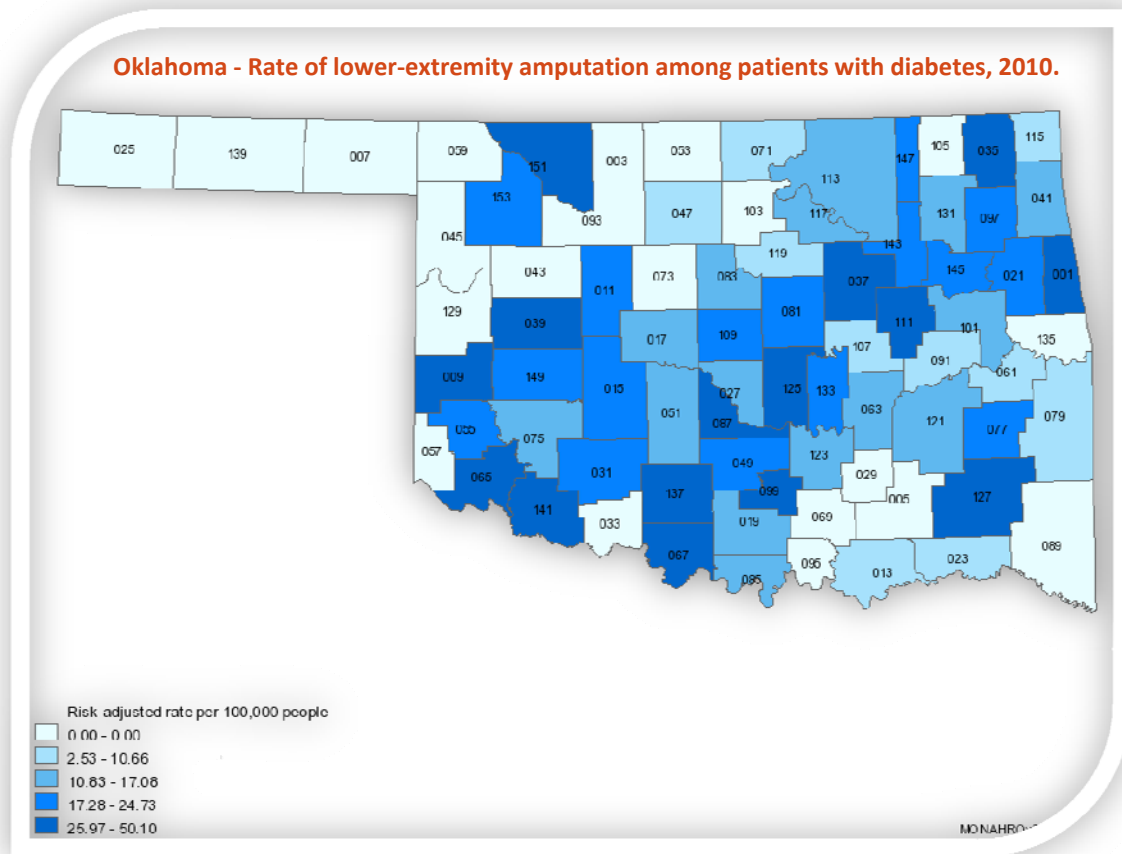
County	Number	Rate	10%	20%	30%	40%	50%
Ottawa	20	77.52	\$15,400	\$30,700	\$46,100	\$61,500	\$76,800
Pawnee	18	129.17	\$14,200	\$28,500	\$42,700	\$56,900	\$71,200
Payne	43	86.93	\$18,600	\$37,300	\$55,900	\$74,500	\$93,200
Pittsburg	39	102.82	\$35,100	\$70,100	\$105,200	\$140,200	\$175,300
Pontotoc	18	65.2	\$11,800	\$23,600	\$35,300	\$47,100	\$58,900
Pottawatomie	65	121.86	\$47,600	\$95,100	\$142,700	\$190,300	\$237,800
Pushmataha	17	165.3	\$8,500	\$16,900	\$25,400	\$33,800	\$42,300
Rogers	51	79.01	\$36,800	\$73,500	\$110,300	\$147,100	\$183,900
Seminole	31	158.37	\$16,700	\$33,500	\$50,200	\$67,000	\$83,700
Stephens	47	128.36	\$31,300	\$62,700	\$94,000	\$125,400	\$156,700
Tillman	12	179.89	\$12,500	\$25,000	\$37,400	\$49,900	\$62,400
Tulsa	567	133.39	\$467,200	\$934,300	\$1,401,500	\$1,868,700	\$2,335,800
Wagoner	53	106.91	\$63,600	\$127,300	\$190,900	\$254,600	\$318,200
Washington	25	57.79	\$15,500	\$31,100	\$46,600	\$62,100	\$77,600
Washita	12	122.08	\$6,900	\$13,800	\$20,700	\$27,600	\$34,500
Woodward	16	109.04	\$12,100	\$24,100	\$36,200	\$48,300	\$60,300
State of Oklahoma	2984	109.48	2,276,200	4,552,300	6,828,500	9,104,700	11,380,800

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.

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### Rate of Lower-Extremity Amputation Among Patients with Diabetes - PQI #16

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.

