PHASE I REPORT

Preliminary Profile of Health Care Needs & Safety Net Providers that serve Residents of Monterey County

INSTITUTE FOR COMMUNITY COLLABORATIVE STUDIES

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EXECUTIVE SUMMARY

INTRODUCTION

CSUMB faculty researchers, under contract with the Monterey County Health Department (MCHD), conducted the first phase of a two-part study to evaluate the capacity of the existing safety net provider system of clinics and hospitals serving the health care needs of Monterey County residents, especially low-income and uninsured people. The area under study includes Monterey County, San Benito County and the southernmost border area of Santa Cruz County (Watsonville). Although the primary geographic focus of this study is Monterey County, because some Monterey County residents seek health care outside the county, non-Monterey county providers were considered in part of this study.

The "safety net" is described as providers that deliver health care and other related services to uninsured, Medicaid, and other vulnerable patients. In addition, a subset of the safety net is described as the "core safety net providers" that generally – by legal mandate or explicitly adopted mission – provide access to services for patients regardless of their ability to pay and accept a substantial share of their patient mix from the uninsured, Medicaid, and other vulnerable patient populations. Safety net system providers within the tri-county region include local public health departments and their clinics; non-profit health centers; rural health clinics; private physicians and medical groups; and public, private and community hospitals that accept a significant proportion of Medi-Cal patients.

We establish an initial list of "safety net" providers, defined primarily by their provision of primary care and related specialist services to residents of Monterey County, regardless of their ability to pay. However, the list of providers may change as new data from the Safety Net Provider Survey sheds light on the types of health care services they offer, their accessibility to individuals without the ability to pay, and their capacity to accept new patients residing in Monterey County.

The primary goal of this study is to assess the capacity of existing safety net providers serving residents of Monterey County and to determine access and service gaps across the system. Phase I provides an initial profile of the region and geospatial maps showing select population demographics and socioeconomic variables, and individual safety net provider profiles showing where current providers are located and what services they provide in their surrounding communities. Phase II will analyze 1) safety net providers' existing capacity to serve the *current* health care needs of Monterey County residents; 2) gaps in health care services throughout Monterey County; and 3) providers' ability to expand to meet projected increases in

health care demand from newly insured people due to (expected) implementation of health care reforms.

This is the first study to document the Monterey County and regional partnering safety net providers and to provide a more complete picture of the safety net system and its capacity to serve our local communities. Results of this study will support safety net providers' efforts to identify service gaps and collaborate across the system, in order to optimize access to needed services by the population and achieve desired population health outcomes.

Following the recent Supreme Court decision to uphold most of the provisions of the Affordable Care Act (ACA), changes to the health care system are expected to shift the ways in which services are delivered and significantly increase the number of individuals eligible for public and private health care insurance coverage. On a local level, Although implementation of federal health care reforms will ensure that more county residents are covered by insurance (which is expected to provide needed resources to safety net providers for an expansion of services), there will be major challenges to the local system. First is the significant number of individuals who will not be eligible for health insurance under the new mandate due to their immigration status. Second is the capacity of the local system to (rather quickly) respond by extending coverage to many newly insured people without abandoning those who continue to lack insurance. Third is how to strategically evolve the system while taking advantage of its existing strengths and addressing the areas – both geographical and institutional – needing the most attention.

These challenges pose a number of questions that this study hopes to address. Regardless of the ultimate shape that health care reform takes, the difficulties faced locally by individuals and families that are un- or under-insured and unable to pay for needed health care serve as a constant reminder that the system – both local and national – needs attention. Although the final outcome of implementation of the Affordable Care Act may ultimately be an increase in insured patients, safety net providers will continue to serve those who will not be covered and those with less than adequate coverage.

The audience for this report is broadly defined as those agencies and organizations that contribute to the "public's health" through provision of health services to those in need regardless of their ability to pay, as well as social service organizations, other government agencies, schools and universities, business groups, philanthropic partners, and the general public. We hope that this study will encourage all interested parties to engage across institutional, political, and marketplace boundaries to collaboratively address – and where possible, solve – some of the challenges facing our local safety net system of providers, ultimately benefiting the entire regional health care system and broader community.

HIGHLIGHTS

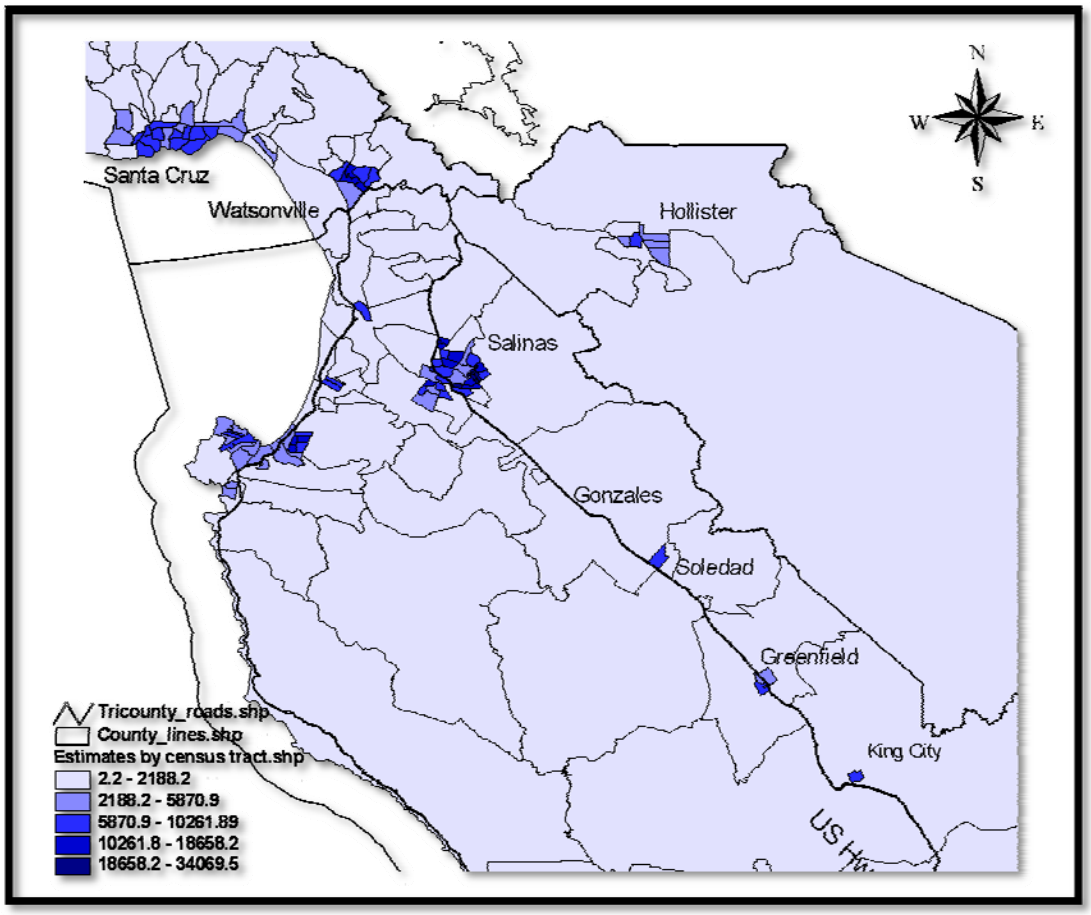
Monterey County has a population of 415,000 of which an average of 81,203/month were Medi-Cal recipients. Approximately 21.7 or 90,126 are uninsured. For 19 of the 21 clinics in Monterey County for which data were available, 36.2 FTE physicians provided services to 85,027 patients largely from underserved and un-served county populations, a ratio of 2,349 patients to every one physician. The national standard is 1,500 patients for every physician. Further data are needed to completely capture and quantify service needs and gaps within the county.

The study's major findings, sample population demographic maps and individual provider profiles are summarized as follows:

Regional population demographics and geospatial maps

- The study includes twenty geospatial maps describing selected population demographics, socioeconomic status, and health related variables that provide a picture of high-need areas within the tri county region.
- The population maps show the census tracts and zip codes with the highest population counts located in the eastern part of the city of Salinas, the southern part of Watsonville, southeast Hollister, Soledad, and Seaside. Further population density by census tract indicates that the highest relative population densities in the region are in the southern part of Watsonville (just north of the Monterey county line), the eastern part of the city of Salinas, and central Seaside (in that order).
- The sample map (below) shows the census tracts with the highest population density the densest of which is located in east Salinas (census tract 06053000702), with 34,070 people per square mile. For comparison, this Salinas census tract has a higher population density than the third densest neighborhood in the Los Angeles metropolitan area (East Hollywood, with a density of 31,095 /sq. mi), making it one of the highest density neighborhoods in the United States.

SAMPLE: Population density map (pop/sq. mile)



- The 2000-2010 period shows modest population growth for the region as a whole but dynamic population shifts within the region. In Monterey County, census in Marina, Moss Landing, Carmel Valley, and parts of central-east Salinas experienced population loss. On the other hand, census tracts in Seaside, the Fort Ord region (south of CSUMB), the area north of Carmel Valley (and south of Hwy 68), Big Sur, and the Salinas valley (east of Hwy 101) experienced population growth. The largest population changes in Monterey took place in the eastern side of Salinas, Greenfield, and Soledad.
- Estimates of undocumented immigrants by ZIP code indicate that two major areas hold the majority of undocumented individuals: the southeastern part of the city of Salinas (ZIP code 93905) and the Watsonville area (Zip code 95076). Together, those two ZIP codes hold about 43% of the approximately 101,000 undocumented immigrants estimated to be living in the tri-county area. Estimates also show that in the southern area of Monterey county, in King City and Gonzales, about 1 in 3 residents are undocumented, in the Watsonville-Castroville area about 1 in 4 residents is likely to be undocumented, and in the southeastern central part of Salinas about 40% of residents are undocumented.

- The population that "does not speak English very well" is concentrated in the eastern part of Salinas, the south Watsonville-Pajaro-Castroville area and the Gonzales-Soledad-Greenfield-King City areas, where between 45 and 72 percent of the population older than 5 years of age reports speaking English "not very well."
- Data on the number of families with incomes below the federal poverty line and unemployment rate by census tract indicate that there are pockets of high poverty and unemployment in southeast Salinas and south Watsonville, where 35 – 43% of the population falls below the poverty line. While these are the areas hardest-hit by poverty and unemployment, there are other hard-hit areas on the Peninsula, including central Seaside, where 22 – 35% of the households with children under 18 fall below the poverty line. Unsurprisingly, areas with a higher proportion of poor residents have higher numbers of Medi-Cal recipients.
- The number of births, crude birth rate, fertility rate and proportion of Medi-Cal-funded births by ZIP code indicate high relative fertility rates in the Watsonville-Castroville-Pajaro, East Salinas, and King City-Greenfield-Gonzales areas, where the birth rate is between 87 and 114 births per 1,000 women between the ages of 15 – 44 years. Interestingly, zip codes with high fertility rates are home to the highest relative proportion of Medi-Cal-funded births (between 66-85%).
- Employment characteristics show that areas of higher average unemployment rates in the past 5 years coincide with areas of lower median income and areas with higher concentrations of wage workers (as opposed to self-employed workers). These areas are located in the corridor along Hwy 101 in Monterey County and in the Southern Watsonville and north Monterey County (Pajaro valley) regions. Furthermore median incomes for working men in the tri-county region are, on average, about 25% higher than median incomes for working women; and areas where median incomes for working women are higher than median incomes for working men coincide with higher poverty areas.

Monterey County health status/health risk hot spots

- In general, health status across the lifespan for individuals living in Monterey County closely mirrors that of the state overall, and the county's population shares many of the same health issues. California has the third highest life expectancy (in the US) at 81.4 years. Although the Monterey county life expectancy at 78.8 years was lower than the statewide average, it was higher than the US at 78.5 years.

- Despite an overall higher life expectancy than the national average, segments of the Monterey County population face a number of health disparities and challenges to improvements in overall health status and access to health care including:

- **Overweight and obesity**
  - In 2009, Monterey County obesity rates (25.6%) and overweight rates (35.4%) were higher than the overall state rates of 22.7% and 33.6% respectively.
  - Monterey County's student population had a combined overweight/obese rate of 44.6%, which is the fourth highest in California where the overall rate is 38%. Monterey County's children had even higher rates in three of its cities: Seaside at 45.6%, Salinas at 46.7% and Soledad at 48.5%. The prevalence of diabetes in Monterey County, at 8.1%, was slightly lower than the statewide California rate of 8.5%.

- **Births/Prenatal Care**
  - Monterey County has the third highest total birth rate in California at 80.1/1,000 women ages 15 – 44, and the sixth highest rate of births to teens (15 – 19 years) in California at 49.8/1,000.
  - Monterey County has a high rate of late (past 1st trimester) or no prenatal care prior to delivery, at 26.8% overall; about 1,780 women throughout the county went without early prenatal care in 2010. This is considerably higher than the statewide rate of 16.5% and the Healthy People 2020 target of 22.1%.

- **Uninsured**
  - Some 21.3% of Monterey County residents went without any form of health insurance, compared with 17.9% for California and 16.7% for the US overall.
  - Over 40% of Monterey County's uninsured population had less than a high school education and 56.9% were unemployed.
  - Hispanic/Latino individuals were three times more likely to lack insurance, and Latinas were the least likely of all groups to have insurance, at 37.3% nationwide.
  - Lack of adequate dental/oral health care – In 2007, 47% of men and 44% of women lacked dental insurance and 52% of Hispanic (38% of non-Hispanic White and 38% of Asian) residents were more likely to lack dental insurance in the prior year.

- **Medi-Cal**: the percentage of Monterey County residents who became eligible for Medi-Cal increased significantly, from 18.5% in 2005 to 24.8% in 2009.
- **Homeless individuals**: 44% of respondents reported having used hospital Emergency Rooms at least once in 2011, and 35% reported utilizing hospital Emergency Rooms as their *primary* source of medical care and treatment in 2009. The number of respondents who reported never having used the ER in the year prior to the survey increased from 45.7% in 2009 to 56.4% in 2011

Affordable Care Act (ACA) 2010 – Benefits from implementation

The percentage of the non-elderly population in Monterey County that would benefit from the Affordable Care Act either by being newly eligible for Medicaid or by qualifying for healthcare subsidies is estimated at 19%. An even greater percentage (23%) of residents in selected cities throughout Monterey County is projected to gain benefits, including parts of Salinas (93907), Carmel (93920, 93923, 93924), Marina (93933), Monterey City (93940), Pacific Grove (93950), Pebble Beach (93953), Seaside (93955), and Castroville (95012).

Safety Net Provider Profile

The safety net profile is divided in two sections: The first one describes utilization, capacity, and financial characteristics of safety net providers in the Monterey, San Benito and southern Watsonville regions. The second section concentrates on providers in Monterey County alone. While both sections look at the same characteristics, the regional profile offers a preliminary comparative analysis across counties and a subsection on dental services. In both profiles hospitals and primary care providers were analyzed separately to reflect the differences in services and data collection systems.

Tri-County Regional Safety Net Provider System

- The study includes 2 geospatial maps locating 41 primary care providers and 6 hospitals throughout Monterey, San Benito and the southern part of Santa Cruz counties. Of these 41 centers, 34 had available data from OSHPD or the Monterey County Health Department. A summary of providers is included in the following table of Tri-County Regional Safety Net Providers.

County/ Provider group	Location/name	#
Monterey		29
Monterey County Health Department	Salinas (Laurel), Seaside, Marina, Alisal	7
Clinica de Salud del Valle de Salinas	Salinas, Sanborn, Alvin, Castroville, Chualar, Soledad, King City, Greenfield	8
Planned Parenthood	Seaside, Salinas, Greenfield	3
Other	-	7
Hospital	C.H.O.M.P.; Salinas Valley; Natividad; G.L. Mee Memorial	4
San Benito		3
Planned Parenthood	Mar Monte	1
Health Foundation	Health Foundation	1
Hospital	Hazel Hawkins	1
Santa Cruz		9
Planned Parenthood	Watsonville	1
Other	-	7
Hospital	Watsonville Community H.	1
Grand Total		41

- Safety net providers are distributed across the region in a pattern of 1-2 public county and/or non-profit clinics in small cities with higher population densities and a few scattered clinics in county areas with dispersed populations.
- Primary care safety net provider patient populations reflect the racial, ethnic and income profiles of the region's population in need. Out of the 137,570 patients served by primary care providers 78% were of Hispanic descent; a third of them were seasonal agriculture and migrant workers; just 5% of the patients were 200% above the federal poverty line; and about 36% of them were women between 15 and 44 years of age.
- The most common types of services provided by primary care safety net facilities in the region were those related to "family planning" and "factors influencing health status and contacts with health services (Z codes)" (these 2 categories represented 55% of their encounters with patients in 2010) .
- Provider financial information regarding payer mix reveals that only about 11% of primary care providers' patients are covered by private insurance and about 25% are categorized as "self-pay." Primary care provider financial information revealed that the system relies heavily on Medi-Cal and family PACT reimbursements. For primary care providers that filed data on net revenues by payer source (those that file data to OSHPD), Medi-Cal patients represented 41% of patient encounters but accounted for 53% of their net revenues. Similarly, Family PACT-covered patients represented 12% of the patient encounters but accounted for 21% of their net revenues. In contrast, self-pay patients represented 13% of the total number of encounters but accounted for only 7 % of total net revenues.
- Out of 34 primary care providers and hospitals at the regional level with available utilization and personnel data, 11 reported having dentists on their staff. These 11 centers reported 9.8 FTE dentists in Monterey, 3.1 FTE in San Benito and 7.2 FTE in the southern part of Watsonville. The Monterey county providers with dentists were all located along Hwy 101 with the exception of the 1 FTE equivalent dentist in CSVS-Castroville. No Providers with dentists on staff were identified in the peninsula area of Monterey County.
- The 6 hospitals identified in the region attended a total of 227,000 patients in 2010. Most of them in Acute care. About 37% of their patients were covered by Medi-Cal. However, in contrast to primary care providers, hospitals' Medi-Cal resources represented only 18% of their net revenues while patients with private insurance accounted for 57% of their revenues.

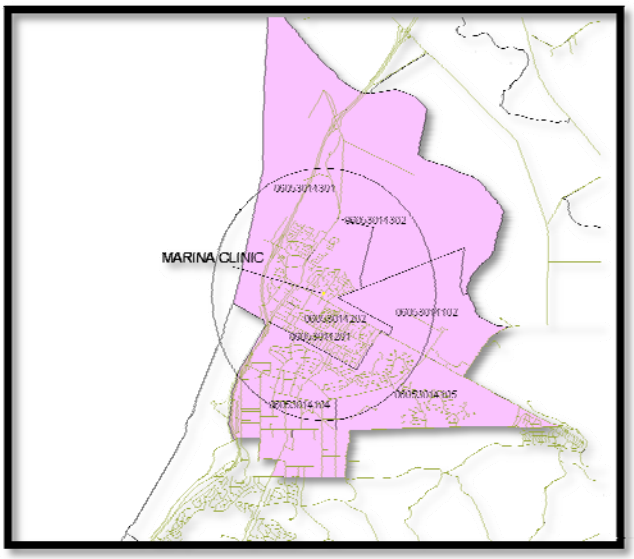
Monterey County Safety Net Provider Network

- In Monterey County alone 29 safety net providers were identified (25 primary care units and 4 hospitals). Out of these 29 providers, 27 had available data from OSHPD or the Monterey County Health Department.

- With the exception of the Big Sur Health center and the CSVS-Chualar, all the rest of the primary care providers in Monterey County were located in urban centers.
- In 2010, safety-net primary care providers in Monterey attended 99,222 patients. About 74% of these patients were Hispanic, 80% of them were below the age of 45, 66% of them were female, and only 6% were above 200% of the federal poverty line.
- Patient coverage data from the primary care providers revealed that 44% of patients attended in the safety net network in Monterey were covered by Medi-Cal. These patients represented about 56% of total patient encounters. Furthermore, for primary care providers with available data on revenues by payer source (those that file OSHPD data), Medi-Cal payments represented about 58% of total net revenues, while private insurance and self-pay patients only accounted for about 13% of net revenues together.
- A preliminary analysis of capacity for Monterey County revealed that safety net providers have a limited number of number of mental health professionals. Even though this study did not include mental health providers, the small number of mental health professionals employed by the safety net providers (2 psychiatrists in the Seaside area and 1 clinical psychologist in the Salinas area) may partly explain the low percentage of Medi-Cal eligible Hispanics receiving needed mental health services.
- Hospitals in Monterey County attended 161,566 patients. About 30% of which were covered by Medi-Cal, 40% were covered by Medicare, and 24 % were covered by some type of private insurance. In contrast to primary care providers, hospitals received about 61% of their total net revenues from private insurance, and only 16% of their revenues from Medi-Cal.
- The Monterey county safety net profile in this report includes detailed information of each provider's catchment population, utilization, and financial characteristics. Two provider profiles are included below. The remaining 23 profiles can be found in the Appendix.

MONTEREY COUNTY HEALTH DEPARTMENT – MARINA CLINIC

Geographic area served



Census tracts adjacent to a 2-mile radius:

06053014102; 06053014202; 06053014201; 06053014104; 06053014301; 06053014302; 06053014105

Zip Codes adjacent to a 2-mile radius:

93908; 93933

Demographic characteristics of geographic area served (2010):

Census Tract Served	Total POP	% Does not speak English "very well"	% Unemployed	% Wage Worker	% Self Employed	Median HH Income	Percent Poor	Percent poor with children
06053014102	2259	11.1	4.3	56.0	3.7	81908	7.4	1.7
06053014202	4075	21.1	5.3	82.4	3.9	60357	6.7	12.9
06053014201	5133	21.6	8.7	74.7	9.7	72063	6.8	11.7
06053014104	1611	0.0	25.8	66.1	5.1	61287	7.2	5.4
06053014301	3602	9.0	3.7	66.3	5.8	74375	6.4	12.4
06053014302	4024	20.6	8.7	64.3	13.2	63237	6.2	25.5
06053014105	2688	11.4	9.1	49.4	0.8	59107	7.1	14.0
Total*	23392	15.73	8.14	67.65	6.77	67581.30	6.74	13.26

*With the exception of the "Total population" field, totals represent (population) weighted averages

Zip codes Served	Undocumented workers	Total Births	Birthrate	Fertility Rate	Births paid by Medical %	Crude Death rate
93908	431	89	6.82	44.04	23.60	6.67
93933	1,325	284	12.68	53.21	46.13	5.00

Patient Characteristics (2010):

Race	Total	%
American Indian	3	0.14
Asian	267	12.47
Black	215	10.04
Native Hawaiian	1	0.05
Not Collected or Unknown	97	4.53
Pacific Islander	27	1.26
White	1,531	71.51
Total Patients	2,141	100

Ethnicity	Total	%
Hispanic	977	45.63
Non-Hispanic	411	19.20
Not Collected/Unknown	753	35.17
Total Patients	2,141	100

Patient Poverty Level	Total	%
Under 100%	34	1.58
100 to 200%	8	0.37
Above 200%	6	0.28
Unknown	2,109	97.77
Total Patients	2,157	100

Patient Age and Gender	Female	Male	Total	%
Under 1 year	38	41	79	3.69
1 - 4 years	156	168	324	15.13
5 - 12 years	212	193	405	18.92
13 - 14 years	33	33	66	3.08
15 - 19 years	109	82	191	8.92
20 - 34 years	319	57	376	17.56
35 - 44 years	158	30	188	8.78
45 - 65 years	205	95	300	14.01
65 and over	142	70	212	9.90
Total Patients	1,372	769	2,141	100

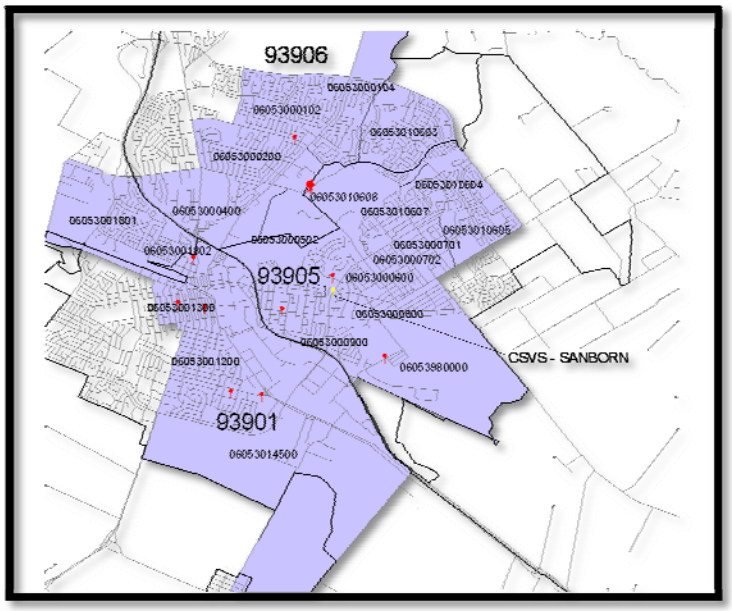
Staffing and Financial Characteristics (2010):

Provider Type	FTE-Salary	FTE-Contract	FTE-Volunteer	FTE-Total	Encounters
Physician	1.87	0	0	1.87	5,730
Physician Assistant	0	0	0	0	0
Nurse Practitioner	0.41	0	0	0.41	1,100
Certified Nurse Midwife	0	0	0	0	0
Visiting Nurse	0	0	0	0	0
Dentist	0	0	0	0	0
Registered Dental Assistant	0	0	0	0	0
Psychiatrist	0	0	0	0	0
Psychologist	0	0	0	0	0
LCSW	0	0	0	0	0
Other	0	0	0	0	0
CPSP	0.1	0	0	0.1	384
TOTAL Providers	**2.38**	**0**	0	**2.38**	**7,214**

Patient Coverage	Total	%
Medicare	291	11.64
CCAH MediCal	1,363	54.54
State MediCal	200	8.00
State Insurance Plan	314	12.57
Monterey County Managed Care	1	0.04
Private Insurance	39	1.56
Self Pay	287	11.48
Not Posted	4	0.16
Total Patients	2,499	100

Payer Source	Total	%
MEDICARE	1,501	17.76
CCAH MediCal	4,927	58.31
State MediCal	854	10.11
State Insurance Plan	629	7.44
Monterey County Managed Care	1	0.01
Private Insurance	87	1.03
Self Pay	448	5.30
Not Posted	4	0.05
Total Encounters	8,450	100

CLINICA DE SALUD DEL VALLE DE SALINAS – SANBORN



Geographic area served:

Census tracts adjacent to a 2-mile radius:
06053000104; 06053010603; 06053010604; 06053000900; 06053010605; 06053000200; 06053000400; 06053000600; 06053000800; 06053001200; 06053010607; 06053001300; 06053000102; 06053014500; 06053010608; 6053000702; 06053001801; 06053001802; 06053000502; 06053000501; 06053000701; 06053980000

Zip codes adjacent to a 2-mile radius:

93906; 93901; 93905

Other primary care providers within 2 mile radius: 20 other

Characteristics of population in geographic area served:

Census Tract Served	Total POP	% does not speak English "very well"	% Unemployed	% Wage worker	% Self employed	Median HH Income	Percent poor	Percent poor with children
06053000104	3,478	26.4	5.3	69.2	15.9	55,625	29.9	40.7
06053010603	7,304	19.5	8.2	64.8	6.2	49,625	13.9	20.7
06053010604	5,512	49.5	11.2	80.7	3.0	73,750	13.6	38.7
06053000900	5,746	59.8	16.6	87.1	4.1	39,570	20.0	22.0
06053010605	4,219	48.0	12.6	86.8	2.4	50,957	13.6	14.1
06053000200	6,884	36.3	7.1	84.0	4.5	31,344	29.7	43.3
06053000400	7,161	36.1	9.0	76.1	8.3	56,334	29.0	18.9
06053000600	7,143	67.6	12.8	97.5	1.0	42,484	22.4	31.7
06053000800	5,628	52.9	16.8	89.0	4.3	42,197	20.9	41.0
06053001200	3,178	11.0	12.2	76.0	10.0	44,908	19.2	25.0
06053010607	4,430	58.2	18.8	92.3	3.5	40,104	13.4	31.7
06053001300	2,548	50.8	23.5	82.0	3.2	54,523	19.0	29.3
06053000102	9,054	31.2	5.5	70.0	9.5	31,690	35.5	43.8
06053014500	4,410	8.5	5.1	69.6	7.4	84,013	6.1	20.3
06053010608	3,646	38.1	16.5	87.7	9.2	43,545	13.3	26.9
06053000702	6,371	71.8	17.3	90.1	3.3	47,177	21.0	28.2
06053001801	3,957	34.9	9.1	63.1	11.0	42,551	17.1	24.7
06053001802	5,078	31.0	7.0	78.7	5.4	40,077	16.4	24.6
06053000502	4,161	56.0	10.9	87.0	1.7	61,250	24.3	0.0
06053000501	4,842	68.4	18.0	93.3	5.6	40,924	25.5	34.6
06053000701	6,439	69.6	18.2	86.1	6.8	48,214	22.0	29.7
Total	111,189	44.9	12.0	81.5	5.8	47,454	21.2	29.0

* With the exception of the "total population" filed, totals represent (population) weighted averages

Zip codes Served	Estimate of Undocumented immigrants	Total Births	Birthrate	Fertility Rate	Births paid by Medical %	Crude Death rate	Medi-Cal recipients in 2010
93901	2,166	411	15.3	76.0	55.0	3.2	4,382
93905	27,438	1,624	26.58	113.6	80.9	9.1	21,445
93906	7,612	999	16.8	75.3	59.4	4.6	10,595

Patient characteristics (2010):

Race	Patients	%
White (include Hispanic)	7,341	81.04
Black	6	0.07
Native American / Alaskan Native	1	0.01
Asian / Pacific Islander	32	0.35
More than one race	0	0.00
Other / Unknown	1,679	18.53
Total	**9059**	**100**

Ethnicity	Patients	%
Hispanic	7254	80.08
Non-Hispanic	126	1.39
Unknown	1679	18.53
Total Patients	**9,059**	**100**

Federal poverty level	Patients	%
Under 100%	6,201	68.45
100 - 200%	2,239	24.72
Above 200%	24	0.26
Unknown	595	6.57
Total	**9,059**	**100**

Migrant workers	Patients	%
Migrant workers	5,142	56.76
Other	3,917	43.24
Total	**9,059**	**100**

Age/gender	Patients Males	Females	Total	% of Total
Under 1 year	362	349	711	7.85
1 - 4 years	674	646	1,320	14.57
5 - 12 years	690	724	1,414	15.61
13 - 14 years	115	134	249	2.75
15 - 19 years	243	509	752	8.30
20 - 34 years	325	1,734	2,059	22.73
35 - 44 years	187	654	841	9.28
45 - 64 years	379	902	1,281	14.14
65 and over	172	260	432	4.77
Total	**3,147**	**5,912**	**9,059**	**100**

Staffing and Financial characteristics (2010):

Provider type	FTE Salary	Contract	Volunteer	Total	Encounters
Physician	1.97	0	0	1.97	14,609
Physician Assistants	1.03	0	0	1.03	1,209
Family Nurse Practitioners	0.81	0	0	0.81	4,629
Certified Nurse Midwives	0	0	0	0	0
Visiting Nurses	0	0	0	0	0
Dentists	0	0	0	0	0
Registered Dental Hygienists (Alternative Practice)	0	0	0	0	0
Psychiatrists	0	0	0	0	0
Clinical Psychologists	0	0	0	0	0
Licensed Clinical Social Workers (LCSW)	0	0	0	0	0
Other Providers billable to Medi-Cal	0.94	0	0	0.94	5,685
Other Certified CPSP providers not listed above	1.7	0	0	1.7	10,516
Total	**6.45**	**0**	**0**	**6.45**	**36,648**

Patient Coverage	Patients	%
Medicare	496	5.48
Medicare - Managed Care	0	0.00
Medi-Cal	517	5.71
Medi-Cal - Managed Care	4,154	45.85
County Indigent / CMSP / MISP	0	0.00
Healthy Families	482	5.32
Private Insurance	1,061	11.71
Self-Pay / Sliding Fee	2,349	25.93
Free	0	0.00
All Other Payers	0	0.00
Total Patients	**9,059**	**100**

Source of revenue	Encounters	Gross revenue $	Net revenue $
Medicare	3,037	252,810	314,197
Medicare - Managed Care	0	0	0
Medi-Cal	7,530	644,278	1,591,346
Medi-Cal - Managed Care	14,973	1,277,615	2,061,610
County Indigent / CMSP / MISP	0	0	0
Healthy Families	1,090	198,297	171,995
Private Insurance	2,766	220,225	197,952
Self-Pay / Sliding Fee	3,156	258,821	184,564
Free	0	0	0
Breast Cancer Programs*	1,015	65,316	33,215
CHDP	827	68,450	118,787
EAPC	3	20,092	0
Family PACT	2,251	244,429	192,192
All Other Payers	0	0	0
GRAND total	**36,648**	**3,250,333**	**4,865,858**

BACKGROUND TO STUDY

As national health care reform has been under debate for some time and its implications for local health systems are significant, informal discussions have been taking place among a number of provider organizations and public agencies and their elected representatives throughout the region. These discussions have focused not only on the overall capacity of the safety net system to meet the needs of their communities, but also on the capacity of individual provider organizations to expand (within and across county boundaries) to address service gaps in selected communities within the study region.

These discussions are currently at an informal level, but have implications not only for the health and well-being of the regional communities and populations, but also for the vulnerability and viability of individual providers. As a predominantly rural and underserved medical area, this region is faced with significant population health needs and limited resources to meet those needs. This study should provide relevant information for providers to use in assessing the community's health care needs and in working collaboratively toward a shared purpose of improving access to medical services for the most vulnerable, with the ultimate goal of improving the health outcomes of our families, friends, colleagues, neighbors and communities.

Over the past decade, numerous studies have evaluated many dimensions of the safety net, from determining the needs of communities and special populations, to assessing the capacity of individual providers and their institutional vulnerabilities, all within the context of changes to the health care system over time. More recent studies have looked at the safety net's capacity to meet the expected increase in health care demand from implementation of federal health care reforms. This study was motivated by three primary research questions:

1. What are the health care needs of Monterey County residents, especially those of the most vulnerable populations such as the un- and under-insured?

2. Is the capacity of the local safety net sufficient to meet the current and future demand for health care (especially primary care and related specialty services) by residents of Monterey County?

3. What and where are the gaps in health care services and what changes might be considered to address these gaps most efficiently and effectively?

Research Objectives

Phase I Report

1. Develop a geospatial profile of the region including population demographics and socioeconomic status indicators.

2. Identify high risk population health care needs and access.

3. Create a census of the public, nonprofit, and private safety net providers that serve residents of Monterey County.

4. Establish a geospatial database and map facilities and providers in the system, identifying services and population catchment area characteristics.

5. Draft an initial set of Safety Net Provider Survey questions

STUDY METHODOLOGY

The purpose of the study was to build a local knowledge base and contribute to strategic planning and implementation of county and regional level health care reforms, especially given changing population demographics, population health care needs and public health outcomes and goals.

The study responds to the above-mentioned Phase I research questions for Monterey County, San Benito County and southern Santa Cruz County (Watsonville) and was carried out in two phases. This Phase I Report includes an analysis of existing secondary data, primarily from the US Census Bureau, the California Office of Statewide Planning and Development (OSHPD) and the US Department of Health and Human Services Health Resources and Services Administration (HRSA), with additional information from the Monterey County Health Department (MCHD). The Phase II Report includes an analysis of primary data collected through a Regional Safety Net Provider Survey implemented in Fall 2012.

The study addressed the research questions by using quantitative data collected from the abovementioned sources, and relied on an extensive literature review of related studies (see references) and federal, state and county public health department reports related to health status, health outcomes, and health care for vulnerable populations. (Note: Where there were conflicting population statistics, we used US Census figures.) Researchers also conducted limited interviews with key informants and attended the Monterey County Safety Net Integration monthly meetings with provider representatives in May and June 2012.

