

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 Placerville, CA in comparison to Medical Group Management Association (MGMA) average physician service levels and relevant benchmark cities to aid Placerville 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 Placerville.
 - Macro benchmark (compared to the State of California)
 - Micro benchmark (compared to 20 similar cities)
- To compare Placerville 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 Placerville to optimal service levels to identify potential needs

Key Findings

The table below identifies the Surplus / Shortage levels by specialty for Placerville 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	Surplus	Surplus
Dermatology	Shortage	Shortage
General Surgery	Surplus	Surplus
General & Family Medicine	Surplus	Surplus
Internal Medicine	Surplus	Surplus
Neurology	Surplus	Surplus
Obstetrics & Gynecology	Surplus	Surplus
Oncology	Shortage	Shortage
Ophthalmology	Surplus	Surplus
Orthopedic Surgery	Surplus	Surplus
Otolaryngology	Shortage	Shortage
Pediatric	Surplus	Surplus
Psychology	Surplus	Surplus
Urology	Surplus	Surplus
Hospital Beds	Surplus	Surplus

Recommendations

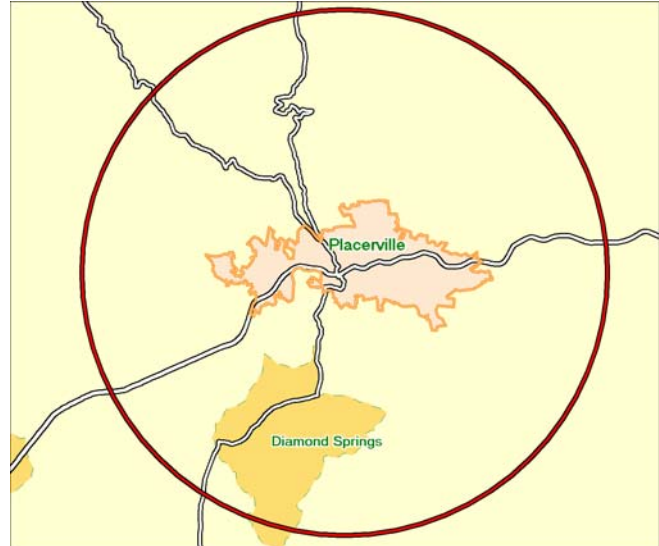
In order to offer healthcare services at average levels, Placerville should seek to increase access to more physicians for Major Specialty Categories including Dermatology, Oncology and Otolaryngology physicians.

Additionally, it has been identified that Placerville is currently experiencing a surplus of 48 staffed hospital beds that is expected to decrease to 42 over five years.

Placerville Primary Health Services Area

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

This area, depicted to the right, covers Placerville and the surrounding area to ensure that all factors influencing the demand and supply for health services in Placerville 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.



Placerville Current State

The City of Placerville is located in El Dorado County approximately 40 miles northeast of the City of Sacramento. The primary health services area of the city exhibits the following demographic characteristics:

- Population: 30,675
- Employment: 25,352
- Five-year projected population growth rate: 3.4%
- Median age: 44.8 years
- Median household income: \$51,451

This same service area exhibits the following healthcare characteristics:

- Estimated annual visits to a physician by residents: 86,398
- Five-year projected visits growth rate: 8.7%
- Estimated annual days spent in a hospital: 20,838
- Five-year projected days spent in a hospital growth rate: 10.2%
- Marshall Medical Center: 105 staffed hospital beds

Methodology

Benchmark Cities

In order to analyze how Placerville 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 Placerville were compared to all other cities within 500 miles of Placerville:
 - 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