#### ICD-9 Procedure Codes

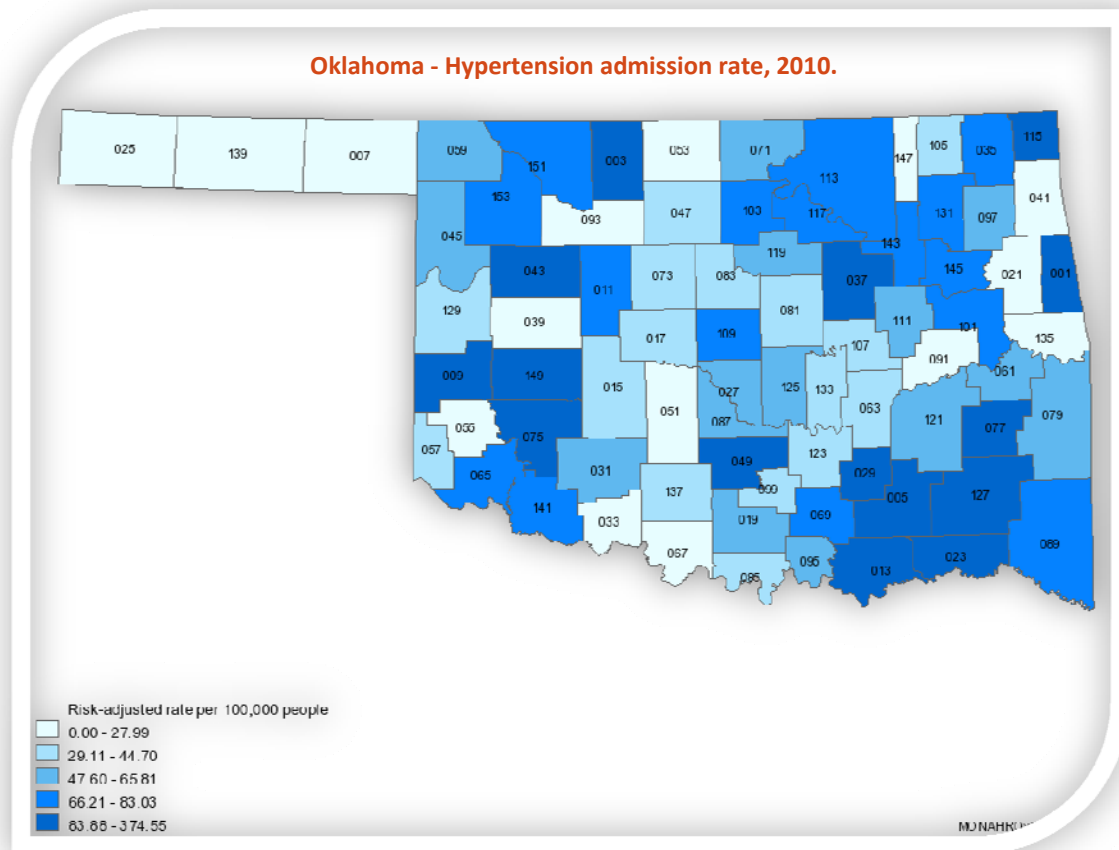
- |       |   |
|-------|---|
| 84.10 | Lower limb amputation, not otherwise specified  |
| 84.11 | Toe amputation                                  |
| 84.12 | Amputation through foot                         |
| 84.13 | Disarticulation of ankle                        |
| 84.14 | Amputation through malleoli of tibia and fibula |
| 84.15 | Below knee amputation, other                    |
| 84.16 | Disarticulation of knee                         |
| 84.17 | Above knee amputation                           |
| 84.18 | Disarticulation of hip                          |
| 84.19 | Hindquarter (abdominopelvic) amputation         |

## Oklahoma - Rate of lower-extremity amputation among patients with diabetes (2010, PQI16)

County	Number of stays	Risk-adjusted rate per 100,000	Cost savings* with reduction in the number by %				
			10%	20%	30%	40%	50%
Cleveland	20	13.02	\$66,100	\$132,300	\$198,400	\$264,500	\$330,700
Comanche	13	18.18	\$18,600	\$37,100	\$55,700	\$74,200	\$92,800
Creek	18	31.24	\$49,000	\$98,000	\$147,100	\$196,100	\$245,100
Oklahoma	100	20.15	\$182,200	\$364,400	\$546,700	\$728,900	\$911,100
Okmulgee	13	41.27	\$16,000	\$32,100	\$48,100	\$64,100	\$80,100
Pottawatomie	14	26.01	\$26,700	\$53,400	\$80,200	\$106,900	\$133,600
Stephens	19	50.1	\$24,800	\$49,600	\$74,400	\$99,100	\$123,900
Tulsa	88	21.09	\$184,400	\$368,800	\$553,300	\$737,700	\$922,100
State of Oklahoma	480	17.55	\$896,600	\$1,793,200	\$2,689,800	\$3,586,400	\$4,482,900

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 Rate - PQI #7

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).

#### ICD-9 Codes

- 401.0 Hypertension, malignant essential
- 401.9 Hypertension, unspecified essential
- 402.00 Malignant hypertensive heart disease without heart failure
- 402.10 Benign hypertensive heart disease without heart failure
- 402.90 Unspecified hypertensive heart disease without heart failure
- 403.00 Malignant hypertensive chronic kidney disease, stages I-IV, or unspecified
- 403.10 Benign hypertensive chronic kidney disease, stages I-IV, or unspecified
- 403.90 Unspecified hypertensive chronic kidney disease, stages I-IV, or unspecified
- 404.00 Hypertensive heart and chronic kidney disease, malignant, without heart failure and with kidney disease stage I-IV, or unspecified
- 404.10 Hypertensive heart and chronic kidney disease, benign, without heart failure and with kidney disease stage I-IV, or unspecified
- 404.90 Hypertensive heart and chronic kidney disease, not specified, without heart failure and with kidney disease stage I-IV, or unspecified

