21

El Dorado County Quarterly Industry Report—Medical Cluster

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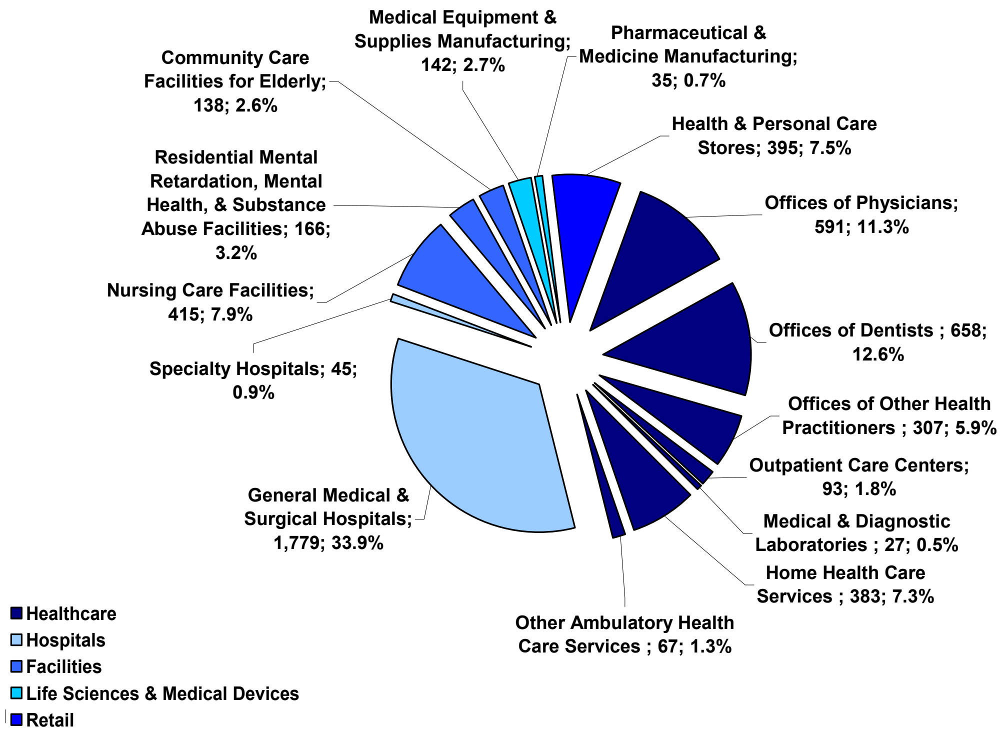
El Dorado County Quarterly Industry Report—Medical Cluster

Cluster Overview

The Medical cluster was among eight that were identified as presenting economic development potential in El Dorado County based on economic performance and feedback from local leaders.[*] With several prominent core activities, the Medical cluster is the largest among the eight with more than 5,200 jobs in 2009. The 15 core activities in the cluster can be grouped into five segments including Healthcare, Hospitals, Facilities, Life Sciences & Medical Devices, and Retail.[†] Combined, these segments produced nearly $787 million of economic output in the County in 2008.[‡] Figure 1 shows the core activities within each of these segments and their contribution to the overall Medical cluster based on employment levels. The Healthcare and Hospital segments are the largest containing 2,100 and 1,800 jobs, respectively. The remaining three segments are significantly smaller with Facilities supporting about 700 jobs, Life Sciences & Medical Devices containing around 200 jobs, and Retail housing nearly 400 jobs. While not shown in Figure 1, there are several sectors that are linked to the Medical cluster as a result of their general supplier relationships with the core activities—these "linked sectors" contain close to 7,000 jobs in El Dorado.[§]

[*] The cluster activities were established in the June 2010 *El Dorado County Industry-Focused Economic Development Study*, which also discusses several additional benefits associated with the Medical cluster.
[†] Wellness activities can be considered a complimentary segment to the Medical cluster; however, these activities were not included in this analysis as a result of industry aggregation with other unrelated personal services.
[‡] Data Source: IMPLAN, 2008 Coefficients
[§] Based on analysis of indirect economic impacts using the IMPLAN input-output model (2008 Coefficients), the linked sectors, which also act as suppliers to a wide range of other industry sectors, include Wholesale Trade, Employment Services, Real Estate, Scientific Research & Development Services, and Food Services & Drinking Places.

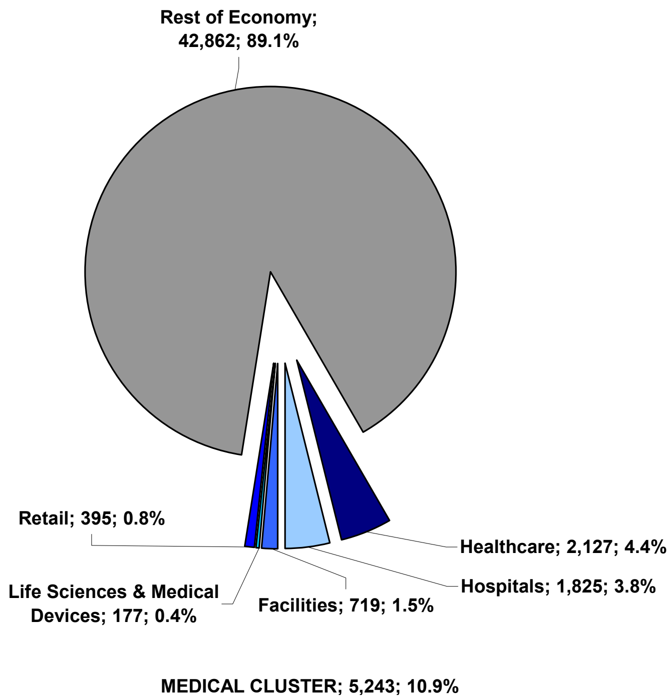
FIGURE 1
EL DORADO COUNTY 2009 MEDICAL
CLUSTER SEGMENTS AND CORE ACTIVITIES



Center for Strategic Economic Research, September 2010
Data Source: CSER estimates based on Moody's Economy.com; CA Employment Development Department, Employment by Industry Data; and U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages information

As illustrated in Figure 2, the Medical cluster is responsible for close to 11 percent of all jobs in the El Dorado County economy based on 2009 data. The two largest segments within the cluster account for over 8 percent of the total County employment. The cluster's combined economic output is just over 8 percent of the County total.

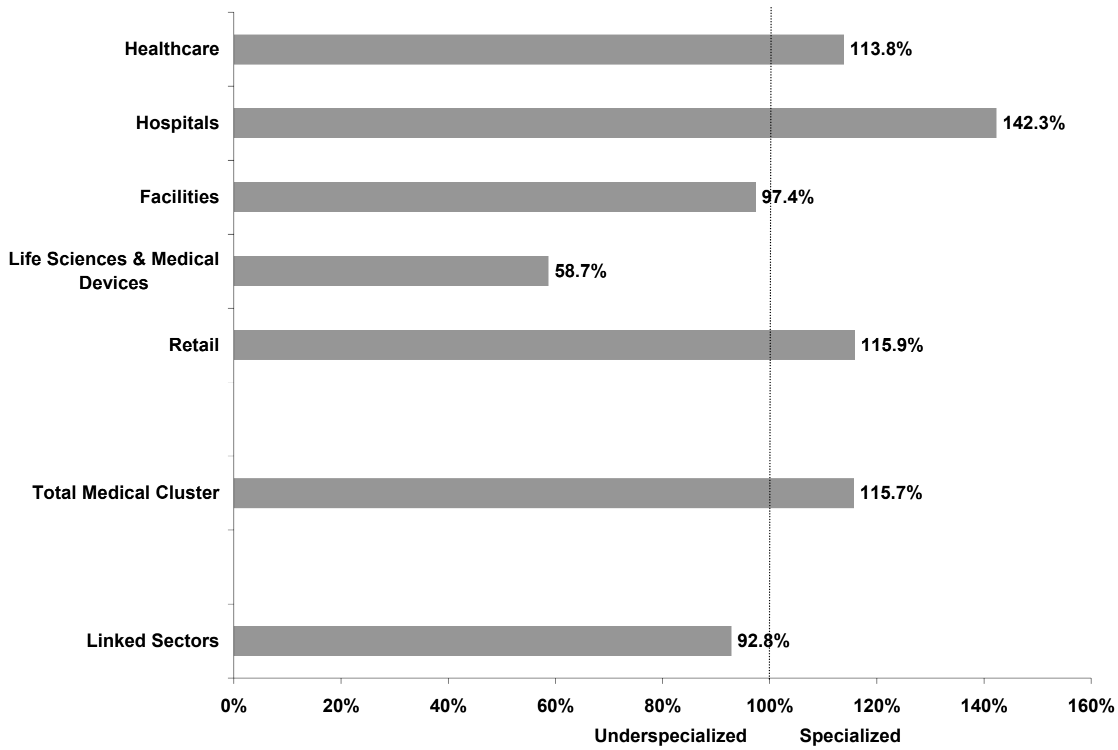
FIGURE 2
EL DORADO COUNTY 2009 MEDICAL CLUSTER COMPOSITION



Center for Strategic Economic Research, September 2010
Data Source: CSER estimates based on Moody's Economy.com; CA Employment Development Department, Employment by Industry Data; and U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages information

El Dorado County shows a strong level of specialization in the Medical cluster overall and in most of its segments. Figure 3 demonstrates that the Medical cluster is almost 15 percent more concentrated in El Dorado County compared to the statewide average—the County supports a greater share of total employment than the state overall in the Healthcare, Hospitals, and Retail segments. The Life Sciences & Medical Devices segment is considerably underspecialized while both the Retail segment and the Linked Sectors are only slightly below the statewide average composition.

