

Benefits of Healthcare to a Community

Access to healthcare is an integral part of any community. Healthcare facilities and services bring a number of benefits to a community. The primary benefit is the availability of quality services to meet the healthcare needs of your citizens. Important economic development benefits include:

- Attraction of new business and industry
- Stop the out-migration of existing businesses and industry
- Increase tax revenues
- Job creation
- Stimulate the local economy through direct, indirect, and induced spending
- Increase the quality of life for a community's residents

One major component of any community's economic development effort is a viable healthcare delivery system. Healthcare services are needed to attract new industry, stop the out-migration of existing industry, and increase tax revenues. Few employers are willing to locate in an area where their employees will not have access to healthcare facilities and qualified medical staff. Additionally, healthcare facilities are often the largest purchasers of labor, goods, and services in a community.

The economic impact of healthcare facilities back to communities can be felt through direct, indirect, and induced spending. Direct spending comes in the form of labor, food, office supplies, utilities and other goods, and services consumed directly by the healthcare facility.

The indirect impact healthcare services have on a community come in the form of additional medical businesses that compliment one another such as: physicians' offices, retail pharmacies, nursing homes, and medical equipment rental and retail outlets. Indirect spending also benefits nonmedical businesses such as restaurants and motels that cater to patients and their families.

Healthcare facilities and services also generate an induced spending effect. Induced spending can be described as the amount spent by employees of the healthcare facility in the community. Induced spending can stimulate additional spending by local businesses, employees of local businesses, and increase local employment.

In addition to the economic benefits healthcare facilities and services bring a local community, perhaps the most important benefit is the positive impact they have to a community's quality of life and social structure.

Executive Summary

Buxton[®] has studied the healthcare demand and supply levels of South Lake Tahoe in comparison to Medical Group Management Association (MGMA) average physician service levels and relevant benchmark cities to aid South Lake Tahoe in understanding current healthcare demand and supply and identify potential needs that are not met by existing healthcare infrastructure. The objectives were as follows:

Objectives

- To determine benchmarks for comparison against South Lake Tahoe.
 - Macro benchmark (compared to the State of California)
 - Micro benchmark (compared to 20 similar cities)
- To compare South Lake Tahoe to the benchmarks based on the following:
 - Major Specialty Categories
 - Estimated visits (2008)
 - Projected visits (2013)
 - Projected visits Growth Rate (2008-2013)
 - Physicians
 - Hospitals
- To compare South Lake Tahoe to optimal service levels to identify potential needs

Key Findings

The table below identifies the Surplus / Shortage levels by specialty for South Lake Tahoe as compared to the optimal service levels (based on MGMA median annual visits per physician) and the Surplus / Shortage levels of hospital beds as outlined within the report.

Category	2008	2013
Cardiovascular Disease	Shortage	Shortage
Dermatology	Surplus	Surplus
General Surgery	Surplus	Surplus
General & Family Medicine	Surplus	Surplus
Internal Medicine	Shortage	Shortage
Neurology	Surplus	Surplus
Obstetrics & Gynecology	Surplus	Surplus
Oncology	Shortage	Shortage
Ophthalmology	Shortage	Shortage
Orthopedic Surgery	Surplus	Surplus
Otolaryngology	Shortage	Shortage
Pediatric	Surplus	Surplus
Psychology	Surplus	Surplus
Urology	Shortage	Shortage
Hospital Beds	Surplus	Surplus

Recommendations

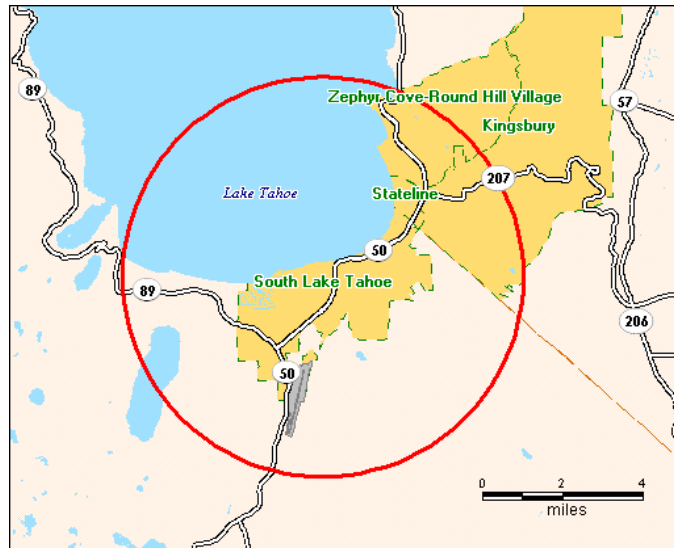
In order to offer healthcare services at average levels, South Lake Tahoe should seek to increase access to more physicians for the Major Specialty Categories including Cardiovascular Disease, Internal Medicine, Oncology, Ophthalmology, Otolaryngology and Urology. Of particular concern should be Internal Medicine and Ophthalmology physicians because South Lake Tahoe is short at least one and a half Full-Time Equivalent (FTE) physicians from optimal levels.