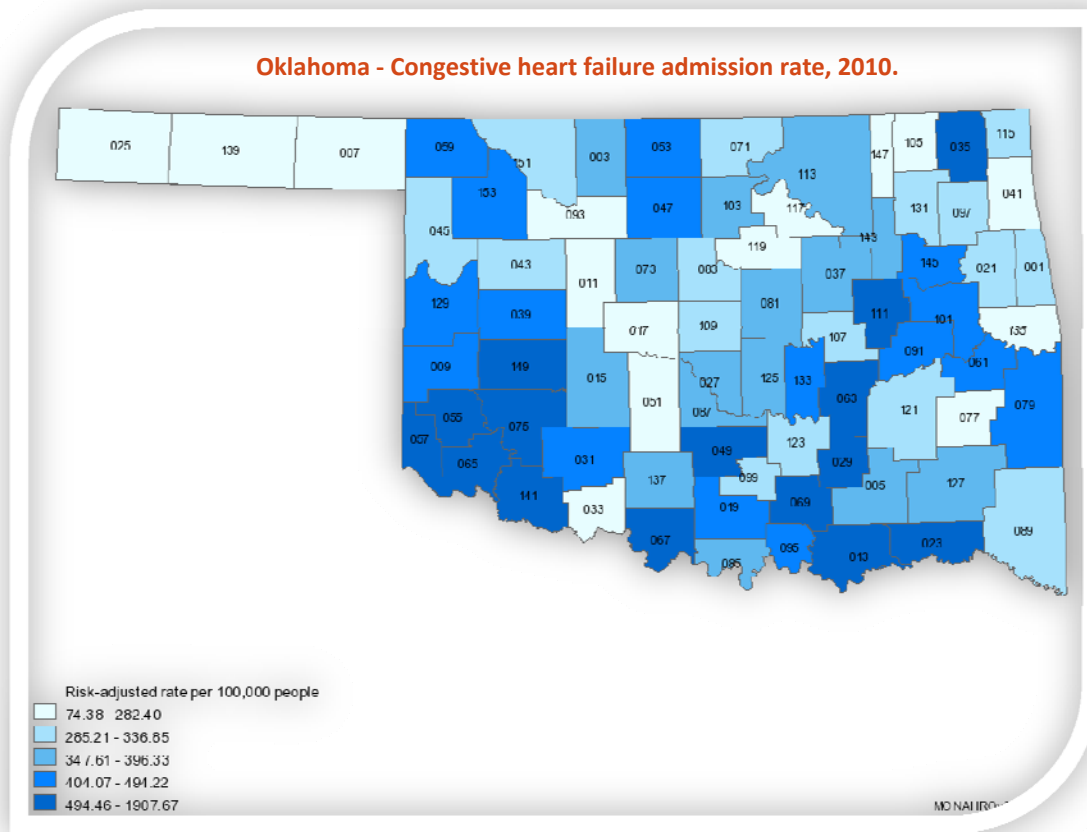


## Oklahoma - Hypertension admission rate (2010, PQI7)

County	Number of stays	Risk-adjusted rate per 100,000	Cost savings* with reduction in the number by %				
			10%	20%	30%	40%	50%
Adair	25	163.83	\$7,500	\$15,000	\$22,500	\$30,000	\$37,500
Atoka	11	98.47	\$1,700	\$3,400	\$5,200	\$6,900	\$8,600
Beckham	18	119.96	\$9,100	\$18,300	\$27,400	\$36,600	\$45,700
Bryan	54	175.17	\$14,800	\$29,600	\$44,400	\$59,200	\$74,000
Canadian	34	44.7	\$18,800	\$37,600	\$56,500	\$75,300	\$94,100
Carter	22	58.12	\$8,400	\$16,700	\$25,100	\$33,500	\$41,900
Choctaw	14	111.75	\$4,600	\$9,200	\$13,800	\$18,500	\$23,100
Cleveland	77	49.95	\$33,300	\$66,500	\$99,800	\$133,100	\$166,300
Comanche	41	56.54	\$17,800	\$35,600	\$53,400	\$71,100	\$88,900
Creek	62	111.62	\$23,500	\$47,000	\$70,400	\$93,900	\$117,400
Garfield	17	36.71	\$11,400	\$22,800	\$34,200	\$45,500	\$56,900
Garvin	22	96.27	\$4,400	\$8,800	\$13,200	\$17,700	\$22,100
Jackson	12	67.57	\$4,400	\$8,900	\$13,300	\$17,700	\$22,100
Kay	18	47.6	\$7,100	\$14,100	\$21,200	\$28,300	\$35,300
Kiowa	31	374.55	\$8,700	\$17,400	\$26,100	\$34,700	\$43,400
Le Flore	23	60.19	\$7,500	\$15,100	\$22,600	\$30,100	\$37,700
McClain	12	48.33	\$3,600	\$7,200	\$10,700	\$14,300	\$17,900
McCurtain	19	74.13	\$11,000	\$22,000	\$32,900	\$43,900	\$54,900
Mayes	20	62.76	\$11,300	\$22,600	\$33,900	\$45,200	\$56,500
Muskogee	39	69.48	\$22,600	\$45,100	\$67,700	\$90,300	\$112,900
Oklahoma	375	74.07	\$166,600	\$333,200	\$499,900	\$666,500	\$833,100
Okmulgee	17	55.33	\$6,900	\$13,800	\$20,600	\$27,500	\$34,400
Osage	26	74.9	\$16,100	\$32,200	\$48,400	\$64,500	\$80,600
Ottawa	25	97.32	\$10,200	\$20,400	\$30,600	\$40,800	\$50,900
Pawnee	11	80.9	\$7,500	\$15,000	\$22,500	\$30,000	\$37,500
Payne	32	65.63	\$18,600	\$37,100	\$55,700	\$74,200	\$92,800
Pittsburg	21	55.6	\$9,300	\$18,600	\$27,900	\$37,100	\$46,400
Pottawatomie	29	55.02	\$10,200	\$20,300	\$30,500	\$40,600	\$50,800
Pushmataha	11	108.08	\$2,700	\$5,300	\$8,000	\$10,700	\$13,400
Rogers	42	66.9	\$19,700	\$39,300	\$59,000	\$78,700	\$98,300
Stephens	15	41.41	\$7,500	\$14,900	\$22,400	\$29,900	\$37,300
Tulsa	317	74.33	\$145,600	\$291,200	\$436,800	\$582,400	\$728,000
Wagoner	36	75.32	\$16,800	\$33,600	\$50,400	\$67,200	\$84,100
Washington	11	25.51	\$5,600	\$11,100	\$16,700	\$22,200	\$27,800
Washita	12	120.33	\$4,900	\$9,700	\$14,600	\$19,400	\$24,300
Woodward	11	75.39	\$5,500	\$10,900	\$16,400	\$21,800	\$27,300
State of Oklahoma	1755	64.87	\$759,800	\$1,519,600	\$2,279,500	\$3,039,300	\$3,799,100