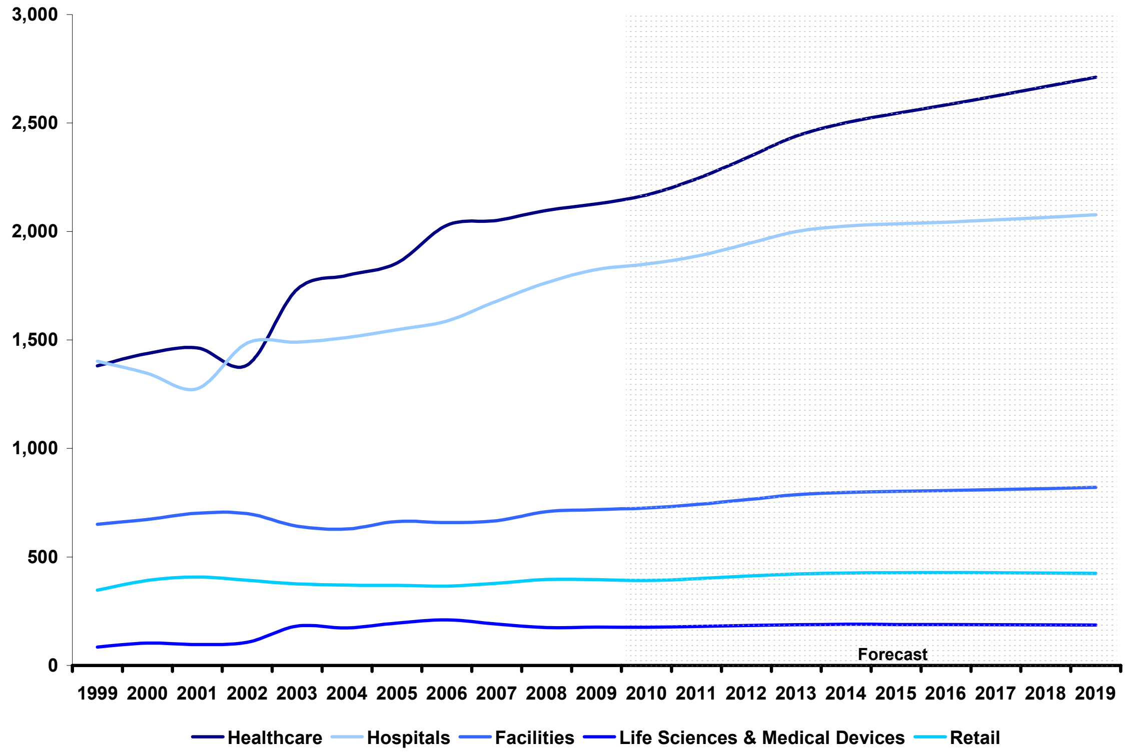
FIGURE 3
EL DORADO COUNTY 2009 MEDICAL CLUSTER SPECIALIZATION



Center for Strategic Economic Research, September 2010
Data Source: CSER estimates based on Moody's Economy.com; CA Employment Development Department, Employment by Industry Data; and U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages information
Note: A measure of 100% means that the local area has the same share of total employment as the statewide average.

Employment forecasts for El Dorado County show that all of the segments in the Medical cluster are expected to continue their historical trend. As shown in Figure 4, the Healthcare, Hospitals, and Facilities segments will see employment levels increase in the coming decade while jobs in the Life Sciences & Medical Devices and Retail segments will remain fairly stable.

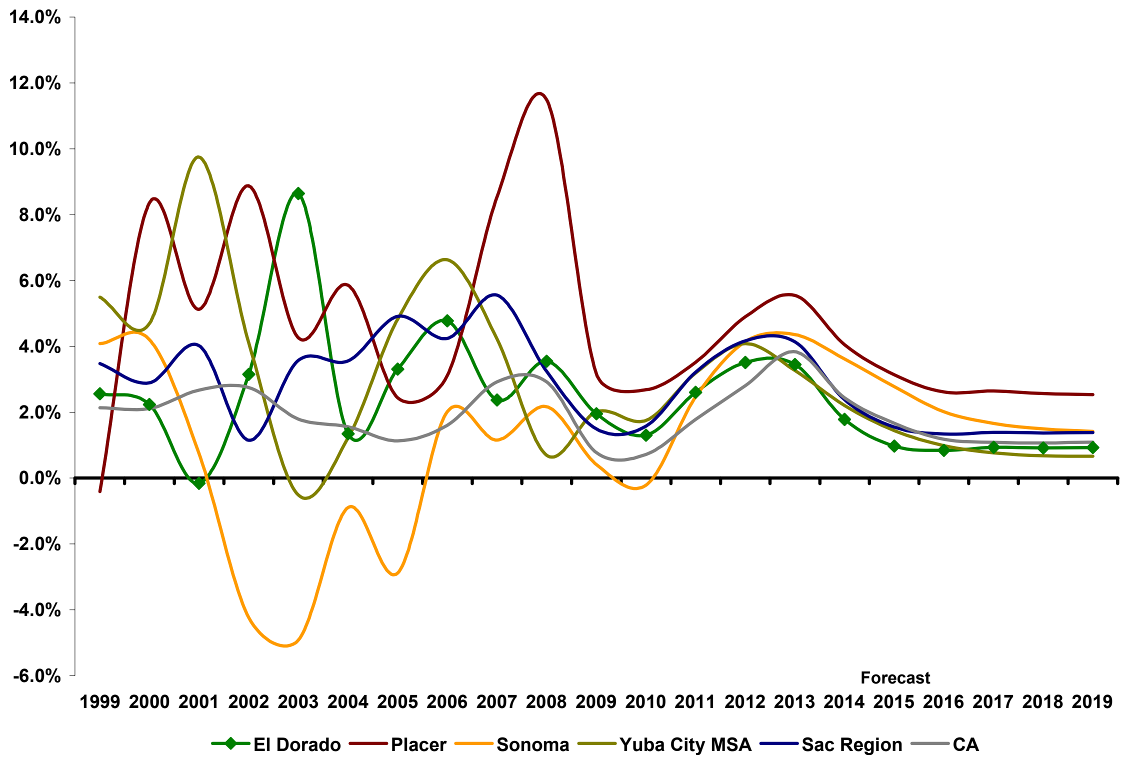
FIGURE 4
EL DORADO COUNTY MEDICAL CLUSTER SEGMENT EMPLOYMENT



Center for Strategic Economic Research, September 2010
Data Source: CSER estimates based on Moody's Economy.com; CA Employment Development Department, Employment by Industry Data; and U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages information

Annual employment growth rates in El Dorado County's Medical cluster have been somewhat erratic in the past decade, as illustrated in Figure 5. With the exception of 2001, the County added jobs in this cluster in every year between 1999 and 2009. This performance is primarily driven by the Healthcare and Hospitals segments. El Dorado County's annual employment growth did not consistently surpass or fall behind any of the benchmark areas including the state, the six-county Sacramento Region (El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba Counties), the Yuba City MSA (Sutter and Yuba Counties), Placer County, and Sonoma County. Moving forward, the Medical cluster in El Dorado County is forecast to continue to add jobs on an annual basis throughout the next 10 years. Forecasts show that, for the majority of that time, El Dorado County is expected to see slower growth in the cluster than the Sacramento Region as well as Placer and Sonoma Counties.

FIGURE 5
MEDICAL CLUSTER ANNUAL EMPLOYMENT GROWTH



Center for Strategic Economic Research, September 2010
Data Source: CSER estimates based on Moody's Economy.com; CA Employment Development Department, Employment by Industry Data; and U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages information

In the past decade (1999 to 2009), employment in El Dorado County's Medical cluster increased by close to 36 percent. This rate of growth was above the statewide average and Sonoma County, but below the Sacramento Region, Yuba City MSA, and Placer County. El Dorado County's Medical cluster grew at more than two times the rate of its economy overall. Expectations for the next decade (2009 to 2010) show employment growth dropping off significantly in El Dorado County's Medical cluster with jobs increasing by approximately 19 percent. While this cluster is still expected to see more robust growth than the total for all industries, all other benchmark areas are forecast to outpace El Dorado County's cluster growth rate. The series of tables included in the Appendix of this report provides additional details of industry performance in the past and upcoming 10 years.

With strong growth, El Dorado County's Medical cluster is forecast to see an increased proportion of total employment by the end of the next decade, moving up about 1.3 percentage points to over 12 percent of all jobs in the County. The level of specialization is also expected to increase by 4.2 percent, reaching close to 121 percent in 2019 with all segments except for Retail, being above the statewide average composition. The Linked Sectors are forecast to fall even further behind the statewide average composition in the next decade.