This Phase I report presents geospatial maps of the population demographics and socioeconomic status of the tri-county region, provides an overview of health status and health risk "hot spots" for Monterey County, and presents individual geomapped profiles of the twenty-three safety net primary care providers for which we had data, including their locations, utilization, financial characteristics and population demographics (. The criteria for site selection included providers who 1) were OSHPD and/or HRSA reporting in 2010; 2) provided primary care and related specialty health care services; 3) accepted Medi-Cal and Medi-Care patient reimbursement; and 4) served low-income, vulnerable and uninsured patient populations.

The Phase II report incorporates an analysis of primary data gathered through a Safety Net Provider Survey including an analysis of current safety net providers' patient populations, linguistic capabilities and cultural competencies, health information technology utilization and capabilities, and financial information regarding payer mix, capacity and needs, and projected capacity for expansion (in response to health care reforms).

QUANTITATIVE ANALYSIS METHODOLOGY

Data Sources

- Population data at the census tract and ZIP code levels comes from the 2010 US Census. Income, employment, and language proficiency data at the census tract level comes from the 2005-2010 US Census American Community Survey.

- Birth data by ZIP code for Monterey County comes from the Monterey County Health Department "Birth Report 2010" and from the Santa Cruz County Health Services Agency report of births for 2010 (SCHSA, 2011). These data were combined with the population data to calculate birth and fertility rates.

- OSHPD data on primary care providers' staffing, utilization, revenue sources, patient demographics and hospital utilization were used for this preliminary report. Figures for tables and aggregates for these data were calculated using STATA software.

Maps and spatial analysis

Maps used to present the data in its geographic context were produced for this study using the US Census Bureau's "2011Tiger Map" layers for Santa Cruz, San Benito, and Monterey counties. Statistical and geographic data were analyzed and reported using ARCVIEW 3.3 software and its extensions.

Estimation of undocumented individuals

Estimates of the number of undocumented individuals at the ZIP code level were derived from Hill and Johnson's (2011) methodology using data from the Internal Revenue Service (IRS) on tax filings and using Individual Tax Identification Numbers (ITIN) for individuals who do not have a valid Social Security number.

FINDINGS

Health Risks in Monterey County

From 2008 to 2010, Monterey County's percentage of uninsured residents increased to about 21%, compared with 17.9% statewide, while the percentage of residents newly covered by MediCal also increased from 18.5% in 2005 to 24.8% in 2009. Santa Cruz County estimates for uninsured rates also rose from 12.9% (2005) to 15.7% in 2009. Lack of dental care was also a significant problem for 47% of men, 44% of women and 52% of Hispanic residents of Monterey County.

Moreover, health risks of concern for Monterey County include the overweight and obesity rates, which are significant risk factors for Type II diabetes, high blood pressure and high cholesterol. Monterey County adult overweight and obesity rates were 35.4% and 25.6%, respectively, 2 and 3 percentage points higher than the statewide averages; the childhood overweight and obesity rate (combined into one rate)[1] at an estimated 44.6% for Monterey County was significantly higher (than the 38.0% overall for the state of California) (followed closely by San Benito, at 42.2%). Within Monterey County, several cities had even higher childhood overweight/obesity rates: Seaside at 45.6%, Salinas at 46.7% and Soledad at 48.5%.

An additional area of concern is the considerably higher rate of births to teens (15-19 years) in Monterey County at 49.1/1,000 compared with the statewide figure of 29/1,000 and a higher rate of late or no prenatal care which was 26.8% compared with the statewide at 16.5%.

Composition and characteristics of the safety net providers that serve Monterey County residents

Safety net providers are generally made up of public health departments (providing direct services through outpatient clinics, non-profit community-based health centers, and public, community, and non-profit hospitals), and private physicians and medical groups that provide services for Medicaid-insured patients. Developing an initial list of such providers was relatively straightforward, since a number of state, federal and local lists of providers that have historically served the low income and un- and under-insured populations already exist.
However, there appear to be differing perceptions of what is considered a safety net provider. For the purposes of Phase I of this study, the safety net providers considered were those who reported to either OSHPD or HRSA and for whom data was available for 2010. Using this criterion, 41 providers were identified, of which 34 had available utilization data from OSHPD

[1] Combined rate —"overweight/obese students by county 2010" kidsdata.org. Retrieved from http://www.kidsdata.org/data/topic/table/student-obesity-overweight-obese.aspx

or the Monterey County health Department. Of the 34 providers with available utilization data, six were identified as hospitals and 27 as primary care centers.

The 27 primary care providers with available OSHPD data accounted for 443,558 encounters with 99227 patients in 2010. Most patients seen at these primary care facilities were of Hispanic origin (77%), with incomes below the 100% poverty line (40%), and between 15 and 44 years of age (49%).

Less than 12 percent of the patients seen by these providers had private insurance, and the majority either paid out of pocket (25%) or were covered by Medi-Cal (41%). However, though Medi-Cal (traditional and managed care) covered just 41% of the total patients, it provided the largest net revenue source for these clinics as a group (56%).
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Hospitals were also considered part of the safety net system, and six of them were identified in the geographical area looked at by this study. These six hospitals reported having 1,101 licensed beds, the majority of them devoted to acute care services (82%). The financial picture for hospitals was different than that for primary care providers. While hospitals derived the majority of their revenues from private insurance (57%), primary care providers derived only a minor portion from this source. In further contrast, hospitals derived only 18% of their net revenues from Medi-Cal, while primary care providers derived 56% of their net revenues from that source.

In summary, it is clear that the safety net primary care providers described in the OSHPD data serve a population in need, as evidenced by their patients' demographic characteristics. Further, poverty levels demonstrate high reliance on public programs (especially Medi-Cal and Family PACT). An initial look at the maps reveals that the geographic concentration of these providers appears to coincide with the concentrations of poverty and population density in the region. Therefore, given the region's great demographic diversity, it is important to study need and capacity at the provider level. The individual provider profiles presented in the appendix section of this report provide greater detail on the system analysis and information on capacity and need for each provider. In addition, an as-yet unknown number of individual private practice physicians and medical groups in Monterey County provide medical services for MediCal-eligible patients.

CONCLUSIONS

We found that there are areas of need where there are much higher than average rates of poverty, low-income populations, undocumented (and by definition uninsured) populations, births funded by MediCal, and elevated rates of selected health problems (notably overweight/obesity especially among children, lack of insurance, and lack of early prenatal care or no prenatal care).

Even though this phase of the report did not include an in-depth analysis of deficits, simple geographic comparisons and counting of specialists by geographic regions revealed interesting mismatches that will be analyzed in detail in the next phase of the study. In the area of behavioral health services, fewer than 3 FTE specialists were located at two safety net providers in Seaside and Salinas. In the area of dental care, no safety net providers with dentists on staff were identified in the Peninsula area of Monterey County.

Phase I of the study provides important baseline information that will guide Phase II. The final Phase II report provides a more comprehensive picture of the capabilities and challenges facing our local safety net system, which will assist public policy decision making on future health care safety net expansion.

PHASE II REPORT PLANNING OBJECTIVES

1. Complete a network analysis of relationships and referral patterns among safety net providers in the system.

2. Identify institutional characteristics, utilization patterns and capacity and engagement with consumers/community stakeholders.

3. Identify linguistic and cultural capabilities and training needs by provider and across the system.

4. Identify the level of health information technology utilization and training needs by individual providers and across the system.

5. Provide recommendations for system-wide changes to maximize access to health care services for residents of Monterey County.

FULL REPORT

BACKGROUND TO STUDY

INTRODUCTION

A number of studies over the past decade have evaluated the capacity of the health care safety net and pointed to its vulnerabilities.The1999 Institute of Medicine (IOM) report entitled *America's Health Care Safety Net: Intact but Endangered* focused on the state of the core safety net and (threats to) its ability to continue to provide needed access to the most disadvantaged and underserved populations across the country. These threats included a growing number of uninsured; increasingly market-driven policies for health care delivery and their adverse effects on safety net providers; the ill-effects resulting from the "patchwork of organization and funding of the safety net"; and erosive restrictions to Medicaid program benefits and funding/subsidies (IOM, 2000).

In 2001, Mathematica Policy Research, Inc. was funded by the Health Resources and Services Administration (HRSA) and the Office of the Assistant Secretary for Planning and Evaluation (OASPE) to conduct the *Study of Safety Net Provider Capacity to Care for Low-Income Uninsured Patients* in five selected cities, primarily in the Midwest and south. This study reiterated some of the IOM findings, including the patchwork nature of the safety net systems, the strains experienced by safety net providers, especially in providing specialty services such as pharmacy, dental care and behavioral health, and the fact that the safety net's capacity for expansion is "heavily influenced by federal, state, and local public policies."

Many of the key findings from these older studies still apply today, exacerbated by additional challenges from the 2008 – 2011 economic downturn, with high unemployment rates resulting in increased numbers of uninsured. For example, from 2005 to 2009 the rate of uninsured residents in Monterey County rose from 14.8% to 16.3% (kidsdata.org), while the percentage of residents newly covered by MediCal rose from 18.5% to 24.8% (CHIS, 2009). The resulting difficulties faced locally by individuals and families who are un- or under-insured and unable to pay for needed health care serve as a constant reminder that the system – both local and national – needs attention.

More recent studies have tracked trends in Americans' access to medical care and found that the gaps in access between those with and without insurance worsened between 2007 and 2010, especially for lower income individuals and those with health problems (Cunningham, 2011b). Finally, two factors compound capacity and access issues for safety net providers: the persistent and growing shortage of primary care practitioners especially for patients in rural areas and for

low-income and uninsured patients (Carrier et al, 2011); and increased demand from newly Medicaid-eligible patients (Cunningham, 2011b) due to health care reform.

Regardless of the ultimate shape that health care reform takes and the size of the increase in the number of *insured* patients, safety net providers will continue to serve those who will continue to be uninsured and those with less than adequate coverage. This study begins to develop a more complete picture of the safety net system locally and its capacity to serve residents of Monterey County and the region into the future. It also provides interested parties with opportunities to use the study's findings to collaborate on and take advantage of public and private funding opportunities to expand services, and to avoid potential conflicts within the system by using the data to inform collaboration and planning efforts.

Purpose: Why a Regional Safety Net Provider Access & Capacity Study?

National health care reform has been under debate for some time and its implications for local health systems are significant, so informal discussions have been taking place among a number of provider organizations and public agencies and their elected representatives in Monterey County and throughout the region. These discussions have focused not only on the overall capacity of the safety net system to meet the needs of individual counties and the tri-county region as a whole, but also on the capacity of individual provider organizations to expand (within and across county boundaries) to address service gaps in selected communities within the study region.

These discussions are currently taking place at an informal level and have implications not only for the health and well-being of residents in Monterey County and the region, but also for the status and viability of individual providers. As a predominantly rural and underserved medical area, this region is faced with significant population health needs and limited resources to meet those needs. The researchers hope that this study will provide useful information for providers and policy makers to assess these needs and to work collaboratively toward a shared goal of improving access to medical services for the most vulnerable, with the ultimate goal of improving the health outcomes of our families, friends, colleagues, neighbors and communities. An important role for local health departments (LHDs) is coordinating public health activities including "…monitoring community health, informing and educating the public about health issues, mobilizing community partnerships, and developing policies and plans that support individual and community health efforts (NACCHO, 2005)." Three associated "essential public health services" at the local level provide a framework for assessing the capacity of the health care safety net, including: (1) to evaluate [the] effectiveness, accessibility and quality of personal and population-based health services, (2) to link people to needed personal health services and assure the provision of health care when otherwise unavailable, and (3) to develop policies and plans that support individual and community health efforts" (USDHHS/CDC, n.d.). These activities form the basis for evaluating the adequacy of health care services at the county level.

The purpose of this study is to build a local knowledge base and contribute to strategic planning at the county and regional level regarding implementation of health care reforms, especially given changing population demographics, population health care needs and public health outcomes and goals. The study analyzes existing health care provider data in new ways in order to document what services currently exist in proximity to population centers. This information provides policy makers with an opportunity to develop more effective approaches to linking people to needed services, and to ensure that needed health care services are available in our communities.

In addition, the Health Resources and Services Administration (HRSA) Program Assistance Letter (PAL) 2011-02: Health Center Collaboration articulates the need to "support health centers in maximizing opportunities to collaborate with other health care safety net providers" and maximize "resources and efficiencies in the health care system in underserved areas" with the intention of optimizing access to services for residents in their catchments areas. This PAL emphasizes the growing importance of collaboration among providers especially in rural and underserved areas, and given changes in the models of care expected as a part of federal health care reform. HRSA explicitly encourages health centers to "identify the location of other safety net providers located in the community, as well as the services they furnish; and include in the proposed expansion plans how the health center will collaborate with these other providers in furnishing coordinated care to the underserved population in the service area (USDHHS, HRSA, 2011a)."

The results of this study should begin to provide the needed information to help facilitate integration and coordination efforts among safety net providers in Monterey County and across the region. To this end, the Monterey County Health Department (MCHD) has contracted with CSUMB faculty researchers to engage with safety net providers to evaluate the system's capacity to serve the current and future health care needs of Monterey County residents, especially the more vulnerable communities of low-income and un-and under-insured people.

This current study was motivated by three primary research questions:

1. What are the health care needs for residents of Monterey County residents, especially the most vulnerable populations including the un- and under-insured?
2. Is the capacity of the local safety net sufficient to meet the current and future demand for health care (especially primary care and related specialty services) by residents of Monterey County?
3. What and where are the gaps in health care services and what changes might be considered to address these gaps most efficiently and effectively?

Research Objectives

Phase I Report

1. Develop a geospatial profile of the region including population demographics and socioeconomic status indicators.

2. Identify high risk population health care needs and access.

3. Create a census of the public, nonprofit, and private safety net providers that serve residents of Monterey County.

4. Establish a geospatial database and map facilities and providers in the system, identifying services and population catchment area characteristics.

5. Draft an initial set of Safety Net Provider Survey questions. (see Appendix)

STUDY METHODOLOGY

Overview

CSUMB faculty and student researchers, under contract with the Monterey County Health Department (MCHD), conducted the first phase of a two-part study to evaluate the capacity of the existing safety net provider system of clinics and hospitals serving the health care needs of Monterey County residents, especially low-income and uninsured people. The area under study includes Monterey County, San Benito County and the southernmost border area of Santa Cruz County (Watsonville). Although the primary geographic focus of this study is Monterey County, because some Monterey County residents seek health care outside the county, some non-Monterey county providers may be considered.

The purpose of the study is to build a local knowledge base and contribute to strategic planning and implementation of county and regional level health care reforms, especially given changing population demographics, population health care needs and public health outcomes and goals. This study is one of the first to examine the safety net system at the county- and regional level across types of providers.

The primary goal of the study is to assess the capacity of existing safety net providers serving residents of Monterey County and determine access and service gaps across the system. We intend to accomplish this by: 1) identifying the priority health care needs in Monterey County, 2) creating geospatial maps showing where current providers are located and what services they provide in their surrounding communities; 3) analyzing providers' existing capacity to serve the *current* health care needs of Monterey County residents; 4) analyzing gaps in health care services throughout Monterey County; and 5) analyzing providers' ability to expand to meet projected

increases in health care demand from newly insured people due to (expected) implementation of health care reforms.

The study was carried out in two phases. This Phase I Report includes an analysis of existing secondary data, primarily from the US Census Bureau, the California Office of Statewide Planning and Development (OSHPD) and the US Department of Health and Human Services Health Resources and Services Administration (HRSA), with additional information from the Monterey County Health Department (MCHD). The Phase II Report includes an analysis of primary data collected through a Safety Net Provider Survey implemented in Fall 2012. The This study provides policy makers and residents of Monterey County with information on the County's safety net provider system.

This Phase I report documents and a presents geospatial maps of the population demographics of the tri-county region, provides an overview of health status and health risk "hot spots" for Monterey County, and presents individual mapped profiles of the twenty-three safety net primary care providers, including their locations, services and the population demographics within a 2-mile radius catchment area.

This Phase I report responded to the above-mentioned research questions for Monterey County, San Benito County and southern Santa Cruz County (Watsonville). The criteria for site selection included the following: 1) providers who were OSHPD and/or HRSA reporting in 2010, 2) provided primary care and related specialty health care services, 3) accepted Medi-Cal and Medi-Care patient reimbursement, and 4) served low-income, vulnerable and uninsured patient populations.

The Phase II report incorporates an analysis of primary data gathered through a Safety Net Provider Survey including an analysis of current safety net providers' patient populations, referral patterns and relationships, linguistic capabilities and cultural competencies, health information technology utilization and capabilities, and financial information regarding payer mix, capacity and needs, and projected capacity for expansion (in response to health care reforms).

Researchers reviewed federal, state and local county-level government reports as well as evidence from the peer-reviewed literature, met with safety net providers and county health department representatives, and analyzed secondary data from a number of sources including 2010 provider data from the California Office of Statewide Health Planning and Development (OSHPD) and US Department of Health and Human Services Health Resources and Services Administration (HRSA) reports, US Census reports, and MCHD birth by primary diagnosis for Monterey County.

Safety net providers were selected based upon a cross-referenced analysis of their inclusion in several reports, including OSHPD and HRSA data tables, MCHD invitee list for the Monterey County Safety Net Integration monthly meetings, and the Safety Net Clinic Coalition of Santa Cruz County member list. Researchers met with the Monterey County Safety Net Integration Council and conducted informal interviews of some providers in May and June 2012 (with additional meeting attendance through early 2013 for Phase II).

Finally, a draft Safety Net Provider Survey was developed and submitted to Monterey County Safety Net Integration Council members and selected leadership for review and input. The survey was implemented in Fall 2012 for the Phase II Report of this study. Draft Survey questions are included in the Appendix.

Research Objectives

Phase I Report

1. Develop a geospatial profile of the region including population demographics and socioeconomic status indicators.
2. Identify high risk population health concerns related to health care needs and access.
3. Create a census of the public, nonprofit, and private safety net providers that serve residents of Monterey County.
4. Establish a geospatial database and map facilities and providers in the system, identifying services and population catchment area characteristics.
5. Draft an initial set of Safety Net Provider Survey questions. (see Appendix)

Phase II Report

1. Project future demand for uninsured population who will be newly eligible for expanded MediCal and subsidized state insurance options.
2. Analyze safety net providers' potential for expanded capacity to serve new demand.
3. Identify linguistic and cultural capabilities and training needs by safety net providers and across the system.
4. Identify the level of health information technology utilization and training needs by individual providers and across the system.
5. Provide recommendations for system-wide changes to maximize access to health care services for residents of Monterey County.

QUANTITATIVE ANALYSIS METHODOLOGY

This section describes the data sources and tools used to produce estimates, figures and geographic information systems. Each type of information used in this report is described separately.

Population data

Population data at the census tract and ZIP code level (5 digit ZIP code tabulation areas) came from the Census bureau's estimates of the 2010 Decennial Census. Income, employment, and language proficiency data at the census tract level comes from the 5-year estimates (2005-2010) provided by the American Community Survey of the Census Bureau. Both these sources were accessed online through the American Fact Finder web portal.

Health data

Data on births for the county of Monterey by ZIP code came from the Monterey County Health Department "Birth Report 2010" (MCHD, 2011a) and from the Santa Cruz County Health Services Agency report of births for 2010 (SCHSA, 2011). These data were combined with population data from the decennial census to calculate birth rates and fertility rates.

Health services provider data

Data on primary care providers' staffing, utilization data, revenue sources, and patient demographics for this preliminary report came from the OSHPD complete database on utilization data for primary care providers (OSHPD, 2011a). Data for hospitals came from the "Selected tables for utilization data for hospitals" (OSHPD, 2011b).

Information on patient demographics and coverage for County clinics came directly from the Monterey County Health department.

Figures for tables and aggregates for these data were calculated using STATA(12) software with the mentioned databases.

Maps and spatial analysis

Maps used to present the data in its geographic context were produced for this study using the US Census Bureau's "2011Tiger Map" layers for Santa Cruz, San Benito, and Monterey counties. Statistical and geographic data were analyzed and reported using ARCVIEW 3.3 software and its extensions.

Estimation of undocumented individuals by ZIP code:

In order to estimate the number of undocumented individuals at the ZIP code level, we used Hill and Johnson's (2011) methodology using data from the Internal Revenue Service (IRS) on tax

filings using Individual Tax Identification Numbers (ITIN). Since 1996, even individuals who do not have a valid social security number have been able to file federal taxes using an ITIN. Hill and Johnson demonstrate the number of ITIN tax filers to be highly correlated with estimates of undocumented individuals obtained using the widely accepted residual method at the state level (2011)[2].

Starting with the total number of undocumented individuals in California for the year 2008, we estimate the number of undocumented individuals in a ZIP code by their proportional share of ITIN filers for that year using the algorithm in equation 1.

$$UWZ_i = (ITIN_i / ITIN_{state}) * 2{,}876{,}000 \quad (1)$$

Where County UWZ_i is the estimate of undocumented individuals in ZIP code *i* in the year 2008; ITINi and $ITIN_{state}$ represent the number of tax filings received by the IRS from that ZIP code *i* and the state as a whole in 2008 respectively. We obtained Internal Revenue Service ITIN filings data from the Brookings institute's EITC study group[3]. Finally, 2,876,000 is the best estimate of the number of undocumented individuals in the state of California in the year 2008 as calculated by the residual method by Warren (2011).

Our estimates follow the most accurate and recent methodology to estimate numbers of undocumented individuals at the sub-county level, yet it is important to mention that these numbers are estimates and should be used with caution. Precision of our estimates are dependent on two assumptions:

1) The estimates assume that estimated number of undocumented migrants at the state level using the residual method (i.e. the warren estimate we used) is precise; and
2) The estimates assume that the ratio of ITIN filings to undocumented individuals is uniform across all ZIP codes in the state.

Finally it should be noted that the IRS does not disclose the number of ITIN filers for ZIP codes that report less than 20 ITIN filings. Thus, our estimates for these ZIP codes will be 0 even if the ITIN filings for that zip may be somewhat higher. This may result in slightly higher estimates for ZIP codes that do have positive numbers of ITIN filers.

Methodology for data classification in maps:

To group the map data into different data classes we used the "natural breaks" method (Jenks, 1967) available in ArcView 3.3. This method creates classification groups by minimizing the

[2] Hill and Johnson report a correlation coefficient of .99 between state estimates of undocumented individuals using the residual method and the number of ITIN filers for the 2008 tax year.
[3] http://www.brookings.edu/research/interactives/eitc

average (squared) deviations for observations within a class and maximizing the variation between classes. In other words, the natural breaks method creates data classes that give the most homogeneous categories while making the cuts at the data values where the biggest jumps between categories occur. This method is preferred to other classification methods because it gives a relatively lower information loss ratio when the data show clear cutoff points (large differences among groups of observations) (Osaragi, 2002). This is certainly the case for the demographic and economic variables selected in the study in the tri-county area, where large differences between geographical areas can be observed.

Overview of Safety Net Providers

Introduction

One objective of national health care reform is to ensure that primary care providers (PCPs) become central players in the delivery of health services to the large population of newly insured patients expected to be eligible for health insurance and entering the California health care system in 2014. Many of these soon-to-be-insured patients currently depend upon urgent care and emergency room services to meet their needs. In order for these future patients to recognize and select community clinics and other safety net providers as their "medical homes" of choice, it is necessary that those clinics become an integral part of a comprehensive system of providers – a system that is efficient in its use of resources, its sharing of patient data, and its coordination of specialty and hospital care when needed.

Safety Net Providers

Community-funded clinics provide free, low-cost, or sliding-fee primary care services to low-income and uninsured families and individuals.

Critical Access Hospitals (CAHs) are small, rural, geographically remote facilities that provide in-/out- inpatient services (> 35 miles [or >15 miles in mountainous areas] from the nearest hospital); or may be designated as a "necessary provider," <25 beds (CMS 2010)

Emergency departments of community and public hospitals offer emergency medical care, regardless of ability to pay or insurance status. Many hospitals, particularly teaching hospitals, also provide basic primary care and specialty care services for people without other health care options.

Federally designated rural health clinics offer basic primary care services. Rural clinics are located in non-urban areas with documented shortages of health care providers and/or medically underserved populations.

Federally qualified health centers (FQHC) have been identified by the Health Resources and Services Administration and certified by the Centers for Medicare and Medicaid Services as meeting the definition of "health center" under Section 330 of the Public Health Service Act, and receive grant funding under the federal Health Center Program (and FQHC Look-alikes are also so defined by do not receive such funding). (HRSA, 2011)

What is the Safety Net?

Although there are a number of definitions of what constitutes the safety net, for the purposes of the first phase of this study, we have used the Institute of Medicine's (IOM) definition: "Those providers that organize and deliver a significant level of health care and other related services to uninsured, Medicaid, and other vulnerable patients." In addition, IOM states that in most communities a subset of the safety net exists and is described as the "core safety net providers" that generally have "two distinguishing characteristics: (1) either by legal mandate or explicitly adopted mission they maintain an 'open door,' offering access to services for patients regardless of their ability to pay; and (2) a substantial share of their patient mix is uninsured, Medicaid, and other vulnerable patients."

Core safety net providers are defined as including primarily public and community hospital systems; federal, state, and locally supported community health centers (CHCs) or clinics, e.g., Federally Qualified Health Centers (FQHCs) that receive Public Health Service Act Section 330 grant funding and FQHC Look-Alikes that do not; and local health departments.

SNP Patient Populations

Safety net primarily serves low-income patients; uninsured, publicly insured, and underinsured.

In 2007, 70% of CHC patients had family incomes at or below 100% of FPL ($22,350 - family of four), and > 90 percent had family incomes at or below twice the FPL ($44,700 - family of four) (Rosenbaum et al. 2009).

In 2009 nearly 40% of patients who visited CHCs lacked health insurance coverage, and one in eight were Medicaid beneficiaries (NACHC 2009).

One in seven rural residents receives care from safety net providers. (Hing and Hooker 2011)

In 2009, 27 percent of CHCs' patients were African American and 35 percent were Hispanic —more than twice their respective proportions in the overall U.S. population (Hing and Hooker 2011).

CHCs also provide care to 865,000 migrant and seasonal farm workers and their families; more than 1 million individuals experiencing homelessness; and more than 165,000 residents of public housing (HRSA 2011a).

In 2010, nearly 50 million people nationwide were uninsured (DeNavas-Walt et al. 2011).

In 2014, after ACA is fully implemented 23 million individuals will still be uninsured, (Congressional Budget Office, 2011)

Community Health Centers (CHCs), as defined by the Health Resources and Services Administration (HRSA), are "community-based and patient-directed organizations that serve populations with limited access to health care." The success of CHCs hinges largely on their ability to provide comprehensive, culturally competent, quality primary health care services to vulnerable populations, including low-income individuals, the uninsured, those with limited-English proficiency, migrant and seasonal farm workers, individuals and families experiencing homelessness, and residents of public housing (HRSA 2011a). In addition to primary care, CHCs may also provide dental care; mental health and substance abuse treatment; pharmacy services; and other services that facilitate care such as translation, transportation, and case management (Direct Relief USA, 2011).

In most communities, other service providers are generally considered to be part of the core safety net including teaching hospitals, HIV/AIDS clinics, family planning clinics, school-based health clinics, community mental health providers, oral health clinics, and private-practice physicians and medical groups that serve a significant number of Medicaid patients – in essence, health care providers who provide primary care services and have demonstrated a commitment to serving the poor and uninsured (IOM, 2000, HRSA, 2011).

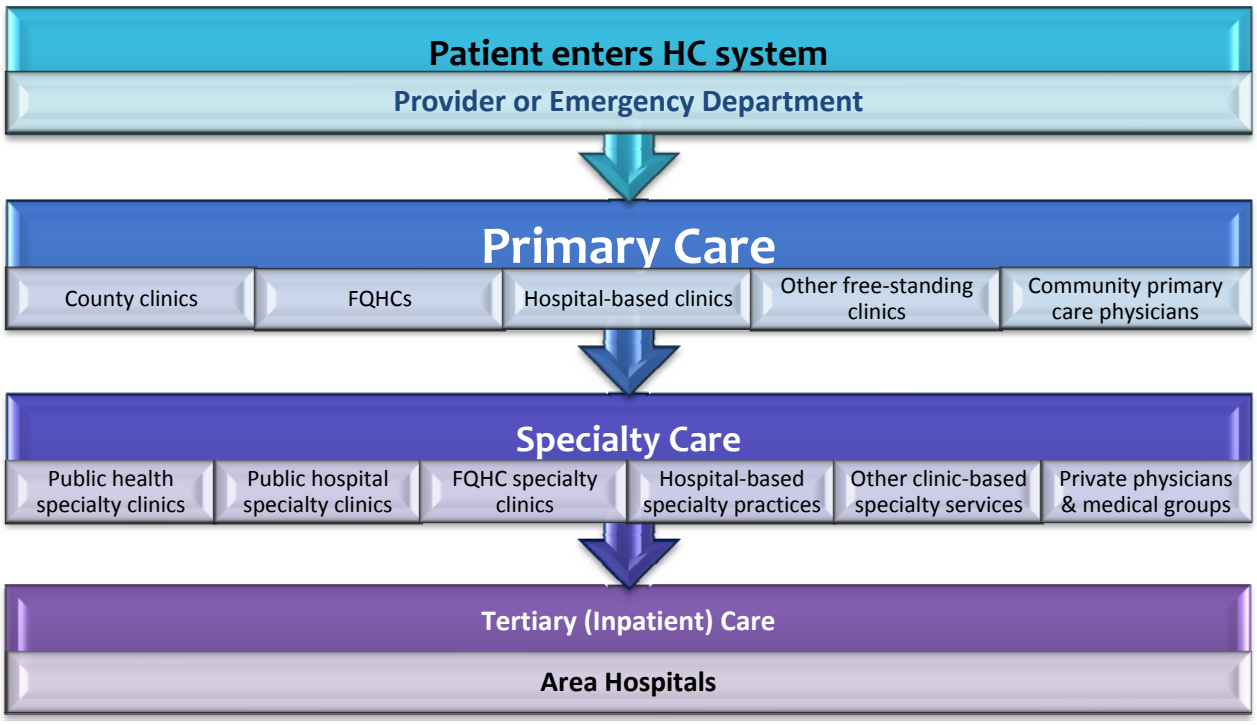
In some communities, free clinics also provide similar services, except free clinics utilize a volunteer/staff model, along with partnerships with other health services providers (National Association of Free and Charitable Clinics, n.d.).

Safety net hospitals – as a subset of public and not-for-profit hospitals – provide a disproportionate amount of care to low-income and uninsured patients and "offer critical public health and specialty services to the entire community, including trauma, emergency psychiatric, and burn care" (Grantmakers in Health, 2012). It is also important to note – for some segment of the population – that a

substantial amount of safety net care is provided in hospital emergency departments and a "largely un-quantified amount of health care for safety net populations is provided in private physicians offices" (IOM, 2000).

Although the health care safety net is not well-integrated in most communities; and is instead, usually made up of a patchwork of institutions (IOM, 2000) the Figure 1 below illustrates the overall structure of the health care system.

Figure 1. Structure of safety net system



SERVICES ACROSS THE LOCAL SYSTEM

The three major safety net providers in Monterey County include the Monterey County Health Department clinics (MCHD), Clinica de Salud del Valle de Salinas (CSVS) and Natividad Medical Center (NMC). Additional providers in the local system include Planned Parenthood, Gonzales Medical Group, Soledad Medical Clinic, the Big Sur Health Center, Peninsula Primary Care, Salinas Valley Memorial Hospital, George L. Mee Memorial Hospital, Community Hospital of the Monterey Peninsula and Watsonville Community Hospital.

Safety Net Services

These facilities provide a wide range of health care and public health services. They include acute, urgent, chronic, rehabilitative, and preventive services, case management, education and outreach, health screenings, quality assurance and disease tracking, as well as surveillance and response to potential environmental hazards and risks in communities.

They also provide a wide range of non-health, non-revenue-generating services that are essential to communities, including enrollment in public assistance programs, interpretation and translation services, transportation, and community referrals for food, housing, heating assistance, day care, and job training. (APHA, 2009)

MAJOR PROVIDERS IN MONTEREY

Monterey County Health Department clinics provide primary medical care to ensure that every resident of Monterey County has access to health care and public health services regardless of their ability to pay, and ensures that high quality services are provided at the lowest possible cost. Clinic Services operates seven facilities: the Seaside Family Health Center, Alisal Health Center in Salinas, the Monterey County Health Clinic in Marina, and the four Laurel Health Clinics on the Natividad Medical Center campus, which include the Laurel Women's Health Clinic, the Laurel Internal Medicine Clinic, the Laurel Pediatrics Clinic, and the Laurel Family Practice Clinic. The clinics offer many core services for individuals of all ages (MCHD, n.d.).

Core services generally include Pediatrics (Infant, Adolescent, Teens), Family Practice, Family Planning (Family PACT), Obstetrics/Gynecology, Internal Medicine, Behavioral Health (Psychiatric Services), Case Management, Comprehensive Prenatal Services Program (CPSP), Health Education (Asthma, Diabetes, Groups), Health Screenings, Immunizations, Sexually Transmitted Disease Treatment, Latent Tuberculosis Treatment, and Eligibility Services. In addition, some clinics (primarily MCHD) provide medical specialists in "high-demand" areas such as Cardiology (Pediatric and Adult), Dermatology, Endocrinology, High-Risk OB/GYN, Pediatric Nephrology, Neurology and Urology, Perinatology, Pulmonology and Rheumatology.

Clinica de Salud del Valle de Salinas (CSVS) was founded in 1980 by local community members to ensure that basic health care was available to all residents of Monterey County, with a focus on families working in the agriculture industry. CSVS is a system of nine federally qualified, JCAHO Accredited Community Health Centers located throughout the Salinas Valley providing full scope Family Practice services including low-risk obstetrics. CSVS provides quality, low-cost health care services and an outreach program to improve the quality of life for farm worker families in Monterey County" (CSVS, n.d.).

Natividad Medical Center (NMC) is a 172-bed acute care hospital owned and operated by Monterey County. As the safety-net hospital providing healthcare to the residents of Monterey County for over 125 years, Natividad provides health care access to all patients regardless of their ability to pay. The hospital operates with a medical staff of over 235 physicians and has

several specialty clinics and outpatient primary care clinics operated by the Monterey County Health Department. Natividad is the only teaching hospital on the Central Coast, through its affiliation with the University of California, San Francisco (UCSF).

Natividad's Family Medicine Residency Program is postgraduate training for physicians specializing in family medicine. About 1/3 of the graduates remain on the central coast to establish a practice (NMC, n.d.). "Only 15 of California's 450-plus hospitals and health care systems are safety-net hospitals. These 15 hospitals provide 50 percent of all hospital care for California's 6.6 million uninsured. Natividad provides healthcare access to all patients regardless of their ability to pay. About 80-90 percent of patients seen at Natividad Medical Center are farm-workers, come from a farm-worker family, or are related to the agriculture industry in some way (Carrillo, 2011).

Safety Net Challenges

Economic downturn has resulted in more uninsured individuals, increased Medicaid enrollment and health care demands *and* decreased funding.

Healthcare workforce shortages are expected to worsen as increased coverage for the newly insured gives rise to higher demand for overdue medical care (APHA, 2009).

Under ACA, projected increases in demand will exceed capacity of local health care systems, esp. primary care physicians (Cunningham, 2011b) and exacerbate a growing shortage of primary care providers, substantially reducing access for vulnerable populations (APHA, 2009).

State and local health departments have been hard hit by recession with 85% expecting to lose staff (APHA, 2009).

Appointment wait times exceed four months at many community health centers (APHA, 2009).

Hospital emergency departments serve as (most expensive and least efficient sites for non-urgent) safety net of last resort (APHA, 2009)

Affordable Care Act – Health System Reform

It is anticipated that the implementation of health care reform will significantly impact Monterey County and the tri-county region. Local health departments and safety net providers are already challenged for a myriad of reasons, not the least of which is the high level of service workers with lower rates of insurance and the high percentage of undocumented and seasonal workers without insurance.