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 Rate - PQI #8

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

#### ICD-9 Codes

- 398.91 Rheumatic heart failure (congestive)
- 428.0 Congestive heart failure, unspecified
- 428.1 Left heart failure
- 428.20 Systolic heart failure, unspecified
- 428.21 Acute systolic heart failure
- 428.22 Chronic systolic heart failure
- 428.23 Acute on chronic systolic heart failure
- 428.30 Diastolic heart failure, unspecified
- 428.31 Acute diastolic heart failure
- 428.32 Chronic diastolic heart failure
- 428.33 Acute on chronic diastolic heart failure
- 428.40 Combined systolic and diastolic heart failure, unspecified
- 428.41 Acute combined systolic and diastolic heart failure
- 428.42 Chronic combined systolic and diastolic heart failure
- 428.43 Acute on chronic combined systolic and diastolic heart failure
- 428.9 Heart failure, unspecified

## Oklahoma - Congestive heart failure admission rate (2010, PQI8)

County	Number of stays	Risk-adjusted rate per 100,000	Cost savings* with reduction in the number by %				
			10%	20%	30%	40%	50%
Adair	49	336.85	\$32,700	\$65,400	\$98,200	\$130,900	\$163,600
Alfalfa	22	386.71	\$14,300	\$28,500	\$42,800	\$57,100	\$71,400
Atoka	40	364.87	\$14,500	\$29,000	\$43,500	\$58,000	\$72,500
Beckham	72	476.28	\$58,200	\$116,400	\$174,700	\$232,900	\$291,100
Blaine	24	235.29	\$19,000	\$38,000	\$57,000	\$76,000	\$95,000
Bryan	236	735.66	\$115,600	\$231,200	\$346,800	\$462,400	\$578,000
Caddo	86	378.88	\$51,700	\$103,300	\$155,000	\$206,700	\$258,400
Canadian	168	249.28	\$120,700	\$241,400	\$362,100	\$482,900	\$603,600
Carter	156	404.07	\$124,900	\$249,800	\$374,700	\$499,500	\$624,400
Cherokee	98	331.53	\$61,500	\$122,900	\$184,400	\$245,900	\$307,400
Choctaw	130	963.18	\$73,200	\$146,400	\$219,600	\$292,800	\$366,000
Cleveland	478	359.78	\$333,100	\$666,100	\$999,200	\$1,332,300	\$1,665,300
Coal	59	1165.31	\$30,400	\$60,800	\$91,100	\$121,500	\$151,900
Comanche	332	494.22	\$235,600	\$471,200	\$706,700	\$942,300	\$1,177,900
Cotton	14	264.19	\$9,400	\$18,900	\$28,300	\$37,700	\$47,200
Craig	69	494.46	\$43,700	\$87,500	\$131,200	\$174,900	\$218,700
Creek	218	396.33	\$126,800	\$253,500	\$380,300	\$507,000	\$633,800
Custer	97	493.51	\$39,300	\$78,600	\$117,900	\$157,300	\$196,600
Delaware	74	188.12	\$46,100	\$92,200	\$138,300	\$184,400	\$230,500
Dewey	16	321.28	\$12,100	\$24,200	\$36,400	\$48,500	\$60,600
Ellis	12	298.2	\$5,800	\$11,600	\$17,400	\$23,300	\$29,100
Garfield	205	422.97	\$200,100	\$400,100	\$600,200	\$800,300	\$1,000,300
Garvin	130	531.03	\$31,200	\$62,500	\$93,700	\$125,000	\$156,200
Grady	65	185.62	\$38,800	\$77,700	\$116,500	\$155,400	\$194,200
Grant	22	452.33	\$15,400	\$30,700	\$46,100	\$61,400	\$76,800
Greer	32	562.24	\$22,300	\$44,500	\$66,800	\$89,000	\$111,300
Harmon	54	1907.67	\$21,800	\$43,600	\$65,400	\$87,100	\$108,900
Harper	17	491.7	\$10,200	\$20,500	\$30,700	\$40,900	\$51,100
Haskell	46	421.47	\$10,200	\$20,400	\$30,600	\$40,800	\$51,000
Hughes	75	612.44	\$28,900	\$57,900	\$86,800	\$115,800	\$144,700
Jackson	122	700.5	\$58,500	\$117,100	\$175,600	\$234,200	\$292,700
Jefferson	32	498.26	\$19,800	\$39,600	\$59,400	\$79,200	\$98,900
Johnston	53	603.68	\$37,600	\$75,300	\$112,900	\$150,600	\$188,200
Kay	138	334.3	\$85,500	\$171,000	\$256,500	\$342,100	\$427,600
Kingfisher	47	390.69	\$4,500	\$8,900	\$13,400	\$17,900	\$22,300
Kiowa	71	779.38	\$28,600	\$57,200	\$85,900	\$114,500	\$143,100
Latimer	12	133.45	\$1,700	\$3,500	\$5,200	\$7,000	\$8,700