Figure 6 shows that there are currently over 1,100 establishments within the Medical cluster in El Dorado County with the majority falling within the Healthcare segment. This cluster accounts for over 12 percent of all establishments in the County. As a result of differences in the Healthcare segment, El Dorado County's Medical cluster contains a notably smaller share of all establishments than in Placer County, Sonoma County, and the Yuba City MSA.

FIGURE 6
2010 MEDICAL CLUSTER
ESTABLISHMENT COUNTS

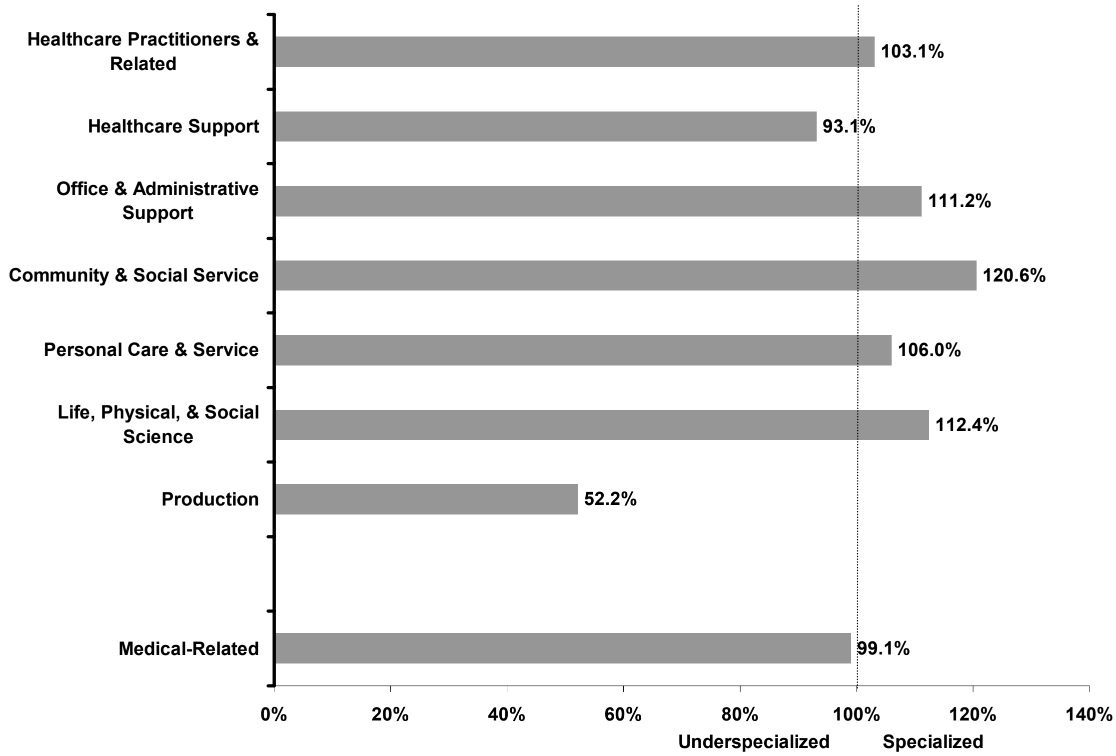
Sector	***El Dorado***	*Placer*	*Sonoma*	*Yuba MSA*
Counts				
Total Medical Cluster	**1,124**	3,042	4,036	887
Healthcare	**957**	2,698	3,511	758
Hospitals	**8**	15	31	13
Facilities	**50**	97	186	36
Life Sci. & Med. Devices	**22**	39	74	14
Retail	**87**	193	234	66
Total Records All Industries	**9,068**	17,443	27,679	5,991
Composition				
Total Medical Cluster	**12.4%**	17.4%	14.6%	14.8%
Healthcare	**10.6%**	15.5%	12.7%	12.7%
Hospitals	**0.1%**	0.1%	0.1%	0.2%
Facilities	**0.6%**	0.6%	0.7%	0.6%
Life Sci. & Med. Devices	**0.2%**	0.2%	0.3%	0.2%
Retail	**1.0%**	1.1%	0.8%	1.1%

Center for Strategic Economic Research, September 2010
Data Source: ReferenceUSA

Medical cluster establishments are concentrated on the west and east sides of El Dorado County with a small number in the middle of the County. These two areas of concentration not only serve the primary population centers of the County, but also overlap with the Sacramento Region and Reno-Carson City market areas. The Sacramento Region presents a fairly competitive environment surrounding the western portion of El Dorado County. The Reno-Carson City market area is not as heavily concentrated as the Sacramento Region, but still contains establishments that create competition in the eastern portion of the County. The establishment distribution map presented in the appendix of this report provides a broader visual depiction of the competitive environment.

Figure 7 shows specialization in the primary occupational categories utilized within the Medical cluster based on positions employed within establishments in the Sacramento MSA, which is the labor market inclusive of El Dorado County (plus Placer, Sacramento, and Yolo Counties). MSA establishments employ a similar share of Medical cluster-related occupational categories as the statewide average. Three occupational categories (Community & Social Service; Office & Administrative Support; and Life, Physical, & Social Science) demonstrate a strong level of specialization in the MSA while two categories are underspecialized (Healthcare Support and Production).

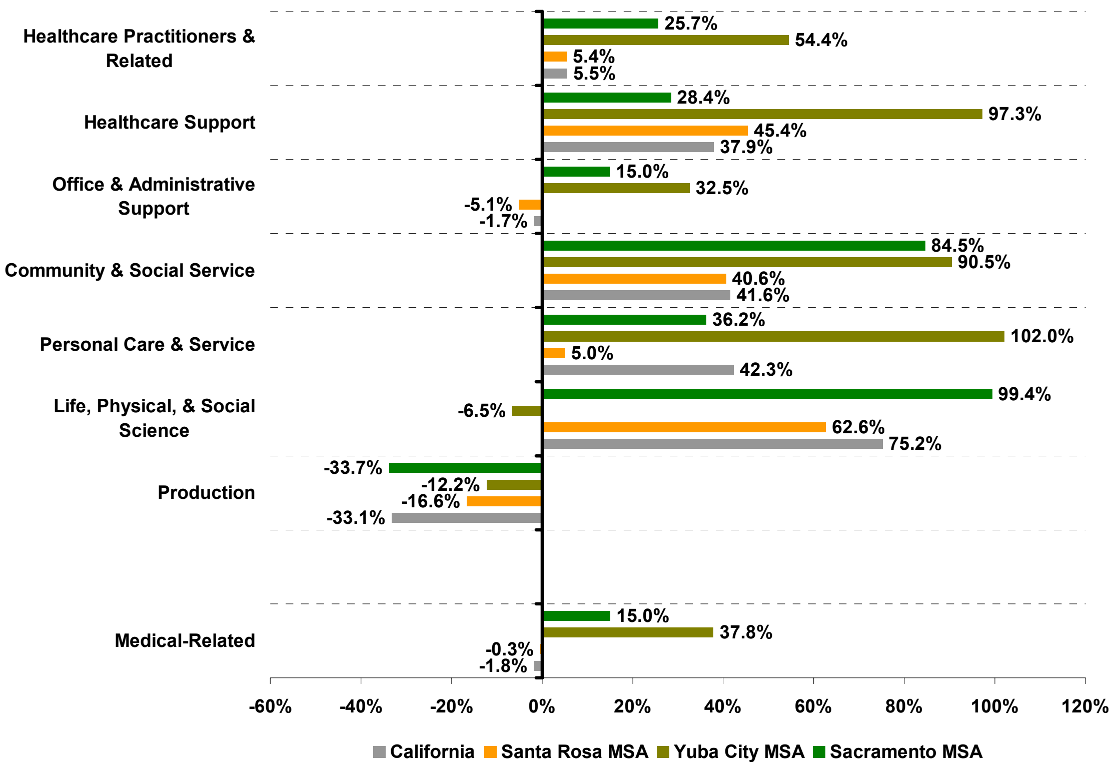
FIGURE 7
SACRAMENTO MSA 2009 ESTABLISHMENT OCCUPATIONAL EMPLOYMENT SPECIALIZATION IN MEDICAL CLUSTER-RELATED CATEGORIES



Center for Strategic Economic Research, September 2010
Data Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics
Note: A measure of 100% means that the local area has the same share of total employment as the statewide average.

The number of positions supported by Sacramento MSA establishments with the Medical cluster-related occupational categories has increased by 15 percent in the past 10 years, as shown in Figure 8. Cluster-related occupational employment in the Sacramento MSA outpaced the statewide average and Santa Rosa MSA (Sonoma County), but fell behind the Yuba City MSA. The most robust growth in the Sacramento MSA was in the Life, Physical, & Social Science occupational category while the Production category posted a significant decrease.