Under the Affordable Care Act, many more individuals in Monterey County and the tri-county region will become eligible to receive government-sponsored or government regulated health insurance, including those who will be newly eligible for expanded Medi-Cal. Others who are uninsured and ineligible for Medi-Cal will find that they can afford to purchase insurance as federal regulation increases competition and lowers prices, and federal subsidies become available.

On one hand, this increase in the number of insured, compensated patients will likely result in an increase in the number of patients with access to services and an increase in revenue for local providers. On the other hand, many of the newly insured patients, having delayed seeking treatment while uninsured, may have complex health care needs, including chronic conditions that require intensive treatment and case management, and psychosocial issues requiring behavioral health, housing, or other social services. This scenario will require better collaboration and coordination by all service providers. An immediate starting point is this coordinated effort to collect data on the health care safety net system.

BACKGROUND ON REGION: MONTEREY, SANTA CRUZ AND SAN BENITO COUNTIES

TRI-COUNTY REGIONAL DESCRIPTION

Monterey, Santa Cruz and San Benito counties total 5,117 square miles in area. Located in California's central coastal area, they are home to approximately 732,708 residents of predominantly White and Hispanic or Latino descent (US Census, 2010). Out of 58 California counties, 42 had populations under 500,000 and within this group of counties, Monterey County had the fourth largest population (after Santa Barbara, Tulare, and Sonoma counties). According to US Census estimates for 2011, Los Angeles County had the largest population, with nearly 9.9 million people; Monterey ranked 20th, at 421,898, and Alpine County was the least populous, with 1,102 people. Since 2005, while the state's overall population has increased by slightly more than 4% (from 36.13 million to 37.69 million), Monterey's population has decreased by about 2.5% (from 432,600). (US Census, 2010; CA Department of Finance, 2012).

All three counties are considered rural, with a majority of employment in the agricultural, service and government sectors. In 2010, the US Census estimated that over half of the population of Monterey and San Benito Counties (55.4% and 56.4%, respectively) and 32% of Santa Cruz residents were of Hispanic or Latino origin (US Census, 2010). Although only those living in Monterey County were more likely than the rest of the state to be foreign born (30.1% compared with 27.2% for California as a whole), a significant number of residents of all three counties were likely to speak a language other than English in their homes (US Census, 2010).

While people living in Santa Cruz County were likely to be better-educated, on average, than the rest of California residents, those living in Monterey and San Benito counties were less likely to have graduated high school or to have obtained a Bachelors degree or higher (US Census, 2010). In 2010, per capita incomes in Monterey and San Benito counties ($25,776 and $25,508, respectively) were lower than the state average of $29,188 (US Census, 2010). However, Monterey County's median household income of $59,271 in 2010 was only slightly below that of the state as a whole ($60,883), while San Benito's median income of $65,771 was higher than the statewide average (US Census, 2010). Santa Cruz County's per capita and median household incomes were both above the statewide averages, at $32,862 and $65,253, respectively (US Census, 2010). In 2010, about 13.7% of people in California were living below the poverty level (US Census, 2010). Monterey County was comparable at 13.9%; a slightly smaller percentage

(12.7%) of Santa Cruz residents were living below poverty level, and San Benito had the smallest percentage of the three, at 11.7% (US Census, 2010).

California is home to the greatest number of undocumented immigrants in the United States, and a significant number of these immigrants live in the tri-county area (US Office of Immigration Statistics, 2011/Hill & Johnson, 2011). The Public Policy Institute of California estimates that 8.2% of Santa Cruz County residents are undocumented (Hill & Johnson, 2011). The same Public Policy Institute study found that approximately 13.5% of Monterey and San Benito County residents were undocumented – the highest percentage of all 34 counties surveyed in the study (Hill & Johnson, 2011). A study conducted by the Institute for Community Collaborative Studies focusing mainly on the tri-county area found that approximately 14.5% of Monterey County residents, 12.9% of Santa Cruz County residents, and 10.1% of San Benito County residents were undocumented (Navarro, 2012). With an estimate of slightly more than 100,000 undocumented immigrants (about 13.5% of the total population) the tri-county area has one of the highest concentrations of undocumented immigrants in the state (Hill & Johnson, 2011). This poses significant funding issues as current and future health care reforms do not and will not have provisions for this segment of the population (Katz, 2010).

Estimates of California's uninsured population range from 17.9% in 2010 (US Census, 2010) to 21% in 2011 (CHCF, 2011a). According to US Census Bureau statistics, Santa Cruz is the only county in the region to have a smaller percentage of uninsured, with 14.6% (US Census, 2010). San Benito County's numbers are comparable to the statewide figures, with 18% of the population reported as uninsured, while Monterey County's percentage of uninsured was significantly higher than the state, at 21.3% (US Census, 2010). Of the tri-county area uninsured, the majority of census respondents were reported as being of "some other race alone" or as being Hispanic or Latino in origin (US Census, 2010). Education levels, employment status and income levels are significant indicators of health insurance coverage, and both Monterey and San Benito County's uninsured were less educated, had higher unemployment levels, and made less money than the uninsured in the state as a whole (US Census, 2010). Santa Cruz County's demographic statistics for the uninsured were consistently better than the California averages, with more of the uninsured having a high school education or better, less unemployment and higher incomes up to the $74,999 bracket (US Census, 2010).

Homelessness is also a significant issue in the tri-county area. In 2011, there were an estimated 6,243 homeless people living in Monterey and Santa Cruz counties (Homeless Census and Survey 2011), an increase of nearly 15% (or 911 individuals) from 2009. (Applied Survey Research, 2011).

MONTEREY COUNTY

Monterey County encompasses an area of 3,322 square miles, and has 12 incorporated cities, four hospitals and 16 county health clinics (8 health clinics and 8 behavioral health clinics) (MCHD, 2011d). Monterey County is a predominantly White (32.9%) and Hispanic (55.4%)[4] community of approximately 415,000[5] residents (US Census, 2010). The county's population is slightly more male (51.4%) (US Census, 2010) and slightly younger than the state as a whole, with a larger percentage of children under five (7.8% versus 6.8% for CA) and people under age 18 (26.7% versus 25%)[6], and a smaller percentage of people 65 years and older (10.7% vs. 11.4% for CA)[7] than in the rest of the state (US Census, 2010). More than 50% of households in Monterey County are reported to speak a language other than English at home, compared with 43% for the rest of the state (US Census, 2010). Monterey County's Hispanic population is predicted to grow to 61%, and the White population to shrink to 27%, with all other groups remaining stable (MCHD, 2011d).

According to the 2010 US Census, the population of Monterey County is slightly less educated than the rest of the state, with a reported 70.7 % of people over age 25 being high school graduates, compared with 80.7% for the state as a whole (US Census, 2010). In 2011, the MCHD reported that in 2008-2009 more than 1 in 5 Monterey County 9th to 12th graders dropped out of school, with 22% of Hispanic students, 20% of African American students, 13% White non-Hispanic students, and 9% of Asian students dropping out of school (MCHD, , 2011d).

Approximately one third of Monterey County adults over age 25 in 2006-2008 had not yet earned a high school diploma or equivalency, with a significant disparity among racial and ethnic groups: 56% of Hispanic residents age 25 and older did not have a high school diploma in 2005-2009, compared to 7% of White non-Hispanic residents who also did not MCHD, 2011dd). The percentage of Monterey County residents that hold Bachelor's degrees or higher is 23.4%, compared with 30.1% in California overall (US Census, 2010).

Per capita and median income levels in Monterey County are comparable to the rest of California and the percent of residents living below poverty level is only slightly less than the state as a whole (13.7% vs. 13.9%, US Census, 2010). The MCHD Strategic plan reports that in 2010, slightly more than 71% of Monterey County infants (n=4,759) were born into poverty. Notably, 70% of families living in poverty in Monterey County are Hispanic and many are concentrated in the youngest and fastest growing areas of the county (including Pajaro, Salinas, King City, Greenfield, Gonzales, and San Ardo) with the highest levels of poverty and linguistic isolation, contributing to a lack of access to health care (MCHD, 2006).

[4] MCHD Strategic Plan uses the CA Department of Finance population estimates of 57% Hispanic, 31% non-Hispanic White, 7% Asian/Pacific Islander, 3% African American and 3% other/multi-population in 2010.
[5] Ibid, population estimate of 433,238 for 2010
[6] Ibid, nearly 44% of population estimate under age 18
[7] Ibid, slightly more than 16% of population estimate over age 65

According to US Census, approximately 21.3% of Monterey County residents were uninsured from 2008-2010, compared with 17.9% of the overall population of California (US Census, 2010). The California Health Care Foundation estimates numbers of uninsured in CA for 2011 to be higher, at approximately 21.5% (CHCF Almanac, 2011). According to the US Census, 9.8% of the uninsured population is under 18 years of age while 30.2% are age 18-65 (US Census, 2010). The same reports estimate that the highest percentage of uninsured is predominantly of Hispanic or Latino origin, or "some other race alone" (US Census, 2010). Over 40% of the uninsured population in Monterey County have less than a high school education, compared with 37% for California as a whole, and 56.9% of Monterey County uninsured are unemployed versus 46.5% for the state as a whole (US Census, 2010). Of uninsured Monterey County respondents, 29.7% reported a household income of $25,000-$49,999, closely followed by 28.9% with a household income less than $25,000 in 2010 (US Census). This mirrors census findings for the state, with the highest percentage (26.1%) of uninsured respondents reporting household income to be in the $25,000-$49,999 bracket and the second highest percentage (25.7%) being under $25,000 (US Census, 2010).

According to a study done by the Public Policy Institute of California, Monterey and San Benito Counties have the highest population percentage (13.5%) of undocumented immigrants in California (Hill & Johnson, 2011). A separate study done by the Institute for Community Collaborative Studies found that approximately 14.5% of Monterey County residents were undocumented (Navarro, 2012). This percentage is significantly greater than the average of approximately 7.8% for the 34 counties surveyed in the Public Policy institute study (Hill & Johnson, 2011). Undocumented immigrants are not currently eligible to participate in any publicly-funded health care programs and will not be eligible under the ACA (Katz, 2010). This creates a barrier to preventative care and other basic health care services, thus putting this population at high risk for poor health outcomes.

Homelessness

According to the 2011 Monterey County Homeless Census and Survey, approximately 3,472 people experience homelessness in the county annually—this is approximately 1% of the county's total population. The majority (61%) of survey respondents were male, 38% were female, and nearly half (47%) were between 31-50 years old. The majority of respondents (69%) were also White/Caucasian, 37% were Hispanic/Latino, 11% were Black/African American, and 3% identified as American Indian/Alaska native (Applied Survey Research, 2011a).

The census and survey also reported that the majority (73%) of 2011 survey respondents were unsheltered, with 30% sleeping outdoors, on the streets, in parks, or in encampments, 13% sleeping in an indoor area not normally meant for sleeping, and 14% sleeping in vehicles (Applied Survey Research, 2011a). The number of unsheltered individuals rose by 208 (12.8%) from 2009 to 2011 (Harder & Co., 2009). Twenty-seven percent of respondents were in shelter

facilities such as emergency shelters, transitional housing facilities, and motel voucher programs in Monterey County (Applied Survey Research, 2011a).

Homeless Families and Children

Of the 2011 survey respondents, 12% reported being a member of a family—defined as currently living with a child under the age of 18 years old (Applied Survey Research, 2011a). It was found that 95% of homeless families had a female head of household and "the largest percentage of homeless individuals with children indicated they were White/Caucasian (41%), followed by Hispanic/Latino (39%) and Black/African American (13%)" (Applied Survey Research, 2011a). The majority of homeless respondents with children (31%) indicated that the primary cause of homelessness was job loss, while 28% reported drug and/or alcohol abuse as the primary cause (Applied Survey Research, 2011a).

Although it was reported that "homeless children and youth are an extremely difficult demographic to capture and federal understanding of this population is limited," the Homeless Census and Survey found that approximately 16% of the homeless population in Monterey County were children under the age of 18 years, 280 of whom were considered to be "unaccompanied children" or "homeless youth" (Applied Survey Research, 2011a). The total number of homeless children and youth, both "Accompanied" and "Unaccompanied," rose from 284 to 402 from 2009 to 2011 (Applied Survey Research, 2011a). "Unaccompanied Children" were defined as those under the age of 18 who were living independently of a parent or legal guardian and "Homeless Youth" were defined as homeless individuals between the ages of 18 and 24 years old (Applied Survey Research, 2011a).

Of the homeless youth surveyed, 53% were male and the largest percentage (47%) indicated they were White/Caucasian, followed by 31% reporting as Hispanic/Latino and 6% reporting as Black/African American (Applied Survey Research, 2011a). Sixty-eight percent of homeless youth reported that their general health was "good" or "very good", but 23% reported having spent four or more days in the emergency room in the past year, and 30% reported having a mental illness –41% of them reporting depression and 10% of them reporting that they suffered from PTSD (Applied Survey Research, 2011a). Drug and alcohol abuse were also prevalent among this population, with 42% of youth respondents reporting drug or alcohol abuse (Applied Survey Research, 2011a). Thirty percent of youth survey respondents reported having experiences with violence, stating that their safety had been threatened one or more times in the past 30 days (Applied Survey Research, 2011a).

SAN BENITO

San Benito County has a population of 55,269, predominantly Hispanic or Latino in origin (US Census, 2010). The San Benito County population is slightly younger than the state population as a whole, with a larger percentage of children under five (7.4% versus 6.8% for CA) and people

under age 18 (29% versus 25%), and a smaller percentage of people 65 years and older (9.7% vs. 11.4% for CA) (US Census, 2010). Compared to California overall, the residents of San Benito County are less likely to be foreign-born, but the gender balance is roughly equal to the state as a whole (US Census, 2010).

A reported 39.9% of San Benito County residents over the age of 5 speak a language other than English at home, compared with 43% for California overall (US Census, 2010). San Benito County residents are also less educated than the state population, with 73.8% of residents over age 25 reporting being high school graduates compared with 80.7% for the state, and only 18.3% having a Bachelor's degree or higher compared with 30.1% of California residents (US Census, 2010).

Although per capita income in San Benito County is slightly lower than in California as a whole ($25,508 vs. $29,188), the median household income increased approximately $5,000 from 2006-2010, and the poverty level declined over that same period to 11.7%, compared with California's 13.7% (US Census, 2010).

In a 2008 study conducted by the Public Policy Institute of California, San Benito and Monterey counties were found have the highest percentage of undocumented immigrants of all counties in the state at 13.5% (Hill & Johnson, 2011). Because of its small population size, the numbers for San Benito County were combined with neighboring Monterey County. In a separate study conducted by the Institute for Community Collaborative studies, San Benito County was surveyed independently and it was found that in 2011, approximately 10.1% of the county's population was undocumented (Navarro, 2012). This percentage is above the average of 7.8% overall for the 34 counties surveyed in the Public Policy Institute Study (Hill & Johnson, 2011).

About 12.1% of San Benito County's children and 23.4% of those aged 18-64 years are reported as having no health insurance (US Census, 2010) and 18% of the total population lacks health insurance coverage (US Census, 2010) which is slightly higher than the US Census estimate of 15.5% and the California Healthcare Foundation's estimate of 14.5% for the state overall (2010). Of the approximately 10,000 uninsured residents, 30.2% are Asian alone, 24.5% are Hispanic or Latino, 17.7% are White, 35.3% have less than a high school education, and 51.3% are unemployed (US Census, 2010). The majority of uninsured residents (31.2% of uninsured population) are reported as having a household income of $25,000 to $49,999 (US Census, 2010).

SANTA CRUZ

Santa Cruz County is a predominantly White community of about 262,382 people (US Census, 2010). The population is slightly older than the state as a whole, with a smaller percentage of children under five (5.7% versus 6.8% for CA) and people under age 18 (21.1% versus 25%), and a slightly smaller percentage of people over 65 years than the state overall (US Census,

2010). Approximately 18% of Santa Cruz County residents are reported to be foreign born, which is substantially less than the 27.2% foreign born residents in the state as a whole (US Census, 2010). Also, according to data from the 2010 US Census, Santa Cruz county residents are less likely than residents of California as a whole to speak a language other than English at home (US Census, 2010). The percentage of people of Hispanic or Latino origin at 32% is slightly less than the reported 37.6% statewide figure (US Census, 2010).

In 2010, Santa Cruz county residents were reported as being more highly educated compared to statewide numbers, with 84.1% of residents having graduated from high school compared with 80.7%, and 37.3% of residents having obtained a Bachelor's degree or higher compared with 30.1% for California overall (US Census, 2010).

Per capita income for Santa Cruz County was $32,862 for 2010, compared with $29,188 for the state (US Census, 2010). The average median income for the years 2006-2010 was reported as being $65,253—approximately five thousand dollars more than the state average (US Census, 2010). Santa Cruz county poverty levels were 12.7% in 2010 – approximately one percent less than the state (US Census, 2010).

In a 2008 study conducted by the Public Policy Institute of California, it was found that approximately 21,000 residents of Santa Cruz County (8.2% of the county's population) were undocumented immigrants (Hill & Johnson, 2011). The average percentage of undocumented immigrants of the 34 counties surveyed in this study was approximately 7.8% (Hill & Johnson, 2011). A 2011 study conducted by the Institute for Community Collaborative Studies focusing on the undocumented in the tri-county area found the Santa Cruz County percentage to be significantly higher at 12.9% (Navarro, 2012).

According to the Santa Cruz County Homeless Census and Survey, approximately 2,771 county residents were homeless in 2011 as compared with 2,265 in 2009 (Applied Survey Research, 2011b). However, while reported reasons for homelessness remained consistent from 2007-2009 with regard to job loss, the percentage for job loss as a reason for homelessness increased from 46% in 2009 to 54% in 2011 (Applied survey research, 2011b). Of those surveyed, 54% reported having been homeless for a year or more and 63% of respondents reported having a disability condition in 2011 (Applied Survey Research, 2011b). Almost one quarter of respondents (23%) reported being unable to receive needed medical care, 26% indicated having chronic health problems, and 38% reported having a current substance abuse problem (Applied Survey Research, 2011b).

In 2010, there were an estimated 37,659 uninsured residents in Santa Cruz County (US Census, 2010). Of the uninsured, 24.9% reported being "some other race alone", closely followed by 24.6% who were Hispanic or Latino, 14.1% who were White, and 10.9% who reported being

Asian alone (US Census, 2010). The uninsured in the US Census report were more likely to be foreign born and 36.7% had less than a high school education (US Census, 2010). Forty-two percent of uninsured respondents reported being unemployed while 21% reported having a household income of $50,000-$74,999 and 20.4% reported having a household income of $25,000-$49,999 (US Census, 2010).

POPULATION DEMOGRAPHICS AND SOCIOECONOMIC STATUS

Introduction

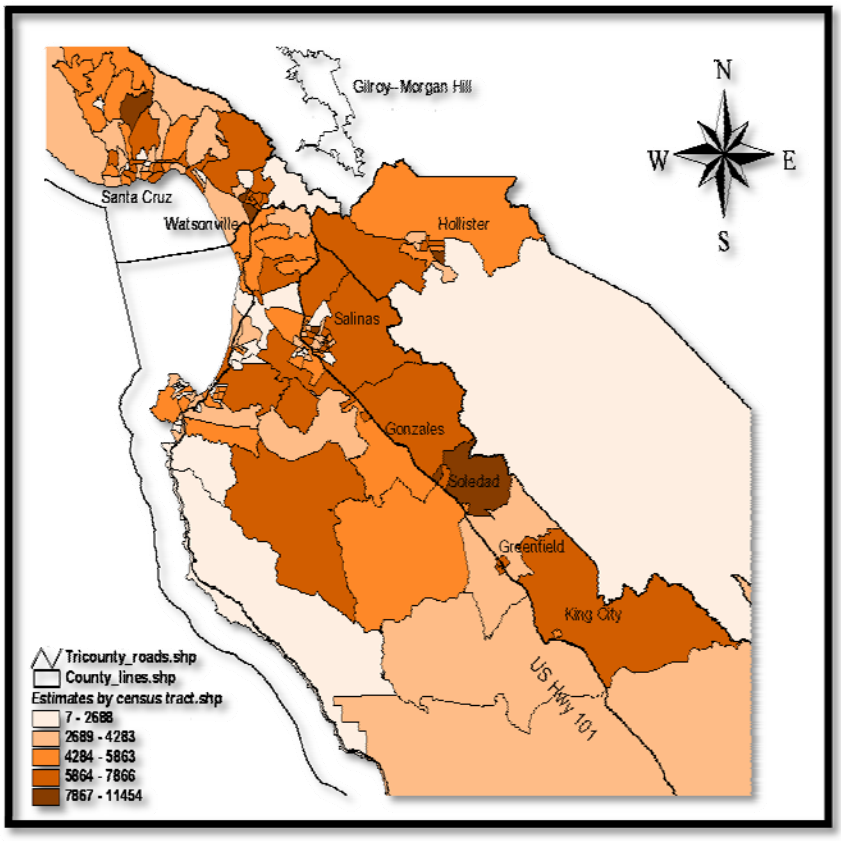
This section develops a population profile and geospatial maps of current population variables including the following: (1) population statistics (population totals and population density by census tract, population totals by ZIP code, and population change 2000-2010 by census tract); (2) estimates of undocumented individuals by ZIP code and as a proportion of total population; (3) percentage of population that speaks another language and does not speak English "very well" by ZIP code; (4) total number of births, crude birth rates and proportion of Medi-Cal funded births by ZIP code, and fertility rates by ZIP, and Medi-Cal recipients and Medi-Cal recipients by Zip code as a proportion of Zip code total population; (5) percent of families and families with children under 18 years old with incomes below the poverty line, and unemployment rates by ZIP code; and (6) median household income, ratio of male to female median earnings for full-time, year-round workers, percent of wage/salary private workers, and percent of self-employed workers per ZIP code.

Regional Population Geospatial Maps

1. Population by census tract

Map 1 shows the population density of the Tri-County area by census tract; darker brown areas indicate more densely populated census tracts, and lighter colors represent less densely populated census tracts. Areas in the Monterey County with the highest population per census tract include eastern Soledad and eastern Salinas, with densities between 7,977 and 11,454 residents. Intermediate population densities for Monterey County occur in western areas of Soledad, King City, Gonzales, most of Salinas (excluding the tract mentioned previously), Seaside, and Monterey, with ranges of 5,976 – 7,976. Monterey County's lowest density areas are the western regions of King City, Greenfield, and Soledad.

Map 1. Population by census tract (Source: US Census 2010)



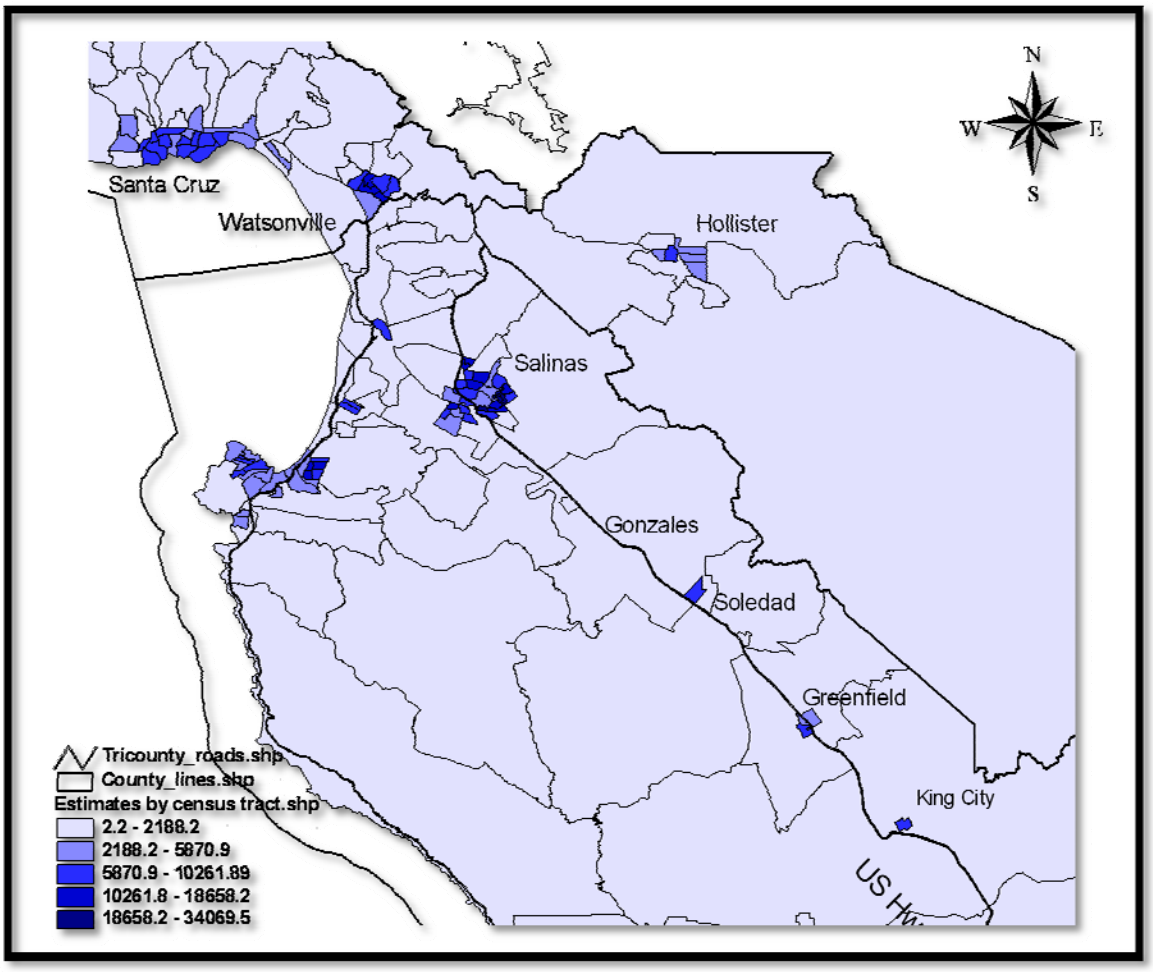
The highest populations for Santa Cruz County include Watsonville, Ben Lomond and Felton, with ranges of 7,977 – 11,454 residents, while the remainder of Santa Cruz County falls in the low to intermediate population ranges of 7 – 5,975 residents. San Benito County's highest population is in the Hollister area, with a population of 7,977 – 11,454. Intermediate ranges for San Benito County are located in the San Juan Bautista and northern regions of Hollister, with population ranges of 4,519 – 7,976. The remainder of San Benito County has a low population, with a range of 2,264 – 3,478 residents.

The highest population by census tract for the tri-county area can be found along the eastern border of Monterey County (Salinas, Gonzales, Soledad, Greenfield and King City), and the northern region of Watsonville.

2. Population density by census tract

The census tracts with highest densities on Map 2 are in east Salinas. The highest density census tract (06053000702) has a population density of 34,070 people per square mile. As a reference, this Salinas census tract has a higher population density than the third most dense neighborhood in the Los Angeles metropolitan area (East Hollywood, with a density of 31,095 pop/sq. mi.), making it one of the highest density neighborhoods in the United States.

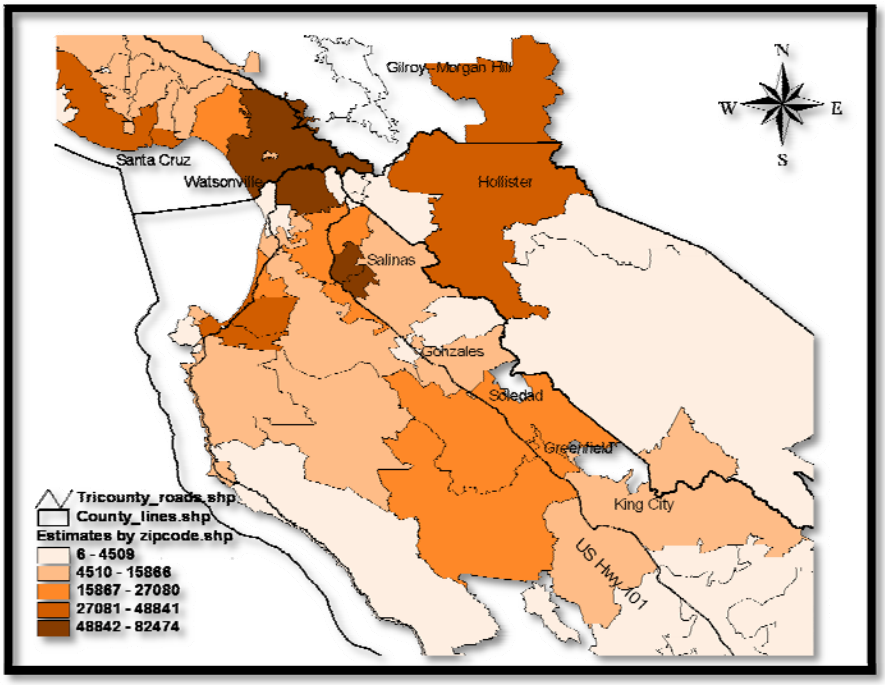
Map 2. Population density by census tract (total population per sq. mi.)



3. Population by ZIP code

Illustrated in Map 3 is the population range for residents by ZIP code in the tri-county area; dark brown regions indicate larger populations and lighter shades of orange represent smaller populations. In Monterey County, the largest populations per ZIP code can be found mainly in Watsonville (95076) and portions of Salinas (93905 and 93906); population densities of these three ZIP codes are between 48,842 and 82,474 residents. It is important to note that, as seen in Map 3, the majority of Watsonville's population lives north of the Santa Cruz/Monterey County border. The intermediate population areas for Monterey County are Monterey (93940) and Seaside (93955) with a range of 27,081 – 48,841 residents. Monterey's lowest population densities are King City (93930), Gonzales (93926), and the southern region of Salinas (93908).

Map 3. Population by ZIP code (US Census 2010)



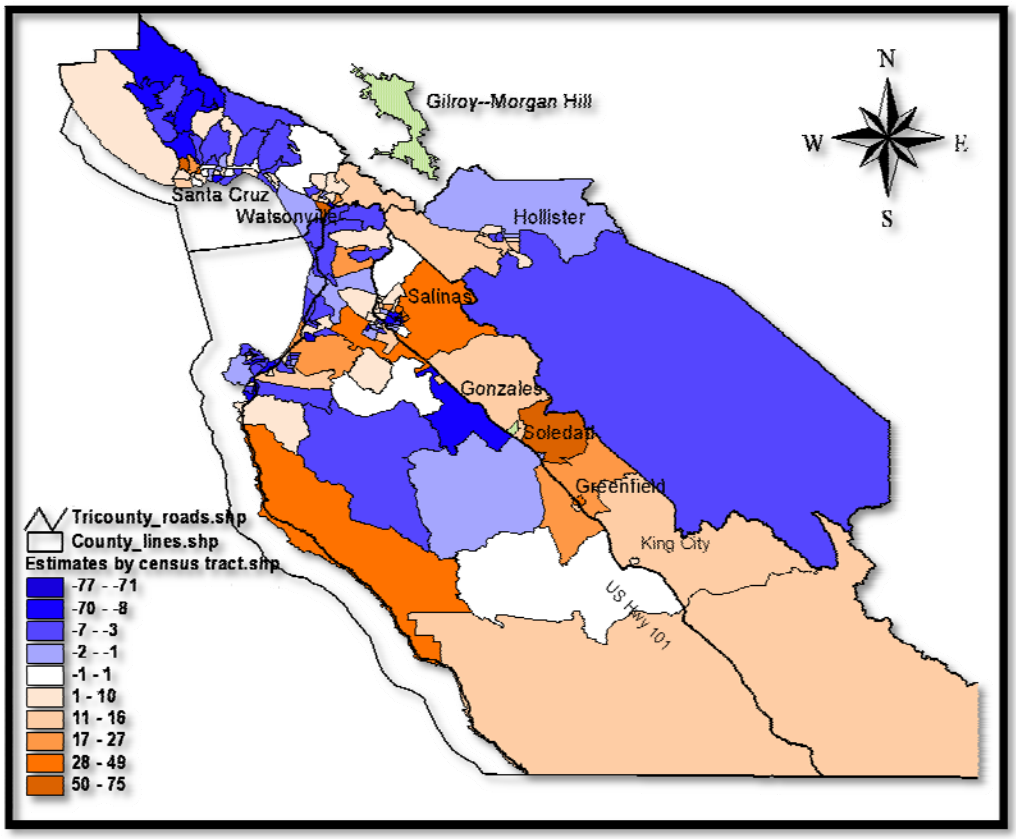
The highest population density for Santa Cruz County is in Watsonville (95076), with a population of 48,842 to 82,474 residents. Intermediate populations for Santa Cruz County can be found in Aptos (95003) and in Santa Cruz ZIP codes 95060 and 95062, where populations range from 15,867 – 27,080. The least populated areas for Santa Cruz County include most of the northern region, with a range of 0 – 15,866 residents. In San Benito County, Hollister (95023) has the highest population with an estimate of 27,081 – 48,841 residents. The northeastern region of King City (93930) makes up San Benito's intermediate population range by ZIP code, but as indicated in Map 3, the majority of the King City population resides in the Monterey County portion of King City. San Juan Bautista (95045) and Pacines (95043) have San Benito County's smallest populations by ZIP code, with a range of 0 – 4509 residents.

The most populous ZIP codes in the tri-county area are Watsonville (95076) –which is split between Santa Cruz and Monterey Counties – and the 93905 and 93906 ZIP codes of Salinas.

4. Population change 2000-2010 by census tract

The tri-county region had a slow overall population change in the 2000-2010 period Monterey County's population grew 3.3% while Santa Cruz and San Benito grew 2.7% and 3.8% respectively. However, changes within the individual counties were more dynamic. Map 4 presents population changes in the 2000-2010 period within census tracts in the tri-county region. The blues scale in the map shows negative changes in population growth (darker blue shades represent larger negative changes); the orange scale shows positive population growth (the darker the shades the larger positive changes); and Census tracts with no color experienced very low population change (less than positive or negative 1%).

Map 4. Population (percentage) change 2000-2010 by census tract



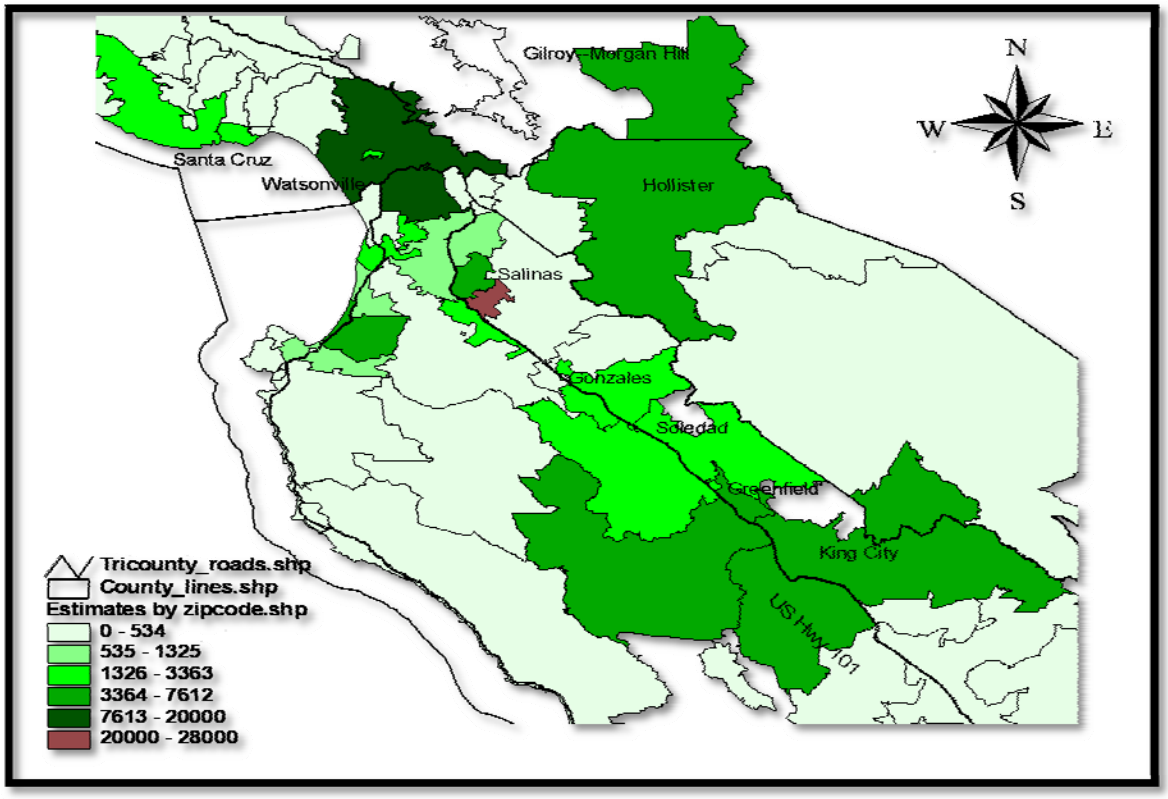
As Map 4shows, in Monterey County, the census tracts on the peninsula region corresponding to Marina, Moss Landing, Carmel Valley, and the East Salinas area adjacent to highway 101 experienced negative population changes. On the other hand, census tracts corresponding to Sand City, the Fort Ord region (south of CSUMB), the area north of Carmel Valley (and south of Hwy 68), Big Sur, and the Salinas valley (east of Hwy 101 experienced positive population changes. The largest population changes in Monterey took place in the eastern side of Salinas, Greenfield, and Soledad. In Santa Cruz County, most census tracts on the coast experienced

negative population changes, but the Watsonville area and the west side of the city of Santa Cruz experienced high population growth rates. Finally in San Benito County the area with population growth corresponds to the south eastern part of Hollister and the area along state Hwy 156.