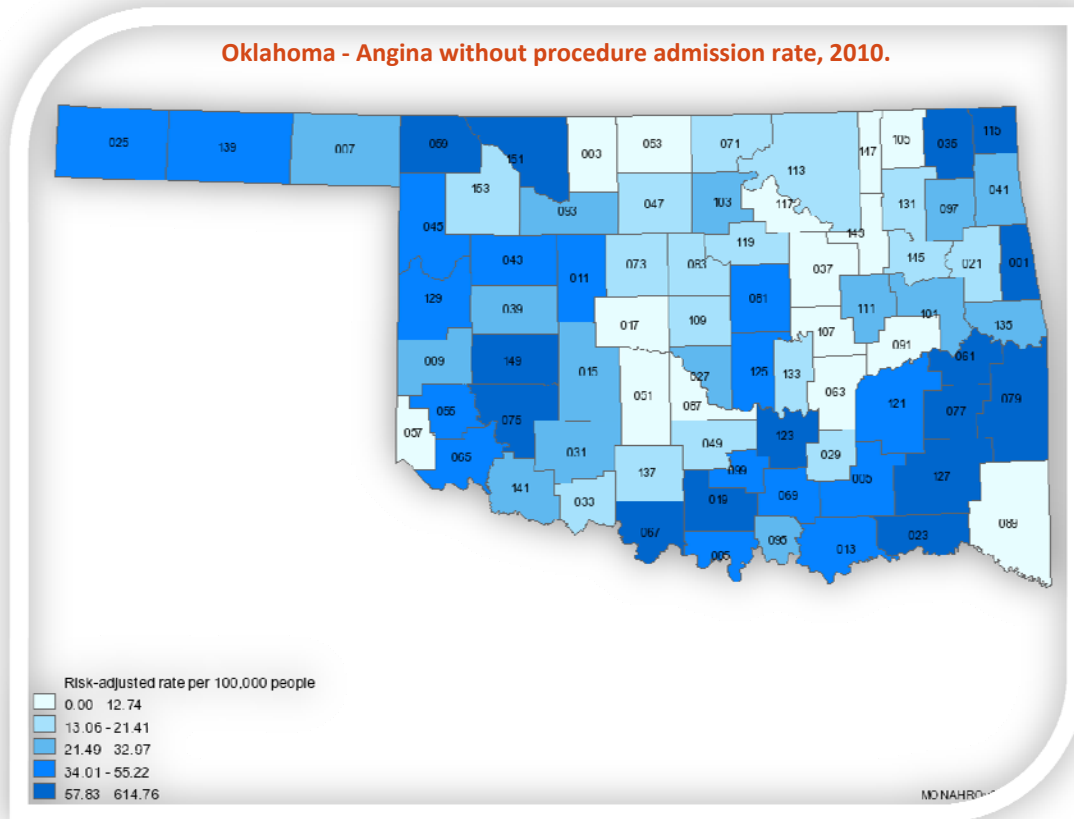
County	Number	Rate	10%	20%	30%	40%	50%
Le Flore	161	421.94	\$92,100	\$184,100	\$276,200	\$368,300	\$460,300
Lincoln	90	363.17	\$54,000	\$108,100	\$162,100	\$216,100	\$270,200
Logan	82	314.86	\$35,200	\$70,500	\$105,700	\$141,000	\$176,200
Love	28	347.98	\$27,900	\$55,700	\$83,600	\$111,500	\$139,300
McClain	86	366.76	\$47,600	\$95,100	\$142,700	\$190,200	\$237,800
McCurtain	79	310.48	\$47,600	\$95,300	\$142,900	\$190,500	\$238,200
McIntosh	85	407.22	\$71,700	\$143,400	\$215,100	\$286,800	\$358,600
Marshall	61	454.22	\$41,500	\$83,000	\$124,600	\$166,100	\$207,600
Mayes	105	319.57	\$61,800	\$123,600	\$185,400	\$247,200	\$309,000
Murray	38	321.78	\$34,700	\$69,300	\$104,000	\$138,600	\$173,300
Muskogee	241	413.87	\$230,200	\$460,500	\$690,700	\$921,000	\$1,151,200
Noble	35	362.09	\$21,200	\$42,400	\$63,700	\$84,900	\$106,100
Nowata	27	282.4	\$15,500	\$31,100	\$46,600	\$62,100	\$77,700
Okfuskee	30	306.18	\$18,500	\$37,000	\$55,500	\$74,000	\$92,500
Oklahoma	1547	311.16	\$961,200	\$1,922,400	\$2,883,600	\$3,844,700	\$4,805,900
Okmulgee	168	538.04	\$93,200	\$186,500	\$279,700	\$372,900	\$466,100
Osage	117	364.1	\$75,100	\$150,300	\$225,400	\$300,600	\$375,700
Ottawa	91	334.34	\$52,200	\$104,300	\$156,500	\$208,700	\$260,800
Pawnee	36	258.49	\$25,000	\$49,900	\$74,900	\$99,900	\$124,900
Payne	113	226.15	\$68,400	\$136,800	\$205,200	\$273,500	\$341,900
Pittsburg	118	293.51	\$74,100	\$148,200	\$222,200	\$296,300	\$370,400
Pontotoc	80	285.21	\$49,900	\$99,800	\$149,700	\$199,600	\$249,500
Pottawatomie	188	358.34	\$108,300	\$216,700	\$325,000	\$433,400	\$541,700
Pushmataha	38	347.61	\$13,600	\$27,100	\$40,700	\$54,200	\$67,800
Roger Mills	15	486.38	\$8,800	\$17,600	\$26,400	\$35,200	\$44,000
Rogers	187	322.36	\$150,900	\$301,700	\$452,600	\$603,400	\$754,300
Seminole	85	406.6	\$27,800	\$55,500	\$83,300	\$111,100	\$138,800
Sequoyah	35	110.99	\$22,400	\$44,700	\$67,100	\$89,500	\$111,900
Stephens	150	391.98	\$104,100	\$208,300	\$312,400	\$416,500	\$520,700
Texas	13	118.68	\$39,100	\$78,100	\$117,200	\$156,300	\$195,400
Tillman	56	736.45	\$25,600	\$51,300	\$76,900	\$102,500	\$128,100
Tulsa	1577	385.19	\$1,074,900	\$2,149,800	\$3,224,800	\$4,299,700	\$5,374,600
Wagoner	184	471.63	\$130,800	\$261,500	\$392,300	\$523,000	\$653,800
Washington	74	156.2	\$43,900	\$87,800	\$131,700	\$175,600	\$219,500
Washita	60	532.42	\$47,300	\$94,600	\$141,800	\$189,100	\$236,400
Woods	24	304.09	\$15,800	\$31,700	\$47,500	\$63,400	\$79,200
Woodward	61	416.54	\$34,000	\$67,900	\$101,900	\$135,900	\$169,800
State of Oklahoma	9754	365.34	\$6,238,300	\$12,476,500	\$18,714,800	\$24,953,100	\$31,191,300