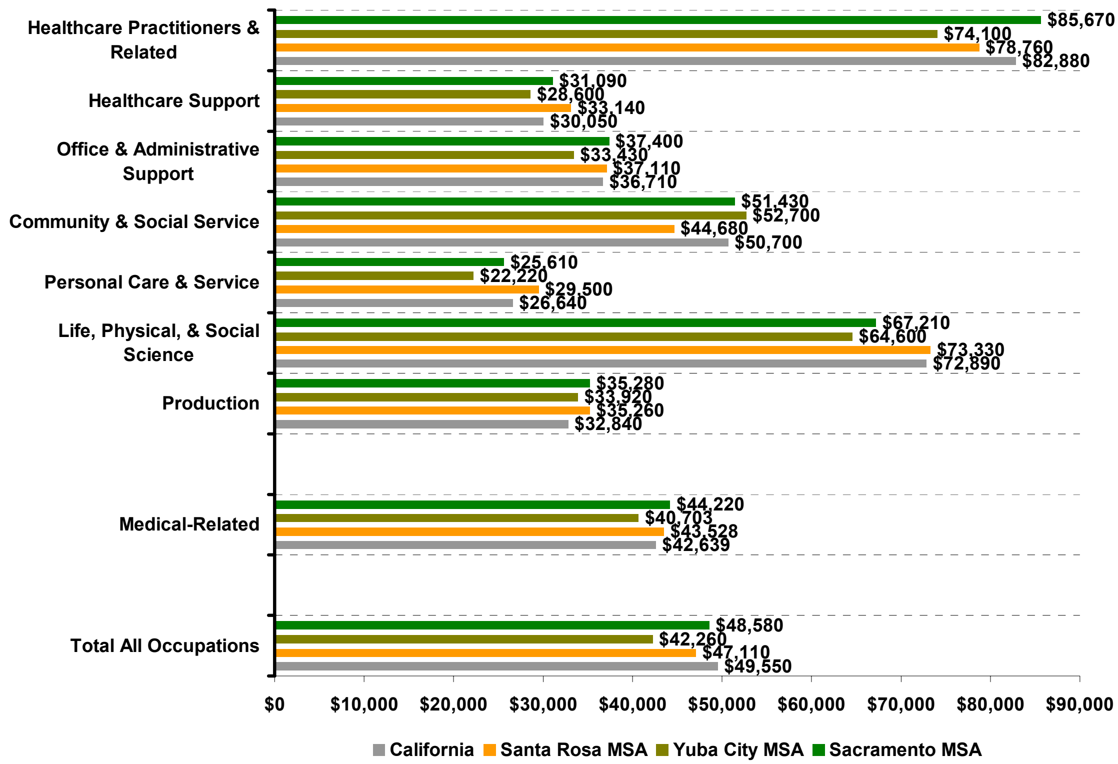
FIGURE 8
1999-2009 ESTABLISHMENT OCCUPATIONAL EMPLOYMENT GROWTH IN MEDICAL CLUSTER-RELATED CATEGORIES



Center for Strategic Economic Research, September 2010
Data Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics

Annual average market wage levels in the Sacramento MSA, shown in Figure 9, are generally slightly below the statewide average (which are typically higher than in the Santa Rosa and Yuba City MSAs), but wages for the Medical cluster-related occupational categories overall are above the state (as well as the Santa Rosa and Yuba City MSAs). The highest annual wages within the Sacramento MSA's Medical cluster-related categories are in the Healthcare Practitioners & Related category, which tracks above all the benchmark areas. Personal Care & Service occupations maintain the lowest annual average wages of the Medical cluster-related categoreis and the Sacramento MSA presents wage rates just under the statewide average in this category.

FIGURE 9
2009 AVERAGE ANNUAL MARKET WAGES IN MEDICAL CLUSTER-RELATED OCCUPATIONAL CATEGORIES



Center for Strategic Economic Research, September 2010
Data Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics

Figure 10 shows that more than 26,000 residents of El Dorado County are employed within occupations that are heavily utilized by the Medical cluster. The Office & Administrative Support category contains the greatest number of residents among the cluster-related occupational categories while the fewest number of residents fall within the Life, Physical, & Social Science category. With 29 percent of residents employed within the cluster-related occupations, El Dorado County's resident composition falls below all the other benchmark areas. As a result, El Dorado County is underspecialized in Medical cluster-related occupations based on resident employment. Only the Community & Social Service; Healthcare Practitioners & Related; and Life, Physical, & Social Science categories present a similar or greater share of resident employment compared to the statewide average.

FIGURE 10
RESIDENT OCCUPATIONAL EMPLOYMENT, 2006-2008 AVERAGE

Occupational Category	***El Dorado***	*Placer*	*Sonoma*	*Yuba MSA*	*Sac Region*	*CA*
Employment						
Medical-Related	**26,308**	48,322	73,672	22,428	359,227	5,395,178
Healthcare Practitioners & Related	**4,073**	8,267	10,425	2,864	46,673	709,881
Healthcare Support	**1,491**	2,796	4,354	1,693	20,841	294,988
Office & Administrative Support	**11,325**	23,084	31,992	9,291	159,009	2,348,868
Community & Social Service	**1,486**	2,152	2,828	1,157	17,654	245,237
Personal Care & Service	**3,087**	6,075	9,471	3,184	40,452	656,569
Life, Physical, & Social Science	**1,008**	1,364	2,135	312	13,293	182,252
Production	**3,838**	4,584	12,467	3,927	38,877	957,383
Total All Workers	**90,156**	164,486	233,387	67,460	1,052,630	16,834,866
Composition						
Medical-Related	**29.2%**	29.4%	31.6%	33.2%	34.1%	32.0%
Healthcare Practitioners & Related	**4.5%**	5.0%	4.5%	4.2%	4.4%	4.2%
Healthcare Support	**1.7%**	1.7%	1.9%	2.5%	2.0%	1.8%
Office & Administrative Support	**12.6%**	14.0%	13.7%	13.8%	15.1%	14.0%
Community & Social Service	**1.6%**	1.3%	1.2%	1.7%	1.7%	1.5%
Personal Care & Service	**3.4%**	3.7%	4.1%	4.7%	3.8%	3.9%
Life, Physical, & Social Science	**1.1%**	0.8%	0.9%	0.5%	1.3%	1.1%
Production	**4.3%**	2.8%	5.3%	5.8%	3.7%	5.7%
Specialization						
Medical-Related	**91.1%**	91.7%	98.5%	103.7%	106.5%	-
Healthcare Practitioners & Related	**107.1%**	119.2%	105.9%	100.7%	105.2%	-
Healthcare Support	**94.4%**	97.0%	106.5%	143.2%	113.0%	-
Office & Administrative Support	**90.0%**	100.6%	98.2%	98.7%	108.3%	-
Community & Social Service	**113.1%**	89.8%	83.2%	117.7%	115.1%	-
Personal Care & Service	**87.8%**	94.7%	104.1%	121.0%	98.5%	-
Life, Physical, & Social Science	**103.3%**	76.6%	84.5%	42.7%	116.6%	-
Production	**74.9%**	49.0%	93.9%	102.4%	64.9%	-

Center for Strategic Economic Research, September 2010
Data Source: U.S. Census Bureau, 2006-2008 American Community Survey

Households in California spend more on healthcare and health insurance than the national average and households in El Dorado County spend even more than the statewide average on medical-related products and services. As shown in Figure 11, El Dorado County households spend approximately $151 million on medical-related activities with an average of close to $2,200 per household based on 2009 annual data. Based on the Medical index score (where the nation is fixed at 100 and areas are scored on a relative basis), El Dorado County spending activity is about 23 percent higher than the national average and about 13 percent higher than the statewide average.

FIGURE 11
2009 MEDICAL SPENDING ACTIVITY

Indicator	***El Dorado***	*Placer*	*Sonoma*	*Yuba MSA*	*Sac Region*	*California*
Total Medical ($M)	**$312**	$663	$8,153	$1,689	$3,238	$51,282
HH Average Healthcare	**$4,543**	$4,942	$4,487	$2,924	$3,769	$4,050
Medical Index*	**122**	133	120	78	101	109
Healthcare ($M)	**$151**	$322	$396	$82	$1,567	$25,058
HH Average Healthcare	**$2,196**	$2,396	$2,177	$1,417	$1,825	$1,979
Healthcare Index*	**123**	134	121	79	102	110
Health Insurance ($M)	**$161**	$342	$420	$87	$1,670	$26,225
HH Average Health Insurance	**$2,346**	$2,546	$2,310	$1,508	$1,944	$2,071
Health Insurance Index*	**121**	132	119	78	101	107
Median HH Income	**$66,079**	$76,441	$68,255	$43,558	$59,140	$60,992

Center for Strategic Economic Research, September 2010
Data Source: ESRI Business Analyst Online, 2009 Medical Expenditures Report
*Notes: National average spending is indexed at 100.
Medical reflects the combination of the healthcare and health insurance categories.

The Medical spending activity index is much higher on the western side of El Dorado County similar to surrounding communities in the Sacramento Region. The eastern side of the County is closer to the national average despite the higher levels seen in the proximate Reno-Carson City market. The Medical index map provided in the Appendix of this report demonstrates the range of index scores within the broader market area.