5. Estimates of undocumented immigrants by ZIP code (total numbers)

Depicted in Map 5 are estimates of undocumented immigrants by ZIP code for the entire tri-county area, with a range of 0 – 28,000 individuals; dark brown areas indicate highest numbers of undocumented immigrants and lighter areas represent respectively smaller populations. The largest population of undocumented immigrants for Monterey County is located in Salinas (93905), with an estimated 20,001 – 28,000 individuals. Intermediate populations of undocumented immigrants for Monterey County are in Watsonville (95076), with a range of 7,613 – 20,000, and Seaside (93955), Salinas (93906), King City (93930) and Greenfield (93927), with ranges of 3,364 – 7,612 individuals. Smaller populations of undocumented immigrants are found in the western and southern regions of Monterey County.

Map 5. Estimates of undocumented immigrants by ZIP code



In Santa Cruz County, Watsonville has the highest number of undocumented immigrants (7,613 – 20,000 individuals), while the rest of the county has relatively low populations, with a range of

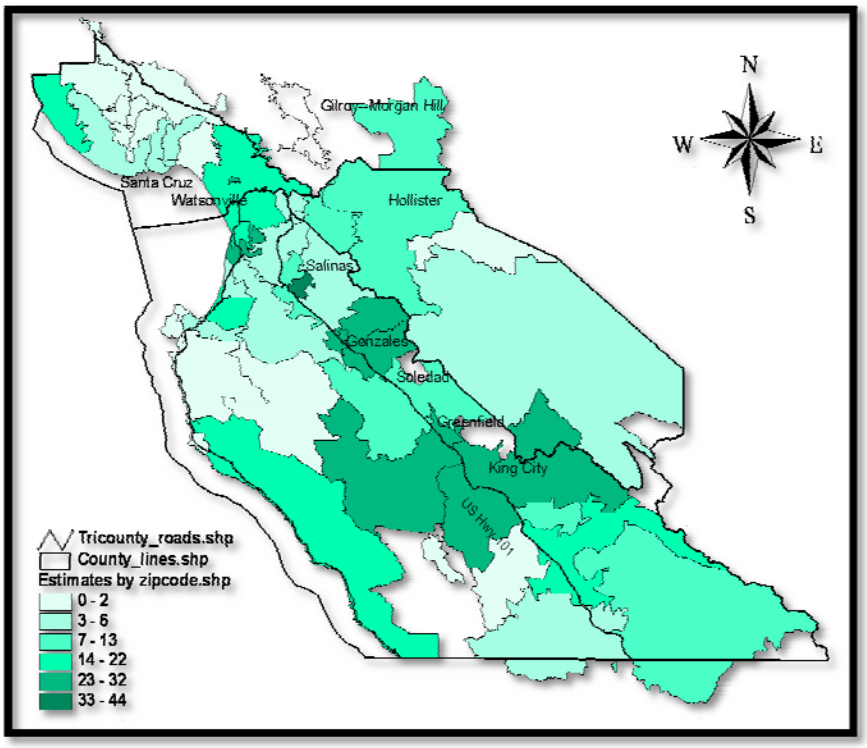
0 – 3,363. San Benito's largest populations of undocumented immigrants are located in Hollister (95023) and King City (93930), with a range of 3,364 – 7,612.

The highest population of undocumented immigrants for the tri-county area is in eastern Salinas (ZIP code 93905) followed closely by Watsonville (95076).

6. Estimates of undocumented immigrants as a proportion of total population

Map 6 depicts the estimates of undocumented immigrants as a proportion of the total population for each ZIP code in the tri-county area; dark green regions represent the largest proportions of undocumented immigrants with respect to the population and lighter areas represent smaller proportions. In Monterey County, the ZIP code with the highest proportion of undocumented immigrants, 0.4 – 0.44, is 93905 in eastern Salinas. Intermediate range proportions are located in ZIP codes 93925 of Chualar and 93930 of King City (range of 0.3 – 0.39). Watsonville (95076), Moss Landing (95039), Castroville (95012), Seaside (93955), Gonzales (93926), Greenfield (93927), Big Sur (93920), and San Miguel (93451) have intermediate ranges of 0.18 – 0.29. The lowest proportions of undocumented immigrants are in Carmel (93923), Carmel Valley (93924), southern Salinas (93908), Soledad (93960), and the southern region of Monterey County, with ranges of 0 – 0.17.

Map 6. Estimates of undocumented immigrants as a proportion of total population



The highest proportions of undocumented immigrants for Santa Cruz County are located in Watsonville (95076), with a range of 0.18 – 0.29; Davenport (95017) has an intermediate range of undocumented immigrants, 0.09 – 0.17; and the remainder of Santa Cruz County has lower proportions, ranging from 0 – 0.08. San Benito's highest proportion of undocumented immigrants is found in King City; however, as shown in Map 6, most residents live on the

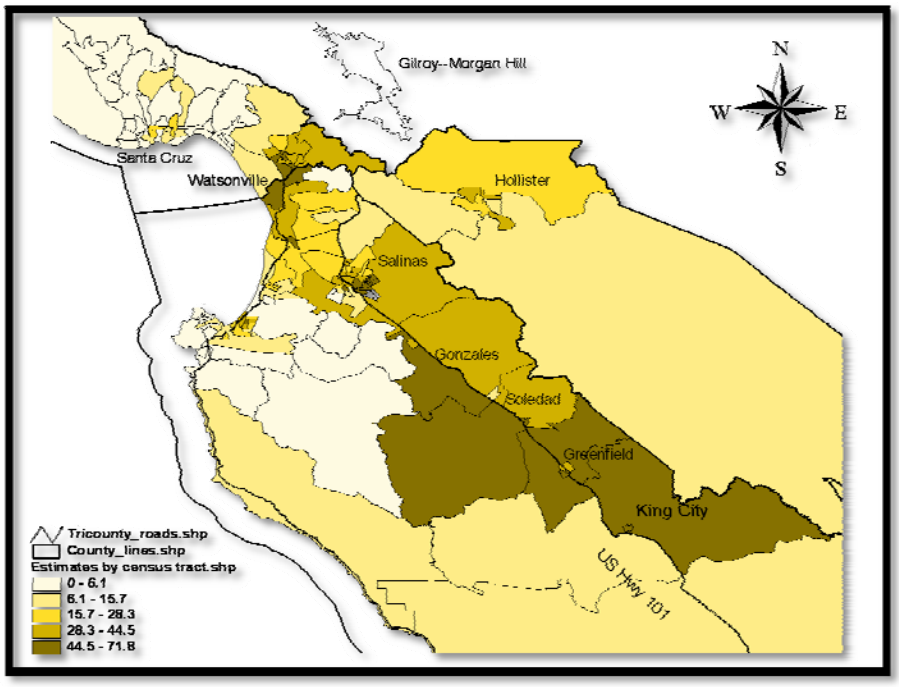
Monterey side of the Monterey/San Benito border. Hollister (95023) has proportions of 0.09 – 0.17, and southern San Benito County has lower proportions of 0 – 0.08.

Salinas ZIP code 93905 has the highest estimated proportion of undocumented immigrants in the Tri-county area (0.4 – 0.44); Chualar (93925) and King City (93930) also have relatively high proportions, with ranges of 0.3 – 0.39.

7. Percentage of population that speaks another language and does not speak English "very well"

Map 7 shows the percentage of population that speaks another language and does not speak English "very well". The darker shaded areas represent a higher percentage of the population that speaks another language and does not speak English "very well." Over 11% of the population in San Benito County speaks another language and does not speak English "very well," and there is 64.9%-81.6% of the population south of Hollister that speaks another language and does not speak English "very well". In Santa Cruz County, 64.9%-81.6% of the population in Watsonville speaks another language and does not speak English "very well". In Monterey County, the highest percentage of population that speaks another language and does not speak English "very well" is in Seaside, Pajaro, east Salinas, and the Greenfield-King city area.

Map 7. Percentage of population who speaks another language and does not speak English "very well"



In Santa Cruz County, there are smaller percentages of the population that speak another language and do not speak English "very well" along the northern border with Santa Clara County and in the northwest part of the county. In Monterey County, there are smaller

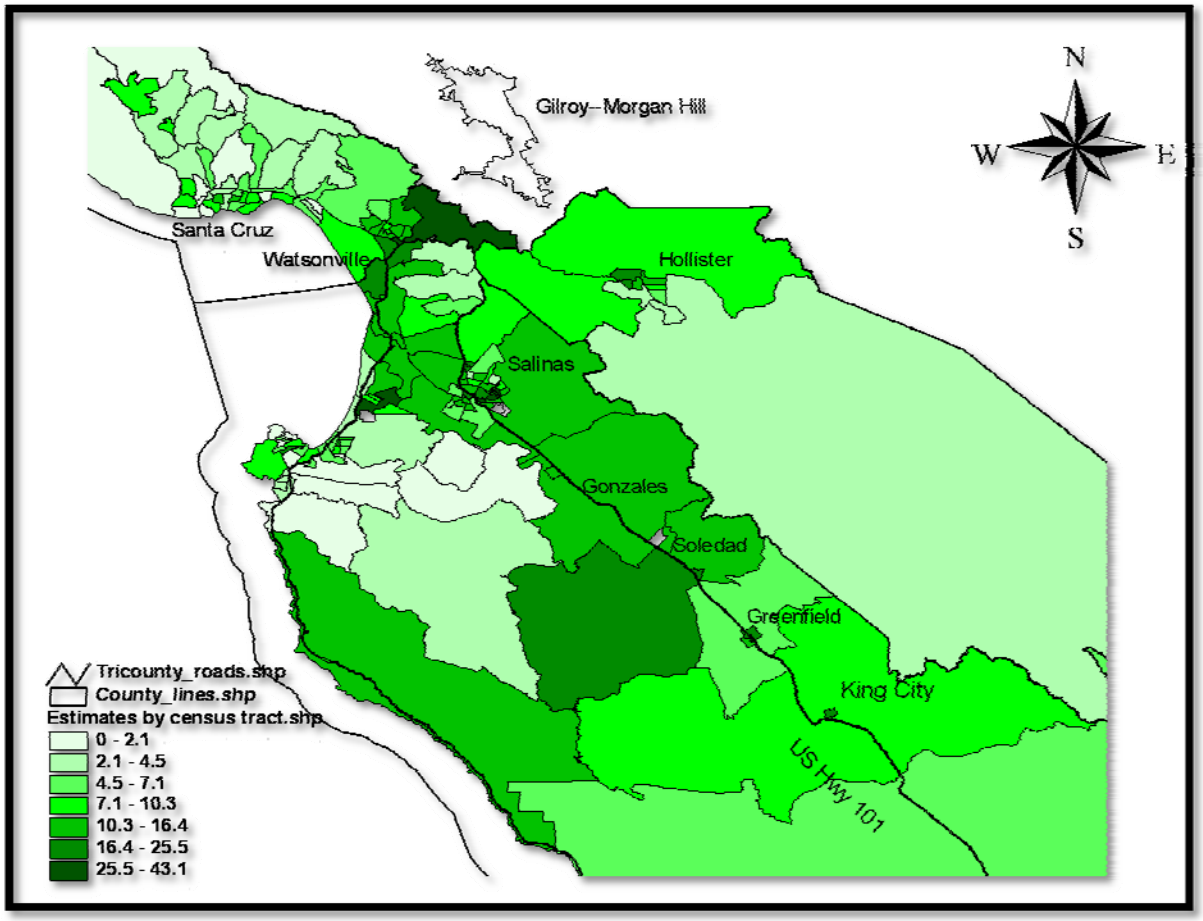
percentages of the population that speak another language and do not speak English "very well" who live around the Pacific Grove, Carmel, and Carmel Valley areas.

In 2011, Monterey County had the 2nd largest population of English language learners in public schools, at 39.1%, after Tulare County, where it was 42.5%. Santa Cruz County's public school ESL population was 29.1%, and San Benito County's was 25.9%. Tuolumne County had the lowest rate, with 1.6% (kidsdata.org).

8. Percent of families with income below the poverty line

Map 8 shows the percentage of families with income below the poverty line. The darker shaded areas illustrate areas with higher percentages. In Santa Cruz County the map shows a higher percentage of families with income below the poverty line along the southeastern portion of the county and in east Watsonville, where 35.1% of families have an income below the poverty line. In Monterey County, 43.1% of families in east Salinas have an

Map 8. Percent of families with income below the poverty line



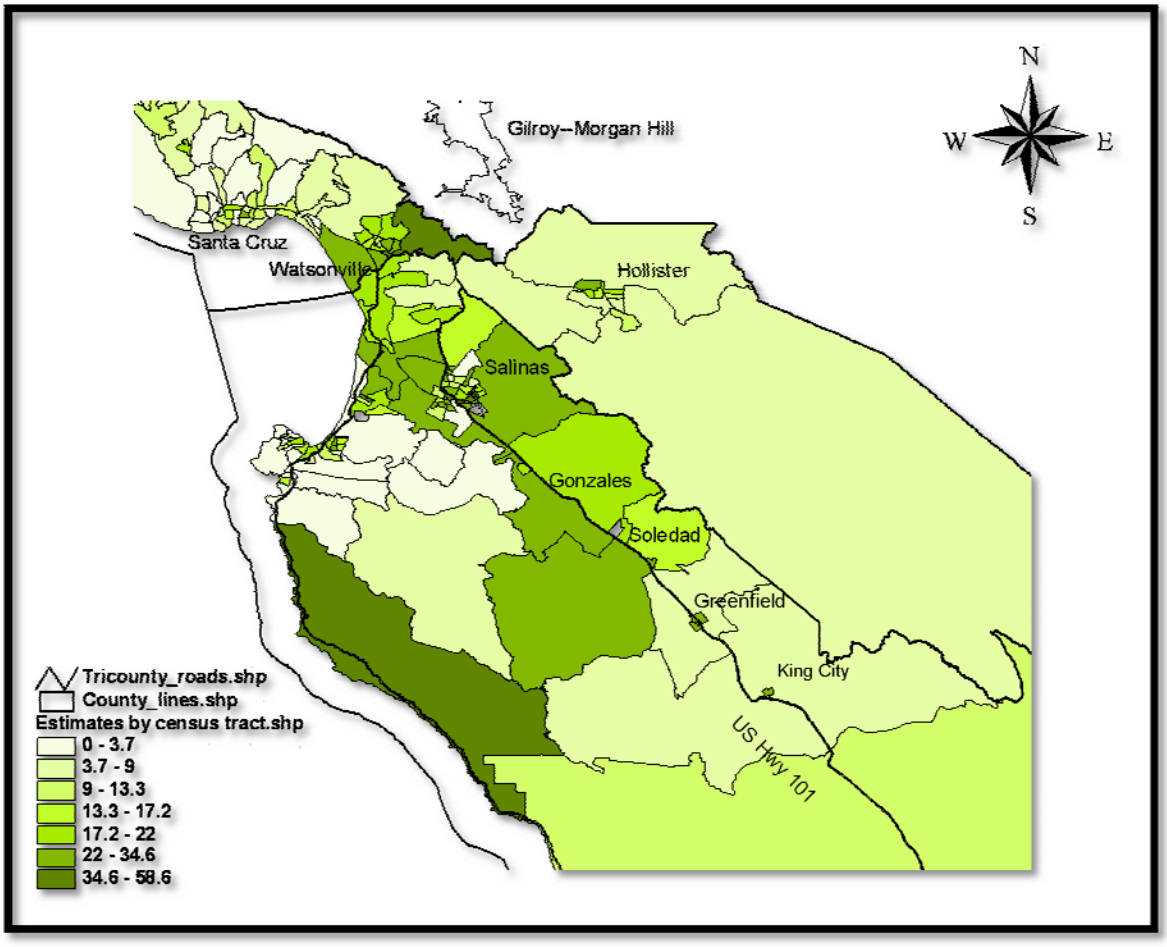
income below the poverty line. Also in Monterey County, between 16.4%-25.5% of families in Seaside have an income below the poverty line.

In San Benito County we also find higher percentages of families with income below the poverty line in northern part of the county. Areas with the lowest percentages of families with income below the poverty line are found in the Carmel Valley region in Monterey County, in northern Santa Cruz County and in an area of northern San Benito County.

9. Percent of families (with children under 18) below the poverty line

Map 9 shows the percent of families (with children under 18) with incomes below the poverty line. The blue shaded areas illustrate areas with lower percentages and the brown shaded areas illustrate areas with higher percentages. In

Map 9. Percent of families (with children under 18) under poverty level



Monterey County there are various areas with 22-34.6% of families (with children under 18) below the poverty line: Salinas, Gonzales, Soledad, Greenfield, and King City, as well as an area

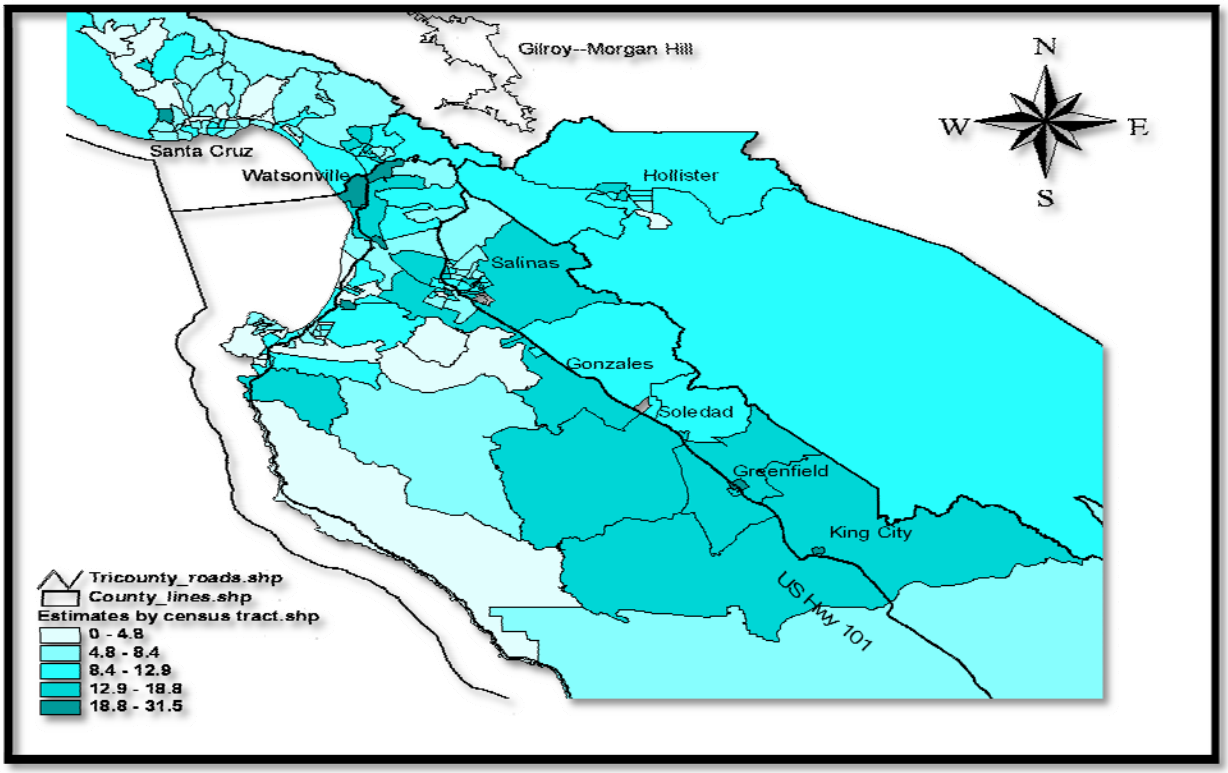
between Marina and Salinas, and 34.6-58.6% of families (with children under 18) below the poverty line in a coastal area below the city of Carmel. Areas with smaller percentages of families (with children under 18) below the poverty line are found in the northern portion of Santa Cruz and Monterey Counties.

In southern Santa Cruz County we find higher percentages of families (with children under 18) below the poverty line, with 34.6-58.6% of families (with children under 18) below the poverty line in the southeastern portion of the county. Most of San Benito County has 0-3.7% of families (with children under 18) below the poverty line, with an area in the northern part of the county with 17.2-34.6% of families (with children under 18) below the poverty line.

10. Unemployment rate

Map 10 illustrates the unemployment rate. The darker shaded areas represent higher rates of unemployment. In Santa Cruz County, the highest rates of unemployment are in the cities of

Map 10. Unemployment Rate



Watsonville and Santa Cruz. In San Benito County, the highest rates of unemployment are found in northeastern portion of the county. In Monterey County, the areas with the highest unemployment rates are in Pajaro, Salinas, King City, Greenfield, Carmel and Seaside. Overall,

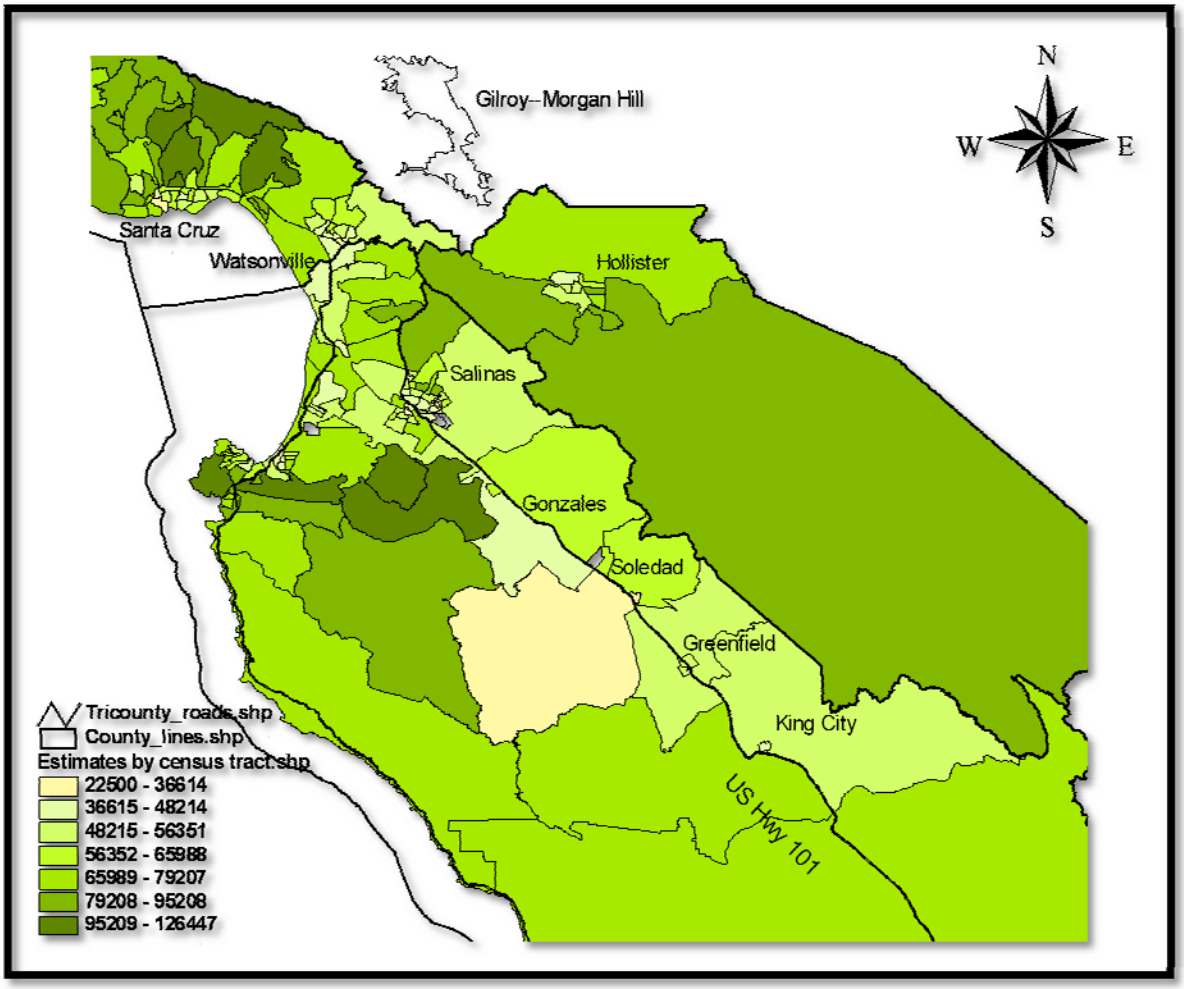
the lowest unemployment rates are found east of Monterey and in Big Sur in Monterey County, and in northern Santa Cruz County, with rates of 3.7 or less.

Monterey County's unemployment rate in 2011 was 12.4%, which was about mid-range compared with the overall state figure of 11.7% of the labor force. By comparison, San Benito was the highest in the region at 15.7%, with Santa Cruz slightly behind Monterey at 12.1%. Imperial County had the highest rate at 29.7% and Marin County had the lowest rate at 7.4% in 2011 (kidsdata.org).

11. Median household income

Map 11 shows the median household income in dollars. The blue shaded areas indicate a higher median household income, ranging from $79,208 to $126,447, green shaded areas indicate a median household income ranging from $36,615 to $79,207, and yellow shaded areas indicate median household incomes from $22,500 to $36,614. Monterey County has a

Map 11. Median household income ($)



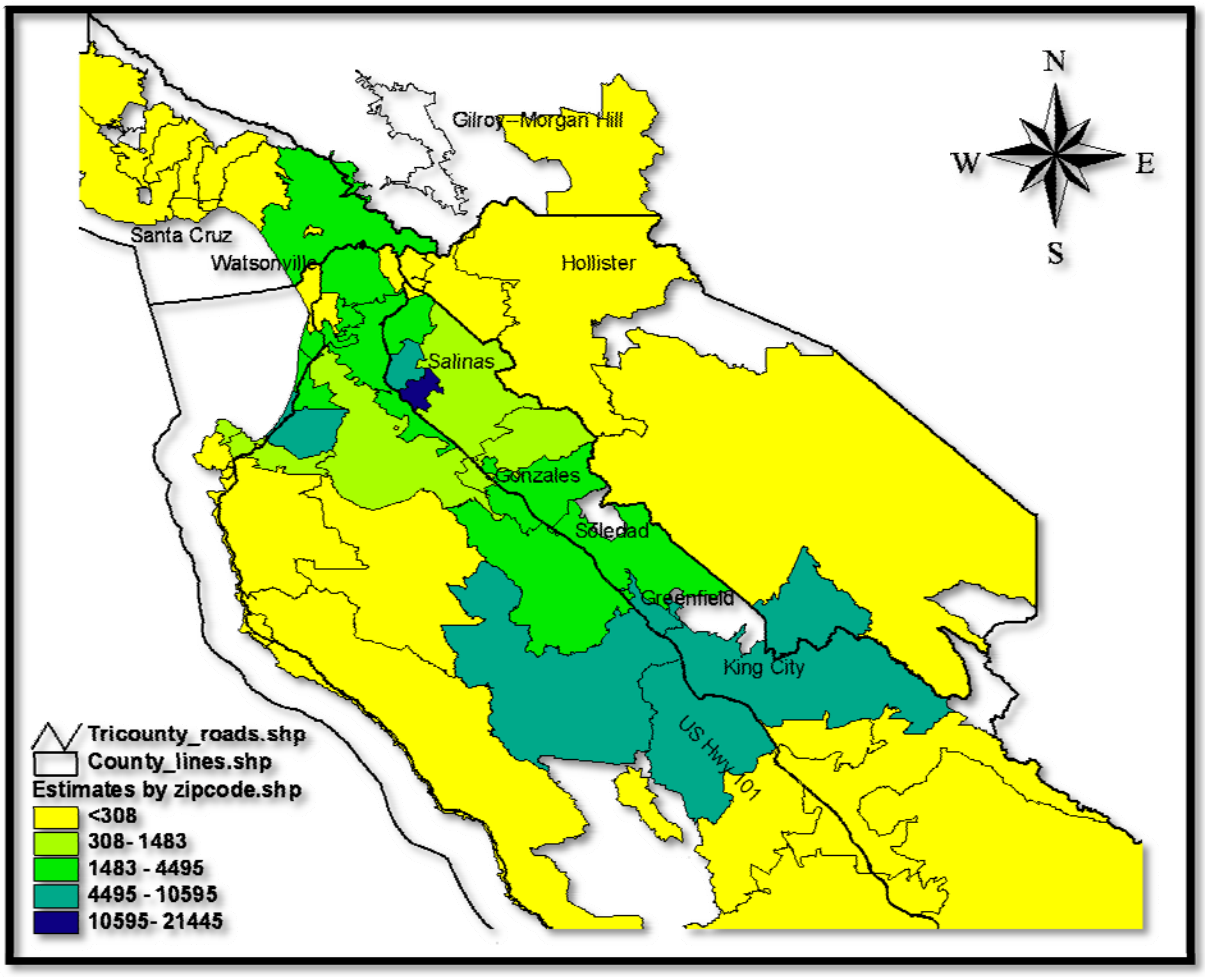
higher median household income in the Carmel Valley area and a lower median household income in the north and along the border with San Benito County. The largest area with a median household of $22,500 - $36,614 is found in the middle portion of Monterey County, east of Greenfield.

Northern Santa Cruz County has a median household income from $79,208 to $126,447, whereas southern Santa Cruz County has a median household income from $48,215 to $79,207. San Benito County's median household income is from $79,208 to $95,208, and northeastern San Benito County's median household income ranges from $36,615 to $79,207.

12. Medi-Cal recipients by ZIP code (2010)

Using data from the Department of Social and Employment Services on Medi-Cal recipients, we estimated a monthly average of about 81,203 medical recipients for 2010. Map 12 shows the Zip code of residence for Monterey County Medi-Cal recipients where the darker colors denote higher numbers of Medi-Cal recipients. When looking at the absolute number of recipients, as the map shows, the highest concentrations of Medi-Cal recipients live in East Salinas (32,040 recipients in Zip codes 93905 and 93906), the King City area (16,580 recipients in Zip codes 93927, 93930, and 39360), and the Seaside Area (6,065 recipients in Zip code 93955).

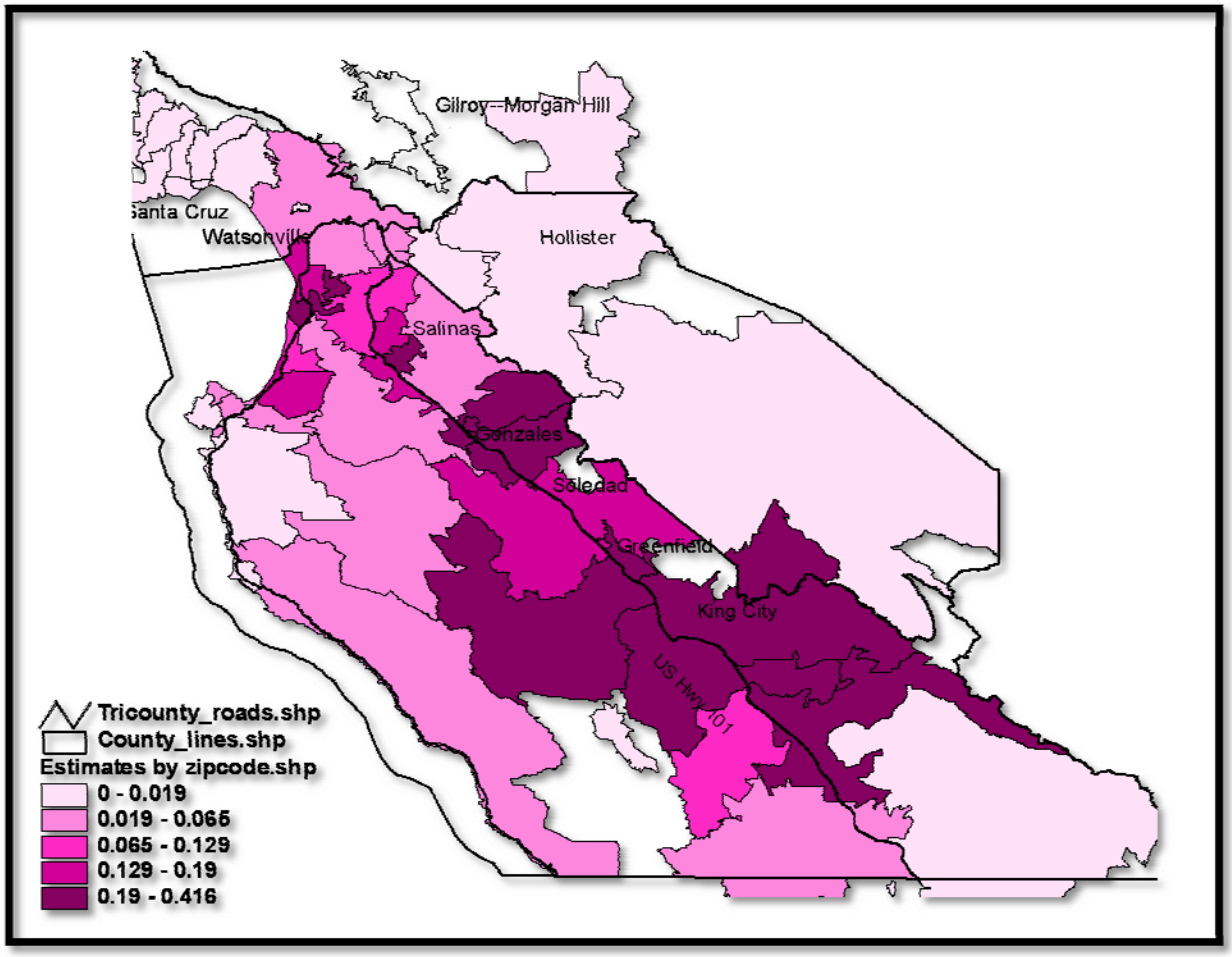
Map 12. Medi-Cal recipients 2010 (monthly averages) by zip code



13. Medi-Cal Recipients 2010 (monthly averages) by Zip code as proportion of Zip code total population

From a planning perspective, absolute numbers of recipients show the highest need for safety net providers, yet they fail to show relative concentrations of eligible populations. For this reason, Map 13 shows the 2010 Monterey County Medi-Cal beneficiaries 2010 (monthly averages) by zip code as proportion of zip code population. In map 13 the darker colors denote higher relative concentrations of Medi-Cal recipients in the Zip code. As the map shows, the corridor along Hwy 101 not only shows high absolute numbers of recipients but also high relative concentration: In east Salinas, Gonzales, King City and Castroville, between 20% and 41% of the population are Medical recipients. On the Coastal area of Monterey County, both Moss Landing and Seaside presented a relatively high concentration of Medi-Cal recipients in 2010, with between 12% and 19% of their populations being Medi-Cal beneficiaries.

