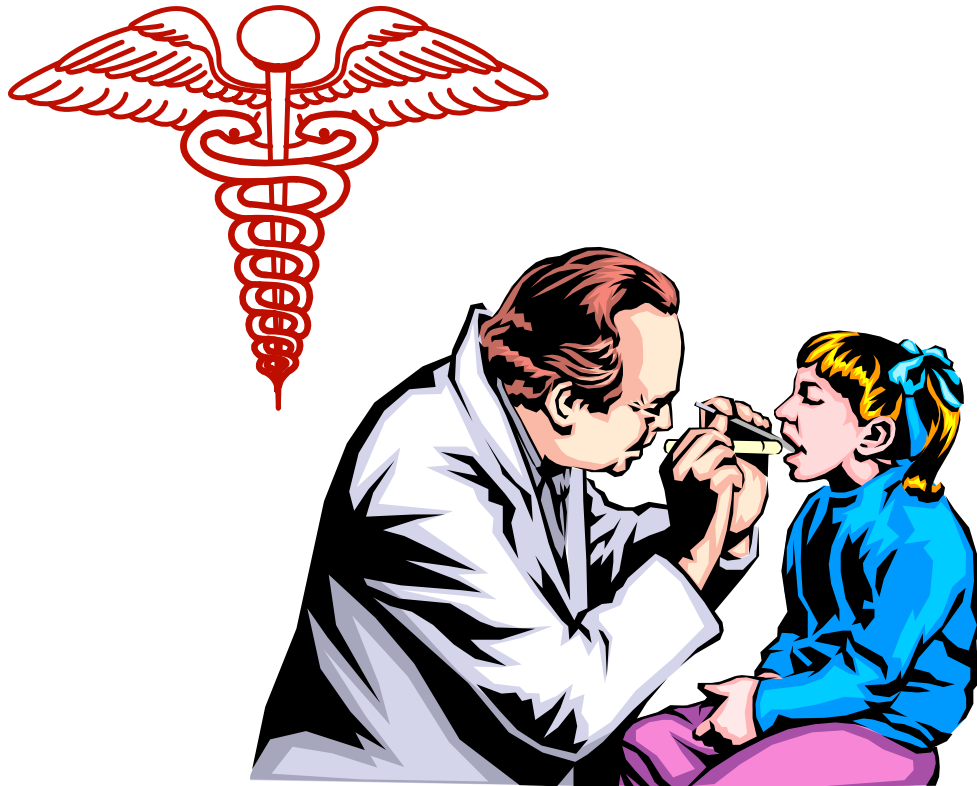


# An Analysis of the Demand for Primary Care Physicians in the Shattuck, Oklahoma, Medical Service Area



Rural Development  
**Oklahoma Cooperative Extension Service**  
Oklahoma State University

**Oklahoma Office of Rural Health**  
Rural Health Policy & Research Center  
Oklahoma State University



December 2008

**An Analysis of the Demand for Primary Care Physicians  
in the Shattuck, Oklahoma, Medical Service Area**

Brian E. Whitacre, Assistant Professor and Extension Economist, OSU, Stillwater  
405-744-6083; FAX 405-744-9835

Lara Brooks, Assistant Extension State Specialist, OSU, Stillwater  
405-744-6083

Gerald A. Doeksen, Regents Professor and Extension Economist, OSU, Stillwater  
405-744-6083

Lynda Latta - Ellis County Interim Extension Director, Arnett  
(580) 885-7775

Stan Ralstin - District Rural Development Specialist, Enid  
(580) 233-5295

Corie Kaiser, Health Consultant, Oklahoma Center for Rural Health, Oklahoma City  
405-945-9197

Val Schott - Director, Oklahoma Center for Rural Health, Oklahoma City  
405-945-9197

Rural Development  
Oklahoma Cooperative Extension Service  
Oklahoma State University

Oklahoma Office of Rural Health  
Center for Rural Health  
Oklahoma State University