Nearly 80 percent of El Dorado County residents had health insurance in 2009. This is a slightly lower proportion than in Sonoma County or the Sacramento Region overall, both with resident insurance coverage of close to 82 percent. However, El Dorado County is notably higher than the Yuba City MSA as well as the statewide average with rates of approximately 75 percent and 76 percent, respectively.[**]

In terms of spending focused on the Retail segment of the Medical cluster, retail sales data show that there is greater demand for Healthcare & Personal Care Stores than what is currently being spent in El Dorado County. The gap between retail demand and retail sales in this category is nearly 45 percent.[††]

[**] Data Source: UCLA Center for Health Policy Research, California Health Interview Survey (CHIS)
[††] Data Source: ESRI Business Analyst Online, 2009 Retail MarketPlace Profile

Residents at the upper end of the age spectrum typically demand more goods and services from the Medical cluster. Figure 12 demonstrates that El Dorado County's median resident age is currently 41.8 years, which is notably higher than the benchmark areas. Nearly 28 percent of all County residents are over the age of 54 and forecasts for 2015 show this proportion moving up to 30 percent, well above any of the benchmark areas. The relatively high income levels in the County also create additional capacity for Medical cluster activities.

FIGURE 12
RESIDENT AGE RANGES

Range	***El Dorado***	*Placer*	*Sonoma*	*Yuba MSA*	*Sac Region*	*California*
2010						
Age 0 - 4	**5.8%**	7.0%	6.0%	8.0%	7.3%	7.5%
Age 5 - 9	**6.4%**	7.1%	5.9%	7.6%	7.1%	7.2%
Age 10 - 14	**6.9%**	7.1%	5.9%	7.1%	6.8%	6.7%
Age 15 - 19	**6.9%**	6.7%	6.7%	7.4%	7.3%	7.4%
Age 20 - 24	**5.0%**	5.0%	6.5%	7.3%	7.0%	7.5%
Age 25 - 34	**10.2%**	11.9%	13.7%	14.3%	13.9%	14.6%
Age 35 - 44	**13.3%**	14.3%	12.6%	12.2%	13.5%	13.6%
Age 45 - 54	**17.9%**	16.1%	15.4%	13.2%	14.5%	14.0%
Age 55 - 64	**14.4%**	11.9%	13.5%	11.0%	11.1%	10.5%
Age 65 - 74	**7.4%**	6.9%	7.0%	6.6%	6.1%	5.8%
Age 75 - 84	**4.1%**	4.1%	4.4%	3.8%	3.8%	3.6%
Age 85+	**1.6%**	1.8%	2.4%	1.6%	1.7%	1.7%
Median	**41.8**	38.8	39.3	33.7	35.5	34.4
2015						
Age 0 - 4	**5.8%**	7.1%	6.0%	7.9%	7.3%	7.5%
Age 5 - 9	**6.4%**	7.2%	5.9%	7.7%	7.2%	7.2%
Age 10 - 14	**7.0%**	7.1%	5.9%	7.4%	6.9%	6.8%
Age 15 - 19	**6.2%**	6.1%	5.8%	6.5%	6.4%	6.4%
Age 20 - 24	**4.8%**	4.9%	6.2%	7.0%	6.8%	7.5%
Age 25 - 34	**11.1%**	13.1%	14.5%	14.7%	14.5%	15.4%
Age 35 - 44	**12.9%**	13.2%	12.5%	12.2%	13.1%	12.8%
Age 45 - 54	**15.5%**	14.7%	13.6%	11.7%	13.1%	12.8%
Age 55 - 64	**15.2%**	12.4%	13.3%	11.6%	11.6%	11.2%
Age 65 - 74	**9.5%**	8.2%	9.4%	7.9%	7.5%	7.2%
Age 75 - 84	**4.1%**	4.2%	4.4%	3.8%	3.7%	3.6%
Age 85+	**1.6%**	1.7%	2.4%	1.6%	1.6%	1.7%
Median	**41.9**	38.3	39.3	34.2	35.5	34.5

Center for Strategic Economic Research, September 2010
Data Source: ESRI Business Analyst Online, 2010 Market Profile Report

The market areas surrounding the western and eastern portions of El Dorado County have much higher population density than the central portions of the County. This drives Medical cluster activity to these areas to take advantage of the greater market concentrations, but also intersects with competition from other establishments in these market areas. By 2015, the population density patterns are expected to become even more pronounced—the density map in the Appendix provides a visual presentation of these forecasts.

Economic Development Considerations

The information presented in the Overview section of this report combined with findings from interviews conducted with major employers within each segment of the Medical cluster in El Dorado County reveals that there are a few aspects that the County and its partners should take into account when considering how to arrange economic development activities around this cluster. Moving forward, the County could benefit from creating an ongoing process to engage cluster employers to keep track of business trends, success factors, and barriers to growth.

Regulatory Environment

The major segments of the Medical cluster—Healthcare, Hospitals, and Facilities—are specialized (or around the statewide average) and experiencing continued job growth. This suggests that economic development efforts should focus on retaining establishments in these segments and fostering continued growth. Interviews with major employers in the Medical cluster identified an overriding issue that presented itself in other economic development studies—the view that the County has a disjointed regulatory environment and difficult permitting process. In addition to this general sentiment, several employers mentioned two specific aspects affecting the Medical cluster including the lack of non-emergency transportation options and cumbersome building permit requirements. Both of these issues relate to business costs and the ability to expand services, which could ultimately inhibit growth potential in the cluster.

Demographic Drivers

Market size is a key driver for the major segments of the cluster. Noting this fact, a number of major employers discussed the need to create a healthy business climate and maintain an attractive quality of life to enhance general business and population growth in the County. This will increase the potential year-round customer base, which has historically demonstrated a favorable share of health insurance coverage and medical-related spending. Further, dissecting the major segments also reveal a few specific activities where the County presents opportunities for growth to serve the existing market—the California Office of Statewide Health Planning and Development identified parts of El Dorado County as health professional shortage areas in the dental and mental health fields (May 2010).[‡‡]

The dynamics that exist in the western and eastern portions of the County create a unique situation. The Sacramento Region and Reno-Carson City markets present a threat in terms of competition and, at the same time, an opportunity as potential service territories. Beneficial business climate differentials and future business and population growth potential could be the distinguishing factors between whether these market areas present an opportunity or threat to cluster growth and development in El Dorado County. This unique situation also creates a focus on the two ends of the County with less attention given to the central area, where portions have been identified as primary care shortage

[‡‡] Data Source: California Office of Statewide Health Planning and Development, Healthcare Atlas: http://www.oshpd.ca.gov/General_Info/Healthcare_Atlas.html.

areas by the California Office of Statewide Health Planning and Development (May 2010).

Spending Leakage

The Retail segment of the Medical cluster is specialized and employment levels have been and are expected to continue to remain flat. At the same time, there is a notable retail sales gap in the Healthcare & Personal Care Stores sector, suggesting the need for greater activity in this sector to serve the existing customer base. Moreover, similar to the major segments in the cluster, this segment will benefit from general business and population growth. The economic development tools the County has acquired focused on retail attraction should definitely include components targeting this sector.

Industry Requirements

The full spectrum of business retention, attraction, and creation efforts should be explored for the Life Sciences & Medical Devices segment of the cluster, which is currently underspecialized and is expected to see flat employment levels moving forward. Throughout the product life cycle, this segment generally demands specialized buildings (e.g. flex and lab space) and services (e.g. funding and technology development/deployment). Areas that do not address these needs typically can only maintain a relatively low level of related activities. Partnerships can be developed outside the County to build assets that currently do not exist or are not feasible to develop.

Supply Chain

The Linked Sectors, which serve the Medical cluster and several other industry sectors, are underspecialized in El Dorado County. This suggests the need to focus on business attraction efforts for suppliers to cluster firms, which is further established by the fact that major employers in the cluster primarily utilize suppliers outside the Sacramento Region. Additionally, with the Linked Sectors experiencing negative job growth in the past five years, retention efforts could be beneficial to maintaining a steady base of potential suppliers.

Workforce Development

There are several areas that suggest the need for workforce development efforts. With resident employment patterns showing an underspecialization in Medical cluster-related occupational categories, it is evident that a large portion of the cluster workforce commutes into the County. Four related occupational categories are notably underspecialized among the County's residents including Office & Administrative Support; Personal Care & Service; Healthcare Support; and Production—the former two are also underspecialized based on business employment patterns in the Sacramento MSA overall. In addition, major employers in the major cluster segments emphasized the difficulty in finding all levels of qualified nurses in the County. These issues present the need to establish linkages with educational institutions to create a workforce pipeline for the County's Medical cluster employers and facilitate services that present local employment opportunities to qualified residents.

Wild Cards

There are two wild cards that could significantly change economic opportunities in the Medical cluster. First, federal healthcare legislation will likely have an impact on how the customer base has traditionally been defined and affect internal operational activities within the major cluster segments. Second, the Sacramento Region contains several assets that could develop advantages in the emerging Healthcare Information Management sector (e.g. visible companies and research activities) and communities throughout the Region will need to identify their role in this sector.