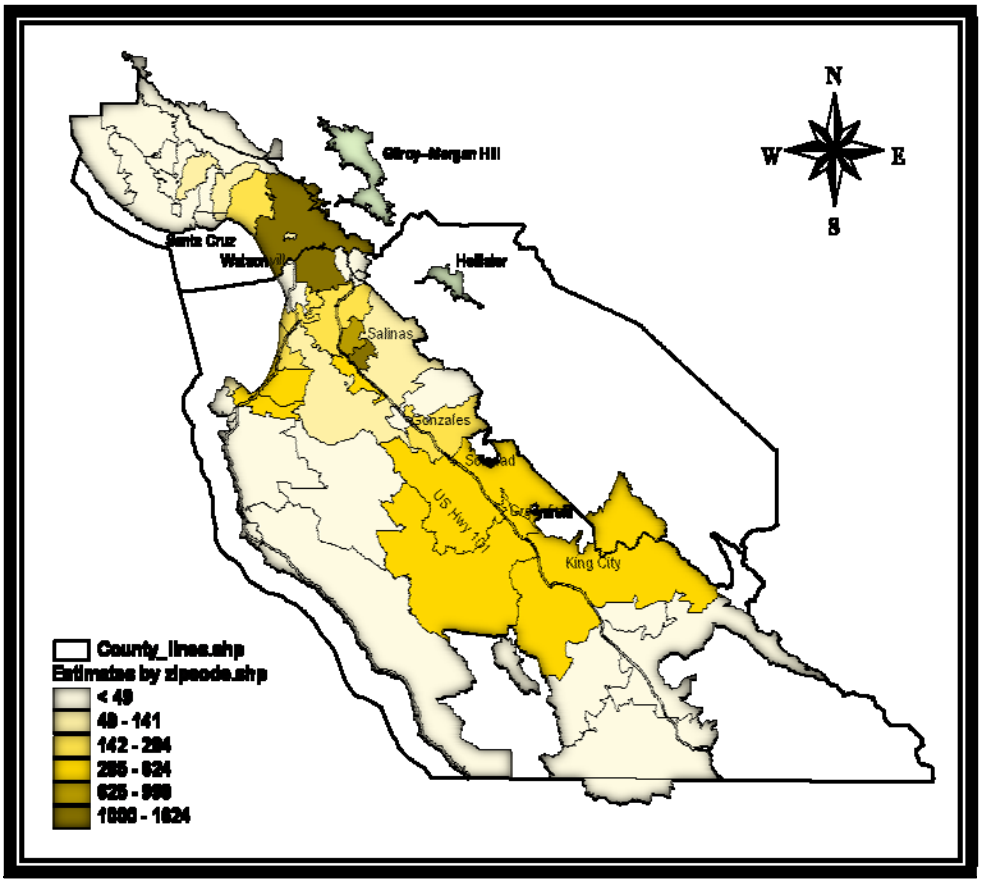
Map 13. Medi-Cal Recipients 2010 (monthly averages) by Zip code as proportion of zip code total population



14. Total births by ZIP code (2010)

Map 14 shows the total number of births by ZIP code in 2010 for the tri-county area; the dark brown color signifies the largest number of total births by ZIP code and lighter shades of yellows indicate lower total births by ZIP code. The highest numbers of births in Monterey County are found in Salinas ZIP code 93905 and Watsonville (95076), with 1,000 – 1,624 births. ZIP code93906 in Salinas also had a relatively high number of births in 2010, with total births in the 625 – 999 range. Intermediate numbers of births by ZIP code are located in Soledad (93960), Greenfield (93927), King City (93930), and on the Marina-Seaside-Monterey area of the peninsula with around 285–624 births per ZIP code. In Monterey County, the ZIP codes with the lowest number of births are primarily along the western and southern borders, where the total births during the year were below 142.

Map 14. Total births by ZIP code (2010)

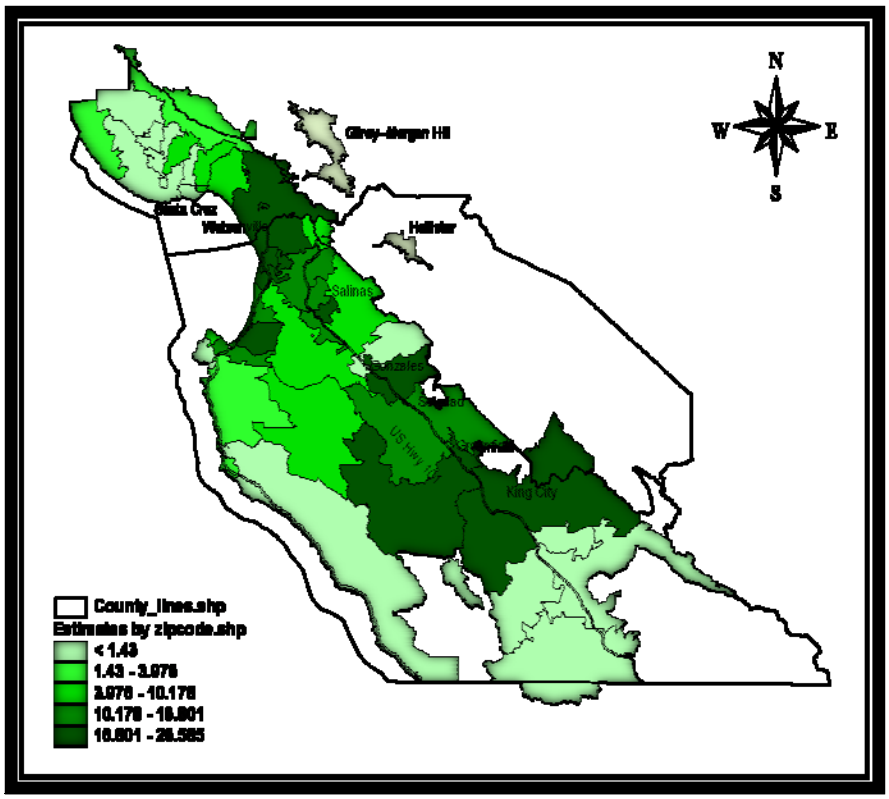


Santa Cruz County has highest total number of births in Watsonville (95076), while Aptos (95003), Soquel (95073) and Scotts Valley (95066) had relatively low numbers of births The remainder of Santa Cruz County has relatively low total births, from <27 – 28 for each ZIP code. No data is available for San Benito County.

Salinas (93905) and Watsonville (95076) have the highest number of total births by ZIP code in the tri-county area, with 1000 – 1624 births; Salinas (93906) and Seaside (93955) follow with 434 – 999 births per ZIP code.

15. Crude birth rates by ZIP code

Map 15. Crude Birth-Rates by ZIP code



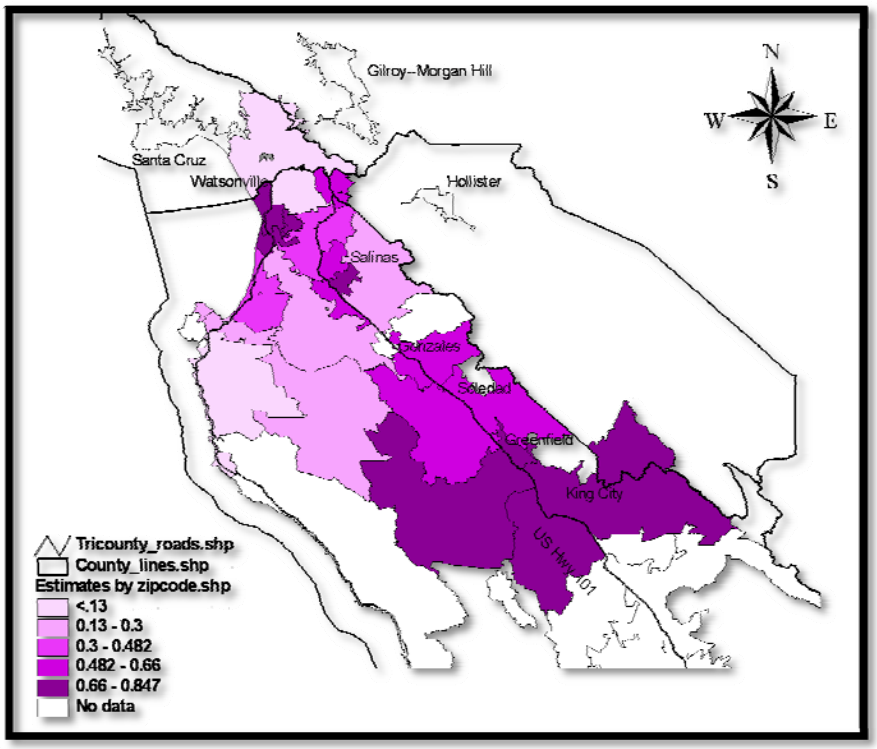
Depicted in Map 15 are the crude birth rates by ZIP code for the tri-county area; the darkest green areas represent the highest numbers of births per 1,000 people and the lighter shades indicate lower rates. The highest crude birth rates for Monterey County are found in Watsonville (95076), King City (93930), Greenfield (93927), Gonzales (93926), Salinas (93905), Seaside (93955), Moss Landing (95039) and Castroville (95012), reporting crude birth rates ranging from 16.801 to 26.585. Intermediate crude birth rates in Monterey County are located in Salinas (excluding 93905), Marina (93933), the Peninsula, Soledad (93960), and Carmel Valley (93924), with ranges of 3.976 – 16.801. Chualar (93925) and the western and southern areas of Monterey County have the lowest crude birth rates, ranging from <1.43 to 3.976.

In Santa Cruz County, Watsonville (95076) and Freedom (95019) have the highest crude birth rates, with a range of 16.801 – 26.585. Santa Cruz County's intermediate crude birth rates, ranging from 3.976 – 16.801, are found in Aptos (95003), Soquel (95073) and Scotts Valley (95066). The remainder of Santa Cruz County has low crude birth rates, with <1.43 – 3.976 births per 1,000 people. Data is not available for San Benito County, with the exception of King City and Aromas (95004), which reports a moderate crude birth rate of 3.976 – 10.178.

Highest crude birth rates for the tri-county area are found in Watsonville (95076), Freedom (95019), King City (93930), Greenfield (93927), Gonzales (93926), Salinas (93905), Seaside (93955), Moss Landing (95039) and Castroville (95012).

16. Proportion of Medi-Cal funded births[8]

Map 16. Proportion of Medi-Cal funded births



Depicted in Map 16 are the proportions of MediCal funded births; the dark purple regions represent the highest proportion of Medi-Cal funded births, and lighter shades represent lower proportions of MediCal funded births. The highest proportion of Medi-Cal funded births in Monterey County are in King City (93930), Greenfield (93927), Salinas (93905), Watsonville (95076), Moss Landing (95039), and Castroville (95012), with proportions ranging from 0.66 – 0.847. Although Moss Landing and Castroville are represented on the map by the shade representing the highest rates of Medi-Cal funded births, it is important to note that because the populations of these ZIP codes are so small (0 – 4,509 residents), the Medi-Cal funded birth rate may be misleading. Moderate proportions of MediCal funded births for Monterey County are found in Soledad (93960), Gonzales (93926), Seaside (93955), Monterey (93940) and Salinas (93908 and 93906), with ranges of 0.13 - 0.66. Carmel (93923) reports a very low proportion of Medi-Cal funded births, <0.13.

No data is available for San Benito and Santa Cruz Counties, with the exceptions of King City and Watsonville, as listed above.

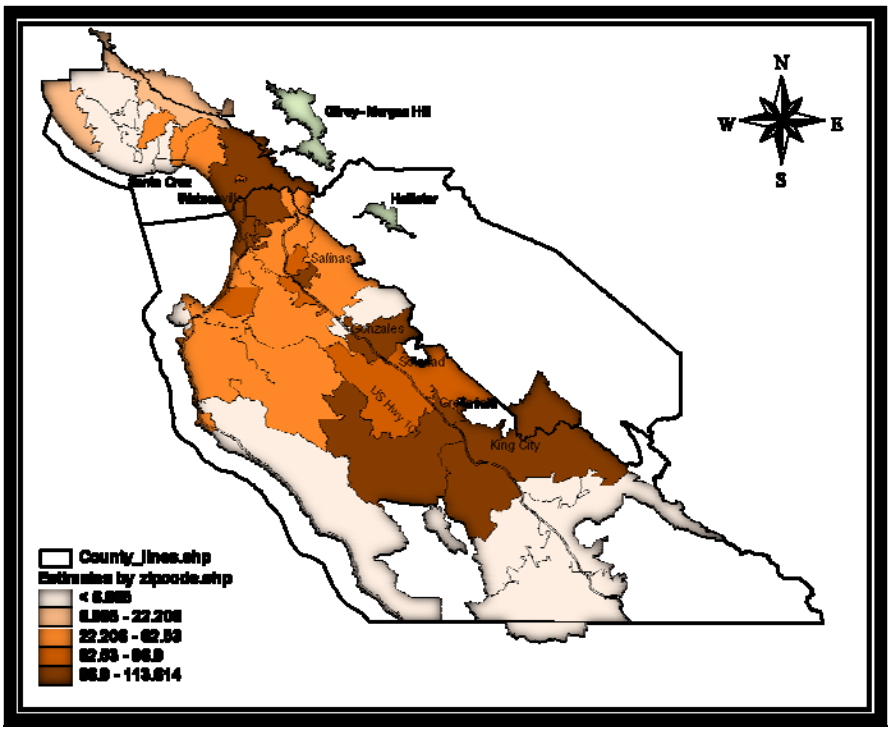
The highest proportions of Medi-Cal funded births in the tri-county area are in King City (93930), Greenfield (93927), Salinas (93905), Watsonville (95076), Moss Landing (95039), and Castroville (95012), with proportions ranging from 0.66 – 0.847.

[8] The proportion of medical funded births for the ZIP code 95067 (Watsonville correspond to the Monterey county portion of the ZIP code only)

17. Fertility rates by ZIP code

Map 17 displays fertility rates by ZIP code for the tri-county area; dark brown areas indicate highest fertility rates while lighter orange areas depict moderate and low fertility rates. The highest fertility rates for Monterey County are as follows: Watsonville (95076), King City (93930), Greenfield (93927), and Salinas (93905), Seaside (93955), Moss Landing (95039) and Castroville (95012). Fertility rates have fertility rates ranging from 96.8 to 113.614 live births per 1,000 women aged 15-44 years. Intermediate fertility rates for Monterey County are found in Salinas (excluding 93905), the peninsula, Gonzales (93926) and Soledad (93960), with rates ranging from 6.865 - 91.149. The lowest fertility rates in Monterey County are along its western and southern borders, with less than 6.865 births per 1,000 women aged 15-44.

Map 17. Fertility rates by ZIP code



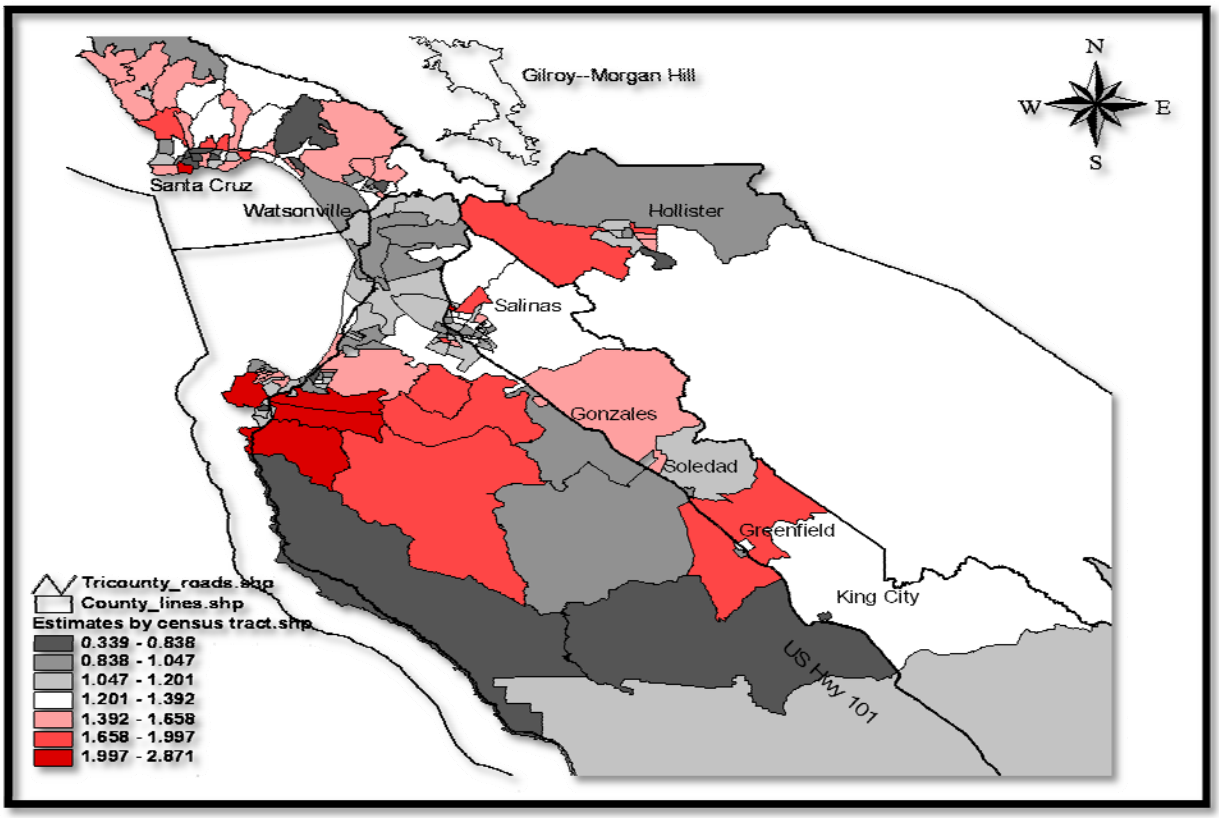
Similar to Map 17, fertility rates in San Benito and Santa Cruz Counties are significantly lower than in the eastern region of Monterey County. The highest fertility rates in Santa Cruz County are in Watsonville and Freedom (95019), with ranges of 91.149 – 113.614. Aptos (95003), Soquel (95073), Scotts Valley (95066) and Davenport (95017) have intermediate fertility rates, with ranges of 6.865 – 62.53, while the remainder of Santa Cruz County has relative low fertility rates of <6.865. Data is not available for San Benito County, with the exceptions of King City, as mentioned above, and Aromas (95004), which reports a moderate fertility rate of 22.206 – 62.53.

Highest fertility rates for the tri-county area are in Watsonville (95076), Freedom (95019), King City (93930), Greenfield (93927), Salinas (93905), Seaside (93955), Moss Landing (95039) and Castroville (95012), with ranges of 91.149 – 113.614 births per 1,000 females aged 15-44.

18. Ratio of Male to Female median earnings for full-time, year-round workers ($)

Map 18 shows the ratio of male to female median earnings for full-time, year-round workers. The areas shaded in darker greys indicate that female median earnings for full-time, year-round

Map 18. Ratio of Male to Female Median earnings for full-time, year-round workers ($)



workers are higher than those of males. The light grey shaded areas indicate that male and female median earnings are about the same. The white shaded areas indicate that males have slightly higher median earnings for full-time, year-round workers than females. The areas shaded in pink and reds indicate that male median earnings for full-time, year-round workers are higher than those of females.

In Monterey County there are four areas where the male median earnings for full-time, year-round workers are 2 to 3 times higher than those of females; these areas are found in the cities of Monterey, Pacific Grove and Carmel. In the Carmel Valley and the city of Greenfield, male median earnings for full-time, year-round workers are approximately 1½ to 2 times higher than those of females. In the western portion of the cities of Gonzalez, Soledad, and King City, and south of Carmel, the female median earnings for full-time, year-round workers are higher than those of males. In the northeastern region of Monterey County female median earnings for full-time, year-round workers are higher than those of males. In a pocket in west Salinas the male

median earnings for full-time, year-round workers is approximately 1½ to 2 times higher than those of females.

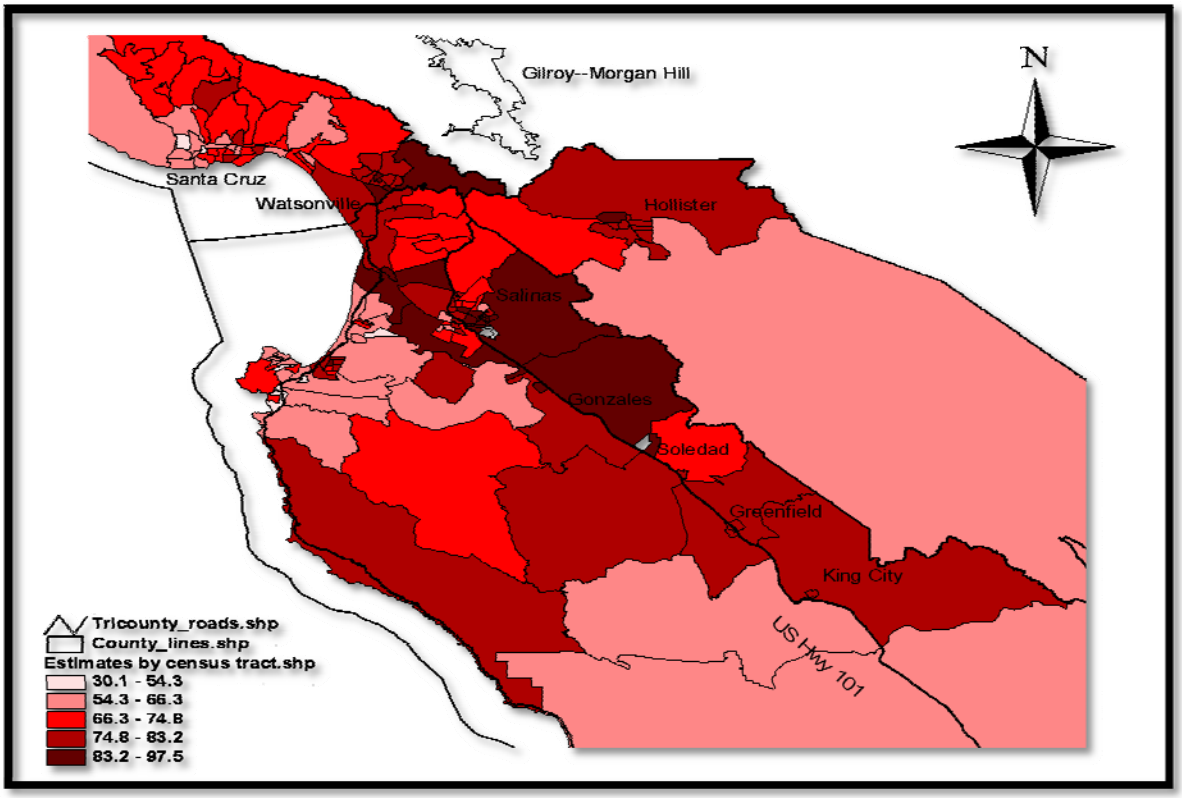
In northwest Santa Cruz County, median earnings for full-time, year-round male workers are approximately 1/3 higher than those of females. In the northernmost part of Santa Cruz County, median earnings for full-time, year-round female workers are higher than those of males. Northeast of Watsonville there is a large area where median earnings for full-time, year-round male workers is approximately 1/3 higher than those of females, and northwest of Watsonville there is an area where the median earnings for full-time, year-round female workers are approximately 1/3 higher than those of males.

In northeastern San Benito County male and female median earnings are about the same, but in northwestern San Benito County, median earnings for full-time, year-round male workers are approximately 1½ to 2 times higher than those of females. South of Hollister there is a small area where the median earnings for full-time, year-round female workers are approximately 1/3 higher than those of males.

19. Percentage of wage/salary private workers

Map 19 illustrates the percentage of wage/salary private workers. The darker shaded areas represent higher percentages of wage/salary private workers. San Benito County has

Map 19. Percentage of wage/salary private workers

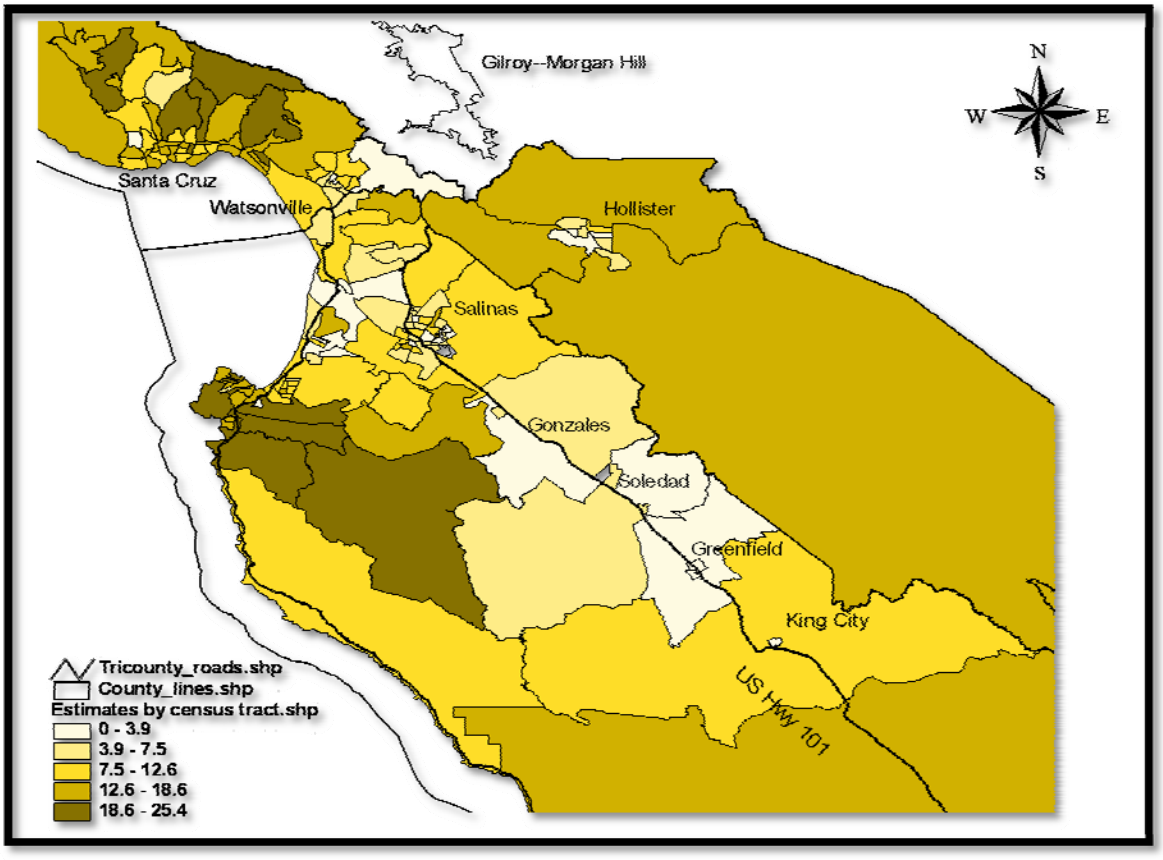


over 54.3% of wage/salary private workers, with higher percentages found in the northern part of the county. In Santa Cruz County, the highest percentages of wage/salary private workers are found in the southern part of the county, with the highest percentages in the southeastern region, where it is 85.2% - 97.5%. Monterey County has the highest percentages of wage/salary private workers in Salinas and east of Marina, with 85.2% - 97.5%. The lower percentages of wage/salary private workers are found in southern San Benito County, Monterey, Marina, and Carmel Valley in Monterey County, and in northeastern Santa Cruz County, all with 54.3 - 65% of wage/salary private workers.

20. Percentage of self-employed workers

Map 20 illustrates the percentage of self-employed workers. The darker shaded areas represent a higher percentage of self-employed workers. In San Benito County, the higher percentages of self-employed workers are found in South County, with lower percentages found in south Hollister. In Santa Cruz County, the higher percentages of self-employed workers are found in northeast Santa Cruz area and the lowest

Map 20. Percent of self-employed workers



percentage in the in west area of the county. In Monterey County, the higher percentages of self-employed workers are found in Monterey, Pacific Grove, Carmel, and Carmel Valley and the lowest percentages west of Salinas and in Greenfield.

Conclusion/summary

The spatial analysis of key demographic characteristics and health outcomes provides a more picture of needs within the region. As the maps in the spatial analysis shows, the tri-county region is characterized by wide geographic variations in demographic and health outcomes.

Our initial analysis shows two critical areas of high need of a strong safety net provider network in terms population high population density, poverty rates, numbers of undocumented immigrants, fertility rates, proportion of individuals who do not speak English very well, and low median incomes: the southeastern part of the city of Salinas and the southern part of the Watsonville area (just north of the Monterey County border). Other pockets of need however are present in parts of the region: Areas of Seaside, Hollister, North Monterey County, and the entire corridor along Hwy 101 (north of King City) present areas of social vulnerability as well.

The next phase of the report will expand on the spatial analysis of need in terms of the variables presented in this phase of the study.

Population health status and health risk "hot spots" for Monterey County

Overview

This study reviewed specific areas of health status as they relate to the need for primary care services in Monterey County. Although a number of health issues may point to the need for *public health* education and promotion interventions, those issues that may respond to prevention and health services at the primary care level are explored. Those identified as posing a challenge for Monterey County include: overweight/obese/diabetes; births to teens; lack of early prenatal care; very low birth weight; violence (injuries, suicide, homicide) uninsured patients; and dental/oral care.

In general, health status across the lifespan for individuals living in Monterey County closely mirrors that of the state overall, and the county's population shares many of the same health issues. At 81.4 years, California had the third highest life expectancy in the US in 2009 (CDPH,

2009). Although the Monterey county life expectancy at 78.8[9] was lower than the statewide average (IHME, 2009), it was higher than the US at 78.5 years (Bezruchka, 2012). The CDC reports that life expectancy at birth (2006) for the Hispanic population was 80.6 years compared with 78.1 years for non-Hispanic whites and 72.9 years for the non-Hispanic black population. This equates to a 2.5 year life expectancy at birth advantage for the Hispanic population (over the non-Hispanic white population) and 7.7 years over the non-Hispanic black population (DHHS, CDC, 2010c). The MCHD Strategic Plan reports significant life expectancy differences between regions, with life expectancy for residents of the city of Monterey at 83 years compared with Greenfield at 80 years (MCHD, 2011d).

Segments of the Monterey County population face a number of health disparities and challenges to improvements in overall health status and access to health care. For nearly all indicators (2008-2010), Monterey County health status was equal to or better than the California state averages, except for the following indicators shown in Table 1, which were worse:

[9] Monterey County Strategic Plan reports a range of 80 years in Greenfield to 83 years in the city of Monterey.

Table 1. Selected Monterey County High Risk Health Indicators

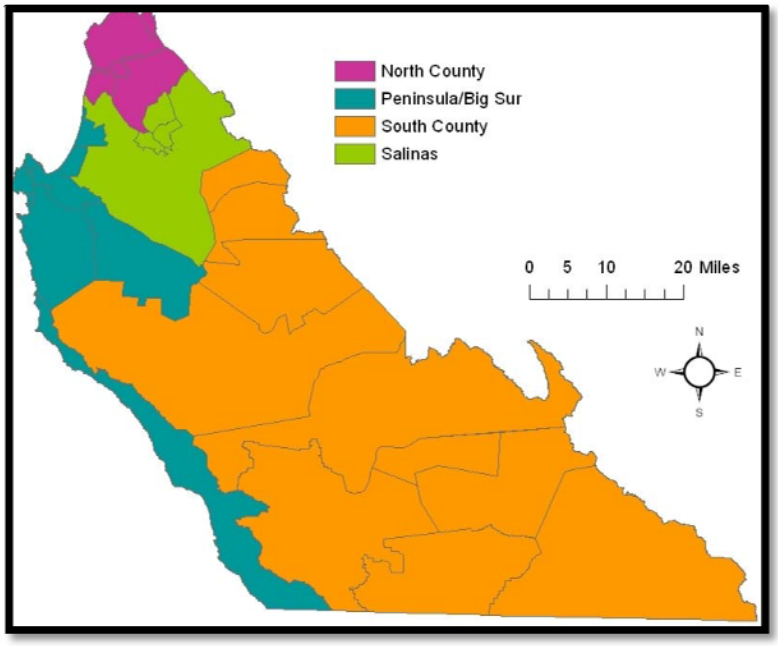
	Monterey County	CA	Healthy People 2020 Target
Overweight/obese students	44.6%	38%	14.6% (obese only)
Overweight/Obese Adults 2009(CHIS)	35.4%/25.6% (Total - 63.8%)	56.3%	30.6% (obese only)
Birth to teens (15-19 years old)	49.8	29	0.0/1,000 female
Prenatal Care – late or none (post 1st trimester)	26.8	16.5%	22.1%
Low and very low birth weight	5.6%/1.20%	6.8%/1.10%	7.8%/1.4%
Violence: Injuries due to domestic violence Domestic Violence Crimes per 10,000 population	50.8	44.7[10]	na
Violence: Suicide rates	9.8 per 100,000 in 2009[11]	9.7 per 100,000 in 2009[12]	10.2 per 100,000[13]
Violence: Homicide rates	10 per 100,000 in 2010[14]	5.3 per 100,000 in 2010[15]	5.5 per 100,000[16]
Lack of health care insurance/Uninsured rates	21.3%	17.9%	16.7% (9%)*
No Dental Insurance in Past Year (2007)	45.3%	33.7%	*

Sources: CHIS, 2009, CDPH & CCLHO, County Health Status Profiles, 2012; CA Healthcare Foundation , 2011; kidsdata.org. 2010, Healthy People 2020
* Current US rate and HP2020 target - to reduce % of population unable to obtain medical/dental care & medicines

As part of its effort to involve the community in identifying health issues of importance for the population, MCHD engaged the community in its strategic planning process where major health concerns were identified by region. The Strategic Plan (2011) identified "four regions of disparate health" in Figure 2 including the North, Salinas, Peninsula and South parts of the county, and presented results from a Years of Potential Life Lost (YPLL) analysis by region. "YPLL differences between four Monterey County regions appear to correlate with the unique socio-demographic differences found in each region. These analyses provide good reason to use a regional approach to plan and deliver public health education and services" (MCHD, 2011d) as well as to utilize the resulting data to inform this and future studies of population health status and health care needs.

[10] Rand, 2011
[11] CA Dept of Health care services (2012). Office of suicide prevention-county level data profiles
[12] CA Dept of Public Health. (2010). *Table 5.7*
[13] HP2020, 2012 Sept 06
[14] CDPH, 2012
[15] CDPH, 2012
[16] HP2020, 2012 December 03

Figure 2. Four Monterey County Regions



Source: Monterey County Health Department, Strategic Plan, 2011

Community input to the MCHD Strategic Plan included participants' top concerns, by region, shown in Table 2 and included concerns related to "healthcare access and dental care" as well as "teen births, obesity and diabetes…mental health…and perinatal mortality (MCHD, 2011d)." Despite variability of input across regions, concerns about the cost and access to health care were shared by participants all four regions (highlighted). Interestingly, three of four regions cited "basic health care" as a strength which was not mentioned for the Peninsula region.