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

Placerville, CA: HealthCareID® Analysis

The chart below shows the 20 cities near Placerville 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
Nevada City, CA	34,254	24,253	5.5%	\$45,531	43.8
East Sonora, CA	29,007	14,571	3.4%	\$45,086	45.1
Roseburg, OR	27,592	23,688	2.3%	\$39,966	40.4
Bunker Hill, OR	33,851	17,751	2.4%	\$39,210	40.1
Talent, OR	27,122	12,256	4.0%	\$40,792	43.3
Atascadero, CA	32,351	11,678	1.7%	\$60,105	39.7
Auburn, CA	40,584	39,271	6.7%	\$58,755	45.7
Temelec, CA	33,086	13,767	0.1%	\$62,559	46.3
Gardnerville, NV	23,119	12,868	6.5%	\$62,461	44.5
Hood River, OR	19,022	9,710	4.6%	\$46,670	39.2
Laughlin, NV	23,714	15,870	6.7%	\$38,613	41.0
Mira Monte, CA	27,171	8,679	0.5%	\$62,856	43.7
Donald, OR	16,207	9,636	7.2%	\$50,540	41.4
Fallbrook, CA	39,590	11,178	2.2%	\$61,276	40.3
Pine Hills, CA	44,051	22,429	0.2%	\$38,188	38.6
South Lebanon, OR	23,589	7,433	4.7%	\$42,606	38.8
Big Bear City, CA	15,646	3,592	5.1%	\$45,202	40.8
Palo Cedro, CA	18,882	5,951	7.7%	\$54,389	39.1
China Lake Acres, CA	16,787	4,315	5.7%	\$58,972	39.6
Clearlake, CA	21,043	4,639	6.4%	\$28,306	40.6
Benchmark Average	27,333	13,677	4.2%	\$49,104	41.6
Placerville, CA	30,675	25,352	3.4%	\$51,451	44.8

The map below shows Placerville 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).

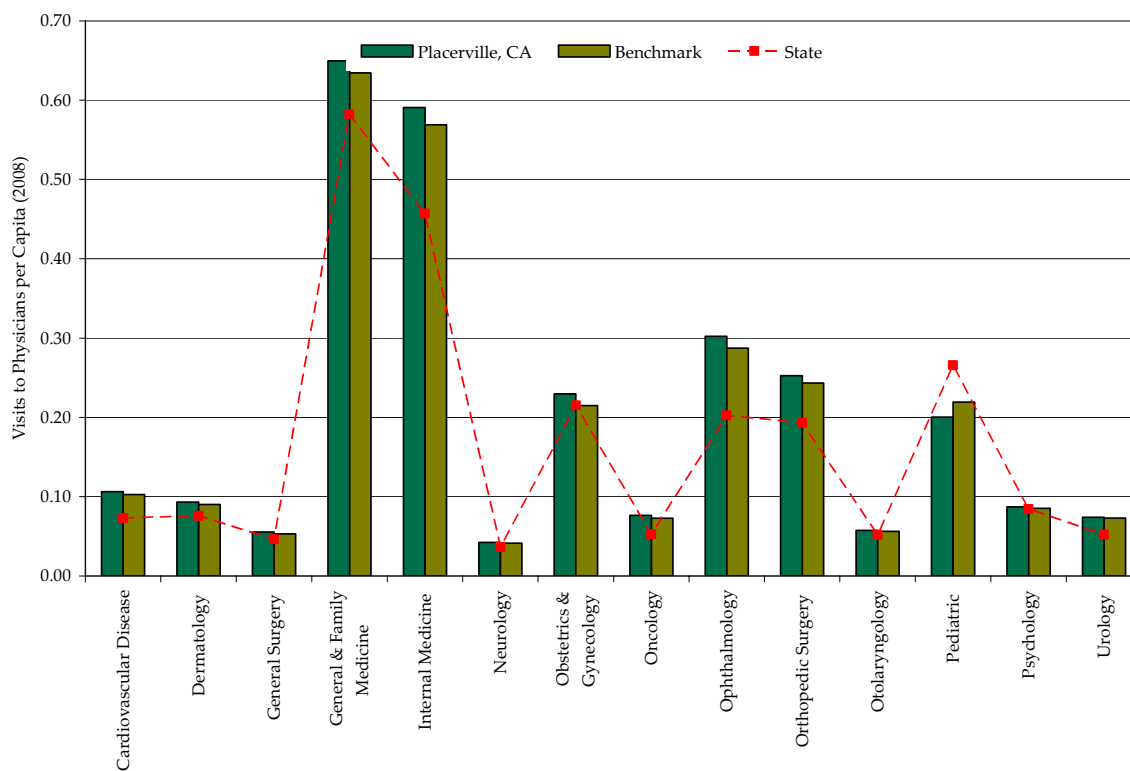
The following sets of information are calculated values utilized in the analysis:

- **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 Placerville and the number of visits per capita for Placerville, the average benchmark city, and the state.

Major Specialty Category	Estimated Visits per Capita (2008)			
	Placerville, CA	Placerville, CA	Benchmark	State
Cardiovascular Disease	3,259	0.11	0.10	0.07
Dermatology	2,859	0.09	0.09	0.08
General Surgery	1,698	0.06	0.05	0.05
General & Family Medicine	19,918	0.65	0.63	0.58
Internal Medicine	18,120	0.59	0.57	0.46
Neurology	1,296	0.04	0.04	0.04
Obstetrics & Gynecology	7,037	0.23	0.21	0.22
Oncology	2,341	0.08	0.07	0.05
Ophthalmology	9,275	0.30	0.29	0.20
Orthopedic Surgery	7,750	0.25	0.24	0.19
Otolaryngology	1,760	0.06	0.06	0.05
Pediatric	6,146	0.20	0.22	0.27
Psychology	2,672	0.09	0.09	0.08
Urology	2,268	0.07	0.07	0.05



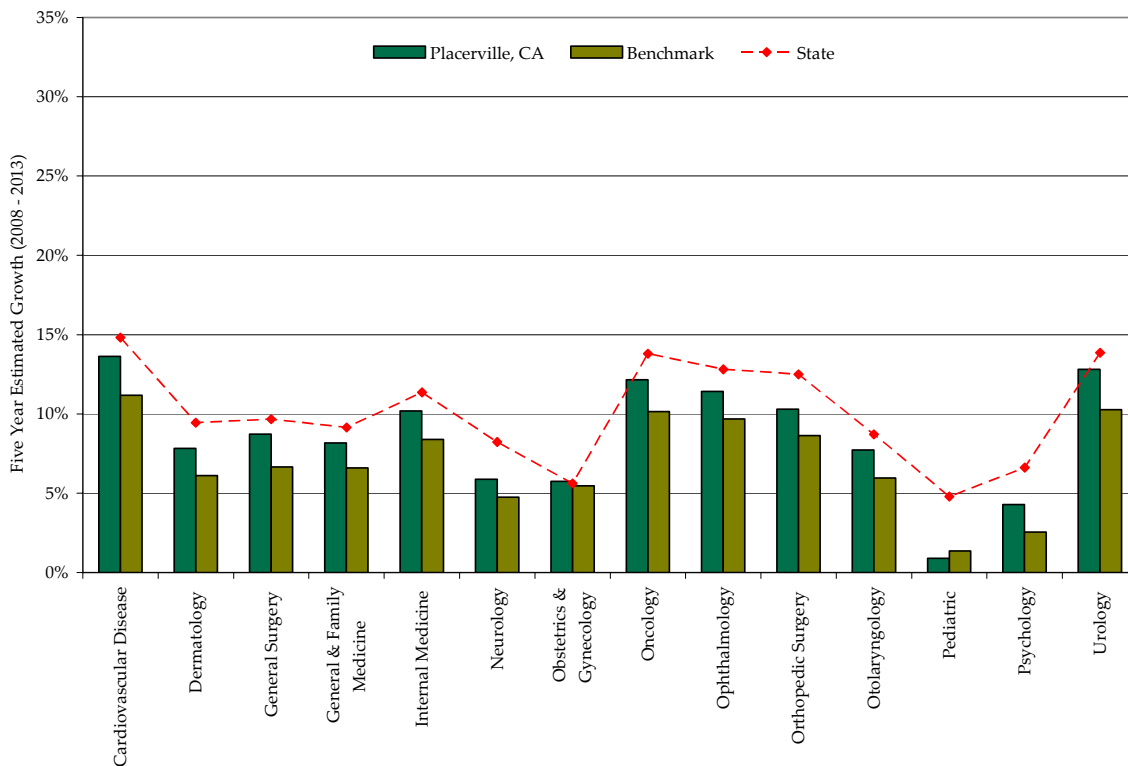
For example, under the General & Family Medicine category, Placerville is estimated to have 19,918 yearly visits to physicians or 0.65 visits per capita. The average benchmark city is estimated to have 0.63 visits per capita and the state is estimated to have 0.58 visits per capita. Notice that Placerville is expected to experience more visits to General & Family 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 Placerville and the five-year projected growth rate for Placerville, the average growth rate for the benchmark cities, and the state growth rate by category.

