

HealthCareID® Analysis
Created For



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

Key Findings

The table below identifies the Surplus / Shortage levels by specialty for Oroville 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	Surplus	Surplus
Neurology	Shortage	Shortage
Obstetrics & Gynecology	Surplus	Surplus
Oncology	Optimal	Optimal
Ophthalmology	Surplus	Surplus
Orthopedic Surgery	Surplus	Surplus
Otolaryngology	Shortage	Shortage
Pediatric	Surplus	Surplus
Psychology	Surplus	Surplus
Urology	Optimal	Optimal
Hospital Beds	Surplus	Surplus

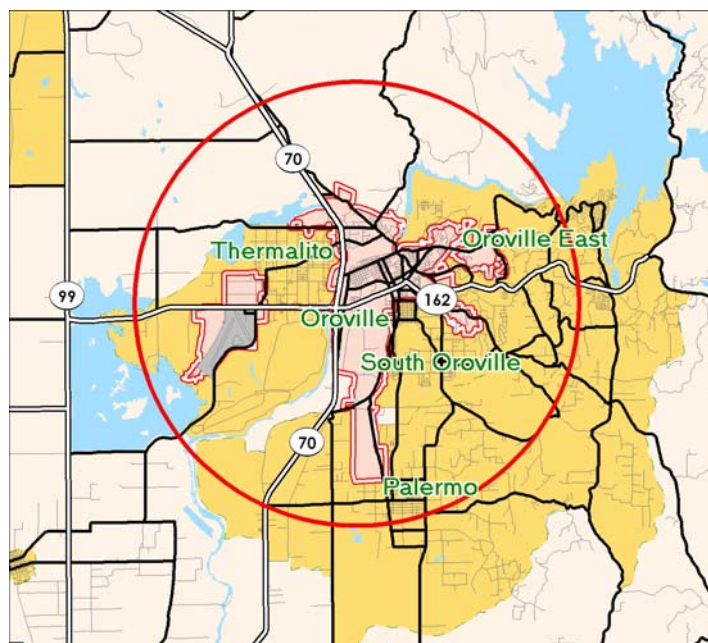
Recommendations

In order to offer healthcare services at average levels, Oroville should seek to increase access to more physicians for the following Major Specialty Categories: Cardiovascular Disease, Neurology, and Otolaryngology. None of these three fields has a physician classified in this category. Oroville has optimal current and future service levels in the fields of Oncology and Urology and no physician-related changes should occur in these areas. The remaining major specialty categories have a surplus based on current visits level within the 5 mile study area.

Oroville's Primary Health Services Area

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

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



Oroville Current State

The City of Oroville is located in Butte County approximately 22 miles southeast of the City of Chico. The primary health services area of the city exhibits the following demographic characteristics:

- Population: 37,654
- Employment: 15,485
- Five-year projected population growth rate: 3.0%
- Median age: 35.2 years
- Median household income: \$32,624

This same service area exhibits the following healthcare characteristics:

- Estimated annual visits to a physician by residents: 95,428
- Five-year projected visits growth rate: 5.4%
- Estimated annual days spent in a hospital: 22,558
- Five-year projected days spent in a hospital growth rate: .42%
- Oroville Hospital: 153 staffed hospital beds

Methodology

Benchmark Cities

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

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

Oroville, CA: HealthCareID® Analysis

The chart below shows the 20 cities near Oroville 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
Anderson, CA	27,481	9,242	6.4%	\$37,192	37.8
Barstow, CA	31,746	8,815	4.8%	\$45,679	35.3
Corcoran, CA	28,066	3,143	10.2%	\$35,091	34.6
Eagle Point, OR	19,991	8,559	13.1%	\$42,859	35.4
Eureka, CA	45,534	27,094	0.2%	\$37,547	38.3
Hermiston, OR	23,204	8,954	1.6%	\$46,806	35.1
Kingman, AZ	44,163	18,145	13.0%	\$37,982	37.7
Kingsburg, CA	29,417	12,927	6.4%	\$44,496	32.9
Klamath Falls, OR	45,232	20,935	3.6%	\$37,679	35.5
Laughlin, NV	23,714	15,870	6.7%	\$38,613	41.0
Lebanon, OR	22,097	7,319	4.6%	\$42,139	38.8
McKinleyville, CA	26,355	6,415	3.0%	\$39,896	33.1
Ontario, OR	28,316	13,861	2.4%	\$38,322	34.5
Red Bluff, CA	24,213	11,448	4.9%	\$38,328	36.4
Sanger, CA	30,696	8,144	9.6%	\$42,426	32.6
South Lake Tahoe, CA	32,119	18,923	3.1%	\$48,121	33.6
Twin Falls, ID	53,130	33,222	13.3%	\$42,713	35.4
Ukiah, CA	29,414	17,345	2.2%	\$43,899	34.7
Walla Walla, WA	46,788	21,213	2.6%	\$42,166	35.2
Woodburn, OR	37,726	13,256	10.0%	\$44,595	33.2
Benchmark Average	32,470	14,242	6.1%	\$41,327	35.5
Oroville, CA	37,654	15,485	3.0%	\$32,624	35.2