Additionally, it has been identified that South Lake Tahoe is currently experiencing a surplus of 75 staffed hospital beds, which will decrease to 52 over the next five years.

South Lake Tahoe Primary Health Services Area

South Lake Tahoe's Primary Health Services area is the geographic boundary containing the vast majority of the population and healthcare providers relevant to South Lake Tahoe's healthcare needs. The Primary Health Services area for South Lake Tahoe was determined to be a 5-mile radius from the city center point.

This area, depicted to the right, covers South Lake Tahoe and the surrounding area to ensure that all factors influencing the demand and supply for health services in South Lake Tahoe are accounted for.



Shortage / Surplus estimates are provided for this entire area with a shortage indicating that the population is likely seeking services outside of the area for a particular category.

South Lake Tahoe Current State

The City of South Lake Tahoe is located in El Dorado County approximately 20 miles southwest of the Carson City. The primary health services area of the city exhibits the following demographic characteristics:

- Population: 32,119
- Employment: 18,923
- Five-year projected population growth rate: 3.1%
- Median age: 33.6 years
- Median household income: \$48,121

This same service area exhibits the following healthcare characteristics:

- Estimated annual visits to a physician by residents: 77,388
- Five-year projected visits growth rate: 8.0%
- Estimated annual days spent in a hospital: 16,608
- Five-year projected days spent in a hospital growth rate: 9.2%
- Barton Memorial Hospital: 121 staffed hospital beds

Methodology

Benchmark Cities

In order to analyze how South Lake Tahoe ranks in health services and demands compared to other cities of the same size, a group of similar cities were selected. These similar cities were determined using the following steps:

- The following demographic characteristics (measured within five miles) of South Lake Tahoe were compared to all other cities within 500 miles of South Lake Tahoe:
 - Residential Population
 - Employee Population
 - Population Growth
 - Median Age
 - Household Income
- The Buxton Urban Density System (BUDS) is a measure of population density that describes the range between highly urban and highly rural areas. Population density is described by the following BUDS classifications:

BUDS Definition	
1	Rural
2	In-Town
3	Suburban
4	Metropolitan
5	Urban

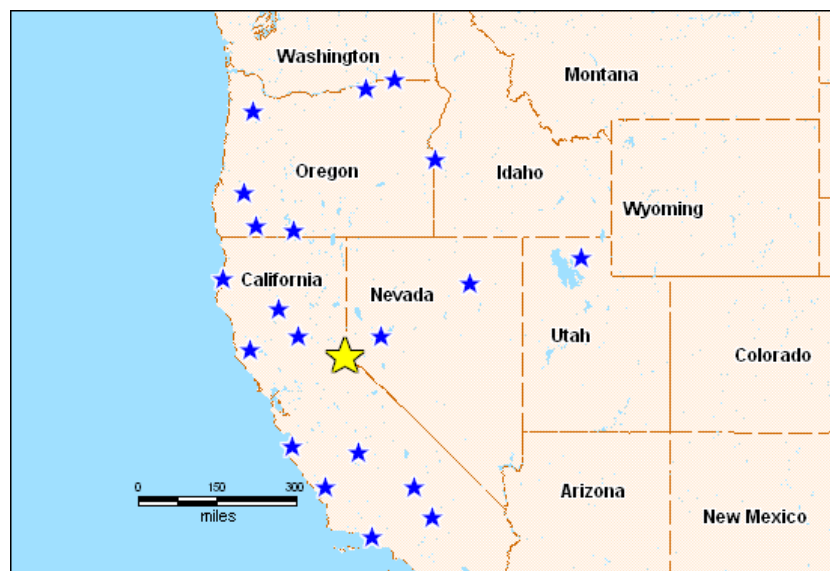
- South Lake Tahoe is classified as an In-Town community. Cities must fall within one BUDS classification of South Lake Tahoe to be included as benchmark cities so only cities classified as Rural, In-Town, or Suburban were considered in the analysis.

