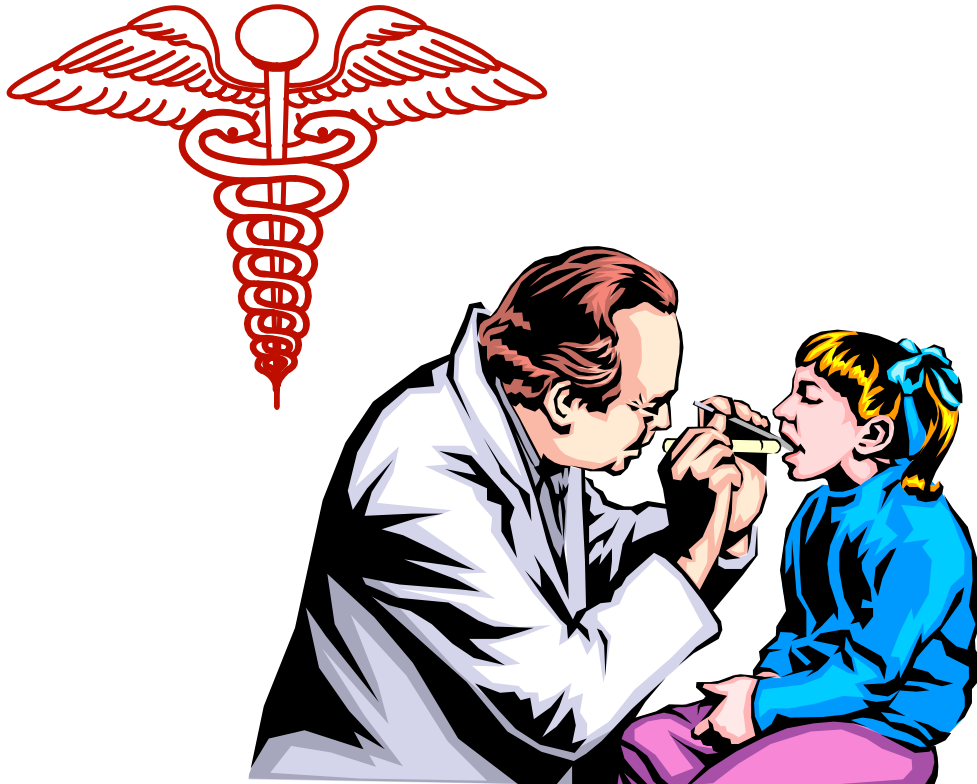


# An Analysis of the Demand for Primary Care Physicians in the Carter County, Oklahoma, Medical Service Area



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in the Carter County, Oklahoma, Medical Service Area**

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## Introduction

This report will examine the need for primary care physicians in the Carter County, Oklahoma, Medical Service Area. Primary care physicians include internal medicine physicians, family practitioners, obstetrics-gynecologists, and pediatricians. Specifically, the study will:

1. Determine the medical service area and population;
2. Estimate primary care physician office visits; and
3. Estimate the total demand for primary care physicians in the medical service area.