The map below shows Oroville 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 14 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 14 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:

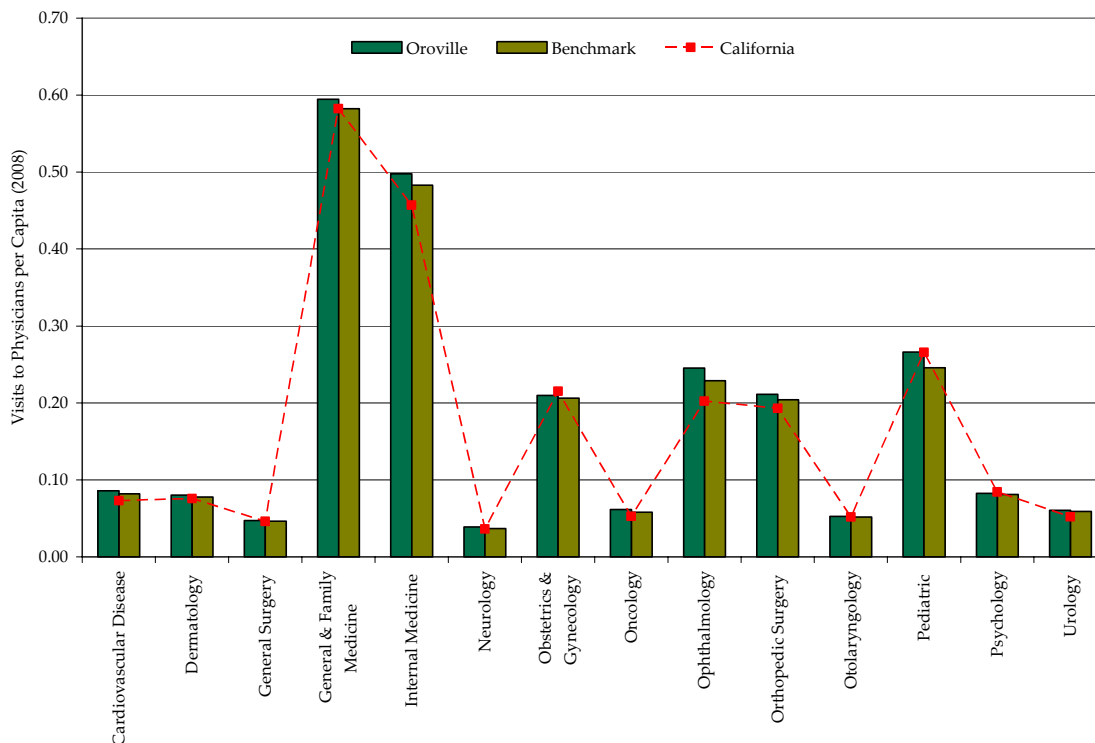
- **Physicians per 100,000 visits:** This is a calculated value derived from the Major Specialty Categories in the Demand (estimated visits) and Supply data (physicians) sets. The value is calculated by dividing the total number of physicians for a given major specialty whose practice falls within a 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 Oroville and the number of visits per capita for Oroville, the average benchmark city, and the state.

Major Specialty Category	Oroville Visits 2008	Estimated Visits per Capita (2008)		
		Oroville	Benchmark	California
Cardiovascular Disease	3,238	0.09	0.08	0.07
Dermatology	3,019	0.08	0.08	0.08
General Surgery	1,776	0.05	0.05	0.05
General & Family Medicine	22,391	0.59	0.58	0.58
Internal Medicine	18,738	0.50	0.48	0.46
Neurology	1,464	0.04	0.04	0.04
Obstetrics & Gynecology	7,894	0.21	0.21	0.22
Oncology	2,321	0.06	0.06	0.05
Ophthalmology	9,240	0.25	0.23	0.20
Orthopedic Surgery	7,954	0.21	0.20	0.19
Otolaryngology	1,989	0.05	0.05	0.05
Pediatric	10,015	0.27	0.25	0.27
Psychology	3,111	0.08	0.08	0.08
Urology	2,279	0.06	0.06	0.05

For example, under the General & Family Medicine category, Oroville is estimated to have 22,391 yearly visits to physicians or 0.59 visits per capita. The average benchmark city is estimated to have 0.58 visits per capita and the state is estimated to have 0.58 visits per capita.