South Lake Tahoe, CA: HealthCareID® Analysis

The chart below shows the 20 cities near South Lake Tahoe chosen based on the criteria above. The selection demographics within 5 miles of each similar city’s center point are shown as well as the average demographics for the twenty similar cities. Going forward the similar city average will be used for all “benchmark city” comparisons.

City	Population	Employment	Population Growth	Median Income	Median Age
Ukiah, CA	29,414	17,345	2.2%	\$43,899	34.7
Walla Walla East, WA	45,696	20,972	2.7%	\$41,979	35.2
Barstow, CA	31,746	8,815	4.8%	\$45,679	35.3
Fruitland, ID	28,410	14,025	2.8%	\$38,516	34.5
Hermiston, OR	23,204	8,954	1.6%	\$46,806	35.1
Kingsburg, CA	29,417	12,927	6.4%	\$44,496	32.9
Santa Paula, CA	32,323	9,497	0.6%	\$52,270	32.8
Ridgecrest, CA	30,242	9,915	5.0%	\$55,935	37.0
Altamont, OR	44,380	18,809	3.3%	\$38,035	35.8
El Paso de Robles, CA	33,068	16,870	7.5%	\$50,431	35.8
Fallon, NV	19,571	8,219	2.9%	\$50,332	36.3
Lafayette, OR	26,517	14,374	7.9%	\$49,457	35.5
Elko, NV	20,013	15,828	2.3%	\$60,472	35.7
Red Bluff, CA	24,213	11,448	4.9%	\$38,328	36.4
McKinleyville, CA	26,355	6,415	3.0%	\$39,896	33.1
Marina, CA	36,316	8,116	-0.3%	\$51,392	32.4
Brigham City, UT	23,359	9,172	6.1%	\$54,691	31.4
Green, OR	18,883	11,562	1.8%	\$41,022	36.8
Oroville, CA	37,654	15,485	3.0%	\$32,624	35.2
Jacksonville, OR	43,113	20,757	8.5%	\$42,787	35.2
Benchmark Average	30,195	12,975	3.8%	\$45,952	35
South Lake Tahoe, CA	32,119	18,923	3.1%	\$48,121	33.6

The map below shows South Lake Tahoe in yellow and the selected benchmark cities in blue.



Data

The following sets of information were utilized in the analysis:

- **Healthcare Demand Data:** Buxton utilizes the following data sets to measure demand for specific health services by the population of a given geography.
 - Major Specialty Categories (estimated visits) – This database consists of estimated Physician Office visits by the 14 major specialty categories offering estimated (current) and projected (five-year) ambulatory visits (office visits) to a physician for a medical need. The dataset is based on the National Ambulatory Medical Care Survey compiled by the National Center for Health Statistics and adjusted for 15 age and sex groupings by major US Census Regions.
 - Hospital Discharges and Length of Stay – This database consists of the number of estimated (current) and projected (five-year) hospital discharges and days spent in a hospital. The dataset is based on the National Hospital Discharge Survey compiled by the National Center for Health Statistics and adjusted for 15 age and sex groupings by major US Census Regions.
- **Healthcare Supply Data:** Buxton utilizes the following data sets to measure the available supply of hospitals and physicians to meet the demand for health services of a given geography.
 - Physicians Data – This database consists of physicians by the 14 Major Specialty Categories. Full-Time Equivalent (FTE) physician metrics are based on the total number of practice locations for each physician. A physician's primary practice location is given the highest weighting with all other locations receiving equal parts of the remainder.
 - Hospital Data – This database consists of hospitals registered in the American Hospital Association (AHA).