Appendix—Supplementary Information

MEDICAL CLUSTER EMPLOYMENT

Area / Sector	1999	2004	2009	2014 F	2019 F	99-09	04-09	09-14 F	09-19 F
El Dorado									
Total Medical Cluster	**3,866**	**4,482**	**5,243**	**5,940**	**6,218**	**35.6%**	**17.0%**	**13.3%**	**18.6%**
Healthcare	**1,381**	**1,798**	**2,127**	**2,501**	**2,710**	**54.0%**	**18.3%**	**17.6%**	**27.4%**
Hospitals	**1,402**	**1,511**	**1,825**	**2,025**	**2,077**	**30.1%**	**20.7%**	**11.0%**	**13.8%**
Facilities	**651**	**629**	**719**	**798**	**821**	**10.5%**	**14.2%**	**10.9%**	**14.2%**
Life Sci. & Med. Devices	**84**	**173**	**177**	**190**	**186**	**110.3%**	**2.7%**	**7.0%**	**4.8%**
Retail	**347**	**371**	**395**	**426**	**425**	**13.8%**	**6.6%**	**7.8%**	**7.4%**
Linked Sectors	**5,616**	**7,383**	**6,993**	**7,588**	**7,651**	**24.5%**	**-5.3%**	**8.5%**	**9.4%**
Total All Industries	**41,581**	**49,758**	**48,105**	**50,464**	**51,072**	**15.7%**	**-3.3%**	**4.9%**	**6.2%**
Placer									
Total Medical Cluster	7,615	10,423	13,744	16,830	19,229	80.5%	31.9%	22.5%	39.9%
Healthcare	2,785	3,349	4,676	5,954	7,071	67.9%	39.7%	27.3%	51.2%
Hospitals	2,502	3,690	5,052	6,028	6,774	101.9%	36.9%	19.3%	34.1%
Facilities	1,531	2,164	2,846	3,438	3,883	85.9%	31.5%	20.8%	36.5%
Life Sci. & Med. Devices	100	172	161	208	219	60.3%	-6.7%	29.7%	36.5%
Retail	697	1,048	1,009	1,201	1,281	44.7%	-3.8%	19.0%	26.9%
Linked Sectors	14,873	19,889	19,929	22,616	24,860	34.0%	0.2%	13.5%	24.7%
Total All Industries	98,630	128,790	125,965	143,091	157,365	27.7%	-2.2%	13.6%	24.9%
Sonoma									
Total Medical Cluster	21,394	20,269	20,838	23,995	26,325	-2.6%	2.8%	15.1%	26.3%
Healthcare	7,393	7,222	8,017	9,622	10,996	8.4%	11.0%	20.0%	37.2%
Hospitals	4,625	5,897	6,103	6,855	7,418	31.9%	3.5%	12.3%	21.5%
Facilities	3,301	3,252	3,640	4,178	4,573	10.3%	11.9%	14.8%	25.6%
Life Sci. & Med. Devices	4,645	2,654	1,946	2,137	2,101	-58.1%	-26.7%	9.8%	8.0%
Retail	1,430	1,244	1,132	1,202	1,238	-20.8%	-9.0%	6.2%	9.3%
Linked Sectors	23,744	26,554	24,756	27,400	29,087	4.3%	-6.8%	10.7%	17.5%
Total All Industries	316,178	330,581	314,196	337,407	352,115	-0.6%	-5.0%	7.4%	12.1%
Yuba City MSA									
Total Medical Cluster	3,621	4,363	5,221	6,022	6,301	44.2%	19.7%	15.3%	20.7%
Healthcare	1,223	1,723	1,978	2,358	2,549	61.6%	14.7%	19.2%	28.9%
Hospitals	1,332	1,472	2,085	2,366	2,424	56.5%	41.7%	13.5%	16.3%
Facilities	628	690	767	885	914	22.2%	11.2%	15.4%	19.2%
Life Sci. & Med. Devices	135	114	45	52	50	-66.6%	-60.5%	14.9%	11.7%
Retail	304	364	347	362	363	14.2%	-4.8%	4.3%	4.8%
Linked Sectors	4,420	5,034	5,127	5,679	5,699	16.0%	1.8%	10.8%	11.2%
Total All Industries	36,777	40,281	39,864	41,891	41,776	8.4%	-1.0%	5.1%	4.8%
Sacramento Region									
Total Medical Cluster	60,408	70,151	84,850	98,814	105,958	40.5%	21.0%	16.5%	24.9%
Healthcare	25,655	26,235	32,239	38,944	43,214	25.7%	22.9%	20.8%	34.0%
Hospitals	17,818	25,895	31,792	36,294	38,148	78.4%	22.8%	14.2%	20.0%
Facilities	10,054	11,283	14,010	16,072	17,022	39.3%	24.2%	14.7%	21.5%
Life Sci. & Med. Devices	1,101	1,214	1,268	1,426	1,398	15.2%	4.4%	12.5%	10.3%
Retail	5,780	5,523	5,542	6,077	6,175	-4.1%	0.3%	9.7%	11.4%
Linked Sectors	110,283	122,707	121,713	133,946	137,072	10.4%	-0.8%	10.1%	12.6%
Total All Industries	852,968	967,561	919,854	986,206	1,023,080	7.8%	-4.9%	7.2%	11.2%
California									
Total Medical Cluster	1,142,591	1,272,478	1,395,869	1,564,731	1,662,478	22.2%	9.7%	12.1%	19.1%
Healthcare	455,455	511,398	575,663	667,864	732,996	26.4%	12.6%	16.0%	27.3%
Hospitals	322,374	364,686	394,849	431,605	448,470	22.5%	8.3%	9.3%	13.6%
Facilities	182,819	203,759	227,329	251,853	264,352	24.3%	11.6%	10.8%	16.3%
Life Sci. & Med. Devices	85,336	88,616	92,971	99,238	98,143	8.9%	4.9%	6.7%	5.6%
Retail	96,607	104,019	105,057	114,171	118,517	8.7%	1.0%	8.7%	12.8%
Linked Sectors	2,231,361	2,377,896	2,319,797	2,583,012	2,714,175	4.0%	-2.4%	11.3%	17.0%
Total All Industries	14,898,202	15,534,306	14,816,916	15,904,544	16,464,643	-0.5%	-4.6%	7.3%	11.1%

Center for Strategic Economic Research, September 2010

Data Source: CSER estimates based on Moody's Economy.com; CA Employment Development Department, Employment by Industry Data; and U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages information

MEDICAL CLUSTER COMPOSITION

Area / Sector	*1999*	*2004*	*2009*	*2014 F*	*2019 F*	*99-09*	*04-09*	*09-14 F*	*09-19 F*
El Dorado									
Total Medical Cluster	**9.3%**	**9.0%**	**10.9%**	**11.8%**	**12.2%**	**1.6%**	**1.9%**	**0.9%**	**1.3%**
Healthcare	**3.3%**	**3.6%**	**4.4%**	**5.0%**	**5.3%**	**1.1%**	**0.8%**	**0.5%**	**0.9%**
Hospitals	**3.4%**	**3.0%**	**3.8%**	**4.0%**	**4.1%**	**0.4%**	**0.8%**	**0.2%**	**0.3%**
Facilities	**1.6%**	**1.3%**	**1.5%**	**1.6%**	**1.6%**	**-0.1%**	**0.2%**	**0.1%**	**0.1%**
Life Sci. & Med. Devices	**0.2%**	**0.3%**	**0.4%**	**0.4%**	**0.4%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**
Retail	**0.8%**	**0.7%**	**0.8%**	**0.8%**	**0.8%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**
Linked Sectors	**13.5%**	**14.8%**	**14.5%**	**15.0%**	**15.0%**	**1.0%**	**-0.3%**	**0.5%**	**0.4%**
Placer									
Total Medical Cluster	7.7%	8.1%	10.9%	11.8%	12.2%	3.2%	2.8%	0.9%	1.3%
Healthcare	2.8%	2.6%	3.7%	4.2%	4.5%	0.9%	1.1%	0.4%	0.8%
Hospitals	2.5%	2.9%	4.0%	4.2%	4.3%	1.5%	1.1%	0.2%	0.3%
Facilities	1.6%	1.7%	2.3%	2.4%	2.5%	0.7%	0.6%	0.1%	0.2%
Life Sci. & Med. Devices	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Retail	0.7%	0.8%	0.8%	0.8%	0.8%	0.1%	0.0%	0.0%	0.0%
Linked Sectors	15.1%	15.4%	15.8%	15.8%	15.8%	0.7%	0.4%	0.0%	0.0%
Sonoma									
Total Medical Cluster	6.8%	6.1%	6.6%	7.1%	7.5%	-0.1%	0.5%	0.5%	0.8%
Healthcare	2.3%	2.2%	2.6%	2.9%	3.1%	0.2%	0.4%	0.3%	0.6%
Hospitals	1.5%	1.8%	1.9%	2.0%	2.1%	0.5%	0.2%	0.1%	0.2%
Facilities	1.0%	1.0%	1.2%	1.2%	1.3%	0.1%	0.2%	0.1%	0.1%
Life Sci. & Med. Devices	1.5%	0.8%	0.6%	0.6%	0.6%	-0.8%	-0.2%	0.0%	0.0%
Retail	0.5%	0.4%	0.4%	0.4%	0.4%	-0.1%	0.0%	0.0%	0.0%
Linked Sectors	7.5%	8.0%	7.9%	8.1%	8.3%	0.4%	-0.2%	0.2%	0.4%
Yuba City MSA									
Total Medical Cluster	9.8%	10.8%	13.1%	14.4%	15.1%	3.3%	2.3%	1.3%	2.0%
Healthcare	3.3%	4.3%	5.0%	5.6%	6.1%	1.6%	0.7%	0.7%	1.1%
Hospitals	3.6%	3.7%	5.2%	5.6%	5.8%	1.6%	1.6%	0.4%	0.6%
Facilities	1.7%	1.7%	1.9%	2.1%	2.2%	0.2%	0.2%	0.2%	0.3%
Life Sci. & Med. Devices	0.4%	0.3%	0.1%	0.1%	0.1%	-0.3%	-0.2%	0.0%	0.0%
Retail	0.8%	0.9%	0.9%	0.9%	0.9%	0.0%	0.0%	0.0%	0.0%
Linked Sectors	12.0%	12.5%	12.9%	13.6%	13.6%	0.8%	0.4%	0.7%	0.8%
Sacramento Region									
Total Medical Cluster	7.1%	7.3%	9.2%	10.0%	10.4%	2.1%	2.0%	0.8%	1.1%
Healthcare	3.0%	2.7%	3.5%	3.9%	4.2%	0.5%	0.8%	0.4%	0.7%
Hospitals	2.1%	2.7%	3.5%	3.7%	3.7%	1.4%	0.8%	0.2%	0.3%
Facilities	1.2%	1.2%	1.5%	1.6%	1.7%	0.3%	0.4%	0.1%	0.1%
Life Sci. & Med. Devices	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Retail	0.7%	0.6%	0.6%	0.6%	0.6%	-0.1%	0.0%	0.0%	0.0%
Linked Sectors	12.9%	12.7%	13.2%	13.6%	13.4%	0.3%	0.5%	0.4%	0.2%
California									
Total Medical Cluster	7.7%	8.2%	9.4%	9.8%	10.1%	1.8%	1.2%	0.4%	0.7%
Healthcare	3.1%	3.3%	3.9%	4.2%	4.5%	0.8%	0.6%	0.3%	0.6%
Hospitals	2.2%	2.3%	2.7%	2.7%	2.7%	0.5%	0.3%	0.0%	0.1%
Facilities	1.2%	1.3%	1.5%	1.6%	1.6%	0.3%	0.2%	0.0%	0.1%
Life Sci. & Med. Devices	0.6%	0.6%	0.6%	0.6%	0.6%	0.1%	0.1%	0.0%	0.0%
Retail	0.6%	0.7%	0.7%	0.7%	0.7%	0.1%	0.0%	0.0%	0.0%
Linked Sectors	15.0%	15.3%	15.7%	16.2%	16.5%	0.7%	0.3%	0.6%	0.8%