Table 2. Monterey County Community Top Concerns

Region →	North County	Coastal Region	South County	Salinas
Top Concerns	• Perinatal mortality • Access to health care • Limited recreation programs • Limited health services	• Healthcare access • Childhood asthma • Mental health • Childhood obesity • Teen births • School bullying	• Teen births • Obesity • Diabetes • Injuries • Healthcare access • Drug/alcohol use	• Mental health • Diabetes • Dental care • Violence • Obesity • Teen births • Access to health care

Region →	North County	Coastal Region	South County	Salinas
Strengths	• Local Programs… Castroville Com. Center, Migrant parent program • Basic healthcare… Local clinic, Natividad Medical Center • Healthy food… free lunch at Castroville CC	• Local Programs… YMCA, • Grief Busters, Sticks & Stones, school nurses • Outdoor Activities… Sports Center, bike trails, parks	• Basic healthcare… clinics, hospitals • Outdoor Activities: Little League, parks, swimming pools • Safety Programs… crossing guards, gang task force, fire department	• Basic healthcare… clinics, hospitals • Local Programs… social supports, high school clubs • Outdoor Activities… soccer fields, parks
Challenges	• Availability of healthcare services… need more appointment times • Access to healthcare… distance to hospital, no local pharmacy • Cost of healthcare… not qualified for Healthy Families • Healthy food… need better school lunches	• Cost of healthcare… insurance programs for middle-income folks • Community safety… unsafe parks, dangerous roads, school zones • Physical Activity, $ child/teen programs, affordable gyms	• Availability of healthcare services… more options are needed • Cost of healthcare… lack of insurance & eligibility • Community safety… poor lighting, dangerous streets	• Cost of healthcare… medical, dental, vision • Limited health knowledge… more chronic disease education • Violence and risk behaviors… gangs, shootings, alcohol, drugs
Solutions	• Affordable Healthcare… low cost clinics for pregnant women • Outdoor Activities… more bike paths & parks • Health Education… after school programs	• Safety Neighborhood Watch, after school • Empowerment: health & nutrition workshops for parents • Healthcare access… • Elder assistance, • School counseling, • Bus vouchers, incentives to maintain good health	• Empowerment programs… youth serving programs and activities • Safety Programs… activities that prevent and address violence • Healthcare access… payment plans, free clinics, bus vouchers	• Universal coverage, affordable prescriptions, free health screenings • Safety: crossing guards, sobriety checks, Neighborhood Watch • Health education, after school programs, gang prevention

Source: Monterey County Health Department, Strategic Plan, 2011

HEALTH ISSUES

OVERWEIGHT/OBESE/DIABETES

According to the 2009 California Health Interview Survey, approximately 8.1% of Monterey County residents over 18 years of age have been diagnosed with diabetes compared with 8.5% for the state overall (CHIS, 2010). Approximately 72.1% of those diagnosed with diabetes in Monterey County were diagnosed with Type II diabetes (CHIS, 2010). National age-adjusted percentages of persons 18 years of age and over with diabetes in 2010 were 7.6% for non-Hispanic Whites and 13.2% for Hispanics/Latinos (CDC, NHIS, 2012), and age-adjusted percentages of physician-diagnosed diabetes among persons 20 years of age and over, 2005-2008, were 6.5% for non-Hispanic White and 11.8% for Mexican American (CDC, NHIS, 2012).

Overweight and obesity are significant risk factors for Type II diabetes, high blood pressure, and high cholesterol. According to the CDC (2012a), more than one third (35.7%) of adults and 17% of children ages 2 to 19 years in the US are obese. According to the 2009 California Health Interview Survey, 33.6% of California residents were overweight and 22.7% of residents were classified as obese based on BMI (2009). In the same study, 35.4% of Monterey County residents were classified as overweight while 25.6% were in the obese category (CHIS, 2009).

California's average overweight/obese student rate was 38% in 2010. According to kidsdata.org, a program of the Lucile Packard Foundation for Children's Health, obesity rates for children in California are stunningly high, with most counties reporting a third or more of their children as being overweight or obese according to the federal definition. There is a wide range across the state, from Imperial County with the highest reported rate (46.9%) to Marin County with the lowest (24.9%) (kidsdata.org, 2010).

With an estimated 44.6%, Monterey County has the fourth highest percentage of overweight or obese children in the state, followed closely by San Benito County with 42.2% (kisdata.org, 2010). Santa Cruz students are in better shape with a rate (at 37.9%) that is slightly below the statewide average (kidsdata.org). However, children in selected Monterey cities have significantly higher rates with 48.5% of children in Soledad, 46.7% of children in Salinas, 45.6% of children residing in Seaside, and 41.2% of those living in Monterey reported as being overweight or obese (kidsdata.org).

BIRTHS/PRENATAL CARE

The average birth rate in California was 63 per 1,000 (women ages 15 – 44). Monterey County had the third highest birth rate in California, at 80.1/1,000. The lowest birth rate (in 2010) was in Sierra County (39.9/1,000) and the highest was in Imperial County (81.7/1,000). According to the California Department of Health Care Services, in 2006 slightly more than 41% of all births to resident Californians were paid for by the Medi-Cal program. Of those, nearly 75% were in the MC Fee-for-Service program and about 25% were to managed care program beneficiaries

The average teen birth rate in California in 2010 was 29/1,000 teens (15 – 19 years) and for counties reporting, Del Norte County had the highest rate at 64.4/1,000, and Marin County had the lowest rate at 10/1,000. Monterey County had the sixth highest teen birth rate at 49.8/1,000. By comparison, San Benito had the seventh lowest teen birth rate at 16.3/1,000, and Santa Cruz was about midway between them at 30/1,000 (kidsdata.org, 2010). The proportion of births to teens among Medi-Cal beneficiaries (at 15.2%) was three times higher than non-Medi-Cal paid sources (DHCS, 2010). Teens that are pregnant are at greater risk of not getting early or adequate prenatal care and may face additional health risks including high blood pressure, preeclampsia, premature birth and low-birth weight babies (NIH, n.d.)

Prenatal care – part of primary (preventive) care for pregnant women, including regular visits to a primary care provider (especially for normal births) that help identify problems early enough to

avoid further complications (and expensive specialty services) – is an important aspect of the primary care/safety net system. The USDHHS Office of Women's Health recommends that low-risk women have 8 to11 prenatal care visits throughout their pregnancy for "screening and monitoring, education and interventions, and vaccination and other prophylaxis" as needed (DHHS, OWH, 2009). The USDHHS Healthy People 2020 Objectives for prenatal care beginning in the first trimester include increasing the rate from the baseline 70.8% to 77.9% of pregnant women (including high risk groups) by 2020 (USDHHS,2012). National rates for women receiving "late prenatal care" [17] are 16%, on average, with the lowest rates among White women (11%) and the highest rates among African American (24%) and Hispanic (23%) women (KFF, 2009).

MCHD reports that the overall average of "late entry to or no prenatal care" across the county in 2010 was 26.8%, with about 1,780 women not receiving adequate primary care for their pregnancy (MCHD, 2011b). According to kidsdata.org, in 2010 Monterey County ranked fourteenth from the bottom in the percentage of infants whose mothers received prenatal care in the first trimester, at 73.1% (compared with 83.5% for CA as a whole).

According to the Monterey County (2010) Health Department Birth Report, births by hospital were distributed as shown in Table 3, with about 40% at Natividad Medical Center, nearly 27% at Salinas Valley Memorial Hospital, 18% at Community Hospital of the Monterey Peninsula (CHOMP), 8% at Mee Memorial Hospital and about 4% at Watsonville Community Hospital (indicating that at least 4% of births by Monterey County residents take place outside the county). Of concern were the rates of late or no prenatal care prior to delivery for Monterey County residents giving birth at selected hospitals. There appears to be significant variation across hospitals for rates of late or no prenatal care "by births by hospital," including nearly 39% at both Natividad Medical Center and Salinas Valley Memorial Hospital, and nearly 34% at Watsonville Community Hospital.

[17] Late entry into prenatal care refers to women beginning their prenatal care in the second or third trimester. (MCHD, Monterey County Birth Outcomes, 2010)

Table 3. Monterey County Births by Hospital of Birth and Mother's Age Group, 2010 (Source: Monterey County Birth Outcomes Report, 2010)

Hospital	Number of Births	Percentage	% of women without early PN care	Estimated no. of women without early PN care
Natividad Medical Center	2,670	39.97	38.5	1,028
Salinas Valley Memorial Hospital	1,778	26.62	15.4	274
Community Hospital of the Monterey Peninsula	1,184	17.72	12.5	148
George L. Mee Memorial Hospital	552	8.26	38.6	213
Watsonville Community Hospital	263	3.94	33.6	88
Other	233	3.49	19.5	45
Total	**6,680**	**100**	**27%**	**1,797**

Although this study did not gather data on the specific reasons for lack of entry into early (1st trimester) prenatal care, national studies indicate that women experience a variety of barriers to obtaining early prenatal care, including "(1) financial/economic issues (including problems with private and public insurance programs and lack of insurance altogether), (2) inadequate capacity, primarily within prenatal care systems relied upon by low-income women, (3) organization, practices and atmosphere of prenatal services (including policies and provider attitudes, as well as issues like transportation and child care), and (4) cultural or personal factors that can limit prenatal care use" (IOM, 1988). This has implications for the population's access to sufficient primary care providers who offer perinatal health services and the level of outreach provided by perinatal health education providers.

LOW BIRTH WEIGHT (LBW) AND VERY LOW BIRTH WEIGHT (VLBW) BABIES

The USDHHS Healthy People 2020 objectives for low birth weight[18] and very low birth weight[19] of 7.8% and 1.4%, respectively, were established as goals to be achieved nationwide. The 2007 baseline national average for LBW was 8.2% of live births and for VLBW 1.5% of live births. In 2010, Monterey County was sixth lowest out of 32 reporting counties with 5.6% LBW infants, compared with California as a whole (6.8%), San Benito County (6.3%) and Santa Cruz County (5.7%). Monterey was 20th lowest out of 32 reporting counties with 1.20% VLBW infants, compared with the state as a whole (1.10%). Other counties with the same percentage VLBW

[18] Low-birth-weight baby - an infant born weighing less than 5.5 pounds (2500 grams) regardless of gestational age
[19] Very-low birth weight baby – an infant born weighing less than 3 pounds (1,500 grams) regardless of gestational age

were Imperial, Solano, and Tulare. Santa Cruz County had 1.4% and San Benito was unreported due to low numbers (kidsdata.org, 2010).[20]

VIOLENCE: INJURIES, HOMICIDE AND SUICIDE

Domestic violence is defined as "abuse committed against an adult or a fully emancipated minor who is a spouse, former spouse, cohabitant, former cohabitant, or person with whom the suspect has had a child or is having or has had a dating or engagement relationship" (California Penal Code 13700(b)). The California Health interview survey reports that 13.8% of adults in Monterey County have experienced physical or sexual violence by an intimate partner in 2009—slightly lower than the state percentage of 14.8. According to Rand California Community Statistics, law enforcement agencies report that there were 50.8 total domestic violence calls per 10,000 persons in Monterey County compared with 44.7/10,000 for the state of California (2011a/b). The numbers of calls resulting in injuries which needed medical care were unavailable, however, the implications of higher than average domestic violence rates are broad and necessitate a need by public health workers and medical professionals to address and understand legal protocols, appropriate and consistent domestic violence screening and intervention methods, and education in provider-patient relationships in highly sensitive situations (Weissman, 2006/Guida, n.d.).

According to 2008-2010 averages, Monterey County had the highest rate of death due to homicide in the state of California at 10 deaths per 100,000 people (CDPH, 2012). The average for the state was reported at 5.3/100,000 (CDPH, 2012). Rates of death related to firearms were reported for Monterey County as being 11.4 out of 100,000 people compared with 7.8 for the state (CDPH, 2012). An often overlooked implication of homicide on medical care is its impact on survivors—those who were affected by homicide. In 2005, it was reported that approximately 16.4 million people experienced the murder of a family member, a relative other than a family member, or a close friend (Feldman-Hertz, Prothrow-Stith & Chery, 2005). It is reported that "homicide survivors experience negative psychological and physical effects that often result in an increase in the usage of primary care services [and that] provider training should include protocols to screen for, discuss, and make referrals for the family and friends of homicide victims" (Feldman-Hertz, Prothrow-Stith & Chery, 2005).

According to the California Department of Public Health, the 2008-2010 age-adjusted death rate from suicide in Monterey County was 9.8 per 100,000 people—only slightly higher than the California average of 9.7 (CDPH, 2012). Surviving friends and family members of those who have committed suicide can face many of the same negative health implications as those who have been affected by homicide. Studies show that grief and bereavement can cause an increase in mortality rates among certain groups like the elderly and young people, and that "secondary

[20] Monterey County Birth Report for 2010 reported low birth weight rate of 4.4% and very low birth weight rate at 0.8%.

morbidity, physical or mental, often occurs among those bereaved" (Zhang, Tong, & Zhou, 2005).

LACK OF HEALTH INSURANCE/UNINSURED

"Health insurance is defined as employer-provided, self-purchased, or public-funded health plan that pays for or reduces the costs of medical care and prescriptions. For most Americans, health insurance is critical to accessing personal health care. People who lack health insurance are less likely to have a primary care provider and receive appropriate preventive care, such as prenatal care, immunizations, preventative health screenings, and healthy lifestyle education. Strong predictors of access to health care include being employed and having a higher income level. Those at risk for lacking health insurance are people who live in poverty and those employed on a low wage, temporary, part time, or seasonal basis. (MCHD, 2011a)"

According to US Census estimates, approximately 21.3% of Monterey County residents were uninsured from 2008-2010 compared with 17.9% of the population of California as a whole (US Census, 2010) and 16.7% nationally (HP, 2020). The California Health Care Foundation estimates the number of uninsured in California in 2011 to be higher, at approximately 21.5% (CHCF, 2011). According to the US Census, 9.8% of the uninsured are under 18 years of age, while 30.2% are ages 18 to 65 (US Census, 2010). The same reports estimate that the highest percentage of uninsured people are predominantly of Hispanic or Latino origin, or "some other race alone" (US Census, 2010) "who were three times more likely to lack health insurance than White, non-Hispanic residents (MCHD,2011a.)." Females were also less likely to have insurance than their male counterparts through 2009 (MCHD, 2011a.). The Kaiser Family Foundation reports that nationwide, 17.7% of all women have no health insurance coverage, with White women having the smallest percentage of no coverage at 12.8%, while 37.3% of Hispanic women and 22.4% of African American women do not have coverage (KFF, 2009).

Over 40% of the uninsured population in Monterey County has less than a high school education, compared with 37% for California as a whole, and 56.9% of the uninsured in Monterey County are unemployed versus 46.5% of the uninsured statewide (US Census, 2010). The largest subset of uninsured Monterey County respondents (29.7%) reported having a household income of $25,000-$49,999, followed closely by 28.9% who reported having an income less than $25,000 in 2010 (US Census). "Of residents lacking health insurance in 2009, 80% were living at or under 299% of the Federal Poverty Level (MCHD, 2011a.)." This mirrors Census findings for the state, with the highest percentage (26.1%) of uninsured respondents reporting household income to be in the $25,000-$49,999 bracket and the second highest percentage (25.7%) being under $25,000 (US Census, 2010). Santa Cruz County estimates for uninsured rates reflect changes similar to those that occurred in Monterey County. The percent uninsured in the county was 12.9% in 2005 and rose to 15.7% in 2009 (CHIS, 2010).

A 2009 Kaiser Family Foundation study found that there are racial and ethnic disparities in health status and health care across the US, with particular groups facing specific challenges. Specifically, for Hispanic women, access and utilization problems were consistent nationwide and included a lack of access to health insurance, a primary care doctor or health care provider, and delayed or denied health care due to the cost of services. Many Latina women face barriers to care due to their immigration status, which limits their eligibility for publicly-funded health insurance programs, language barriers and resulting health literacy, and contributing social factors including a disproportionate level of Latina women who are poor and have low educational status (KFF, 2009).

HOMELESSNESS, HEALTH CARE AND EMERGENCY DEPARTMENT USE

Over 26% of Monterey County survey respondents reported needing medical care since becoming homeless, but being unable to receive it (Applied Survey Research, 2011a). This represents a significant decrease from the 56.8% reported in 2009 (Harder & Co., 2009). Survey results show that the reported primary medical service needs among respondents were dental (77.7%) and medical (66.2%) care (Applied Survey Research, 2011a). The number of respondents who reported never having used the ER in the year prior to the survey increased from 45.7% in 2009 to 56.4% in 2011 (Applied Survey Research, 2011a). However, 44% of respondents reported having used hospital Emergency Rooms at least once in 2011, and 35% reported utilizing hospital Emergency Rooms as their *primary* source of medical care and treatment in 2009 (Applied Survey Research, 2011a).

ORAL/DENTAL HEALTH

Poor oral health is largely preventable, but if left untreated can lead to poorer quality of life and poor health outcomes among people with certain chronic diseases such as diabetes (Griffin. S. et al, 2012). There is a positive correlation between poor oral health and poor general health (Griffin, S. et al, 2012). According to the Monterey County Health Department, there is growing evidence of associations between oral diseases and diabetes, heart disease, stroke, respiratory disorders, and adverse pregnancy outcomes. Oral health is therefore seen as both a portal and a barrier to systemic risk factors, as oral tissues may signal the presence of disease, disease progression, or exposure to risk factors (MCHD, 2011).

The CDC reports that over 40% of poor adults have at least one untreated decayed tooth, compared to 16% of non-poor adults (CDC 2006). The same report also states that most adults show signs of gum disease, and that for every adult 19 years or older without medical insurance, there are three without dental insurance (CDC 2006). In addition, beginning in 2009, most adult dental services were eliminated for Medi-Cal beneficiaries 21 years and older.

Similar disparities for racial, ethnic and income groups can be seen among Monterey County residents. In 2007, 47% of men and 44% of women lacked dental insurance and 52% of Hispanic

(38% of non-Hispanic White and 38% of Asian)[21] residents were more likely to lack dental insurance in the prior year (MCHD,2010).

The CDC also reports that 20% of all adolescents aged 12–19 years currently have untreated decay and "children and adolescents of some racial and ethnic groups and those from lower-income families have more untreated tooth decay. For example, 40% of Mexican American children aged 6–8 years have untreated decay, compared with 25% of non-Hispanic whites (CDC, 2011b)."

The CDC reports that "tooth decay (dental caries) affects children in the United States more than any other chronic infectious disease. Untreated tooth decay causes pain and infections that may lead to problems; such as eating, speaking, playing, and learning" (CDC 2011a).

BENEFITS FROM IMPLEMENTATION OF THE AFFORDABLE CARE ACT

According to Kaiser Family Foundation (KFF), "the Affordable Care Act includes several provisions that allow many individuals across the U.S. to be eligible for Medicaid or for federal tax credits to subsidize the cost of insurance" (Kaiser Family Foundation, 2011). By gathering data from the Integrated Public Use Microdata Series (CA PUMA MAPS) which analyzes data taken from the US Census, the KFF was able to estimate by area and ZIP code the percentage of the population that would benefit from the Affordable Care Act either by being newly eligible for Medicaid or by qualifying for healthcare subsidies (KFF, 2011). The KFF estimates that 17% of the non-elderly population nationwide would benefit from the ACA and, in certain areas of California, up to 40% of the population could be helped by the proposed reform (2011).

Using the KFF data tables in the Appendix showing the estimated percent of the population by ZIP code within the Public Use Microdata areas (indicated by number) that would benefit from the ACA, each county within the study region would see benefits from ACA summarized in the Appendix. In the tri-county region, Monterey County would gain the most with an estimated 19% of the non-elderly population benefitting from ACA. An even greater number (23%) of residents in selected cities throughout Monterey County are projected to gain benefits from health care reform including parts of Salinas (93907), Carmel (93920, 93923, and 93924), Marina (93933), Monterey City (93940), Pacific Grove (93950), Pebble Beach (93953), Seaside (93955), and Castroville (95012).

San Benito County residents would also benefit from implementation of ACA, although at a slightly lower rate from Monterey County residents, at 18% of the non-elderly population. Although Santa Cruz County residents are also projected to benefit from implementation of ACA, a lower percentage (15%) overall are expected to see benefits.

[21] Data for African American residents' dental insurance status were unavailable. Monterey County Summary Data as of June 2011.

PROFILE OF SAFETY NET PROVIDERS THAT SERVE RESIDENTS OF MONTEREY COUNTY

Regional Safety Net providers System Overview

One of the goals of this study is to understand the safety net providers' provision capacity from a regional point of view, thus this section expands the overview of Monterey county Safety Net Provider by including clinics and hospitals in San Benito County and the southern region of Santa Cruz County (Providers in the Watsonville area). The geographical concentration of providers in this section is depicted in Map 21. Additionally, Table 4 presents a list of safety net providers included in the report and distinguishes those for which utilization and financial data was available from OSHPD, the Monterey County Health Department (for county clinics), and those for which no data was available at this phase of the study. As Table 4 presents, this section concentrates on 41 centers identified as safety net providers of which 21 have available utilization data from OSHPD for calendar year 2010, seven of them have available utilization data from the Monterey county health department, and 7 had no available data. Further, out of the 34 providers with available data, 6 were identified as hospitals and 27 as primary care centers.

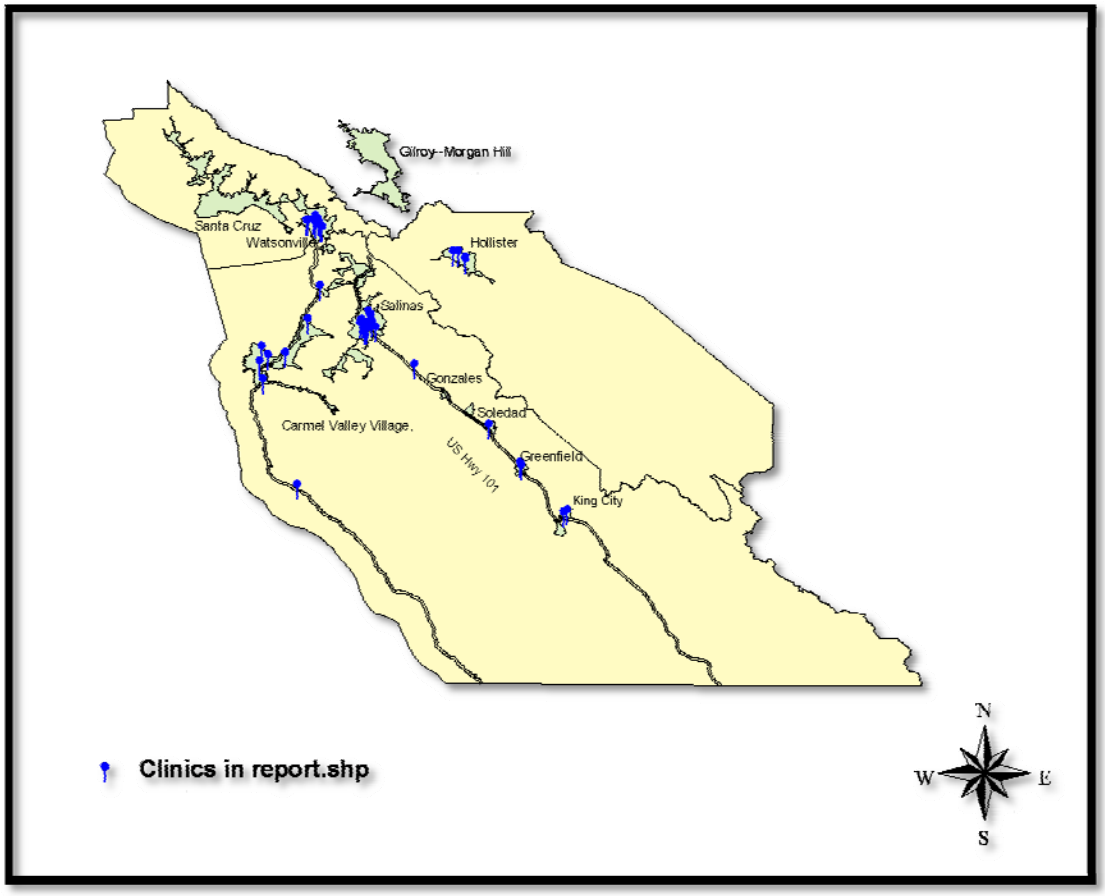
It is important to note that because hospitals follow different data reporting procedures and offer different types of services than most primary care providers; this overview looks at hospitals and primary care providers separately. Further, because dental service provided by the safety net system is an important current issue for the county, this overview presents a detailed examination of clinics that offer dental services for providers with available utilization data.

This overview is organized as follows: the second part provides a detailed description of the primary care provider network's capacity in terms of providers' personnel patient characteristics, and revenue sources; the third part describes dental services capacity considerations; the fourth section explores hospital's utilization and revenue sources while fifth section concludes.

Table 4. Providers identified in Monterey, San Benito, and (south) Santa Cruz

County	Provider	Utilization Data
Monterey	COMMUNITY HOSPITAL OF THE MONTEREY PENINSULA	Hospital OSHPD
Monterey	GEORGE L. MEE MEMORIAL HOSPITAL	Hospital OSHPD
Monterey	NATIVIDAD MEDICAL CENTER	Hospital OSHPD
Monterey	SALINAS VALLEY MEMORIAL HOSPITAL	Hospital OSHPD
Monterey	LAUREL FAMILY PRACTICE	MCHD
Monterey	LAUREL WOMENS HEALTH	MCHD
Monterey	LAUREL PEDIATRIC	MCHD
Monterey	LAUREL INTERNAL MEDICINE	MCHD
Monterey	ALISAL HEALTH CENTER	MCHD
Monterey	MARINA CLINIC	MCHD
Monterey	SEASIDE FAMILY HEALTH CENTER	MCHD
Monterey	GONZALES MEDICAL GROUP	None
Monterey	SOLEDAD MEDICAL CLINIC	None
Monterey	CLINICA DE SALUD DEL VALLE DE SALINAS - ALVIN	OSHPD
Monterey	CLINICA DE SALUD DEL VALLE DE SALINAS - CASTROVILLE	OSHPD
Monterey	CLINICA DE SALUD DEL VALLE DE SALINAS - GREENFIELD	OSHPD
Monterey	CLINICA DE SALUD DEL VALLE DE SALINAS - KING CITY	OSHPD
Monterey	CLINICA DE SALUD DEL VALLE DE SALINAS - SALINAS	OSHPD
Monterey	CLINICA DE SALUD DEL VALLE DE SALINAS-MHC (HOMES)	OSHPD
Monterey	CLINICA DE SALUD DEL VALLE DE SALINAS-SANBORN	OSHPD
Monterey	CLINICA DE SALUD DEL VALLE DE SALINAS-SOLEDAD	OSHPD
Monterey	COMMUNITY ORAL HEALTH SERVICES - MOBILE UNIT 1	OSHPD
Monterey	COMMUNITY ORAL HEALTH SERVICES - MOBILE UNIT NO.3	OSHPD
Monterey	BIG SUR HEALTH CENTER	OSHPD
Monterey	PENINSULA PRIMARY CARE	OSHPD
Monterey	BLIND AND VISUALLY IMPAIRED CENTER OF MONTEREY CO	OSHPD
Monterey	PLANNED PARENTHOOD - GREENFIELD	OSHPD
Monterey	PLANNED PARENTHOOD - SALINAS	OSHPD
Monterey	PLANNED PARENTHOOD - SEASIDE	OSHPD
San Benito	HAZEL HAWKINS MEMORIAL HOSPITAL	Hospital OSHPD
San Benito	PLANNED PARENTHOOD MAR MONTE, INC. SAN BENITO H/C	OSHPD
San Benito	SAN BENITO HEALTH FOUNDATION	OSHPD
Santa Cruz	WATSONVILLE COMMUNITY HOSPITAL	Hospital OSHPD
Santa Cruz	CAESAR CHAVEZ SBHC	None
Santa Cruz	DIABETES HEALTH CENTER	None
Santa Cruz	SALUD PARA LA GENTE GREEN VALLEY CLINIC	None
Santa Cruz	SOUTH COUNTY MENTAL HEALTH	None
Santa Cruz	WATSONVILLE HEALTH CENTER	None
Santa Cruz	CLINICA DEL VALLE DEL PAJARO	OSHPD
Santa Cruz	PLANNED PARENTHOOD - WATSONVILLE	OSHPD
Santa Cruz	SALUD PARA LA GENTE CLINIC	OSHPD

Map 21. Safety Net Providers Included in Report



Regional Primary Care Providers

In 2010, the Safety-Net providers in Monterey, San Benito, and the Watsonville area for which data was available reported 443,558 encounters with patients in 2010. The last column in Table 5 presents a summary of the system's patient encounters by the type of primary provider they saw in each visit. As the table shows, most of the system encounters involved a physician (47%) or a dentist (14%) followed by family nurse practitioners (14%) and physician assistants (12%). When comparing providers with OSHPD data in San Benito County to those in the Watsonville area, some interesting findings emerge. San Benito county personnel served more encounters per FTE than their Santa Cruz counterparts in all comparable categories. San Benito county dentists serving in the safety net system, for example, served 3 times more encounters per FTE than their Watsonville area counterparts. Unfortunately, Monterey county personnel could not be aggregated to obtain a total FTE county to offer comparisons across counties.[22]

[22] OSHPD requires providers to file personnel data using FTE and such data are readily available from the OSHPD database. FTE data for clinics that do not file data to OSHPD was not readily available for this phase of the report and thus could not be aggregated.

Table 5. Primary care staff and encounters

Type of Primary Provider	Santa Cruz		San Benito		Monterey			Total
	FTE	Encounters	FTE	Encounters	FTE/head count		Encounters	Encounters
					OSHPD clinics (FTE)	County clinics (head count)		
Physician	11.38	45485	3.75	16649	14.43	66	147,481	209,615
Physician Assistants	1.23	12284	0.26	3217	4.54	3	37,569	53,070
Resident						28	9,125	9,125
Family Nurse Practitioners	2.57	8319	2.05	9008	8.25	7	43,211	60,538
Certified Nurse Midwives	0	0	0	7	0		4,662	4,669
Visiting Nurses	0	0	0	0	0		0	0
Dentists	7.16	9962	3.15	12574	9.81		38,311	60,847
Registered Dental Hygienists (Alternative Practice)	0	0	0	0	0		0	0
Psychiatrists	0	0	0	0	0	2	74	74
Psychiatric Nurse Practitioner						1	514	514
Clinical Psychologists	0	0	0	0	0.8		1,972	1,972
Licensed Clinical Social Workers (LCSW)	0	0	0	0	0		0	0
Other Providers billable to Medi-Cal	0	4	0	257	2.16		9,694	9,955
Other Certified CPSP providers not listed	5.71	14545	0	963	5.4	11	18,081	33,589
Total	28.05	90599	9.21	42675	45.39	118	310,284	443,558

In 2010 the system primary care providers gave service to 137,570 patients of whom 78% were Hispanic. As Table 6 presents, about 2% of patients were black, 85% were white (which in OSHPD classification includes Hispanic) and the rest were from other racial backgrounds or did not report their race. When looking at the ethnicity distributions across counties there are not substantially different.

About 40% of the patients serviced in 2010 by the safety net clinics reported having an income below the federal poverty level, and 51% of patients reported having an income lower than 200% of the federal poverty level. Only 6 % of patients serviced by the clinics reported having an income above 200% of the federal poverty level, and incomes could not be determined for about 45% of the patients. The distribution of poverty levels is shown in Table 7. Interestingly, patients served by San Benito County were more likely to report their income (only 13% did not report their income), and in this county, 77% of the total number of patients served reported being below the federal poverty level.

Table 6. Patients' Race and Ethnicity

	Santa Cruz		San Benito		Monterey		Total	
Race	**Patients**	**%**	**Patients**	**%**	**Patients**	**%**	**Patients**	**%**
White (include Hispanic)	22,840	84.82	10,820	94.79	83,086	83.52	116,746	84.86
Black	40	0.15	65	0.57	2,164	2.19	2,269	1.65
Native American / Alaskan Native	838	3.11	57	0.50	175	0.18	1,070	0.78
Asian / Pacific Islander	141	0.52	109	0.95	3,364	3.40	3,614	2.63
More than one race	130	0.48	100	0.88	0	0.00	230	0.17
Other / Unknown	2,939	10.91	264	2.31	10,438	10.71	13,641	9.92
Total Patients	26,928		11,415		99,227	100.00	137,570	
Ethnicity	**Patients**	**%**	**Patients**	**%**	**Patients**	**%**	**Patients**	**%**
Hispanic	23,794	88.36	9,469	82.95	73,569	73.88	106,832	77.66
Non-Hispanic	2,587	9.61	1,664	14.58	15,813	15.88	20,064	14.58
Unknown	547	2.03	282	2.47	9,845	10.25	10,674	7.76
Total Patients	26,928		11,415		99,227		137,570	

Table 7. Patients' Poverty Level

	Santa Cruz		San Benito		Monterey		Total	
Federal poverty level	**Patients**	**%**	**Patients**	**%**	**Patients**	**%**	**Patients**	**%**
Under 100%	14,256	52.94	8,895	77.92	31,283	31.40	54,434	39.57
100 - 200%	2,409	8.95	772	6.76	12,146	12.19	15,327	11.14
Above 200%	263	0.98	223	1.95	6,360	6.38	6,846	4.98
Unknown	10,000	37.14	1,525	13.36	50,132	50.73	61,657	44.82
Total	26,928		11,415		99,227		137,570	

Table 8 shows the distribution of patients by age and gender and county. For simplicity, the table shows only the number of female patients, the total number of patients, and the percentage of patients for each age group across different counties. As the table shows, differences across counties are negligible. In general, patients seen by these clinics across the system tend to be generally young. About 82% of them were below the age of 45. Interestingly, the group that these clinics see most frequently is that of females between 20 and 34 years of age. That group comprises 23% of all the patients served in the clinics. Another interesting finding in Table 8 is the difference in patient's gender across different age groups. For patients below the age of 14 similar numbers of female and male patients are served by the clinics. However for the 15-19 and the 35-44 age groups, the number of female patients is 2.5 and 2.3 times the number of male patients respectively. For the 20-34 age group, the number of female patients is 3 times as high as the number of male patients. These gender disparity decreases again for patients 45 years of age or older, but the large disparities in the 15-44 age groups still makes the total number of

female patients to be almost twice as large as the number of male patients (about 65% of all patients were female).

Table 8. Patients' Age and Gender (Female patients)

	Santa Cruz			San Benito			Monterey			Total		
Age Group	F	Total	Total %	F	Total	Total %	F	Total	Total %	F	Total	Total %
Under 1 year	701	1,401	5.20	164	311	2.72	1,973	4,143	4.16	2,838	5,855	4.26
1 - 4 years	1,558	3,147	11.69	607	1,194	10.46	6,243	12,648	12.69	8,408	16,989	12.35
5 - 12 years	1,885	3,779	14.03	751	1,450	12.70	6,985	14,095	14.15	9,621	19,324	14.05
13 - 14 years	414	785	2.92	161	292	2.56	1,322	2,452	2.46	1,897	3,529	2.57
15 - 19 years	1,960	3,373	12.53	990	1,359	11.91	6,808	9,123	9.16	9,758	13,855	10.07
20 - 34 years	4,753	8,204	30.47	2,768	3,679	32.23	23,157	27,552	27.65	30,678	39,435	28.67
35 - 44 years	1,547	2,827	10.50	926	1,342	11.76	7,479	9,701	9.74	9,952	13,870	10.08
45 - 64 years	1,435	2,815	10.45	876	1,458	12.77	7,932	12,471	12.52	10,243	16,744	12.17
65 and over	288	597	2.22	189	330	2.89	4,215	7,042	7.07	4,692	7,969	5.79
Total	14,541	26,928		7,432	11,415		66,114	99,227		88,087	137,570	

By definition, safety net providers serve the population that may not be able to afford other types of health services. Table 9 illustrates the type of the systems patients' coverage in 2010. As the table illustrates, 25% of the patients served by the clinics fell under the "self- pay / sliding fee" category while 41% of the patients were covered by Medi-Cal (traditional or managed care). Medicare patients only comprised about 8% of the total patient mix, and only 11% of patients reported having some type of private insurance in 2010. When looking at county comparisons, Santa Cruz and San Benito patients are more likely than Monterey county patients to be under the "self- pay / sliding fee" category. While about 40% of patients in Santa Cruz and San Benito clinics analyzed fell under the "self- pay / sliding fee" category only 25% of Monterey patients were reported in this category. This difference is important when considering the system's revenue sources.