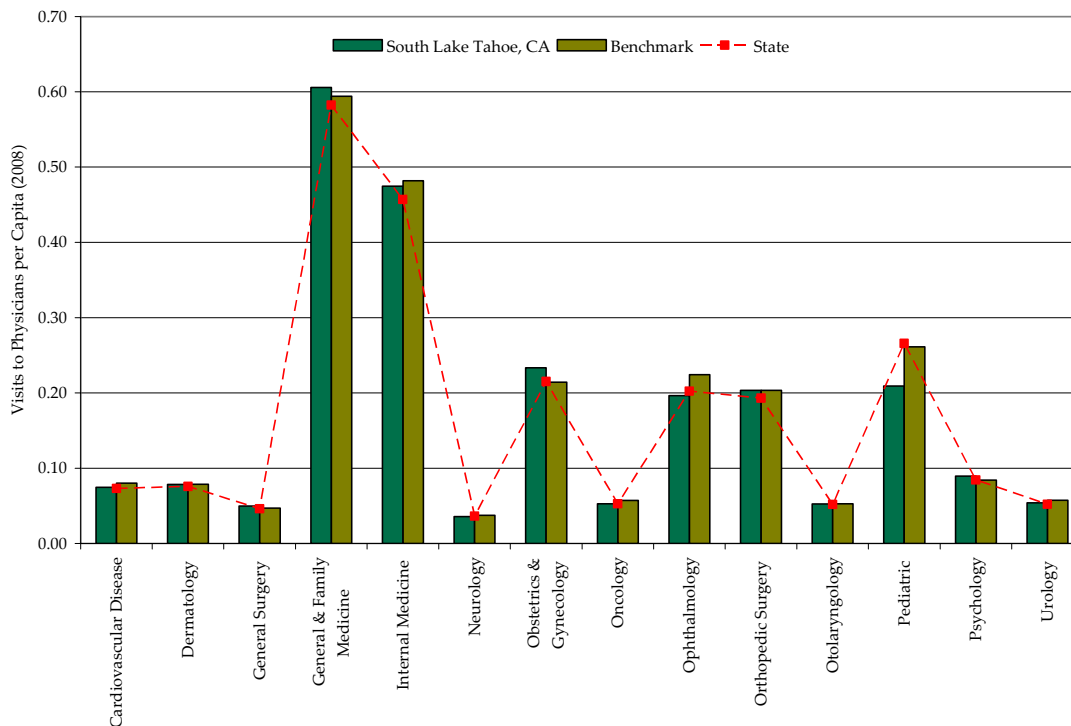
The following sets of information are calculated values utilized in the analysis:

- **Physicians per 100,000 visits:** This is a calculated value derived from the Major Specialty Categories in the Demand (estimated visits) and Supply data (physicians) sets. The value is calculated by dividing the total number of physicians for a given major specialty whose practice falls within a given geography by the total number of visits within the same category and geography and multiplying by 100,000. Buxton utilizes the resulting value as a measure of the saturation level for each specialty within a given geography.
- **Optimal FTE physicians per 100,000 visits:** This is a calculated value derived from the Medical Group Management Association (MGMA) median physician service levels listed in the table below. The value is calculated by inverting the MGMA median annual visits per FTE physician and multiplying by 100,000. Buxton utilizes both values when measuring physician shortage / surplus for each specialty within a given geography.

Estimated visits

The chart and graph below provide the estimated number of visits to physicians by category for South Lake Tahoe and the number of visits per capita for South Lake Tahoe, the average benchmark city, and the state.

Major Specialty Category	Estimated Visits per Capita (2008)			
	South Lake Tahoe, CA Visits 2008	South Lake Tahoe, CA	Benchmark	State
Cardiovascular Disease	2,393	0.07	0.08	0.07
Dermatology	2,523	0.08	0.08	0.08
General Surgery	1,596	0.05	0.05	0.05
General & Family Medicine	19,459	0.61	0.59	0.58
Internal Medicine	15,241	0.47	0.48	0.46
Neurology	1,141	0.04	0.04	0.04
Obstetrics & Gynecology	7,496	0.23	0.21	0.22
Oncology	1,695	0.05	0.06	0.05
Ophthalmology	6,305	0.20	0.22	0.20
Orthopedic Surgery	6,532	0.20	0.20	0.19
Otolaryngology	1,685	0.05	0.05	0.05
Pediatric	6,715	0.21	0.26	0.27
Psychology	2,874	0.09	0.08	0.08
Urology	1,732	0.05	0.06	0.05