Major Specialty Category	Estimated Visits Growth Percentage (2008-2013)			
	Placerville, CA Visits (2013)	Placerville, CA	Benchmark	State
Cardiovascular Disease	3,703	14%	11%	15%
Dermatology	3,083	8%	6%	9%
General Surgery	1,846	9%	7%	10%
General & Family Medicine	21,544	8%	7%	9%
Internal Medicine	19,966	10%	8%	11%
Neurology	1,372	6%	5%	8%
Obstetrics & Gynecology	7,441	6%	5%	6%
Oncology	2,625	12%	10%	14%
Ophthalmology	10,333	11%	10%	13%
Orthopedic Surgery	8,548	10%	9%	12%
Otolaryngology	1,896	8%	6%	9%
Pediatric	6,201	1%	1%	5%
Psychology	2,786	4%	3%	7%
Urology	2,559	13%	10%	14%

For example, from 2008 to 2013, General & Family Medicine visits in Placerville are expected to grow 8% to 21,544 out pacing the average benchmark city (7%).

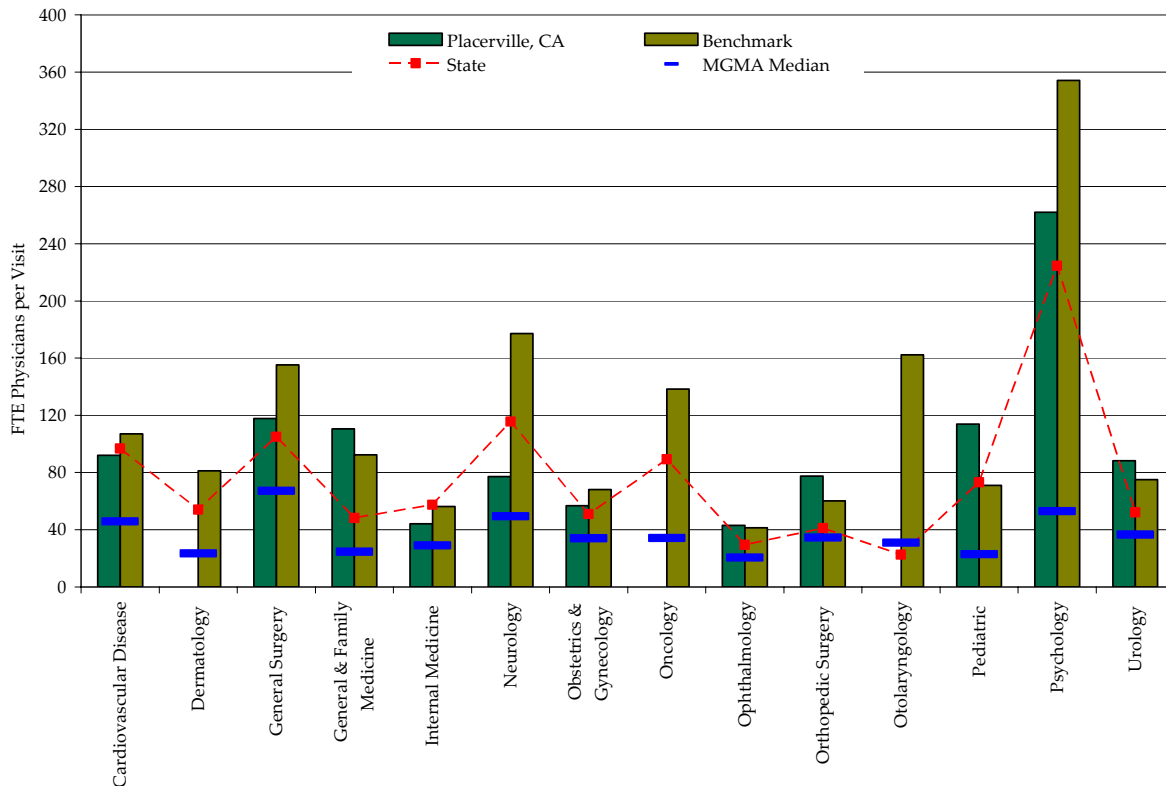


Full-Time Equivalent Physician Service Levels

The chart and graph below provide the Full-Time Equivalent (FTE) Physicians per 100,000 visits for Placerville, 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.

FTE Physicians per 100,000 Visits (2008)						
Major Specialty Category	Placerville, CA	Placerville, CA	Placerville, CA		MGMA	
	Physicians	FTE Physicians	CA	Benchmark	State	Median
Cardiovascular Disease	3	3.00	92	107	97	46
Dermatology	0	0.00	0	81	54	23
General Surgery	2	2.00	118	155	105	67
General & Family Medicine	22	22.00	110	92	48	25
Internal Medicine	8	8.00	44	56	57	29
Neurology	1	1.00	77	177	116	49
Obstetrics & Gynecology	5	4.00	57	68	51	34
Oncology	0	0.00	0	138	89	34
Ophthalmology	4	4.00	43	41	29	21
Orthopedic Surgery	8	6.00	77	60	41	35
Otolaryngology	0	0.00	0	162	23	31
Pediatric	8	7.00	114	71	73	23
Psychology	7	7.00	262	354	224	53
Urology	3	2.00	88	75	52	37

For example, for the General & Family Medicine category, Placerville currently has 22 physicians with an estimated FTE of 22.00. This equates to an estimated 110 FTE physicians per 100,000 visits, the average benchmark city is estimated to have 92 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 Placerville is positioned much higher than the average benchmark city, the state, and the MGMA median.