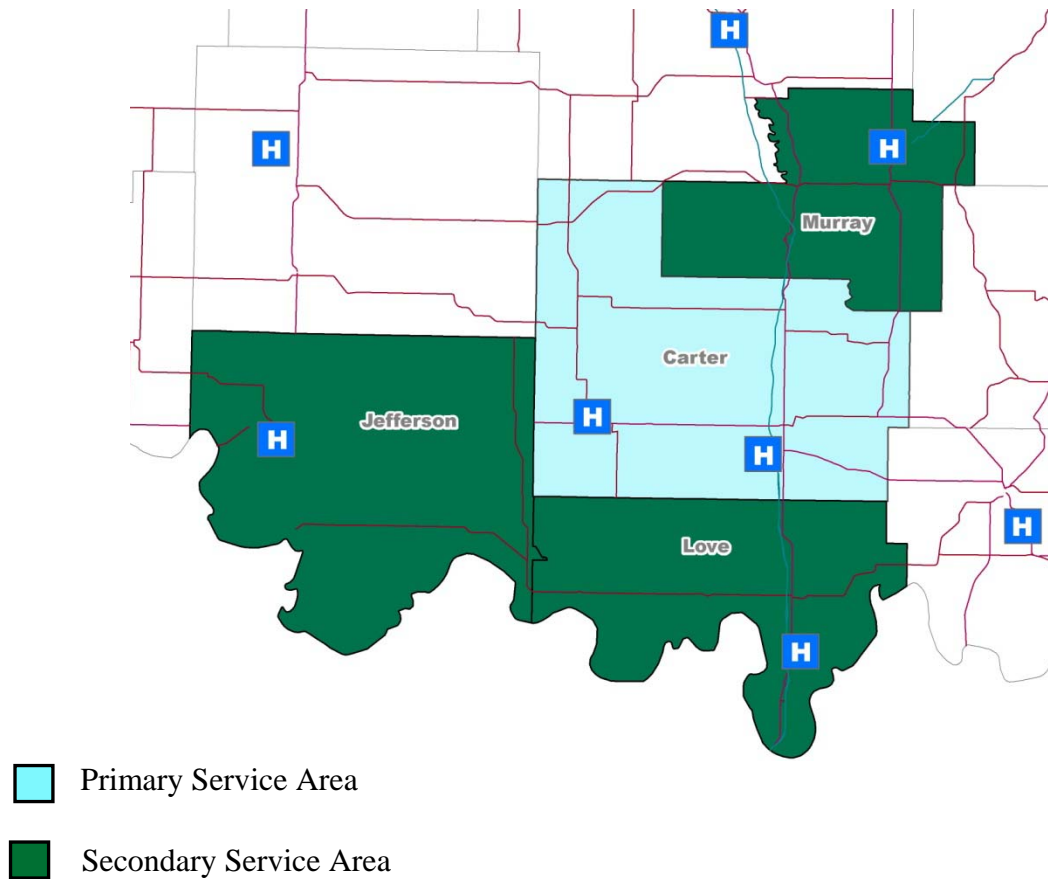
No recommendations will be made. The information included in this report is designed to assist local decision-makers in assessing the need and potential for primary care physician services.

## Determining Need for Primary Care Physicians in the Carter County, Oklahoma, Medical Service Area

In order to estimate the number of visits to primary care physicians in Carter County, the medical service area was delineated as shown in **Figure 1**. To determine the medical service area, a number of factors were taken into consideration, including the proximity of physician practices in nearby cities and the travel distances faced by residents of nearby communities. In particular, existing physician practices in the surrounding counties, Jefferson, Johnston, Love, Murray, and Stephens, likely draw residents of those counties. Therefore, the primary medical service area for Carter County includes only Carter County while the secondary medical service area is comprised of the counties of Jefferson, Love, and Murray, since there is the possibility that some individuals in these towns will choose to go to Carter County for their physician needs. The 2008 estimated population of the primary medical service area was 47,979 as shown in

**Table 1.** The 2008 estimated secondary medical area population totals to 28,158. This yields a total population of 76,137 for both the primary and secondary service areas.

**Figure 1**  
**Carter County, Oklahoma Medical Service Area**



Hospital	County	Number of Beds
Healdton Mercy Hospital Corporation	Carter	22
Mercy Memorial Health Center, Inc.	Carter	175
Pauls Valley General Hospital	Garvin	64
Jefferson County Hospital	Jefferson	25
INTEGRIS Marshall County Medical Center	Marshall	25
Arbuckle Memorial Hospital	Murray	25
Duncan Regional Hospital	Stephens	155

**Table 1**  
**Medical Service Area Population by County**

	Estimated 2008 Population	Totals
Primary Medical Service Area		
Carter County	47,979	47,979
Secondary Medical Service Area		
Jefferson County	6,219	
Love County	9,155	
Murray County	12,784	
		28,158
Medical Service Area Total		<u>76,137</u>

Source: US Census Bureau 2008 County Population Estimates (accessed July, 2009).