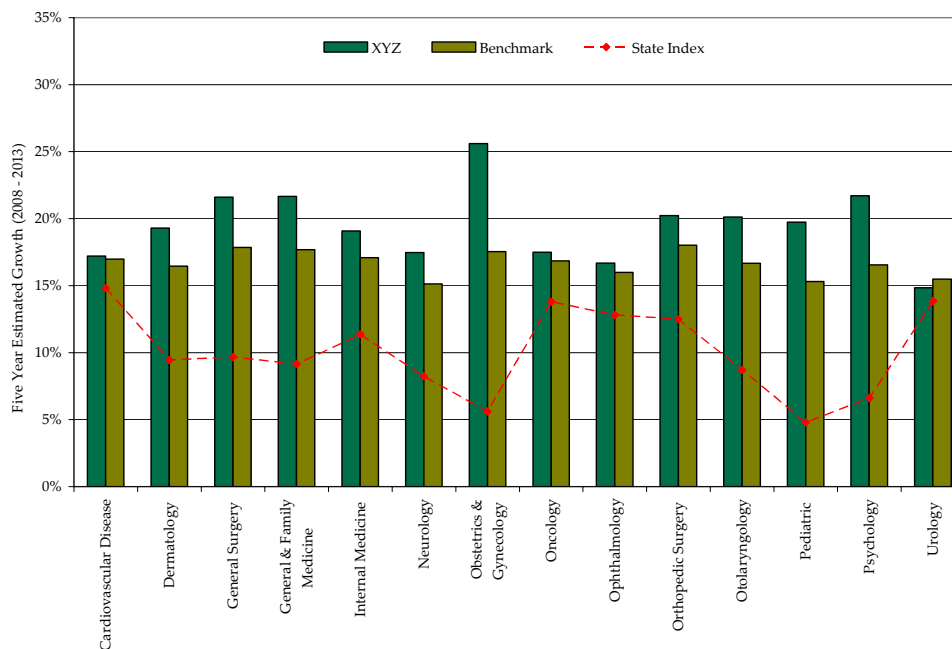
For example, under the Pediatric Medicine category, South Lake Tahoe is estimated to have 6,715 yearly visits to physicians or 0.21 visits per capita. The average benchmark city is estimated to have 0.26 visits per capita and the state is estimated to have 0.27 visits per capita. Notice that South Lake Tahoe is expected to experience fewer visits to Pediatric Medicine physicians per capita than both the average benchmark city and the state.

Five Year Projected visits Growth

The chart and graph below provide the estimated 2013 visits for South Lake Tahoe and the five-year projected growth rate for South Lake Tahoe, the average growth rate for the benchmark cities, and the state growth rate by category.

Major Specialty Category	Estimated Visits Growth Percentage (2008-2013)			
	South Lake Tahoe, CA	South Lake Tahoe, CA	Benchmark	State
Cardiovascular Disease	2,847	19%	10%	15%
Dermatology	2,751	9%	6%	9%
General Surgery	1,730	8%	6%	10%
General & Family Medicine	20,848	7%	6%	9%
Internal Medicine	17,056	12%	8%	11%
Neurology	1,216	7%	5%	8%
Obstetrics & Gynecology	7,585	1%	5%	6%
Oncology	1,995	18%	9%	14%
Ophthalmology	7,365	17%	9%	13%
Orthopedic Surgery	7,340	12%	8%	12%
Otolaryngology	1,801	7%	6%	9%
Pediatric	6,538	-3%	2%	5%
Psychology	2,963	3%	3%	7%
Urology	2,043	18%	9%	14%

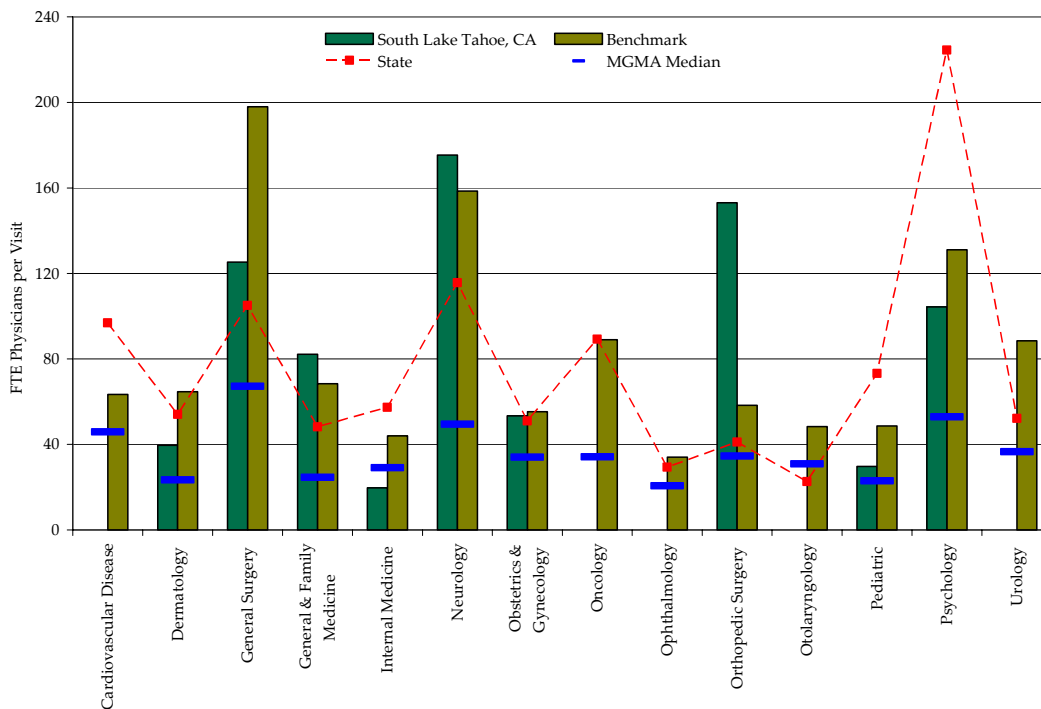
For example, from 2008 to 2013, Cardiovascular Disease Medicine visits in South Lake Tahoe are expected to grow 19% to 2,847 out pacing the average benchmark city (10%) and the state (15%).