Table 9. Patient Coverage

	Santa Cruz		San Benito		Monterey		Total	
Coverage Type	Patients	%	Patients	%	Patients	%	Patients	%
Medicare	555	2.06	147	1.29	7,368	7.39	8,070	5.87
Medi-Cal	4,806	17.85	3,409	29.86	14,623	14.68	22,838	16.60
Medi-Cal - Managed Care	4,284	15.91	28	0.25	29,259	29.37	33,571	24.40
County Indigent / CMSP / MISP	0	0.00	140	1.23	0	0.00	140	0.10
Healthy Families	638	2.37	224	1.96	2,183	2.19	3,045	2.21
Private Insurance	1,892	7.03	489	4.28	13,114	13.16	15,495	11.26
Self-Pay / Sliding Fee	9,875	36.67	4,858	42.56	19,475	19.55	34,208	24.87
Free	0	0.00	0	0.00	46	0.46	46	0.03
All Other Payers	4,878	18.11	2,120	18.57	13,160	13.21	20,158	14.65
Total Patients	26,928		11,415		99,227		137,570	

Table 10 presents patient encounters by coverage type for the year 2010 while Table 11 shows net revenues for system clinics that reported data to OSHD only[23]. The table shows that Medi-Cal covered patients represented the highest proportion of encounters in Watsonville, San Benito and Monterey. Overall, 41% of the patients served by the system in 2010 were covered by Medi-Cal, but they represented 53 % of the system encounters. This means that Medi-Cal patients are more likely to have more encounters with the system than patients under other coverage types. On the other hand, patients under "self-pay" and "private insurance" represented 36% of system patients, but only 22% of system-wide encounters. In terms of revenues for the system, the difference between the distributions of patient coverage and revenue sources are large, as shown in Table 11 Medi-Cal covered patients represented 41% of all patients in 2010, but they brought 56% of net revenues. Self-Pay patients, on the other hand, represented 27% of patients but brought only about 7% of system revenues[24].

Table 10. Patient encounters by coverage type

	Santa Cruz		San Benito		Monterey		Total	
	Encounters	%	Encounters	%	Encounters	%	Encounters	%
Medicare	2,366	2.61	633	1.48	28,324	8.21	31,323	6.55
Medicare - Managed Care	0	0.00	0	0.00	0	0.00	0	0.00
Medi-Cal	26,675	29.44	14,056	32.94	85,227	24.71	125,958	26.34
Medi-Cal - Managed Care	19,921	21.99	62	0.15	117,196	33.98	137,179	28.69
County Indigent / CMSP / MISP	0	0.00	621	1.46	0	0.00	621	0.13
Healthy Families	1,646	1.82	618	1.45	5,954	1.73	8,218	1.72
Private Insurance	5,135	5.67	1,582	3.71	35,853	10.40	42,570	8.90
Self-Pay / Sliding Fee	10,760	11.88	16,006	37.51	34,886	10.12	61,652	12.89
Free	0	0.00	0	0.00	65	0.02	65	0.01
Breast Cancer Programs*	522	0.58	1,147	2.69	2,163	0.63	3,832	0.80
CHDP	7,267	8.02	1,137	2.66	2,262	0.66	10,666	2.23
EAPC	0	0.00	0	0.00	124	0.04	124	0.03
Family PACT	15,804	17.44	6,489	15.21	32,375	9.39	54,668	11.43
Other County Programs	503	0.56	0	0.00	0	0.00	503	0.11
All Other Payers	0	0.00	324	0.76	457	0.13	781	0.16
GRAND total	90,599		42,675		344,886		478,160	

[23]Data on providers' net revenue by patient coverage type was not available for 7 Monterey county clinics, so they are not included in Table 11.
[24] This calculation involves only providers that filed data to OSHPD.

Table 11. Provider Net Revenues by Patient Coverage Type

	Santa Cruz		San Benito		Monterey		Total	
Patient Coverage Type	**$**	**%**	**$**	**%**	**$**	**%**	**$**	**%**
Medicare	241,913	2.31	85,966	2.41	1,618,187	6.73	1,946,066	5.11
Medicare - Managed Care	0	0.00	0	0.00	0	0.00	0	0.00
Medi-Cal	4,934,271	47.10	1,713,978	48.12	8,570,923	35.62	15,219,172	39.95
Medi-Cal - Managed Care	1,154,349	11.02	8,180	0.23	4,860,523	20.20	6,023,052	15.81
County Indigent / CMSP / MISP	0	0.00	68,159	1.91	0	0.00	68,159	0.18
Healthy Families	96,237	0.92	38,291	1.07	725,716	3.02	860,244	2.26
Private Insurance	423,795	4.05	149,312	4.19	1,554,091	6.46	2,127,198	5.58
Self-Pay / Sliding Fee	456,691	4.36	469,801	13.19	1,723,522	7.16	2,650,014	6.96
Free	0	0.00	0	0.00	0	0.00	0	0.00
Breast Cancer Programs	22,483	0.21	36,848	1.03	69,148	0.29	128,479	0.34
CHDP	595,015	5.68	141,187	3.96	297,007	1.23	1,033,209	2.71
EAPC	-67,639	-0.65	0	0.00	0	0.00	-67,639	-0.18
Family PACT	2,177,466	20.79	850,127	23.87	4,649,478	19.32	7,677,071	20.15
PACE Program	0	0.00	0	0.00	0	0.00	0	0.00
LA Co. Public Private Partnership	0	0.00	0	0.00	0	0.00	0	0.00
Alameda Alliance for Health	0	0.00	0	0.00	0	0.00	0	0.00
Other County Programs	440,844	4.21	0	0.00	0	0.00	440,844	1.16
All Other Payers	0	0.00	166	0.00	20,932	0.09	21,098	0.06
GRAND total	10,475,425		3,562,015		24,061,727		38,099,167	

Regional Dental Services

Out of the 34 primary care providers with available data in the system, 11 reported having dentist on staff. The geographical location for these providers and their total number of dentists (FTE equivalent) is depicted in Map 22. In addition, Table 12 shows a distribution of dentist FTE by county and provider in its third column. As the table shows, these 11 providers served 60,847 encounters with an equivalent of 20.12 full-time dentists (FTE). The 5th column in Table 12 presents the encounters served by each FTE equivalents in the year 2010 by provider and county. Interestingly there is wide variation on the total number of encounters served and the caseloads for dentist across providers in 2010. Dentists at the CSVS-Alvin, for example served the most encounters per dentist FTEs. During 2010 dentist in this clinic 16,400 encounters with 2.99 FTE. This resents a total of 5,485 patient encounters per FTE. The second clinic with the highest encounters per FTE was the only provider in San Benito County with available data. In this clinic (San Benito Health Foundation) the 3.17 FTE equivalent dentists served around 4,000 per FTE.

The geographic distribution of providers with available dental services depicted in Map 22 shows that in 2010 all the providers with dentists within Monterey county were situated along Hwy 101 (with the exception of CSVS-Castroville). There no identified providers in the peninsula region or the northern part of the county.

Map 22. Primary care providers Dentist FTEs

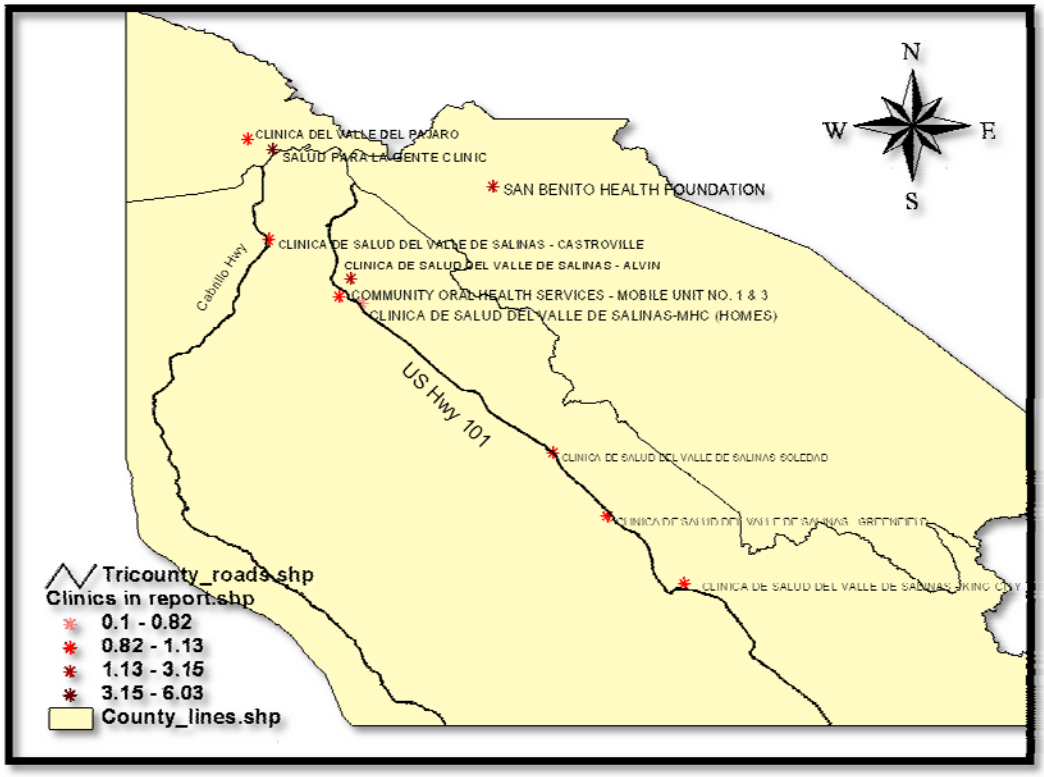


Table 12. Dentist FTE and encounters in 2010

County	Provider	Total Dentist FTE	Patient encounters in 2010	Encounters per FTE
Monterey	CLINICA DE SALUD DEL VALLE DE SALINAS - ALVIN	2.99	16,400	5,485
Monterey	CLINICA DE SALUD DEL VALLE DE SALINAS - CASTROVILLE	1	3,930	3,930
Monterey	CLINICA DE SALUD DEL VALLE DE SALINAS - GREENFIELD	1.01	4,554	4,509
Monterey	CLINICA DE SALUD DEL VALLE DE SALINAS - KING CITY	1	3,854	3,854
Monterey	CLINICA DE SALUD DEL VALLE DE SALINAS-MHC (HOMES)	0.82	1,524	1,859
Monterey	CLINICA DE SALUD DEL VALLE DE SALINAS-SOLEDAD	0.99	3,427	3,462
Monterey	COMMUNITY ORAL HEALTH SERVICES - MOBILE UNIT 1	1	2,411	2,411
Monterey	COMMUNITY ORAL HEALTH SERVICES - MOBILE UNIT NO.3	1	2,211	2,211
Total Monterey County		**9.81**	**38,311**	**3,905**
San Benito	SAN BENITO HEALTH FOUNDATION	3.15	12,574	3,992
Total San Benito County		**3**	**12,574**	**3,992**
Watsonville area (Santa Cruz)	SALUD PARA LA GENTE CLINIC	6.03	8,151	1,352
Watsonville area (Santa Cruz)	CLINICA DEL VALLE DEL PAJARO	1.13	1,811	1,603
Total Watsonville area (Santa Cruz)		**7**	**9,962**	**2,954**
Overall Total		**20.12**	**60,847**	**10,851**

Source: OSHPD primary care providers complete database 2010.

Regional Hospital Overview

This section describes some key indicators reflecting capacity in the region's hospitals. The system analysis involved 6 hospitals located in Monterey County, San Benito County, and the Watsonville area of Santa Cruz County. The specific hospitals included in the data tables are: Community Hospital of the Monterey Peninsula, George L. Mee Memorial Hospital, Natividad Medical Center, Salinas Valley Memorial Hospital, Hazel Hawkins Memorial Hospital, and Watsonville Community Hospital. Together these hospitals reported 1,101 licensed beds, of which 832 were reported as staffed as shown in Table 13.

Table 13. Licensed, Available, and Staffed Beds

Beds	Number
Licensed Beds (End of Period)	1,101
Available Beds (Average)	1,000
Staffed Beds (Average)	832

The hospitals in the region destined the majority of their resources to provide acute care services. As Table 14 shows, in 2010, the group of hospitals used about 82% of their licensed beds for acute care; about 76% of their patients (in census days) were in acute care and these produced 95% of the patient discharges. The second most important type of care provided by the group of hospitals was long term care which represented about 13% of their capacity in licensed beds and represented 19% of their patients. Psychiatric, chemical dependence, and rehabilitation care, together, used about 5 % of the group's capacity.

Table 14. Licensed Beds, Patients, and Discharges by type of care

	Licensed Beds		Patient (Census) Days		Discharges	
Type of Care	#	%	#	%	#	%
Acute Care	899	81.65	172,093	75.81	38,338	95.11
Psychiatric Care	36	3.27	6,906	3.04	1,306	3.24
Chemical Dependency Care	0	0.00	0	0.00	0	0.00
Rehabilitation Care	20	1.82	4,801	2.12	376	0.93
Long-term Care	146	13.26	43,195	19.03	291	0.72
Residential & Other Daily Services	0	0.00	0	0.00	0	0.00
Total	1,101	100	226,995	100	40,311	100

The financial characteristics of the regional hospitals reveal an interesting difference between the distribution of patients by payer source and the distribution of hospital revenues by payer source. As Table 15 shows (in its third column), 37% of their patients were covered by Medicare (traditional and managed care) but these patients only produced 22% of the hospital's revenue (column 7). Similarly, in 2010, Medi-Cal (traditional and managed care) patients represented 37% of patients, but only 18% of the revenues. These shortfalls in revenues from Medicare and

Medical were covered by patients covered by "other third parties" who represented about 19% of the total number of patients, but brought 57% of the hospitals revenues.

Table 15. Patient and discharges net revenue by payer source

	Patient (Census) Days		Discharges		Net Patient Revenue	
Payer Source	**#**	**%**	**#**	**%**	**$**	**%**
Medicare-Traditional	82,587	36.38	14,357	35.62	241,598,686	21.14
Medicare-Managed Care	2,191	0.97	480	1.19	10,379,513	0.91
Medi-Cal-Traditional	47,057	20.73	6,017	14.93	119,601,183	10.47
Medi-Cal-Managed Care	36,366	16.02	6,077	15.08	90,842,877	7.95
County Indigent Programs-Traditional & Man. Care	2,104	0.93	577	1.43	3,086,860	0.27
Other Third Parties-Traditional	28,035	12.35	6,262	15.53	376,870,142	32.98
Other Third Parties-Managed Care	16,731	7.37	4,650	11.54	274,625,717	24.03
Other Indigent	2,532	1.12	542	1.34	0	0.00
Revenue Other Payers	9,392	4.14	1,349	3.35	25,671,878	2.25
Total	226,995	100	40,311	100	1,142,676,856	100

Conclusions:

This section presented a general picture of the safety net primary care providers and hospitals network in San Benito, the Watsonville area of Santa Cruz, and Monterey County. As a group these providers served 364,565 patients in 2010. Medi-Cal covered represented about 37% of hospitals patients and about 56% of primary care providers.

Comparisons of primary care providers across counties reveal subtle differences across counties in staffing, and capacity in specific areas (especially dentists and mental health specialists), but the type of population demographics served by the system are very similar in terms of poverty levels, age, race, ethnicity, and gender across county lines.

At the system level, Medi-Cal represents the largest source of net revenues, when comparing safety-net providers' patient coverage and revenue sources across counties subtle differences emerge. While Watsonville and Monterey county providers were very similar in terms of patient coverage and net revenue sources, San Benito County providers tend to rely more on Self-Pay patients and less on Medi-Cal patients as a source of net revenue than their Watsonville and Monterey counterparts.

MONTEREY COUNTY SAFETY NET OVERVIEW

Introduction

The previous section provided an overview of safety net providers at the regional level. This section concentrates on Monterey County and focuses on county capacity as opposed to comparisons across counties. This section concentrates on the network of 29 safety-net providers in Monterey County that includes 25 primary care providers and 4 hospitals. Table 1 presents a

list of the safety net providers in the network and identifies the data sources used to complete the Monterey county overview.

Just as in the regional system overview, hospitals are described separately from primary care providers and this section is organized as follows: the second part provides information on the primary care provider network's capacity in terms of personnel, patient characteristics, and revenue sources; the third part describes hospital's utilization and revenue sources separately from those of primary care providers, and the fourth section concludes.

Safety Net Primary Care Providers

As Table 16 presents, an initial count of 25 primary care providers was found in Monterey County. Data on utilization and financial information was available for 23 providers either through the most recent OSHPD database (2010) or the County Health Department. Data was not available for two other clinics for this phase of the report (Gonzales Medical Group, and Soledad Medical Clinic). Locations for the 23 providers with available data are shown in Map 23. As the map shows, the majority of these providers are located in urban centers (as defined by the census bureau urban area boundaries) with the exception of "Big Sur Heath Center" and "Clinica de Salud del Valle de Salinas in Chualar."

In 2010, the 23 primary care providers in Monterey County had 310,284 encounters with patients that involved a primary provider (i.e. excludes support staff). Table 17 presents a distribution of these encounters by type of primary provider. As the table shows, about 60% of encounters involved a physician or a physician assistant. The number of employees for county clinics and non-county clinics are not added because of differences in reporting definitions, but the table still provides interesting insights regarding the shortages in certain specialties. The network, for example, counts with 2 psychiatrists and 1 psychiatric nurse practitioner at Seaside health center and the equivalent of a clinical psychologist working at 80% time at CSVS-Salinas that attended 74, 514, and 1,695 patient encounters respectively. Similarly the safety net network counts with the equivalent of 9.81 full time dentists attending 38,311 patient encounters in 2010 (about 4,000 encounters per FTE per year).

Table 16. Monterey County safety-net primary care providers

Provider	OSHPD / County data available
CLINICA DE SALUD DEL VALLE DE SALINAS - ALVIN	OSHPD
CLINICA DE SALUD DEL VALLE DE SALINAS - CASTROVILLE	OSHPD
CLINICA DE SALUD DEL VALLE DE SALINAS - GREENFIELD	OSHPD
CLINICA DE SALUD DEL VALLE DE SALINAS - KING CITY	OSHPD
CLINICA DE SALUD DEL VALLE DE SALINAS - SALINAS	OSHPD
CLINICA DE SALUD DEL VALLE DE SALINAS-MHC (HOMES)	OSHPD
CLINICA DE SALUD DEL VALLE DE SALINAS-SANBORN	OSHPD
CLINICA DE SALUD DEL VALLE DE SALINAS-SOLEDAD	OSHPD
COMMUNITY ORAL HEALTH SERVICES - MOBILE UNIT 1	OSHPD
COMMUNITY ORAL HEALTH SERVICES - MOBILE UNIT NO.3	OSHPD
LAUREL FAMILY PRACTICE	County
LAUREL WOMENS HEALTH	County
LAUREL PEDIATRIC	County
LAUREL INTERNAL MEDICINE	County
ALISAL HEALTH CENTER	County
MARINA CLINIC	County
SEASIDE FAMILY HEALTH CENTER	County
BIG SUR HEALTH CENTER	OSHPD
PENINSULA PRIMARY CARE	OSHPD
BLIND AND VISUALLY IMPAIRED CENTER OF MONTEREY CO	OSHPD
PLANNED PARENTHOOD – GREENFIELD	OSHPD
PLANNED PARENTHOOD – SALINAS	OSHPD
PLANNED PARENTHOOD – SEASIDE	OSHPD
GONZALES MEDICAL GROUP	None
SOLEDAD MEDICAL CLINIC	None
COMMUNITY HOSPITAL OF THE MONTEREY PENINSULA	Hospital OSHPD
GEORGE L. MEE MEMORIAL HOSPITAL	Hospital OSHPD
NATIVIDAD MEDICAL CENTER	Hospital OSHPD
SALINAS VALLEY MEMORIAL HOSPITAL	Hospital OSHPD

Map 23. Monterey county safety-net primary care providers

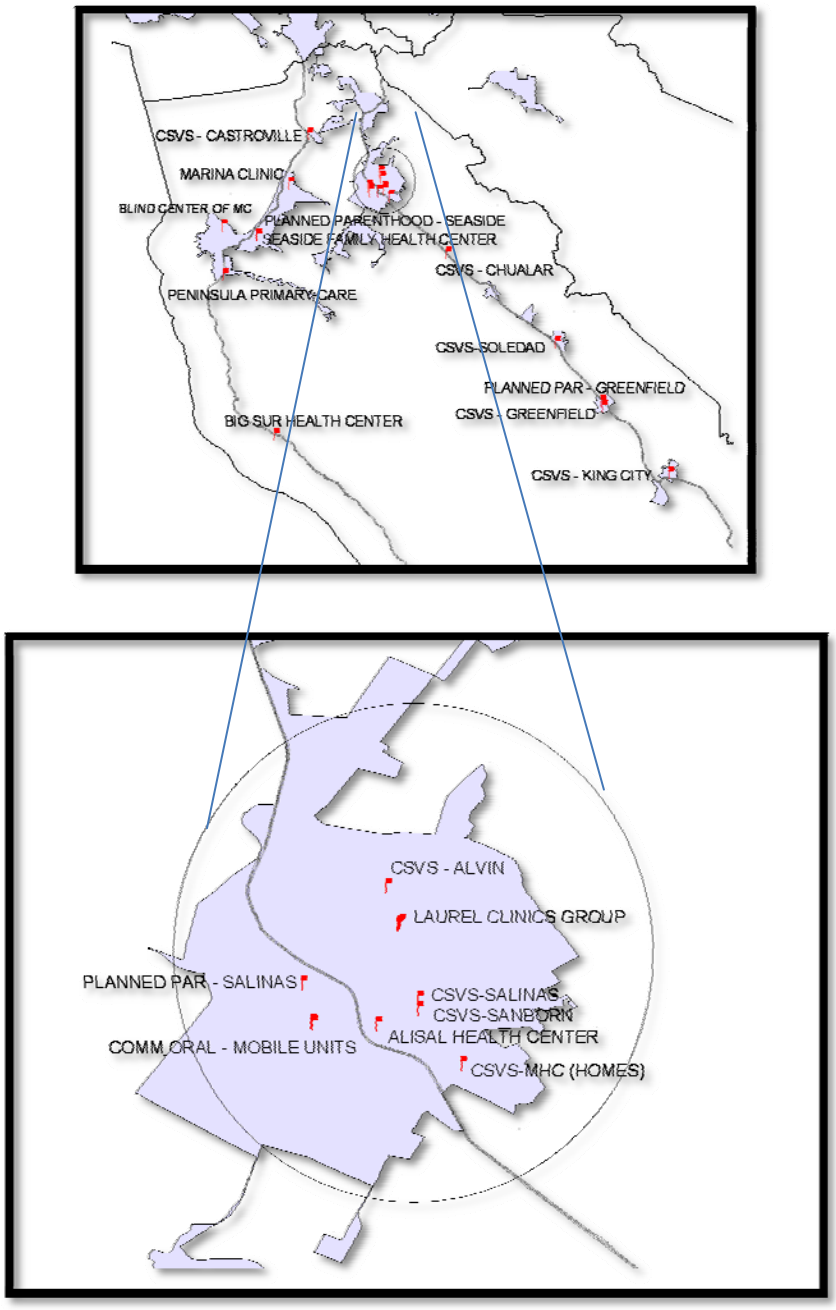


Table 17. Patient encounters by primary provider personnel in 2010

Primary Providers	OSHPD Providers (FTE)	County providers (head count)**	Encounters (primary providers only)
Physician	14.43	66	147,481
Physician Assistants	4.54	3	37,569
Resident		28	9,125
Family Nurse Practitioners	8.25	7	43,211
Certified Nurse Midwives	0		4,662
Visiting Nurses	0		0
Dentists	9.81		38,311
Registered Dental Hygienists (Alternative Practice)	0		0
Psychiatrists	0	2	74
Psychiatric Nurse Practitioner		1	514
Clinical Psychologists	0.8		1,695
Licensed Clinical Social Workers (LCSW)	0		0
Other Providers billable to Medi-Cal	2.16		9,694
Other Certified CPSP providers not listed above	5.4	11	18,081
Total	45.39	118	310,284

* County reports are for fiscal year 2010 while OSHPD data reports are for calendar years

** Personnel data was not aggregated because County data is not reported on a FTE equivalent basis.

The 23 primary care providers attended 99,222 patients in the year 2010. About 84% of those patients reported being white (including Hispanic), 2% were black, and 3.4 % were Asian or Pacific Islander. When asked for their ethnicity, almost 74% of patients reported being of Hispanic descent. Table 18 describes the distribution of patients' race and ethnicity in detail.

Table 18. Patient Race and Ethnicity

Race	Patients	%
White (include Hispanic)	83,086	83.52
Black	2,164	2.19
Native American / Alaskan Native	175	0.18
Asian / Pacific Islander	3,364	3.40
More than one race	0	0.00
Other / Unknown	10,438	10.71
	99,227	**100.00**
Ethnicity	**Patients**	**%**
Hispanic	73,569	73.88
Non-Hispanic	15,813	15.88
Unknown	9,845	10.25
Total Patients	**99,227**	**100.00**

By definition safety net clinics provide care for patients who may not be able to afford care in other places. Table 19 presents the distribution of poverty level as reported by patients in 2010. As the table depicts, when considering all clinics in the network, just under half of patients (44%) reported incomes being under 200% the federal poverty line. This percentage, however, is masked by the fact that about 50% of the patients did not report their income. Most patients attending county clinics did not report their income in 2010, but when looking at patients from clinics that reported OSHPD data the percentage of patients reporting incomes below 200% poverty level reaches about 65% of the total number of patients.

Table 19. Patients' Poverty Level

Federal poverty level	Patients	%
Under 100%	31,283	31.40
100 - 200%	12,146	12.19
Above 200%	6,360	6.38
Unknown	50,132	50.73
Total	**99,227**	**100**

Table 20 shows the distribution of patients who attended safety net primary care provider clinics in 2010. As the table shows, patients seen by these clinics tend to be generally young. About 80% of them were below the age of 45. Interestingly, the group that these clinics see most frequently is that of females between 20 and 34 years of age. That group comprises 23% of all the patients served in the clinics. Another interesting finding in Table 20 is the difference in patient's gender across different age groups. For patients below the age of 14 similar numbers of female and male patients are served by the clinics (i.e. the ration of female to male patients is close to 1). However for the 15-19 and the 35-44 age groups, the number of female patients is 2.9 and 3.37 times the number of male patients respectively. The largest gender difference takes place for the 20-34 age group. In that age group the number of female patients is 5.27 times as high as the number of male patients. The gender disparity decreases again for patients 45 years of age or older, but the large disparities in the 15-44 age groups still makes the total number of female patients seen by the safety net providers in Monterey county to be twice as large as the number of male patients.

Table 20. Patient age and gender in 2010

Age	Patients			% of total	Female to male ratio
	Male	Female	Total		
Under 1 year	2,170	1,973	4,143	4.16	0.91
1 - 4 years	6,405	6,243	12,648	12.69	0.97
5 - 12 years	7,110	6,985	14,095	14.15	0.98
13 - 14 years	1,130	1,322	2,452	2.46	1.17
15 - 19 years	2,315	6,808	9,123	9.16	2.94
20 - 34 years	4,395	23,157	27,552	27.65	5.27
35 - 44 years	2,222	7,479	9,701	9.74	3.37
45 - 64 years	4,539	7,932	12,471	12.52	1.75
65 and over	2,827	4,215	7,042	7.07	1.49
Total	**33,113**	**66,114**	**99,227**	**100**	**2.00**

Beyond patient demographic characteristics, patient coverage type illustrates in more detail the nature of clients served by safety net providers in Monterey County. As Table 21 illustrates, about 44% of patients served by the providers were covered by either Medical (15%) or medical's managed care program (29%). Making Medi-Cal the most common coverage for patients seen by these clinics in 2010. About 20 % of the patients served by the clinics fell under the "self- pay / sliding fee" category making it the second most frequent category. The third most frequent category was that of "all other payers" (13 %) which includes all programs not included in the table that reimbursed providers for their services. Finally, about 13% of patients seen by the clinics had some type of private insurance, while Medicare patients only comprised about 7% of the total patient mix for these clinics in 2010. The low number of Medicare covered patients was not surprising given the age groups that are most likely to seek services by safety net providers.

Table 21. Patient Coverage

Coverage	Patients	%
Medicare	7,368	7.39
Medi-Cal	14,623	14.68
Medi-Cal - Managed Care	29,259	29.37
Healthy Families	2,183	2.19
Private Insurance	13,114	13.16
Self-Pay / Sliding Fee	19,475	19.55
Free	46	0.46
All Other Payers	13,160	13.21
Total Patients	**99,227**	**100.00**

In addition to painting a picture of the nature of clients served by the system of primary care providers, the types of patient coverage also provide information on the system's sources of revenue. As Table 22 presents, out of the 344,886 patient encounters the system of primary care clinics served in 2010, almost 60% were covered by Medi-Cal, and 20% by "self-pay" (10%) or some type of "private insurance" (10%). Further, when comparing these figures to those in Table 22 it is clear that Medi-Cal covered patients represent a higher proportion of total encounters than those covered by private insurance and "self-pay" patients.

The high representation of Medi-Cal encounters experienced by these clinics is also reflected in the revenues collected by the county safety net network. Table 23 presents patient encounters and revenues by payer source for the group of clinics that reported data to OSHPD. As the table shows, the 16 clinics that report data to OSHPD together produced net revenues of $24,061,727 in 2010. Interestingly, as the table shows, "Medi-Cal", "Medi-Cal managed care", accounted for about 56% of the system's net revenues but also comprised 47% of the patient encounters for that year. On the other hand, "Self-Pay/Sliding Fee" and "Private Insurance" covered encounters accounted for about 21% of total encounters but they only accounted for 13.6% of the net revenue. Given that county clinics (which are not included in Table 23) have a higher proportion of Medi-Cal encounters (82% of total encounters) than OSHPD clinics, reliance on Medi-Cal payments for the system's revenues as a whole may even be higher than what is reflected in Table 23.

Table 22. Encounters by payer source

Pay Source	Patient Encounters (All)	%
Medicare	28,324	8.21
Medicare - Managed Care	0	0.00
Medi-Cal	85,227	24.71
Medi-Cal - Managed Care	117,196	33.98
County Indigent / CMSP / MISP	0	0.00
Healthy Families	5,954	1.73
Private Insurance	35,853	10.40
Self-Pay / Sliding Fee	34,886	10.12
Free	65	0.02
Breast Cancer Programs*	2,163	0.63
CHDP	2,262	0.66
EAPC	124	0.04
Family PACT	32,375	9.39
All Other Payers	457	0.13
GRAND total	**344,886**	**100.00**

Table 23. Patient Encounters and Net-Revenues for clinics reporting data to OSHPD in 2010

	Encounters		Net Patient Revenue (collected) OSHPD clinics	
Payer Source	**Count**	**%**	**$**	**%**
Medicare	16,320	8.57	1,618,187	6.73
Medi-Cal	45,520	23.90	8,570,923	35.62
Medi-Cal - Managed Care	44,773	23.51	4,860,523	20.20
County Indigent / CMSP / MISP	0	0.00	0	0.00
Healthy Families	5,954	3.13	725,716	3.02
Private Insurance	18,223	9.57	1,554,091	6.46
Self-Pay / Sliding Fee	22,498	11.81	1,723,522	7.16
Free	65	0.03	0	0.00
Breast Cancer Programs*	2,163	1.14	69,148	0.29
CHDP	2,262	1.19	297,007	1.23
EAPC	124	0.07	0	0.00
Family PACT	32,375	17.00	4,649,478	19.32
All Other Payers	184	0.10	20,932	0.09
GRAND total	190,461	100	24,061,727	100

Monterey County Hospitals

Hospitals differ significantly from primary care providers not only in the services they are able to provide, but in their administrative, utilization, and financial data reporting procedures. For this reasons we separate the analysis of hospitals from the previous analysis of primary care providers and offer a comparison of revenue sources to highlight the differences between these types of providers and their capacity in serving Monterey County residents. Four hospitals were identified in Monterey county: and considered in the following analysis: Community Hospital Of The Monterey Peninsula, George L. Mee Memorial Hospital, Natividad Medical Center, and Salinas Valley Memorial Hospital. Together these hospitals reported 819 licensed beds, of which 599 were reported as staffed as shown in Table 24.

Table 24. Licensed, Available, and Staffed Beds in 2010

Beds	**Number**
Licensed Beds (End of Period)	819
Available Beds (Average)	740
Staffed Beds (Average)	599

Monterey County hospitals destined the majority of their resources to provide acute care services. As Table 25 shows, in 2010, County hospitals used about 90% of their licensed beds for acute care; about 90% of their patients (in census days) were in acute care as well, and these

patients represented about 95% of the total patient discharges. The second most important type of care provided by the group of hospitals was long term care which represented about 4% of their capacity in licensed beds and of their patients. Rehabilitation and long-term care, together, used about 5 % of the hospitals' capacity.

Table 25. Licensed Beds, Patients, and Discharges by type of care

	Licensed Beds		Patient (Census) Days		Discharges	
Type of Care	#	%	#	%	#	%
Acute Care	744	90.84	144,106	89.19	30,328	94.71
Psychiatric Care	36	4.40	6,906	4.27	1,306	4.08
Chemical Dependency Care	0	0.00	0	0.00	0	0.00
Rehabilitation Care	20	2.44	4,801	2.97	376	1.17
Long-term Care	19	2.32	5,753	3.56	13	0.04
Residential & Other Daily Services	0	0.00	0	0.00	0	0.00
Total	819	100	161,566	100	32,023	100

The financial characteristics of the regional hospitals reveal an interesting difference between the distribution of patients by payer source and the distribution of hospital revenues by payer source. As Table 26 shows (in its third column), 41% of patients in the county hospitals were covered by Medicare (traditional and managed care), but these patients only produced 20% of the hospital's revenue (column 7). Similarly, in 2010, Medi-Cal (traditional and managed care) patients represented about 30% of patients, but only 16% of the net revenues. These shortfalls in revenues from Medicare and Medical were covered by patients covered by "other third parties" who represented about 15% of the total number of patients but brought 61% of the Monterey county hospitals' revenues.

Table 26. Patient and discharges net revenue by payer source

	Patient (Census) Days		Discharges		Net Patient Revenue	
Payer Source	#	%	#	%	$	%
Medicare-Traditional	64,880	40.16	11,700	36.54	193,818,191	20.29
Medicare-Managed Care	1,264	0.78	273	0.85	5,163,226	0.54
Medi-Cal-Traditional	15,682	9.71	4,188	13.08	78,702,985	8.24
Medi-Cal-Managed Care	32,149	19.90	5,041	15.74	69,948,642	7.32
County Indigent Programs-Traditional & Man. Care	1,624	1.01	381	1.19	1,454,602	0.15
Other Third Parties-Traditional	24,823	15.36	5,626	17.57	355,389,051	37.21
Other Third Parties-Managed Care	13,536	8.38	3,530	11.02	226,542,530	23.72
Other Indigent	1,848	1.14	379	1.18	0	0.00
Revenue Other Payers	5,760	3.57	905	2.83	24,146,962	2.53
Total	161,566	100	32,023	100	955,166,189	100

Conclusions and aspects to be addressed in Phase II study

This section presented a general picture of the safety net primary care providers and hospitals in Monterey County. The 23 (out of 25 identified) primary care providers with either county or OSHP data served more than 99,000 patients. These were likely to be Hispanic (73% of them), with incomes below the poverty level (at least 60% of them), Female (2/3 of patients were female) and relatively young (about 50% of them between 15 and 44).