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.

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### Angina Without Procedure Admission Rate - PQI #13

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.

#### ICD-9 Codes

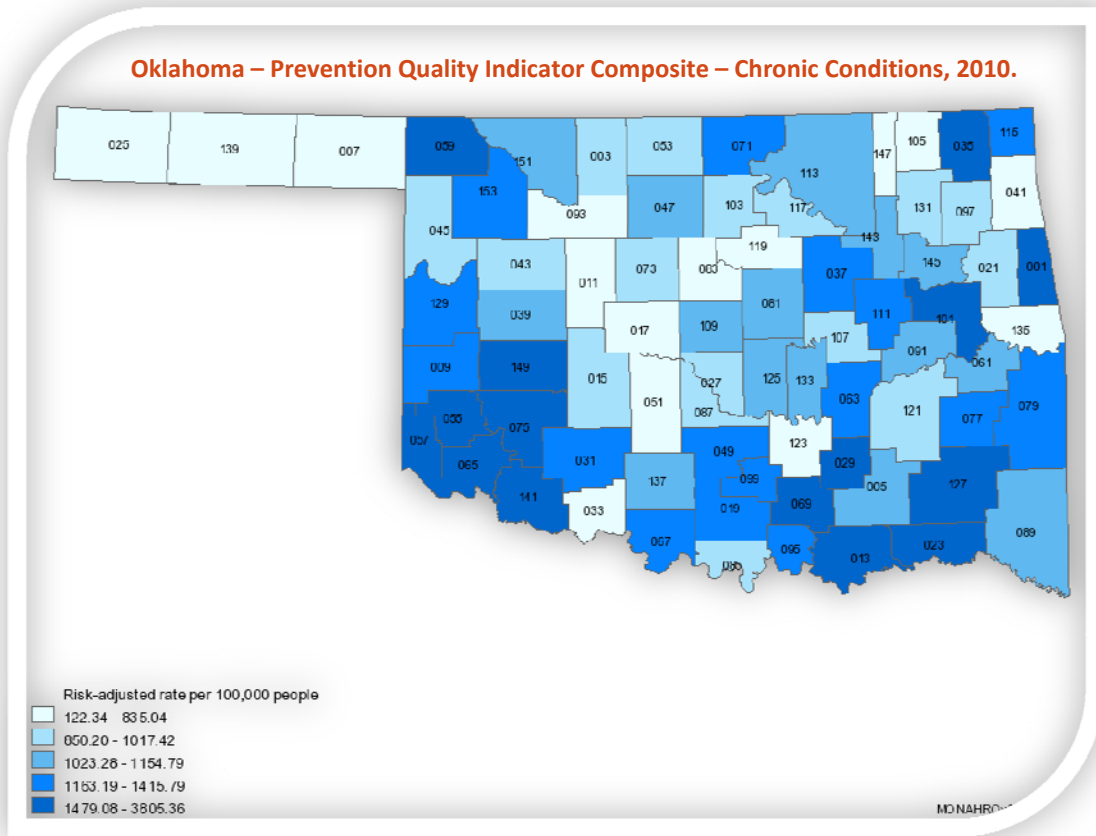
- 411.1 Intermediate coronary syndrome
- 411.81 Acute coronary occlusion without myocardial infarction
- 411.89 Acute ischemic heart disease, other
- 413.0 Angina decubitus
- 413.1 Prinzmetal angina
- 413.9 Angina pectoris, other and unspecified