Full-Time Equivalent Physician Service Levels

The chart and graph below provide the Full-Time Equivalent (FTE) Physicians per 100,000 visits for South Lake Tahoe, the average benchmark city, and the state by category and the optimal level derived from the MGMA median annual visits per physician for each category.

Major Specialty Category	FTE Physicians per 100,000 Visits (2008)					
	South Lake Tahoe, CA	South Lake Tahoe, CA	South Lake Tahoe			MGMA
	Physicians	FTE	Tahoe, CA	Benchmark	State	Median
Cardiovascular Disease	0	0.00	0	63	97	46
Dermatology	1	1.00	40	65	54	23
General Surgery	3	2.00	125	198	105	67
General & Family Medicine	19	16.00	82	68	48	25
Internal Medicine	3	3.00	20	44	57	29
Neurology	2	2.00	175	159	116	49
Obstetrics & Gynecology	5	4.00	53	55	51	34
Oncology	0	0.00	0	89	89	34
Ophthalmology	0	0.00	0	34	29	21
Orthopedic Surgery	12	10.00	153	58	41	35
Otolaryngology	0	0.00	0	48	23	31
Pediatric	2	2.00	30	49	73	23
Psychology	5	3.00	104	131	224	53
Urology	0	0.00	0	88	52	37



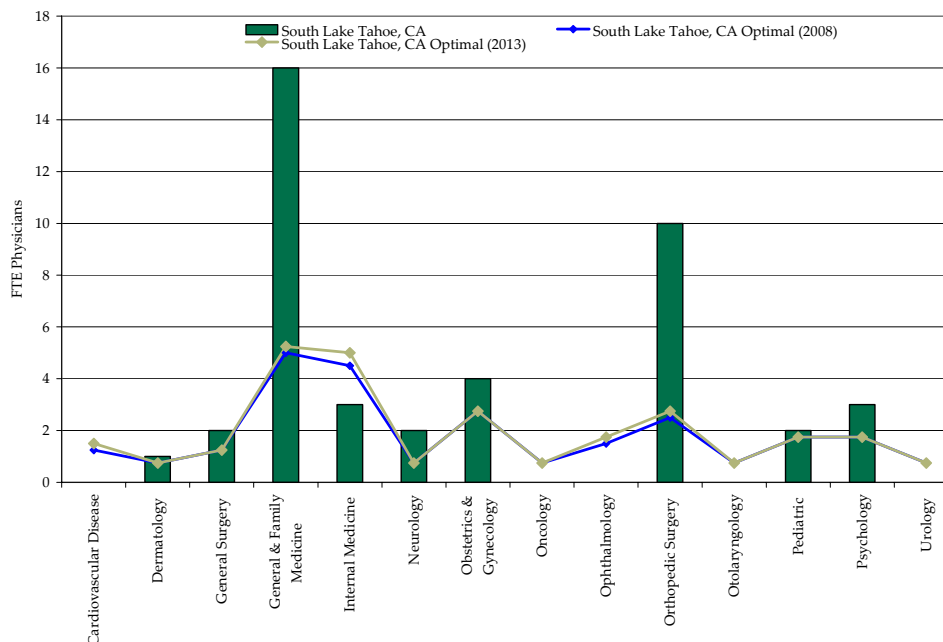
For example, for the General & Family Medicine category, South Lake Tahoe currently has 19 physicians with an estimated FTE of 16.00. This equates to an estimated 82 FTE physicians per 100,000 visits, the average benchmark city is estimated to have 68 FTE physicians per 100,000 visits, the state is estimated to have 48 FTE physicians per 100,000 visits, and the MGMA average is 25 FTE physicians per 100,000 visits. Notice that South Lake Tahoe falls far above of the average benchmark city, the state, and the MGMA median.