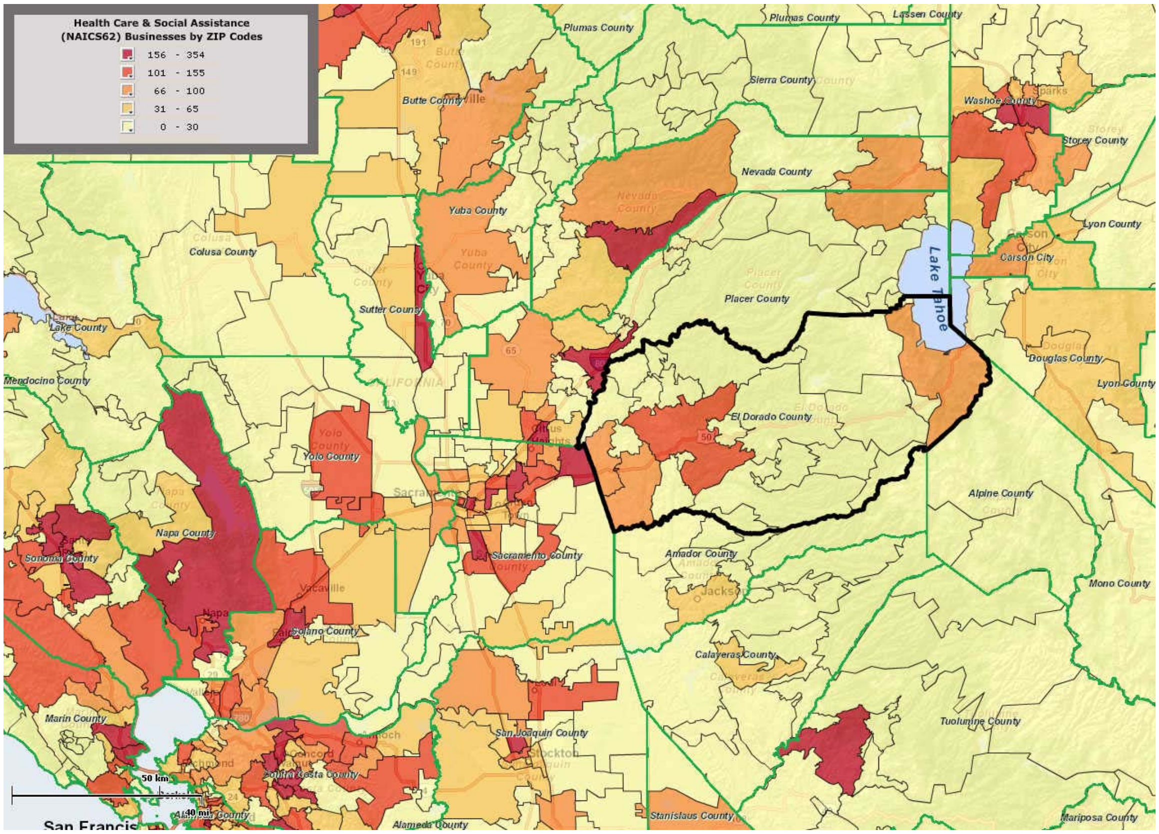
Center for Strategic Economic Research, September 2010
Data Source: CSER estimates based on Moody's Economy.com; CA Employment Development Department, Employment by Industry Data; and U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages information

MEDICAL CLUSTER SPECIALIZATION

Area / Sector	*1999*	*2004*	*2009*	*2014 F*	*2019 F*	*99-09*	*04-09*	*09-14 F*	*09-19 F*
El Dorado									
Total Medical Cluster	**121.2%**	**110.0%**	**115.7%**	**119.6%**	**120.6%**	**-4.6%**	**5.2%**	**3.4%**	**4.2%**
Healthcare	**108.6%**	**109.7%**	**113.8%**	**118.0%**	**119.2%**	**4.8%**	**3.7%**	**3.7%**	**4.7%**
Hospitals	**155.9%**	**129.4%**	**142.3%**	**147.9%**	**149.3%**	**-8.7%**	**10.0%**	**3.9%**	**4.9%**
Facilities	**127.5%**	**96.4%**	**97.4%**	**99.8%**	**100.1%**	**-23.6%**	**1.0%**	**2.5%**	**2.8%**
Life Sci. & Med. Devices	**35.4%**	**60.8%**	**58.7%**	**60.2%**	**61.0%**	**66.0%**	**-3.5%**	**2.6%**	**3.9%**
Retail	**128.9%**	**111.3%**	**115.9%**	**117.6%**	**115.5%**	**-10.1%**	**4.1%**	**1.5%**	**-0.4%**
Linked Sectors	**90.2%**	**96.9%**	**92.8%**	**92.6%**	**90.9%**	**3.0%**	**-4.2%**	**-0.3%**	**-2.1%**
Placer									
Total Medical Cluster	100.7%	98.8%	115.8%	119.5%	121.0%	15.0%	17.2%	3.2%	4.5%
Healthcare	92.4%	79.0%	95.6%	99.1%	100.9%	3.4%	21.0%	3.7%	5.6%
Hospitals	117.2%	122.0%	150.5%	155.2%	158.0%	28.4%	23.3%	3.2%	5.0%
Facilities	126.5%	128.1%	147.2%	151.7%	153.7%	16.4%	14.9%	3.0%	4.4%
Life Sci. & Med. Devices	17.7%	23.4%	20.3%	23.3%	23.4%	14.5%	-13.3%	14.8%	15.0%
Retail	109.0%	121.6%	113.0%	116.9%	113.1%	3.6%	-7.1%	3.5%	0.1%
Linked Sectors	100.7%	100.9%	101.0%	97.3%	95.8%	0.4%	0.2%	-3.7%	-5.2%
Sonoma									
Total Medical Cluster	88.2%	74.8%	70.4%	72.3%	74.0%	-20.2%	-5.9%	2.7%	5.2%
Healthcare	76.5%	66.4%	65.7%	67.9%	70.1%	-14.1%	-1.0%	3.4%	6.8%
Hospitals	67.6%	76.0%	72.9%	74.9%	77.3%	7.8%	-4.1%	2.7%	6.1%
Facilities	85.1%	75.0%	75.5%	78.2%	80.9%	-11.2%	0.7%	3.5%	7.1%
Life Sci. & Med. Devices	256.5%	140.7%	98.7%	101.5%	100.1%	-61.5%	-29.9%	2.9%	1.4%
Retail	69.7%	56.2%	50.8%	49.6%	48.8%	-27.1%	-9.5%	-2.3%	-3.9%
Linked Sectors	50.1%	52.5%	50.3%	50.0%	50.1%	0.4%	-4.1%	-0.6%	-0.4%
Yuba City MSA									
Total Medical Cluster	128.4%	132.2%	139.0%	146.1%	149.4%	8.3%	5.1%	5.1%	7.4%
Healthcare	108.8%	130.0%	127.7%	134.0%	137.1%	17.3%	-1.8%	5.0%	7.3%
Hospitals	167.4%	155.6%	196.3%	208.1%	213.0%	17.3%	26.1%	6.1%	8.5%
Facilities	139.1%	130.5%	125.4%	133.5%	136.3%	-9.8%	-3.9%	6.4%	8.7%
Life Sci. & Med. Devices	64.0%	49.6%	18.0%	19.8%	20.2%	-71.9%	-63.7%	9.9%	12.2%
Retail	127.3%	135.0%	122.6%	120.2%	120.8%	-3.7%	-9.2%	-1.9%	-1.5%
Linked Sectors	80.2%	81.6%	82.1%	83.5%	82.7%	2.4%	0.6%	1.6%	0.7%
Sacramento Region									
Total Medical Cluster	92.3%	88.5%	97.9%	101.8%	102.6%	6.0%	10.6%	4.0%	4.8%
Healthcare	98.4%	82.4%	90.2%	94.0%	94.9%	-8.3%	9.5%	4.2%	5.2%
Hospitals	96.5%	114.0%	129.7%	135.6%	136.9%	34.3%	13.8%	4.6%	5.6%
Facilities	96.1%	88.9%	99.3%	102.9%	103.6%	3.3%	11.7%	3.7%	4.4%
Life Sci. & Med. Devices	22.5%	22.0%	22.0%	23.2%	22.9%	-2.5%	-0.2%	5.5%	4.4%
Retail	104.5%	85.2%	85.0%	85.8%	83.9%	-18.7%	-0.3%	1.0%	-1.3%
Linked Sectors	86.3%	82.8%	84.5%	83.6%	81.3%	-2.1%	2.0%	-1.0%	-3.8%