The number of physician office visits generated in the Carter County, Oklahoma service area was estimated using the service area population data and research on the number of annual physician office visits for a specified age group [1, 2, 3]. Age group breakouts (by gender) and their corresponding number of annual physician office visits are presented in **Table 2**. For instance, for males under age 15, the average number of physician office visits is 2.8 visits per year [3]. Similar estimates are applied to other age groups to derive the total number of physician office visits occurring in the Carter County medical service area. Residents in the primary medical service area were estimated to make 162,443 total physician office visits per year, while residents of the secondary medical service area were estimated to visit physicians 98,302 times annually (**Table 2**). Of these total physician office visits, recent data indicates that

58.4 percent will be made to physicians active in primary patient care while the remainder will be made to specialists [3]. Using the data presented in **Table 2**, the primary medical service area will generate 94,866 primary care physician visits (58.4% x 162,443), and the secondary medical service area will generate 57,409 visits (58.4% x 98,302) yielding a total of 152,275 local primary care physician visits per year for the total medical service area.

The total number of primary care physician office visits given various usage rates is presented in **Table 3** for the Carter County medical service area. If there is a 90 percent usage of Carter County primary care physicians by residents of the primary medical service area and a 10 to 15 percent usage rate from residents in the secondary service area, an estimated 91,121 to 93,991 primary care physician office visits will be made annually in the Carter County medical service area. The national average for the number of annual office visits to each primary care physician is 4,870 [3]. Therefore, Carter County needs an estimated 18.71 primary care physicians at a 90 percent primary medical service area usage rate coupled with a 10 percent usage rate from the secondary medical service area ( $91,121/4,870 = 18.71$ ). By expanding the secondary usage rate to 15 percent, the need becomes 19.30 total primary care physicians ( $93,991/4,870 = 19.30$ ). Higher usage levels would indicate that more physicians could be supported, while lower usage levels would indicate fewer physicians could be supported. All assumptions and local conditions, including the actual usage levels in the primary and secondary medical service areas must be taken into consideration by decision-makers before determining if additional physicians could successfully locate in Carter County. Note that the current number of existing primary care physicians is not included in this analysis. Any evaluation of the relative shortage or surplus of primary care physicians must include details about the current levels of practicing physicians. Again, primary care physicians include the physician practices

of internal medicine, pediatrics, family medicine, and OB-GYN. All of these types of physicians should be considered when analyzing the usage levels in the medical service area.

### Summary

The analysis above presented the methodology and results of estimating the demand for primary care physicians in Carter County, Oklahoma. The results suggest that, given a 90% primary service area usage rate and a 10% secondary service area usage rate, an estimated 18.71 primary care physicians can be supported in the Carter County area. The actual number of physicians that the Carter County medical service area can support will vary based on the usage rates depicted in **Table 3**. Estimates of these usage rates should be used in conjunction with the current status of the primary care industry in Carter County to determine the next steps for the community.

Many assumptions have been made in this analysis. These include items that may change, such as the population of the service area or service area delineation. For example, the service area depicted here may change due to the exit or entry of physicians from nearby communities. If this does occur, revised estimates of physician office visits should be made. The number of existing primary care physicians is not addressed in this study. A close examination of current practicing primary care physicians will be imperative to accurately assess whether or not the current population base can in fact support additional primary care physicians.

All assumptions should be closely examined by local decision-makers to verify that they reflect local conditions. If additional local data are available, they should be included to derive the most realistic conclusion possible for the current situation. If further analysis is needed, contact your county extension office listed on the title page of this document.