## Oklahoma - Angina without procedure admission rate (2010, PQI13)

County	Number of stays	Risk-adjusted rate per 100,000	Cost savings* with reduction in the number by %				
			10%	20%	30%	40%	50%
Adair	17	110.27	\$5,900	\$11,800	\$17,600	\$23,500	\$29,400
Bryan	17	55.01	\$4,700	\$9,500	\$14,200	\$19,000	\$23,700
Carter	24	62.9	\$12,500	\$25,000	\$37,500	\$50,000	\$62,500
Cleveland	37	23.71	\$24,300	\$48,500	\$72,800	\$97,000	\$121,300
Comanche	20	27.63	\$8,100	\$16,300	\$24,400	\$32,500	\$40,700
Haskell	16	158.09	\$1,600	\$3,200	\$4,700	\$6,300	\$7,900
Latimer	53	614.76	\$500	\$900	\$1,400	\$1,900	\$2,300
Le Flore	34	87.71	\$9,200	\$18,300	\$27,500	\$36,700	\$45,800
Muskogee	14	24.98	\$7,100	\$14,200	\$21,300	\$28,400	\$35,500
Oklahoma	84	16.77	\$26,500	\$53,100	\$79,600	\$106,200	\$132,700
Ottawa	15	57.83	\$7,000	\$14,000	\$21,000	\$28,000	\$35,000
Pittsburg	17	44.63	\$4,700	\$9,300	\$14,000	\$18,700	\$23,300
Pontotoc	21	76.67	\$11,800	\$23,500	\$35,300	\$47,100	\$58,900
Pottawatomie	21	39.58	\$9,000	\$18,100	\$27,100	\$36,100	\$45,100
Rogers	12	18.59	\$5,300	\$10,600	\$16,000	\$21,300	\$26,600
Tulsa	54	12.74	\$21,000	\$42,000	\$63,000	\$84,100	\$105,100
State of Oklahoma	718	26.39	\$256,400	\$512,800	\$769,200	\$1,025,600	\$1,282,000

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.



**Chronic Composite - PQI #92**

Composite measures are to summarize quality across multiple indicators.

**PQI #**

- 01 Diabetes Short-Term Complications Admission Rate
- 03 Diabetes Long-Term Complications Admission Rate
- 05 Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate
- 07 Hypertension Admission Rate
- 08 Congestive Heart Failure (CHF) Admission
- 13 Angina without Procedure Admission Rate
- 14 Uncontrolled Diabetes Admission Rate
- 15 Asthma in Younger Adults Admission Rate
- 16 Rate of Lower-Extremity Amputation Among Patients With Diabetes





## Oklahoma - Prevention Quality Indicator Composite - Chronic Conditions (2010, PQI92)

County	Number of stays	Risk-adjusted rate per 100,000	Cost savings* with reduction in the number by %				
			10%	20%	30%	40%	50%
Adair	280	1862.42	\$134,300	\$268,500	\$402,800	\$537,100	\$671,300
Alfalfa	50	945.68	\$35,700	\$71,400	\$107,200	\$142,900	\$178,600
Atoka	120	1081.02	\$38,000	\$76,000	\$114,000	\$152,100	\$190,100
Beaver	14	311.65	\$1,300	\$2,500	\$3,800	\$5,100	\$6,400
Beckham	210	1395.02	\$147,100	\$294,100	\$441,200	\$588,300	\$735,300
Blaine	81	828.29	\$69,900	\$139,800	\$209,800	\$279,700	\$349,600
Bryan	816	2572.08	\$352,400	\$704,900	\$1,057,300	\$1,409,700	\$1,762,100
Caddo	223	977.63	\$124,600	\$249,200	\$373,800	\$498,400	\$623,000
Canadian	561	769.07	\$434,100	\$868,200	\$1,302,400	\$1,736,500	\$2,170,600
Carter	525	1372.93	\$386,500	\$773,000	\$1,159,500	\$1,545,900	\$1,932,400
Cherokee	267	850.2	\$173,700	\$347,400	\$521,100	\$694,800	\$868,500
Choctaw	268	2068.83	\$139,300	\$278,500	\$417,800	\$557,000	\$696,300
Cleveland	1412	943.33	\$1,029,600	\$2,059,200	\$3,088,800	\$4,118,400	\$5,148,000
Coal	103	2131.49	\$45,700	\$91,500	\$137,200	\$182,900	\$228,700
Comanche	832	1163.19	\$535,900	\$1,071,900	\$1,607,800	\$2,143,700	\$2,679,700
Cotton	29	555.09	\$15,400	\$30,900	\$46,300	\$61,700	\$77,200
Craig	200	1479.08	\$117,500	\$235,000	\$352,500	\$469,900	\$587,400
Creek	788	1415.79	\$484,000	\$968,100	\$1,452,100	\$1,936,200	\$2,420,200
Custer	222	1150.14	\$103,400	\$206,800	\$310,200	\$413,600	\$517,100
Delaware	252	658.17	\$167,500	\$335,000	\$502,500	\$670,000	\$837,500
Dewey	41	919.79	\$32,900	\$65,800	\$98,700	\$131,600	\$164,500
Ellis	33	882.44	\$16,700	\$33,300	\$50,000	\$66,700	\$83,300
Garfield	515	1089.13	\$461,000	\$922,000	\$1,383,100	\$1,844,100	\$2,305,100
Garvin	324	1377.08	\$93,300	\$186,700	\$280,000	\$373,400	\$466,700
Grady	169	457.25	\$108,700	\$217,300	\$326,000	\$434,700	\$543,300
Grant	38	853.32	\$25,600	\$51,100	\$76,700	\$102,300	\$127,900
Greer	132	2545.58	\$92,000	\$184,000	\$275,900	\$367,900	\$459,900
Harmon	97	3805.36	\$39,300	\$78,500	\$117,800	\$157,100	\$196,300
Harper	51	1580.24	\$30,100	\$60,100	\$90,200	\$120,200	\$150,300
Haskell	107	1023.28	\$35,600	\$71,300	\$106,900	\$142,600	\$178,200
Hughes	151	1291.39	\$63,400	\$126,700	\$190,100	\$253,400	\$316,800
Jackson	337	1901.72	\$164,100	\$328,200	\$492,300	\$656,500	\$820,600
Jefferson	79	1352.12	\$47,600	\$95,200	\$142,800	\$190,500	\$238,100
Johnston	166	1922.12	\$105,200	\$210,400	\$315,600	\$420,800	\$526,000
Kay	471	1202.23	\$279,300	\$558,600	\$837,900	\$1,117,100	\$1,396,400
Kingfisher	107	917.22	\$23,000	\$45,900	\$68,900	\$91,800	\$114,800
Kiowa	209	2446.7	\$78,800	\$157,500	\$236,300	\$315,100	\$393,800