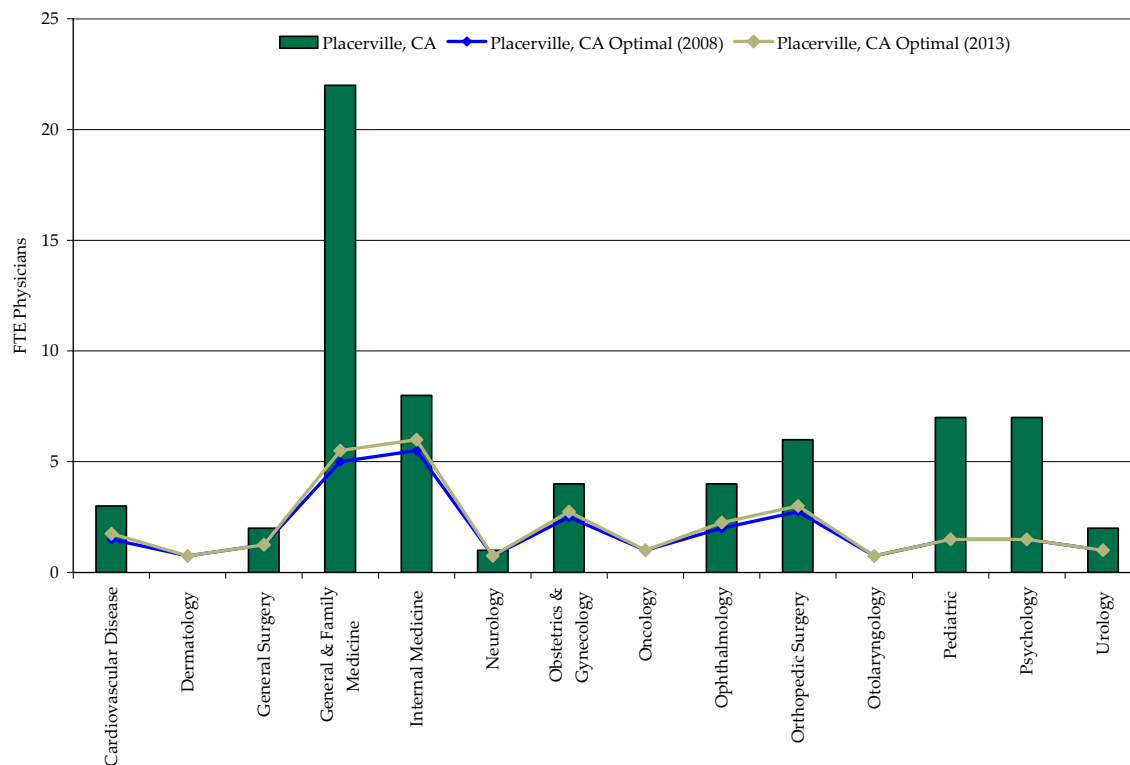


Optimal Full-Time Equivalent Physician Levels

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

Major Specialty Category	Placerville, CA Current FTE Physicians	Placerville, CA Optimal (2008)	Surplus / Shortage (2008)	Placerville, CA Optimal (2013)	Surplus / Shortage (2013)
Cardiovascular Disease	3.00	1.50	1.50	1.75	1.25
Dermatology	0.00	0.75	0.75	0.75	0.75
General Surgery	2.00	1.25	0.75	1.25	0.75
General & Family Medicine	22.00	5.00	17.00	5.50	16.50
Internal Medicine	8.00	5.50	2.50	6.00	2.00
Neurology	1.00	0.75	0.25	0.75	0.25
Obstetrics & Gynecology	4.00	2.50	1.50	2.75	1.25
Oncology	0.00	1.00	1.00	1.00	1.00
Ophthalmology	4.00	2.00	2.00	2.25	1.75
Orthopedic Surgery	6.00	2.75	3.25	3.00	3.00
Otolaryngology	0.00	0.75	0.75	0.75	0.75
Pediatric	7.00	1.50	5.50	1.50	5.50
Psychology	7.00	1.50	5.50	1.50	5.50
Urology	2.00	1.00	1.00	1.00	1.00

For example, for the General & Family Medicine category, Placerville’s estimated (2008) optimal level is 5.00 FTE physicians and projected (2013) optimal level is 5.50. Currently there are 22.00 FTE physicians for a current surplus of 17.00 FTE physicians that is projected to decrease to a surplus of 16.50 FTE physicians by 2013.



Hospital Capacity

The following hospitals are located within the primary health services area for Placerville:

- o Marshal Medical Center: 105 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 Placerville, and the projected (2008-2013) days spent in a hospital growth percentage.

Variable	Placerville, CA	Benchmark	State
Hospital Beds (2008)	105	133	95,120
Estimated Days Spent in Hospital (2008)	20,838	17,913	19,973,943
Estimated Days Spent in Hospital per Capita (2008)	0.68	0.66	0.54
Projected Growth Percentage (2008-2013)	10.2%	7.4%	10.1%
Years spent in Hospital per Hospital Bed (2008)	0.54	0.37	0.58
Years spent in Hospital per Hospital Bed (2013)	0.60	0.40	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 Placerville hospitals.

Based on Placerville’s 20,838 estimated (2008) days spent in a hospital, the minimum number of beds needed is 57. In 2013, the minimum number is expected to increase to 63. Currently there are 105 hospital beds available – putting Placerville above the minimum number of hospital beds.