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

## Introduction

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

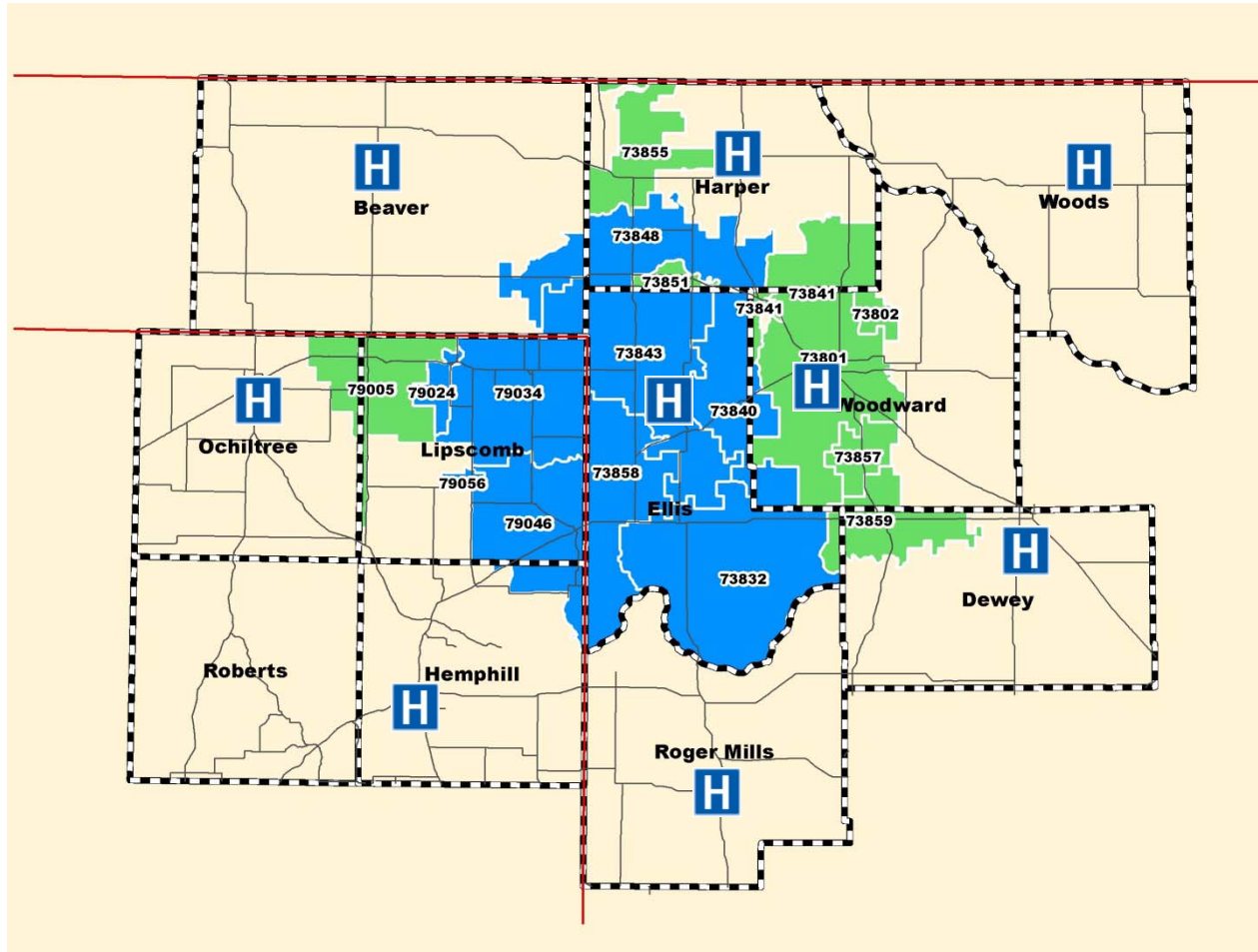
1. Determine the medical service area and population;
2. Estimate primary care physician office visits; and
3. Estimate the total demand for primary care physicians in the medical service area.

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 Shattuck, Oklahoma, Medical Service Area

In order to estimate the number of visits to primary care physicians in Shattuck, 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 Woodward, Cheyenne, Seiling, Alva, Buffalo, Beaver, Perryton, TX, and Canadian, TX, likely draw residents of those communities, and also draw some residents of those communities without physicians (such as Fort Supply, May, Sharon, Vici, and Rosston,). Therefore, the primary medical service area for Shattuck includes Shattuck, Arnett, Gage, Fargo, Laverne, Follett, TX, Darrouzett, TX, Libscomb, TX, and Higgins, TX, while the secondary medical service area is comprised of the communities of Fort Supply, May,

Sharon, Vici, Rosston, and Woodward, since some individuals in these towns will choose to go to Shattuck for their physician needs. The 2007 estimated population of the primary medical service area was 7,488 as shown in **Table 1**, consisting of 1,689 individuals in Shattuck alone. The 2007 estimated secondary medical area population totals to 18,230.





-  Primary Service Area
-  Secondary Service Area

Figure 1  
Newman Memorial Hospital Medical Service Area, Shattuck, OK

**Table 1**  
**Medical Service Area Population by Zip Code**

	Zip Code	Estimated 2007 Population	Totals
<b>Primary Medical Service Area</b>			
	Shattuck	73858	1,689
	Arnett	73832	1,178
	Gage	73843	566
	Fargo	73840	634
	Laverne	73848	1,827
	Follet, TX	79034	896
	Lipscomb, TX	79056	46
	Higgins, TX	79046	652
			7,488
<b>Secondary Medical Service Area</b>			
	Fort Supply	73841	1,416
	May	73851	68
	Sharon	73857	1,266
	Vici	73859	1,189
	Woodward	73801	14,083
	Rosston	73855	208
	Booker, TX	79005	1,584
			18,230
	<b>Medical Service Area Total</b>		<u><b>25,718</b></u>

Source: Community Sourcebook of Zip Code Demographics, 20<sup>th</sup> edition, ESRI, Vienna, VA, 2007.