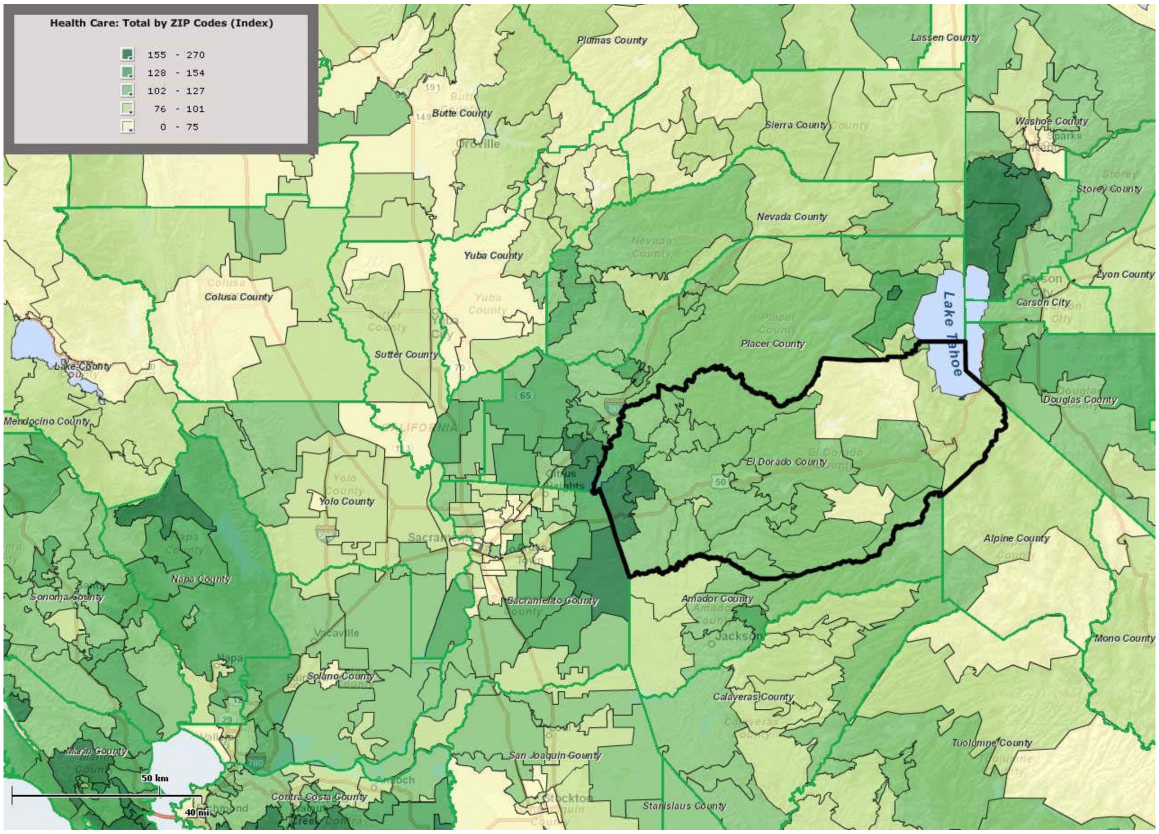
Center for Strategic Economic Research, September 2010
Data Source: CSER estimates based on Moody's Economy.com; CA Employment Development Department, Employment by Industry Data; and U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages information

2009 HEALTHCARE & SOCIAL ASSISTANCE INDUSTRY ESTABLISHMENT DISTRIBUTION



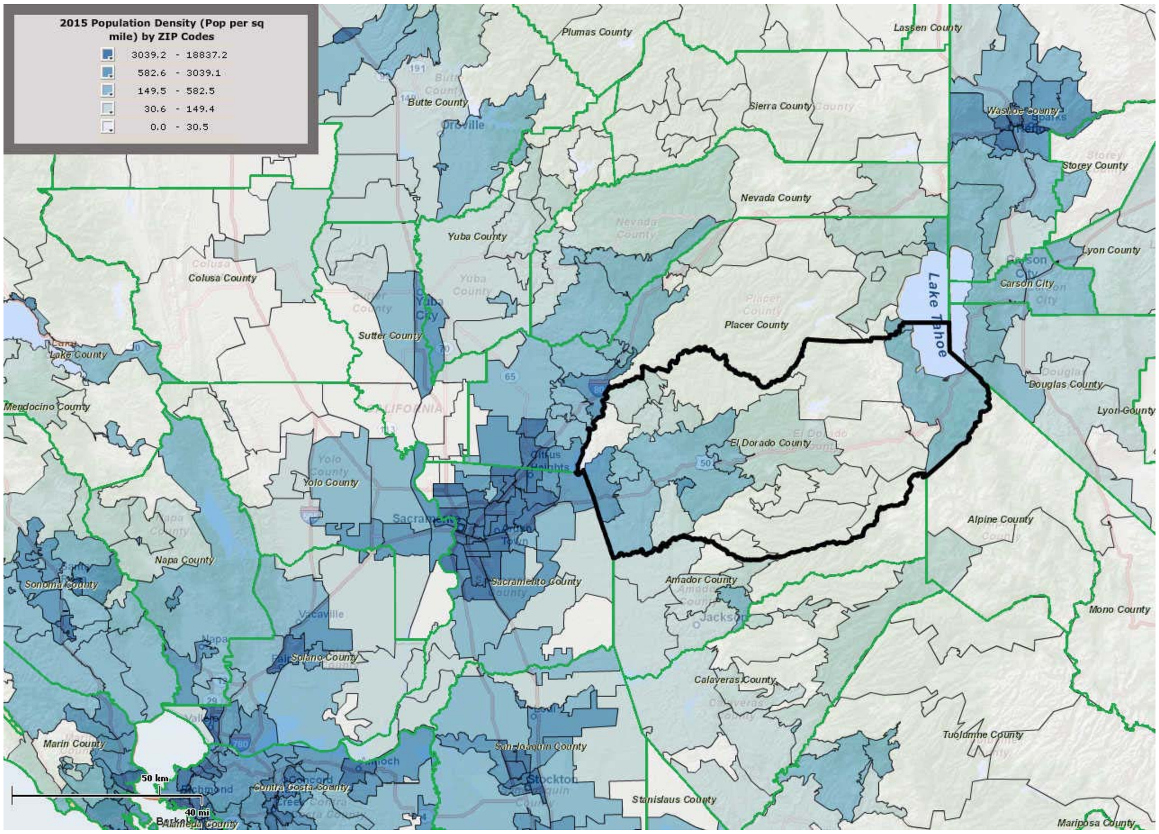
Center for Strategic Economic Research, September 2010
Data Source: ESRI Business Analyst Online

2009 MEDICAL SPENDING ACTIVITY INDEX DISTRIBUTION



Center for Strategic Economic Research, September 2010
Data Source: ESRI Business Analyst Online
*Note: National average spending is indexed at 100.

2015 POPULATION DENSITY DISTRIBUTION



Center for Strategic Economic Research, September 2010
Data Source: ESRI Business Analyst Online