**Table 2**  
**Annual Primary Care Physician Office Visits Generated in the Carter County Medical Service Areas**

<b>PRIMARY MEDICAL SERVICE AREA</b>							
	Male			Female			
Age	2008 Population	Visit Rate <sup>1</sup>	Visits	2007 Population	Visit Rate <sup>1</sup>	Visits	Total Visits
Under 15	5,344	2.8	14,964	5,019	2.5	12,548	27,512
15-24	3,158	1.3	4,106	2,887	2.2	6,351	10,457
25-44	6,483	1.8	11,669	6,375	3.1	19,764	31,433
45-64	5,372	3.3	17,727	5,663	4.5	25,485	43,212
65+	<u>3,211</u>	6.2	<u>19,905</u>	<u>4,466</u>	6.7	<u>29,923</u>	<u>49,828</u>
<b>Total</b>	23,568		68,371	24,411		94,072	<b>162,443</b>
Primary Medical Service Area - Local Primary Care Physician Office Visits Per Year:							<b>94,866</b>

<b>SECONDARY MEDICAL SERVICE AREA</b>							
	Male			Female			
Age	2008 Population	Visit Rate <sup>1</sup>	Visits	2007 Population	Visit Rate <sup>1</sup>	Visits	Total Visits
Under 15	2,877	2.8	8,055	2,702	2.5	6,755	14,810
15-24	1,806	1.3	2,348	1,651	2.2	3,631	5,979
25-44	3,591	1.8	6,464	3,532	3.1	10,948	17,412
45-64	3,363	3.3	11,098	3,545	4.5	15,955	27,052
65-74	<u>2,129</u>	6.2	<u>13,202</u>	<u>2,962</u>	6.7	<u>19,847</u>	<u>33,049</u>
<b>Total</b>	13,766		41,167	14,392		57,136	<b>98,302</b>
Secondary Medical Service Area - Local Primary Care Physician Office Visits Per Year:							<b>57,409</b>

Source: U. S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center of Health Statistics, "National Ambulatory Medical Care Survey: 2005 Summary," No. 387, June, 2007

**Table 3**  
**Primary Care Physician Office Visits Given Usage**  
**By Local Residents in Carter County Medical Service Areas**

		Usage by Residents of Primary Service Area						
		70%	75%	80%	85%	90%	95%	100%
Usage by Residents of Secondary Service Area	5%	69,277	74,020	78,764	83,507	88,250	92,994	97,737
	10%	72,147	76,891	81,634	86,377	<b>91,121</b>	95,864	100,607
	15%	75,018	79,761	84,504	89,248	<b>93,991</b>	98,734	103,478
	20%	77,888	82,632	87,375	92,118	96,862	101,605	106,348
	25%	80,759	85,502	90,245	94,989	99,732	104,475	109,219
	30%	83,629	88,372	93,116	97,859	102,602	107,346	112,089
	35%	86,500	91,243	95,986	100,730	105,473	110,216	114,959
	40%	89,370	94,113	98,857	103,600	108,343	113,087	117,830
	45%	92,240	96,984	101,727	106,470	111,214	115,957	120,700
	50%	95,111	99,854	104,597	109,341	114,084	118,827	123,571

<p>If 90% primary medical service area and 10 to 15% secondary medical service area, then the usage would be:  16,943 to 18,885 total primary care physician office visits  for an estimated <b>18.71 to 19.30 Total Primary Care Physicians</b>  Based on 4,870 average annual primary care office visits per physician practice in Oklahoma</p>
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## References

- [1] "Family Medicine – A Systematic Approach to the Planning and Development of a Community Practice," Doeksen, G., Miller, K.A., Shelton, P.J., and Miller, D.A., University of Oklahoma Health Sciences Center, 1990.
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- [3] U. S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center of Health Statistics, "National Ambulatory Medical Care Survey: 2005 Summary," No. 387, June, 2007.
- [4] U.S. Bureau of the Census, 2009, website: [www.census.gov](http://www.census.gov). Accessed: July 2009.