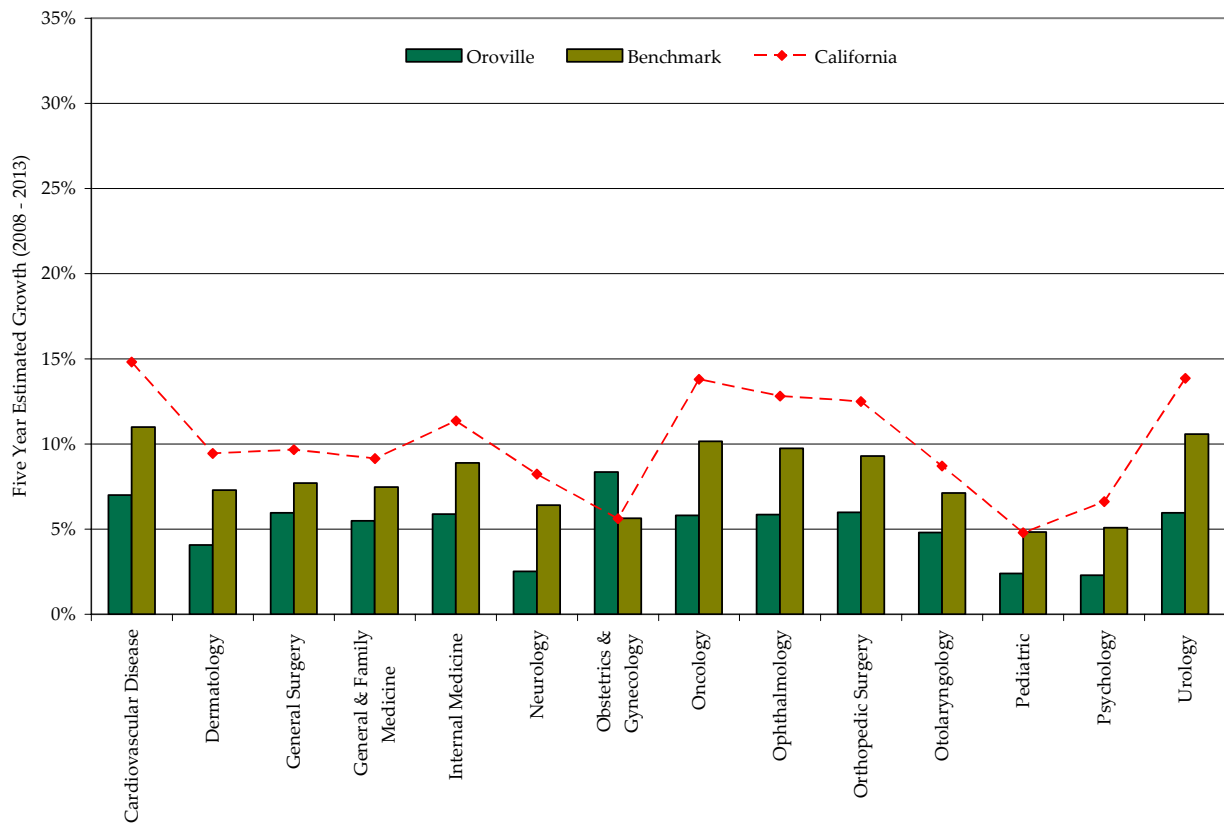


Five Year Projected visits Growth

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

Major Specialty Category	Oroville Visits (2013)	Estimated Visits Growth Percentage (2008-2013)		
		Oroville	Benchmark	California
Cardiovascular Disease	3,465	7%	11%	15%
Dermatology	3,142	4%	7%	9%
General Surgery	1,882	6%	8%	10%
General & Family Medicine	23,622	5%	7%	9%
Internal Medicine	19,840	6%	9%	11%
Neurology	1,500	3%	6%	8%
Obstetrics & Gynecology	8,554	8%	6%	6%
Oncology	2,455	6%	10%	14%
Ophthalmology	9,779	6%	10%	13%
Orthopedic Surgery	8,430	6%	9%	12%
Otolaryngology	2,084	5%	7%	9%
Pediatric	10,255	2%	5%	5%
Psychology	3,182	2%	5%	7%
Urology	2,415	6%	11%	14%

For example, from 2008 to 2013, General & Family Medicine visits in Oroville are expected to grow 5% to 23,622 which is slower than the average benchmark city (7%) and the state (9%).