The number of physician office visits generated in the Shattuck, 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 Shattuck medical service area. Residents in the primary medical service area were estimated to make 24,847 total physician office visits per year, while residents of the secondary medical service area were estimated to visit physicians 66,500 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 14,510 primary care physician visits ( $58.4\% \times 24,847$ ), and the secondary medical service area will generate 38,836 visits ( $58.4\% \times 66,500$ ) yielding a total of 53,346 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 Shattuck medical service area. If there is a 90 percent usage of Shattuck 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 16,943 to 18,885 primary care physician office visits will be made annually in the Shattuck medical service area. The national average for the number of annual office visits to each primary care physician is 4,870 [3]. Therefore, Shattuck needs an estimated 3.48 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 ( $16,943/4,870 = 3.48$ ). By expanding the secondary usage rate to 15 percent, the need becomes 3.88 total primary care physicians ( $18,885/4,870 = 3.88$ ). 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 Hugo. 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 Shattuck, Oklahoma. The results suggest that, given a 90% primary service area usage rate and a 10% secondary service area usage rate, an estimated 3.48 primary care physicians can be supported in the Shattuck area. The actual number of physicians that the Shattuck 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 Shattuck 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. Should this occur, revised estimates of physician office visits should be made.

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 Shattuck Medical Service Areas**

<b>PRIMARY MEDICAL SERVICE AREA</b>							
	Male			Female			
Age	2007 Population <sup>1</sup>	Visit Rate <sup>2</sup>	Visits	2007 Population <sup>1</sup>	Visit Rate <sup>2</sup>	Visits	Total Visits
Under 15	546	2.8	1,529	509	2.5	1,274	2,803
15-24	451	1.3	586	400	2.2	880	1,466
25-44	724	1.8	1,303	701	3.1	2,174	3,476
45-64	1,008	3.3	3,327	1,059	4.5	4,767	8,095
65+	<u>578</u>	6.2	<u>3,585</u>	<u>809</u>	6.7	<u>5,422</u>	<u>9,007</u>
<b>Total</b>	3,307		10,330	3,479		14,517	<b>24,847</b>
Primary Medical Service Area - Local Primary Care Physician Office Visits Per Year:							<b>14,510</b>

<b>SECONDARY MEDICAL SERVICE AREA</b>							
	Male			Female			
Age	2007 Population <sup>1</sup>	Visit Rate <sup>2</sup>	Visits	2007 Population <sup>1</sup>	Visit Rate <sup>2</sup>	Visits	Total Visits
Under 15	1,914	2.8	5,358	1,785	2.5	4,464	9,822
15-24	1,581	1.3	2,055	1,402	2.2	3,085	5,140
25-44	2,540	1.8	4,571	2,461	3.1	7,628	12,199
45-64	2,545	3.3	8,398	2,674	4.5	12,033	20,430
65-74	<u>1,214</u>	6.2	<u>7,526</u>	<u>1,699</u>	6.7	<u>11,382</u>	<u>18,908</u>
<b>Total</b>	9,793		27,908	10,021		38,592	<b>66,500</b>
Secondary Medical Service Area - Local Primary Care Physician Office Visits Per Year:							<b>38,836</b>

<sup>1</sup>Source: Community Sourcebook of Zip Code Demographics, 20<sup>th</sup> edition, ESRI, Vienna, VA, 2007 and American Community Survey, US Census, Age and Sex Population.

<sup>2</sup>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 Shattuck 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%	12,099	12,825	13,550	14,276	15,001	15,727	16,452
	10%	14,041	14,766	15,492	16,217	<b>16,943</b>	17,668	18,394
	15%	15,983	16,708	17,434	18,159	<b>18,885</b>	19,610	20,336
	20%	17,924	18,650	19,376	20,101	20,827	21,552	22,278
	25%	19,866	20,592	21,317	22,043	22,768	23,494	24,219
	30%	21,808	22,534	23,259	23,985	24,710	25,436	26,161
	35%	23,750	24,475	25,201	25,926	26,652	27,377	28,103
	40%	25,692	26,417	27,143	27,868	28,594	29,319	30,045
	45%	27,633	28,359	29,084	29,810	30,536	31,261	31,987
	50%	29,575	30,301	31,026	31,752	32,477	33,203	33,928

<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>3.48 to 3.88 Total Primary Care Physicians</b>  Based on 4,870 average annual primary care office visits per physician practice in Oklahoma</p>
---

## 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.
- [2] "Internal Medicine - A Systematic Approach to the Planning and Development of a Community Practice - A Step-by-Step Guide," Miller, K.A., Doeksen, G., Miller, D., Campbell, J., and Shelton, P.J., University of Oklahoma Health Sciences Center, 1993.
- [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] Community Sourcebook of Zip Code Demographics, 20<sup>th</sup> edition, ESRI, Vienna, VA, 2007.