Optimal Full-Time Equivalent Physician Levels

Using the MGMA median annual visits per physician, the estimated (2008) visits and projected (2013) visits for South Lake Tahoe, Buxton has projected the number of FTE physicians needed to reach optimal levels for South Lake Tahoe. The chart below provides the current FTE physicians for South Lake Tahoe, the optimal FTE physicians for South Lake Tahoe based on 2008 and 2013 estimated visits, and the estimated (2008) and projected (2013) surplus/shortage FTE physicians for South Lake Tahoe by category.

Major Specialty Category	South Lake Tahoe, CA		XYZ City		Surplus / Shortage	
	Current FTE	Optimal (2008)	Optimal (2008)	Optimal (2013)	(2008)	(2013)
Cardiovascular Disease	0.00	1.25	1.25	1.50	1.50	1.50
Dermatology	1.00	0.75	0.25	0.75	0.25	0.25
General Surgery	2.00	1.25	0.75	1.25	0.75	0.75
General & Family Medicine	16.00	5.00	11.00	5.25	10.75	10.75
Internal Medicine	3.00	4.50	1.50	5.00	2.00	2.00
Neurology	2.00	0.75	1.25	0.75	1.25	1.25
Obstetrics & Gynecology	4.00	2.75	1.25	2.75	1.25	1.25
Oncology	0.00	0.75	0.75	0.75	0.75	0.75
Ophthalmology	0.00	1.50	1.50	1.75	1.75	1.75
Orthopedic Surgery	10.00	2.50	7.50	2.75	7.25	7.25
Otolaryngology	0.00	0.75	0.75	0.75	0.75	0.75
Pediatric	2.00	1.75	0.25	1.75	0.25	0.25
Psychology	3.00	1.75	1.25	1.75	1.25	1.25
Urology	0.00	0.75	0.75	0.75	0.75	0.75

For example, for the General & Family Medicine category, South Lake Tahoe’s estimated (2008) optimal level is 5.00 FTE physicians and projected (2013) optimal level is 5.25. Currently there are only 16.00 FTE physicians for a current surplus of 11.00 FTE physicians that is projected to decrease to a surplus of 10.75 FTE physicians by 2013.



Hospital Capacity

The following hospitals are located within the primary health services area for South Lake Tahoe:

- o Barton Memorial Hospital: 121 Staffed Beds

The chart below provides the total number of hospital beds, estimated (2008) and projected (2013) number of days spent in a hospital by the population of South Lake Tahoe, and the projected (2008-2013) days spent in a hospital growth percentage.

Variable	South Lake		
	Tahoe, CA	Benchmark	State
Hospital Beds (2008)	121	61	95,120
Estimated Days Spent in Hospital (2008)	16,608	16,621	19,973,943
Estimated Days Spent in Hospital per Capita (2008)	0.52	0.56	0.54
Projected Growth Percentage (2008-2013)	9.2%	7.0%	10.1%
Years spent in Hospital per Hospital Bed (2008)	0.38	0.75	0.58
Years spent in Hospital per Hospital Bed (2013)	0.41	0.80	0.63

Assuming each hospital bed can, at best, treat one patient per day, a hospital’s maximum capacity is equal to the number of beds multiplied by the number of days in a year. Based on this assumption, the minimum number of hospital beds required to provide adequate services is the Estimated Days Spent in a Hospital divided by 365 (the number of days in a year) – a relatively conservative assumption considering an area at this capacity would have every hospital bed occupied every day of the year if the population sought treatment only at South Lake Tahoe hospitals.

Based on South Lake Tahoe’s 16,608 estimated (2008) days spent in a hospital, the minimum number of beds needed is 46. In 2013, the minimum number is expected to increase to 50. Currently there are 121 hospital beds available – putting South Lake Tahoe far above the minimum number of hospital beds.