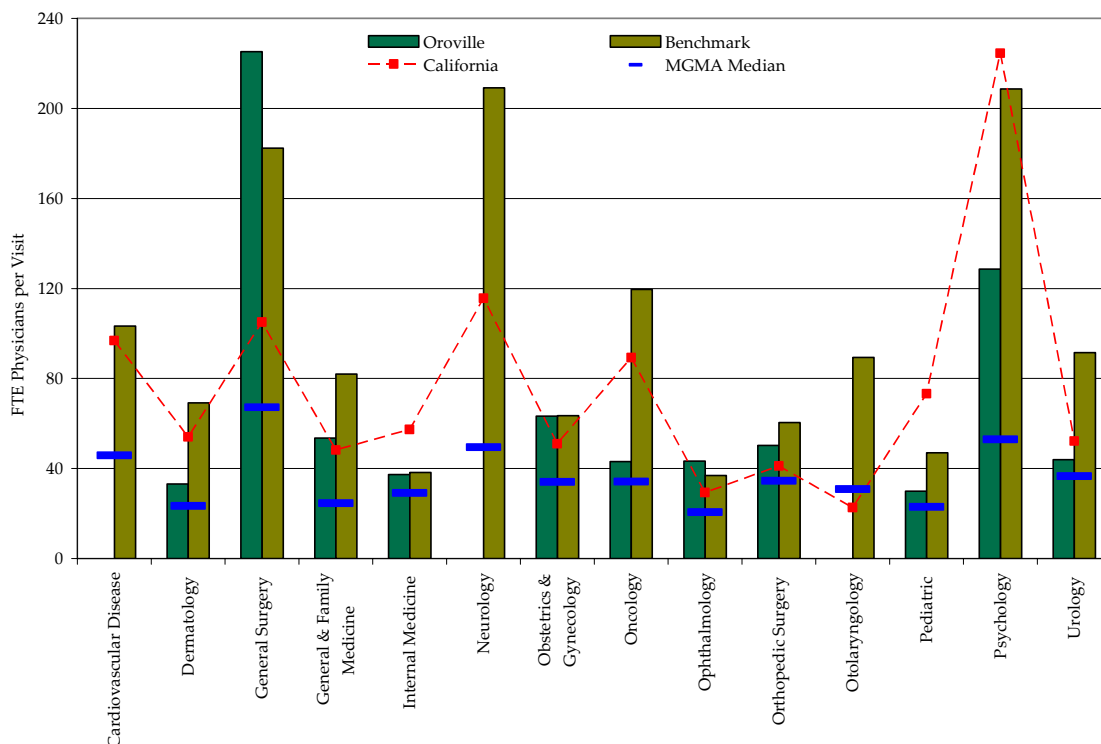


Full-Time Equivalent Physician Service Levels

The chart and graph below provide the Full-Time Equivalent (FTE) Physicians per 100,000 visits for Oroville, 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)					
	Oroville Physicians	Oroville FTE Physicians	Oroville	Benchmark	Calif ornia	MGMA Median
Cardiovascular Disease	0	0.00	0	103	97	46
Dermatology	1	1.00	33	69	54	23
General Surgery	4	4.00	225	182	105	67
General & Family Medicine	14	12.00	54	82	48	25
Internal Medicine	7	7.00	37	38	57	29
Neurology	0	0.00	0	209	116	49
Obstetrics & Gynecology	5	5.00	63	63	51	34
Oncology	2	1.00	43	120	89	34
Ophthalmology	4	4.00	43	37	29	21
Orthopedic Surgery	4	4.00	50	60	41	35
Otolaryngology	0	0.00	0	89	23	31
Pediatric	3	3.00	30	47	73	23
Psychology	4	4.00	129	209	224	53
Urology	1	1.00	44	92	52	37

For example, for the General & Family Medicine category, Oroville currently has 14 physicians with an estimated FTE of 12.00. This equates to an estimated 54 FTE physicians per 100,000 visits, the average benchmark city is estimated to have 82 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 Oroville falls far short of the average benchmark city, but is higher than the state and the MGMA median.