County	Number	Rate	10%	20%	30%	40%	50%
Latimer	117	1325.27	\$20,900	\$41,700	\$62,600	\$83,500	\$104,400
Le Flore	450	1167.96	\$225,700	\$451,500	\$677,200	\$903,000	\$1,128,700
Lincoln	293	1153.87	\$159,100	\$318,100	\$477,200	\$636,300	\$795,300
Logan	198	718.55	\$88,300	\$176,600	\$264,900	\$353,200	\$441,500
Love	79	1006.63	\$76,700	\$153,400	\$230,100	\$306,700	\$383,400
McClain	219	891.34	\$128,300	\$256,500	\$384,800	\$513,100	\$641,300
McCurtain	283	1101.58	\$153,400	\$306,800	\$460,200	\$613,600	\$767,000
McIntosh	227	1139.98	\$196,500	\$393,000	\$589,500	\$786,000	\$982,500
Major	26	378.62	\$17,600	\$35,100	\$52,700	\$70,200	\$87,800
Marshall	174	1319.59	\$105,800	\$211,700	\$317,500	\$423,400	\$529,200
Mayes	316	968.6	\$198,500	\$397,000	\$595,500	\$794,000	\$992,500
Murray	144	1278.87	\$124,000	\$247,900	\$371,900	\$495,900	\$619,800
Muskogee	909	1597.48	\$792,700	\$1,585,400	\$2,378,200	\$3,170,900	\$3,963,600
Noble	89	954.99	\$50,400	\$100,800	\$151,300	\$201,700	\$252,100
Nowata	63	683.69	\$41,800	\$83,700	\$125,500	\$167,400	\$209,200
Okfuskee	82	866.74	\$41,700	\$83,300	\$125,000	\$166,600	\$208,300
Oklahoma	5176	1026.9	\$2,962,600	\$5,925,200	\$8,887,800	\$11,850,400	\$14,813,000
Okmulgee	422	1355.82	\$261,000	\$522,000	\$783,100	\$1,044,100	\$1,305,100
Osage	363	1070.48	\$241,200	\$482,500	\$723,700	\$964,900	\$1,206,200
Ottawa	358	1350.63	\$215,100	\$430,100	\$645,200	\$860,200	\$1,075,300
Pawnee	133	960.15	\$77,000	\$154,000	\$231,000	\$308,000	\$385,000
Payne	425	827.03	\$235,900	\$471,900	\$707,800	\$943,700	\$1,179,700
Pittsburg	379	974.45	\$225,700	\$451,400	\$677,100	\$902,800	\$1,128,500
Pontotoc	234	835.04	\$144,600	\$289,200	\$433,800	\$578,300	\$722,900
Pottawatomie	563	1057.98	\$316,200	\$632,500	\$948,700	\$1,265,000	\$1,581,200
Pushmataha	165	1560.53	\$60,300	\$120,700	\$181,000	\$241,300	\$301,600
Roger Mills	36	1209.46	\$15,000	\$30,000	\$45,000	\$60,000	\$74,900
Rogers	627	1017.42	\$423,200	\$846,400	\$1,269,600	\$1,692,800	\$2,115,900
Seminole	218	1082.08	\$72,100	\$144,100	\$216,200	\$288,300	\$360,400
Sequoyah	174	538.69	\$80,500	\$160,900	\$241,400	\$321,900	\$402,400
Stephens	423	1134.33	\$259,100	\$518,100	\$777,200	\$1,036,200	\$1,295,300
Texas	67	558.01	\$76,100	\$152,200	\$228,300	\$304,400	\$380,400
Tillman	128	1811.56	\$58,600	\$117,200	\$175,800	\$234,400	\$293,000
Tulsa	4712	1122.85	\$2,956,900	\$5,913,700	\$8,870,600	\$11,827,400	\$14,784,300
Wagoner	519	1154.79	\$380,500	\$761,100	\$1,141,600	\$1,522,100	\$1,902,600
Washington	168	373.15	\$114,300	\$228,600	\$342,800	\$457,100	\$571,400
Washita	169	1620.17	\$116,900	\$233,700	\$350,600	\$467,400	\$584,300
Woods	78	1074.91	\$49,800	\$99,500	\$149,300	\$199,000	\$248,800
Woodward	175	1195.06	\$100,200	\$200,400	\$300,600	\$400,800	\$500,900
State of Oklahoma	29664	1094.42	\$18,097,700	\$36,195,400	\$54,293,100	\$72,390,800	\$90,488,500

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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Chronic Disease Service  
Oklahoma State Department of Health  
1000 NE 10<sup>th</sup> Street  
Oklahoma City, OK 73117-1299  
Phone 405.271.4072

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