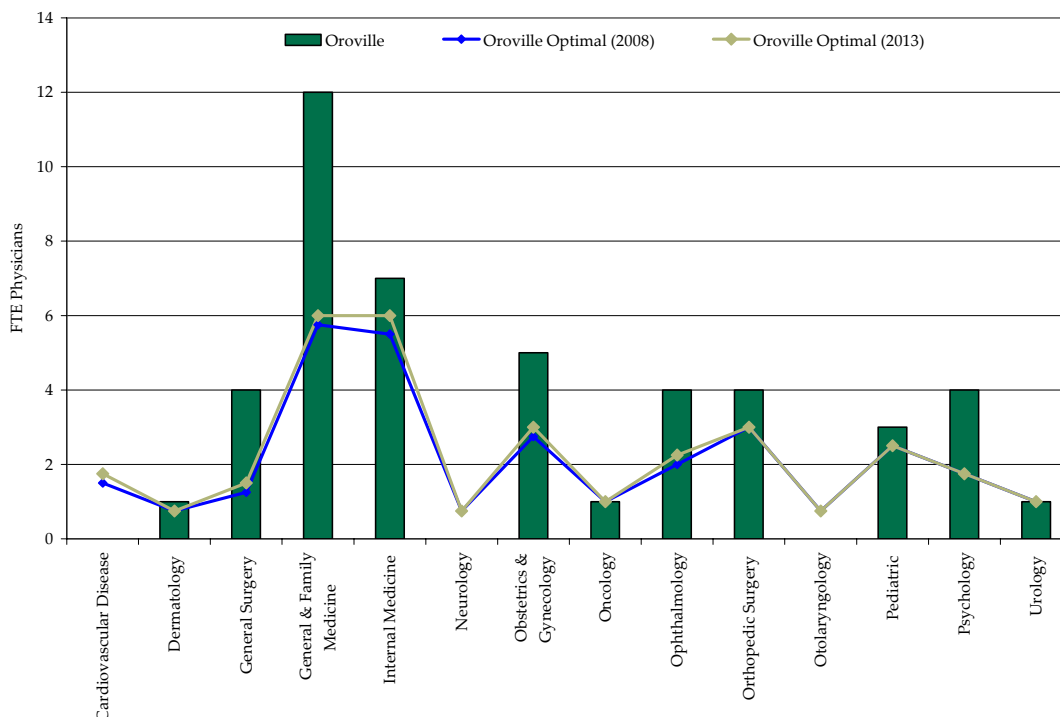


Optimal Full-Time Equivalent Physician Levels

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

Major Specialty Category	Oroville Current FTE Physicians	Oroville Optimal (2008)	Surplus / Shortage (2008)	Oroville Optimal (2013)	Surplus / Shortage (2013)
Cardiovascular Disease	0.00	1.50	1.50	1.75	1.75
Dermatology	1.00	0.75	0.25	0.75	0.25
General Surgery	4.00	1.25	2.75	1.50	2.50
General & Family Medicine	12.00	5.75	6.25	6.00	6.00
Internal Medicine	7.00	5.50	1.50	6.00	1.00
Neurology	0.00	0.75	0.75	0.75	0.75
Obstetrics & Gynecology	5.00	2.75	2.25	3.00	2.00
Oncology	1.00	1.00	Optimal	1.00	Optimal
Ophthalmology	4.00	2.00	2.00	2.25	1.75
Orthopedic Surgery	4.00	3.00	1.00	3.00	1.00
Otolaryngology	0.00	0.75	0.75	0.75	0.75
Pediatric	3.00	2.50	0.50	2.50	0.50
Psychology	4.00	1.75	2.25	1.75	2.25
Urology	1.00	1.00	Optimal	1.00	Optimal

For example, for the General & Family Medicine category, Oroville’s estimated (2008) optimal level is 5.75 FTE physicians and projected (2013) optimal level is 6.00. Currently there are 12.00 FTE physicians for a current surplus of 6.25 FTE physicians that is projected to decrease to a surplus of 6.00 FTE physicians by 2013.



Hospital Capacity

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

- Oroville Hospital: 153 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 Oroville, and the projected (2008-2013) days spent in a hospital growth percentage.

Variable	Oroville	Benchmark	California
Hospital Beds (2008)	153	69	95,120
Estimated Days Spent in Hospital (2008)	22,558	18,828	19,973,943
Estimated Days Spent in Hospital per Capita (2008)	0.60	0.58	0.54
Projected Growth Percentage (2008-2013)	2.9%	9.6%	10.1%
Years spent in Hospital per Hospital Bed (2008)	0.40	0.75	0.58
Years spent in Hospital per Hospital Bed (2013)	0.42	0.82	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 this Oroville hospital.

Based on the twenty benchmark cities, Oroville has an ample supply of hospital and services. Oroville's numbers compared to the benchmark cities are very large compared to the benchmark cities.