When looking at the revenue sources for the primary care safety-net providers, the majority of patients served tend to be covered by Medi-Cal. In fact, 44% of the patients served by the safety net primary care network in the county were covered by Medi-Cal. Further, these patients represented 60% of total patient encounters in 2010. These figures provide evidence to the importance of Medi-Cal funds for these primary care providers. Unfortunately, data on revenues by payer source was not available for county clinics in this phase of the report to have an exact figure on how much Medi-Cal funds represent in terms of system-wide revenues. But for the portion of clinics that filed OSPHD data, Medi-Cal funds comprised about 60% of their net revenues making it the highest source of overall revenues and in terms of net revenue per patients encounter.

In terms of system capacity, and without even a spatial mismatch analysis, it is evident that the primary safety net system has low number of mental health specialists. This report did not include mental health providers, but it raises questions about capacity for the specific population served by a safety-net network. Even though a more in depth analysis of mental health providers' capacity to serve low income populations is needed, the 2 psychiatrists (head count) and the .8 FTE clinical psychologists seem insufficient to deal with the demands of the patient population in need of a safety net provision of mental health. The finding that only 1/3 of the Hispanic population who needed mental health services and were eligible for Medi-Cal received mental health services in 2008 (MCHD, 2008) raises even more questions about capacity. A similar appreciation could be made of the 9.8 FTE dentists available in the system. The second phase of this study will include a spatial analysis to identify shortages by specialty and by geographical area within the county, yet the numbers presented in this report uncover areas that need to be addressed by further research.

In terms of hospitals, our findings show that they follow a significantly different revenue structure than the primary care providers mainly because of their higher proportion of Medicare and private insurance covered patients in their payer mix. In terms of safety net clients, about 30 % of county hospitals' patients reported being covered by Medi-Cal (traditional and managed care). A more accurate picture of safety net clients served by hospitals however will be provided after the analysis of emergency room services is completed in the second phase of this study.

References

Abramson, S. S. (2012). *Holes in the net: Surveying the impact of the current economic recession on the health care safety net.* Retrieved from http://www.apha.org/NR/rdonlyres/DC0A82C1-606B-4F67-B3DD-3E14A9FB3C9B/0/1SafetyNet.pdf

Academy Health. (2011). *The impact of the Affordable Care Act on the safety net.* Retrieved from http://www.academyhealth.org/files/FileDownloads/AHPolicybrief_Safetynet.pdf

Adashi, E. Y., Geiger, J., Fine, M. D., (2010). Perspective, health care reform and primary care—The growing importance of the community health center. *New England Journal of Medicine, 362*:2047-2050. Retrieved from http://www.nejm.org/doi/full/10.1056/NEJMp1003729

Agency for Healthcare Research and Quality (AHRQ). (2012). *Patient centered medical home resource center*. Retrieved from http://pcmh.ahrq.gov/portal/server.pt/community/pcmh__home/1483/what_is_pcmh_

American College of Physicians. (2012). *Patient centered medical home.* Retrieved from http://www.acponline.org/fcgi/search?q=patient+centered+medical+home&site=ACP_Online&x=0&y=0

American Diabetes Association. (2011). *Diabetes statistics: Data from the 2011 National Diabetes fact sheet*. Retrieved from http://www.diabetes.org/diabetes-basics/diabetes-statistics/

Andrulis, D., Delbanco, T., Avakian, L., Shaw-Taylor, Y. (n.d.). *Conducting a cultural competence self-assessment.* Retrieved from http://www.consumerstar.org/pubs/Culturalcompselfassess.pdf

Applied Survey Research. (2009). 2009 Santa Cruz county homeless census & survey. Retrieved from http://www.santacruzhealth.org/pdf/2009santacruzhomelessreport.pdf.

Applied Survey Research. (2011a). *2011 Monterey & San Benito counties homeless census and survey*. Retrieved from http://www.unitedwaymcca.org/sites/unitedwaymcca.oneeach.org/files/2011_Homeless_Census_for_Monterey_County_.pdf

Applied Survey Research. (2011b). *2011 Santa Cruz county homeless census and survey*. Retrieved from http://www.appliedsurveyresearch.org/storage/database/homelessness/santacruz/SantaCruz_ExecSummary_FINAL.pdf

Benatar, S., Hughes, D., Howell, E., & Kenney, G. (2010). *Swimming upstream: Improving access to indigent health care in the midst of major economic challenges*. Retrieved from http://www.urban.org/UploadedPDF/412269-swimming-upstream.pdf

Bezruchka, S. (2012). The Hurrider I Go the Behinder I Get: The Deteriorating International Ranking of U.S. Health Status. *Annual review of Public Health, 33,* 157-173. Retrieved from http://www.annualreviews.org/eprint/iESYF775U2MwVfrxfAR2/full/10.1146/annurev-publhealth-031811-124649

Blewett, L. A., & Beebe, T. J. (2004). State Efforts to Measure the Health Care Safety Net. *Public Health Reports, 119* (2), 125-135. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1497607/

Blue Shield Foundation. (2011). *On the cusp of change: The healthcare preference of low-income Californians.* Retrieved from http://www.blueshieldcafoundation.org/sites/default/files/publications/downloadable/On_the_Cusp_of_Change_6_2011_1.pdf

Boukus, E. R., Cunningham, P. J. (2010). *Mixed Signals: Trends in Americans' Access to Medical Care, 2007-2010, Center for Studying Health System Change, Tracking Report No. 25, August 2011*. Retrieved from http://www.hschange.com/CONTENT/1233/?words=au07

Buettgens, M., & Hall, M. A. (2011). *Who will be uninsured after health insurance reform?* Retrieved from http://www.rwjf.org/coverage/product.jsp?id=71998

California Association of Public Hospitals and Health Systems (2012). *May Budget Revise: Most Vulnerable Californians Face the Greatest Risks with Cuts to Public Hospital Systems, Monday May 14, 2012, Statement by Melissa Stafford Jones, President and CEO.* Retrieved from http://www.caph.org/content/upload/AssetMgmt/PDFs/Publications/StatementOn2012May.pdf

California Department of Healthcare Services. (2010). *Medi-Cal births: Calendar year 2006.* Retrieved from http://www.dhcs.ca.gov/dataandstats/statistics/Documents/Medi-Cal%20Births%20-%20CY%202006%20%28Web%201-12-2011%29.pdf

California Department of Finance. (2012). Population Estimates for Cities, Counties, and the State — January 1, 2011 and 2012 Retrieved from http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/view.php

California Department of Public Health & California Conference of Local health officers. (2010). *County health status profiles, 2010.* Retrieved from http://www.cdph.ca.gov/pubsforms/Pubs/OHIRProfiles2010.pdf

California Department of Public Health. (2009) Vital Statistics and Population Summary Tables, Life Expectancy Data. Retrieved from http://www.cdph.ca.gov/data/statistics/Pages/VitalStatisticsandPopulationSummaryTables.aspx

California Department of Public Health. (2012). *County health status profiles.* Retrieved from http://www.cdph.ca.gov/pubsforms/Pubs/OHIRProfiles2012.pdf

California Health Interview Survey (CHIS). (2010). *Ask CHIS: Health Insurance, current coverage 2005 & 2009, Monterey and Santa Cruz counties*. Retrieved from http://www.itup.org/Reports/Statewide/2010/State_Overview_Final.pdf

California Health Care Foundation. (2011a). *Better and faster: How safety-net providers are redesigning care*. Retrieved from http://www.chcf.org/publications/2011/01/better-faster-safety-net-redesigning-care

California Healthcare Foundation. (2010). *Consumers and Health Information Technology: A National Survey, April 2010*. Retrieved June 4, 2012 from http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/C/PDF%20ConsumersHealthInfoTechnologyNationalSurvey.pdf

California Healthcare Foundation. (n.d.). *Healthcare IT glossary of terms.* Retrieved from http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/H/PDF%20HITGlossary.pdf

California Healthcare Foundation. (2011b). *Improving patient experience: A hands-on guide for safety-net clinics.* Retrieved from http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/I/PDF%20ImprovingPatientExperienceHandsOnGuide.pdf

California Healthcare Foundation. (2012). *On The Road to Meaningful Use of EHRs: A Survey of California Physicians, June 2012*. Retrieved June 9, 2012 from http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/R/PDF%20RoadMeaningfulUseEHRsPhysicians.pdf

California Healthcare Foundation. (2011c). *The State of health information technology in California*. Retrieved from http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/S/PDF%20StateHealthInfoTechnologyCA.pdf

California Healthcare Foundation. (2008a). *The state of health information technology in California: Consumer perspective.* Retrieved from http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/H/PDF%20HITConsumerSnapshot08.pdf

California Healthcare Foundation. (2008b). *The state of health information technology in California: Use among hospitals and long term care facilities.* Retrieved from http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/H/PDF%20HITHospitalsAndLTCSnapshot2.pdf

California Healthcare Foundation. (2008c). *The state of health information technology in California: Use among physicians and community clinics.* Retrieved from

http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/H/PDF%20HITAdoptionPhysicians.pdf

California Healthcare Foundation, California Health Care Almanac. (2012a). *California health care spending*. Retrieved from http://dev.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/H/PDF%20HealthCareCosts12CAQRG.pdf

California Healthcare Foundation, California Health Care Almanac. (2012b). *Health care costs 101: California addendum*. Retrieved from http://dev.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/H/PDF%20HealthCareCosts12CA.pdf

California Healthcare Foundation, California healthcare almanac. (2011). *Quick reference guide: California's uninsured*. Retrieved from http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/C/PDF%20CaliforniaUninsured2011.pdf

California Heart Disease and Stroke Prevention Program (2011). *The burden of cardiovascular disease in California: Select figure updates June 2011 (California Health Interview Survey – CHIS 2009).* Retrieved from http://www.cdph.ca.gov/programs/cvd/Documents/Cal_Burden_Revised_Figures_Sep2011.pdf

California Medi-Cal Dental Program. (n.d.). *Denti-Cal FAQs: Elimination of most adult dental services beneficiary frequently asked questions.* Retrieved from http://www.denti-cal.ca.gov/provsrvcs/FAQs/Bene_FAQs.pdf

California Penal Code Section 13700(b).

Carrier ER Yee T Stark L, National Institute for Health Care Reform (NIHCR), Matching Supply to Demand: Addressing the U.S. Primary Care Workforce Shortage, Policy Analysis, No. 7, December 2011, Retrieved June 28, 2012 http://www.nihcr.org/PCP_Workforce.pdf

Carillo, P. (2011). *Safety-net for uninsured Salinas farmworkers.* Retrieved from http://farmworkersforum.wordpress.com/2011/07/22/safety-net-for-uninsured-salinas-farm-workers/

Central California Alliance for Health. (2011). *Provider capacity.* [PowerPoint Slides].

Christianson, J. B., Bond, A. M., Carrier, E., Cunningham, P. J., Samuel, D. R., Stark, L. B. (2011). *Economic Downturn Strains Miami Health Care System, Community Report No. 11, September 2011.* Retrieved from http://www.hschange.com/CONTENT/1244/?words=au07

Clinica de Salud del Valle de Salinas (n.d.). *"History"* Retrieved June 29, 2012 from http://www.csvs.org/english/history.html

Coleman, K., & Phillips, K. (2010). *Providing underserved patients with medical homes: Assessing the readiness of safety net health centers*. Retrieved from http://www.commonwealthfund.org/Publications/Issue-Briefs/2010/May/Providing-Underserved-Patietns-with-Medical-Homes.aspx

Colorado Health Institute. (2009). *The state of Colorado's Health Care Safety Net: Safety net indicators and monitoring system (SNIMS) 2009 progress report*. Retrieved from http://www.coloradohealthinstitute.org/key-issues/detail/safety-net-1/the-state-of-colorados-health-care-safety-net-safety-net-indicators-and-monitoring-snims-2009-progress-report/

Colorado Trust, The. (2012). *Equality in Health: An Annotated Bibliography with Resources on Health Disparities & Cultural & Linguistic Competency*. Retrieved June 4, 2012 from http://www.coloradotrust.org/online-publications/additional-programs/equality-in-health-an-annotated-bibliography-with-resources-on-health-disparities-and-cultural-and-linguistic-competency/cultural-and-linguistic-competency-assessment-tools-performance-measurement

Commonwealth Fund, The. (2011). *After health reform, safety net providers still play crucial health system role, experts say.* Retrieved from http://www.commonwealthfund.org/News/News-Releases/2011/Aug/Safety-Net-Providers-Still-Play-Crucial-Health-System-Role.aspx

County Health Rankings & Roadmaps. (2012). *A healthier nation, county by county.* Retrieved from http://www.countyhealthrankings.org/#app/california/2012/compare-counties/053+087+069+079+083

Cunningham, P. (2007). The healthcare safety net: What is it, what good does it do, and will it still be there when we need it? *Harvard Health Policy Review. 8*(2).

Cunningham, P. (2011a). *Diverting Non-urgent Emergency Room Use: Can It Provide Better Care and Lower Costs? U.S. SENATE Hearing, Health, Education, Labor and Pensions Committee, Subcommittee on Primary Health and Aging*. Retrieved June 8, 2012 http://www.hschange.com/CONTENT/1204/1204.pdf

Cunningham, P.J. (2011b). *State Variation in Primary Care Physician Supply: Implications for Health Reform Medicaid Expansions, HSC Research Brief No. 19*. Retrieved June 8, 2012 http://www.hschange.com/CONTENT/1192/?words=au07

Cunningham, P., Banker, M., Artiga, S., & Tolbert, J. (2006). *Health coverage and access to care for Hispanics in "new growth communities" and "major Hispanic centers"*. Retrieved from http://www.kff.org/uninsured/upload/7551.pdf

Cunningham, P. Bazzoli, G.J., & Katz, A. (2008). Caught in the competitive crossfire: Safety-net providers balance margin and mission in a profit-driven health care market. *Health Affairs, August*. doi: 10.1377/hlthaff.27.5.w374. Retrieved from

http://content.healthaffairs.org/content/early/2008/08/12/hlthaff.27.5.w374.full.pdf+html?ijkey=ERlP079nPyZ/.&keytype=ref&siteid=healthaff

Cunningham, P. & Hadley, J. (2004). Expanding care versus expanding coverage: How to improve access to care. *Health Affairs, 23*(4), 233-244. doi: 10.1377/hlthaff.23.4.234. Retrieved fromhttp://content.healthaffairs.org/content/23/4/234.full?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=Expanding%252BCare%252BVersus%252BExpanding&andorexactfulltext=and&searchid=1&FIRSTINDEX=0&resourcetype=HWCIT

Cunningham, P.J. & Hibbard, C.B. (2011). Raising Low 'Patient Activation' Rates Among Hispanic Immigrants May Equal Expanded Coverage in Reducing Access Disparities October 2011. *Health Affairs*, *30*(10). Retrieved from http://www.hschange.com/CONTENT/1248/?words=au07

Cunningham, P. J., & Whitmore, H. H. (1998). *How well do communities perform on access to care for the uninsured, research report no. 1.* Retrieved from http://www.hschange.com/CONTENT/109/index.html

Direct Relief USA. (2011). *The state of the safety net: A snapshot of America's nonprofit community clinics, free clinics, and community clinics*. Retrieved from www.directrelief.org/uploadedFiles/SafetyNetReport2011.pdf

Dorn, S., Garrett, B., Holahan, J., & Williams, A. (2008). *Medicaid, SCHIP and economic downturn: Policy changes and policy responses.* Retrieved from http://www.kff.org/medicaid/upload/7770.pdf

Doty, M. M., Abrams, M. K., Hernandez, S. E., Stremikis, K., & Beal, A. C. (2010). *Enhancing the capacity of community health centers to achieve high performance: Findings from the 2009 Commonwealth Fund National Survey of federally qualified health centers.* Retrieved from http://www.commonwealthfund.org/Publications/Fund-Reports/2010/May/Enhancing-the-Capacity-of-Community-Health-Centers-to-Achieve-High-Performance.aspx?page=all

Dower, C. & O'Neill, E. (2011). *Primary care healthcare workforce in the United States.* Retrieved from http://www.rwjf.org/files/research/070811.policysynthesis.workforce.rpt.pdf

Feldman-Hertz, M., Prothrow-Stith, D., & Chery, C. (2005). Homicide survivors: Research and practice implications. *American Journal of Preventative Medicine*, *29*(5), 288-295. Retrieved from http://www.ajpmonline.org/article/S0749-3797%2805%2900323-5/abstract

Felland, L., Lesser, C., Benoit-Staiti, A., Katz, A., & Lichiello, P. (2003). The Resilience of the Health Care Safety Net, 1996–2001. *Health Services Research*, *38*(1 pt. 2): 489-502. doi: 10.1111/1475-6773.00126. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1360896/

Felt-Lisk, S., Au, M., & Higgins, P. (2009). *Health information exchange: The role of safety-net providers.* Retrieved from http://www.mathematica-mpr.com/publications/pdfs/health/healthinfoexchangeIB.pdf

Felt-Lisk, S., McHugh, M., & Howell, E. (2001). *Study of safety net provider capacity to care for low-income uninsured patients—final report.* Retrieved from http://www.mathematica-mpr.com/PDFs/safetynet.pdf

Grantmakers In Health. (2008). *Health information technology: Increasing quality and access within safety net providers*. Retrieved from http://www.gih.org/Publications/IssueFocusDetail.cfm?itemnumber=4269

Grantmakers in Health. (2012). *Safety Net in the Era of Health Reform: A New Vision of Care, Issue Brief No. 38*. Retrieved from http://www.gih.org/files/FileDownloads/Safety_Net_in_Era_Health_Reform_no38_March_2012.pdf

Griffin, S. O., Jones, J. A., Brunson, D., Griffin, P. M., & Bailey, W. D. (2012). Burden of oral disease among older adults and implications for public health priorities. *American Journal Of Public Health, 102*(3), 411-418. doi:10.2105/AJPH.2011.300362 Retrieved from http://csumb.edu/search/redirect/11363?searchterm=library

Grossman, L., Witgert, K., & Hess, C. (2012). *Toward meeting the needs of vulnerable populations: Issues for policymakers' consideration in integrating a safety net into health care reform implementation*. Retrieved from http://www.nashp.org/publication/toward-meeting-needs-vulnerable-populations-issues-policymakers-consideration

Guida, S. (n.d.). *Domestic violence or intimate partner violence: Applications to medical practice.* [Powerpoint Presentation]. Retrieved from http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CFcQFjAA&url=http%3A%2F%2Fwww.ndhealth.gov%2Ffamily-planning%2FTraininigs%2FDomestic%2520Violence%2520Medical%2520training.pptx&ei=Vfv9T-TvGOSI2gXQ2ozPDw&usg=AFQjCNGWECy6Xrf5KPCo1qixPqXlr6BomA&sig2=ncClMUSyVatiTeZqZCug7w

Hadley, J., Cunningham, P., & Hargraves, J.L. (2006). Would Safety-Net Expansions Offset Reduced Access Resulting From Lost Insurance. *Health Affairs, 25*(6), 1679-1687.

Hall, M. (2009). *After insurance reform: An adequate safety net can bring us to universal coverage*. Retrieved from http://www.tseed.com/aslme/conference/forSystemUse/papers/051.pdf

Harder & Company Community Research. (2009). *Monterey county 2009 homeless census & survey*. Retrieved from http://www.unitedwaymcca.org/sites/unitedwaymcca.oneeach.org/files/Homeless_Report_2009.pdf

Health Improvement Partnership of Santa Cruz County. (2010). *Safety net clinic coalition of Santa Cruz report to the community: 2010 vision for a safety net system of care.* Retrieved from http://www.santacruzhealth.org/pdf/SNCC%20Report.pdf

Henschen, L. & Searle, B. (2011). *Primary Care Needs Assessment, Westminster's Joint Strategic Needs Assessment*. Retrieved from http://westminstercitypartnership.org.uk/Partnerships/Health%20and%20Wellbeing/JSNA%20%20Completed%20Needs%20Assessments/JSNA%20-%20Primary%20Care%20Needs%20Assessment%20draft.pdf

Hill, L. E., & Johnson, H.P. (2011). *Unauthorized immigrants in California: Estimates for counties*. Retrieved from http://www.ppic.org/content/pubs/report/R_711LHR.pdf

Hoefer, M., Rytina, N., & Baker, B.C. (2011). Estimates of the unauthorized immigrant population residing in the United States: January 2010. Retrieved from http://www.dhs.gov/xlibrary/assets/statistics/publications/ois_ill_pe_2010.pdf

Hoffman, C. & Sered, S. S. (2005). *Threadbare: Holes in America's health care safety net.* Retrieved from http://www.kff.org/uninsured/upload/Threadbare-Holes-in-America-s-Health-Care-Safety-Net-report.pdf

Hughes, D., Diringer, J.D. (2008). *Adult dental Medi-Cal cuts: Costs & consequences.* Retrieved from http://tcenews.calendow.org/pr/tce/document/Adult_Dent-Cal_Cuts_Brief_05_13_08_final.pdf

Hurley, R., Felland, L., & Lauer, J. (2007). *Community health centers tackle rising demands and expectations—Issue brief no. 116.* Retrieved from http://www.hschange.com/CONTENT/958/?topic=topic11

Institute for Healthcare Improvement. (2012). *The IHI triple aim*. Retrieved from http://www.ihi.org/offerings/Initiatives/TripleAim/Pages/default.aspx

Institute for Health Metrics and Evaluation. (2012). *Life expectancy by county and sex (US), 1989-2009.* [Interactive tool]. Retrieved from http://www.healthmetricsandevaluation.org/tools/data-visualization/life-expectancy-county-and-sex-us-1989-2009#/overview/explore

Institute for Health Metrics and Evaluation. (2011). *Life expectancy in most US counties falls behind world's healthiest nations.* Retrieved from http://www.healthmetricsandevaluation.org/news-events/news-release/life-expectancy-most-us-counties-falls-behind-worlds-healthiest-nations

Institute of Medicine. (2000). *America's Health Care Safety Net: Intact but Endangered.* Retrieved from http://www.idph.state.il.us/tfhpr/materials/Carvalho%20handout.pdf

Institute of Medicine. (1988). *Prenatal care: Reaching mother's, reaching infants.* Retrieved from http://www.nap.edu/openbook.php?record_id=731&page=R1

Insure the Uninsured Project. (2010). *2006-2009 Overview of California's uninsured*. Retrieved from http://www.itup.org/Reports/Statewide/2010/State_Overview_Final.pdf

Integrated Public Use Microdata Series (IPUMS), USA. (2012). California-Census 2000 super-public use micro data series [Map]. Retrieved from http://usa.ipums.org/usa/resources/volii/maps/ca_puma5.pdf

Jacobs, K., Watson, G., Kominski, G. F., Roby, D. H., Graham-Squire, D., Kinane, C. M., & Needleman, J. (2012). *Nine out of ten non-elderly Californian's will be insured when the Affordable Care Act is fully implemented*. Retrieved from www.healthpolicy.ucla.edu/pubs/files/calsim_Exchange1.pdf

Jenks, G. F. (1967). *The data model concept in statistical mapping.* International Yearbook of Cartography, 7, 186-190.

Kaiser Commission on Medicaid and the Uninsured. (2009). *Key facts; Healthy San Francisco.* Retrieved from http://www.kff.org/uninsured/upload/7760-02.pdf

Kaiser Commission on Medicaid and the Uninsured. (2011). *Ensuring Access to Care in Medicaid under Health Reform.* Retrieved from http://www.kff.org/healthreform/8187.cfm

Kaiser Commission on Medicaid and the Uninsured. (2006). *The uninsured: A primer, key facts about Americans without health insurance.* Retrieved from www.kff.org/uninsured/upload/7451.pdf

Kaiser Family Foundation. (2011). *Mapping the Effects of the ACA's Health Insurance Coverage Expansions* [Interactive Tool]. Retrieved from http://healthreform.kff.org/en/coverage-expansion-map.aspx

Kaiser Family Foundation. (2009). *Putting women's health care disparities on the map: Examining racial and ethnic disparities at the state level.* Retrieved from http://www.kff.org/minorityhealth/upload/7886.PDF

Kaiser Family Foundation. (2003). *Prenatal care: Lessons from the California experience.* Retrieved from http://www.kff.org/womenshealth/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=14290

Kaiser Family Foundation. (2012). *State health facts: Medicare CA.* Retrieved from http://www.statehealthfacts.org/comparecat.jsp?cat=6&rgn=6&rgn=1

Kaiser Family Foundation. (2012). *State health facts: Medicaid & CHIP CA.* Retrieved from http://www.statehealthfacts.org/comparecat.jsp?cat=4&rgn=6&rgn=1

Katz, M. (2010). *The future of the safety net under health reform. JAMA: Journal of the American Medical Association, 304*(6), 679-80.

Kotelchuck, R., Lowenstein, D., & Tobin, J. N. (2011). Community Health Centers And Community Development Financial Institutions: Joining Forces To Address Determinants Of Health. *Health Affairs, 30*(11), 2090-7. Retrieved from http://search.proquest.com.library2.csumb.edu:2048/docview/908419488/fulltextPDF?accountid=10355

Ku, L., Jones, K., Shin, P., Bruen, B., & Hayes, K. (2011). Perspective, The States' Next Challenge—Securing Primary Care for Expanded Medicaid Populations. *New England Journal of Medicine, 364*:493-495. Retrieved from http://www.nejm.org/doi/full/10.1056/NEJMp1011623

Larkin, J. (n.d.). *Race, Demographics, and History in Monterey County: Local History Resources*. Retrieved from http://web.me.com/joelarkin/RaceDemographicsandMonterey/HomePage.html

Latino Coalition for a Healthy California, The. (n.d.). *A framework for implementing the patient protection & affordable care act to improve health in Latino communities*. Retrieved from http://www.lchc.org/documents/BRT_2012AFramework_FINAL.pdf

Lewin, M. E., & Altman, S. (Eds.). (2000). *America's health care safety net: Intact but endangered*. Washington DC: The National Academies Press.

Lin, D. (2011). Americans living longer but falling behind other nations, study says. *California Watc, June 6, 2011.* Retrieved from http://californiawatch.org/dailyreport/americans-living-longer-falling-behind-other-nations-study-says-10801

Lucile Packard Foundation for Children's health. (2010). *Kidsdata.org: Immunizations*. Retrieved from http://www.kidsdata.org/data/topic/table/immunizations-kindergarteners.aspx

Margolis, D., & Bodenheimer, T. (2010). Transforming Primary Care: From Past Practice To The Practice Of The Future. *Health Affairs, 29*(5). Retrieved from http://content.healthaffairs.org/content/29/5/779.short

McHugh, M., Kang, R., & Hasnain-Wynia, R. (2009). Understanding the safety net: Inpatient quality of care varies based on how one defines safety-net hospitals. *Medical Care Research and Review*, 66, 590-605.

Meyer, J. A. (2004). Safety net hospitals: A vital resource for the US. *Economic and Social Research Institute.*

MN Community Measurement. (2009). *Health Information Technology Survey Specifications for 2009 Survey.* Retrieved from http://www.health.state.mn.us/healthreform/measurement/2009HITSurvey_PhysicianClinics.pdf

MN Health information technology (HIT) ambulatory clinic survey: Synopsis of the 2011 HIT survey for MN clinics. (2011). Retrieved June 4, 2012 from http://www.health.state.mn.us/healthreform/measurement/adoptedrule/measure1111i.pdf

Mobley, L., Kuo, T., Bazzoli, G., (2011). Erosion in the Healthcare Safety Net: Impacts on Different Population Groups. Open Health Service Policy, 30(4): 1-14. doi: 10.2174/1874924001104010001. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3165171/

Monterey County Department of Social & Employment Services. (2009). *Community action plan, 2010-2011*. Retrieved from http://mcdses.co.monterey.ca.us/reports/downloads/2010-11_CAP.pdf

Monterey County Health Department. (n.d.). *Clinic Services, "About Us" and "Services We Offer."* Retrieved from http://www.mtyhd.org/index.php?option=com_content&view=category&layout=blog&id=255&Itemid=606&lang=en

Monterey County Health Department. (2011a). *Data and reports: Lack of health insurance.* Retrieved from http://www.mtyhd.org/index.php?option=com_content&view=article&id=1859&Itemid=1124&lang=en

Monterey County Health Department. (2010). *Data and reports: No dental insurance*. Retrieved from http://www.mtyhd.org/index.php?option=com_content&view=article&id=1860&Itemid=1125&lang=en

Monterey County Health Department. (2006). *Health Profile 2006: Disparities*. Retrieved from http://www.mtyhd.org/images/stories/Publications/pdf/HPpdfs/HealthProfile2006.pdf

Monterey County Health Department. (2011b). *2010 Monterey County birth report*. Retrieved from http://www.mtyhd.org/index.php?option=com_content&view=article&id=1096&Itemid=809&lang=en

Monterey County Health Department. (2011c). *2010 Monterey County birth report outcomes*. Retrieved from http://www.mtyhd.org/images/stories/Public_HealthBureau/POSTPONE/2010_MC_Birth_Outcomes_Chartbook.pdf

Monterey County Department. (2011d). *Strategic Plan 2011-2015.* Retrieved from http://www.co.monterey.ca.us/cob/Supplemental_Addendum%202011/December%2013,%202011/S-3%20Final.Health%20Strat%20Plan.%20Proposed.pdf

National Association of Community Health Centers. (2008). *Access Transformed: Building a Primary Care Workforce for the 21st Century*. Retrieved from http://www.nachc.com/client/documents/ACCESS%20Transformed%20full%20report.PDF

National Association of Community Health Centers. (2009). *A sketch of community health centers: Chart book 2009*. Retrieved from http://www.nachc.com/state-healthcare-data-list.cfm

National Association of Community Health Centers. (2011). ALERT: HRSA Issues Guidance on Contracting between Health Centers and Rural Health Providers. Retrieved from http://www.nachc.com/client/documents/3.11%20Collaboration_PAL_Alert.pdf

National Association of County & City Health Officials (NACCHO). (2005). *National Profile of Local Health Departments, July 2006*. Retrieved June 1, 2012, http://www.naccho.org/topics/infrastructure/profile/upload/NACCHO_report_final_000.pdf

National Association of Free & Charitable Clinics (n.d.) *What is a free or charitable clinic?* Retrieved from http://www.nafcclinics.org/about-us/what-is-free-charitable-clinic

National Association of Public Hospitals and Health Systems. (2010). *Safety net health systems: An essential resource during the economic recession*. Retrieved June 6, 2012 from http://www.naph.org/Main-Menu-Category/Publications/Safety-Net-Financing/Recession-Brief-Aug-2010.aspx?FT=.pdf

National Association of Public Hospitals and Health Systems. (n.d.). *What is a safety net hospital?* Retrieved from http://literacynet.org/hls/hls_conf_materials/WhatIsASafetyNetHospital.pdf

National Institutes of Health (n.d.) *Adolescent pregnancy*. Retrieved from http://www.nlm.nih.gov/medlineplus/ency/article/001516.htm

National Women's Law Center. (2003). *First trimester prenatal care: What percentage of women receive prenatal care in the first trimester?* Retrieved from http://hrc07.nwlc.org/status-indicators/Womens-Access-to-Health-Care-Services/First-Trimester-Prenatal-Care.aspx

Natividad Medical Center. (n.d.). *About Natividad Medical Center*. Retrieved from http://www.natividad.com/

Navarro, I (2012) *Institute for Community Collaborative Studies Working Paper: Estimates of undocumented immigrants in Tri-County Central Coast Region of California*.

North Carolina Institute of Medicine. (2008). *Health Care Services for the Uninsured and Other Underserved Populations A Technical Assistance Manual to Help Communities Create or Expand Health Care Safety Net Services*. Retrieved from http://www.nciom.org

Office of Statewide Health Planning and Development, Healthcare Information Division. (2011a). *Data on primary care clinics-complete database.* [On line data base]. Retrieved from http://www.oshpd.ca.gov/hid/Products/Hospitals/Utilization/PC_SC_Utilization.htm

Office of Statewide Health Planning and Development, Office of Statewide Health Planning and Development (2011b). *Healthcare information division – Annual financial data.* [On line data base]. Retrieved from http://www.oshpd.ca.gov/hid/Products/Hospitals/AnnFinanData/SubSets/SelectedData/default.asp

Osaragi, T. (2002). *Classification methods for spatial data representation.* Retrieved from http//www.casa.ucl.ac.uk/paper40.pdf

Public Policy Institute of California. (2001). *A Portrait of Race and Ethnicity in California: An Assessment of Social and Economic Well-Being*. Retrieved from http://www.ppic.org/content/pubs/report/r_201brr.pdf

Rand California Community Statistics. (2011a). *Domestic violence number of crimes: California.* [Data tables]. Retrieved from http://ca.rand.org/stats/community/domvio.html

RAND California Community Statistics. (2011b). *Domestic violence number of crimes: Monterey County*. [Data tables]. Retrieved from http://ca.rand.org/stats/community/domvio.html

RAND Health. (2011). *Mapping the Gaps: Ideas for Using GIS to Enhance Local Health Department Priority Setting and Program Planning, Technical Report*. Retrieved April 24, 2012, http://www.rand.org/content/dam/rand/pubs/technical_reports/2011/RAND_TR1146.pdf

Redlener, I., & Grant, R. (2009, December 3). *America's safety net and health care reform — What lies ahead?*. New England Journal of Medicine. pp. 2201-2204. doi:10.1056/NEJMp0910597.

Rieselbach, R. E., Crouse, B. J., Frohna, J. G. (2010). Teaching Primary Care in Community Health Centers: Addressing the Workforce Crisis for the Underserved. *Annals of Internal Medicine, 152*(2):118-122. Retrieved from http://annals.org/article.aspx?volume=152&issue=2&page=118

Rosenbaum, S. & Shin, P. (2009). *Community health centers in an era of health system reform and economic downturn: Prospects and challenges*. Retrieved from http://www.kff.org/uninsured/7876.cfm

Rosenbaum, S., & Shin, P. (2003). *Health centers as safety net providers: An overview and assessment of Medicaid's role.* Retrieved from http://www.kff.org/medicaid/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=14342

Santa Cruz County Health Services Agency. (2011). *Births Santa Cruz County 2010*. Retrieved from http://www.santacruzhealth.org/resources/categories/3health_statistics_and_reporting.htm

Schober, S., Carroll, M., Lacher, D., & Hirsch, R. (2007). *High serum total cholesterol—An indicator for monitoring cholesterol lowering efforts: US adults, 2005-2006.* Retrieved from http://www.cdc.gov/nchs/data/databriefs/db02.pdf

Shields, A. E., Shin, P., Leu, M. G., Levy, D. E., Betancourt, R., Hawkins, D., & Proser, M. (2007). Adoption of health information technology in community health centers: Results of a national survey. *Health Affairs, 26*(5), 1373-1383. doi:10.1377/hlthaff.26.5.1373

Smedley, B. D., Stith, A. Y., & Nelson, A. R. (Eds). (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, DC: The National Academies Press. Retrieved from http://books.nap.edu/openbook.php?record_id=10260&page=R1

Summer, L. (2011). *The impact of the affordable care act on the safety net*. Retrieved from www.academyhealth.org/files/.../AHPolicybrief_Safetynet.pdf

Taylor, E.F., Cunningham, P., & McKenzie, K. (2006). Community approaches to providing care for the uninsured. *Health Affairs 25*(3). doi: 10.1377/hlthaff.25.w173. Retrieved from http://content.healthaffairs.org/content/25/3/w173.full.pdf+html

US Census Bureau. (2010a). *American fact finder: Health insurance coverage status 2008-2010*. Retrieved from http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_10_3YR_S2701&prodType=table

US Census Bureau. (2010b). *American Fact Finder: Selected social characteristics in the United States 2010 American community survey 1-year estimates*. Retrieved from http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_10_1YR_DP02&prodType=table

U.S. Census Bureau. (2011*). Income, poverty and health insurance coverage in the United States in 2010*. Retrieved from www.census.gov/prod/2011pubs/p60-239.pdf

US Census Cureau. (2000). *Scope 2000, Monterey County, Language, Ability to speak English among those speaking a language other than English, 2000*. Retrieved from http://www.censusscope.org/us/s6/c53/chart_language.html

US Census Bureau. (2010). *State and county quick facts: State of California & Monterey/Santa Cruz/San Benito counties.* [Data tables]. Retrieved from http://quickfacts.census.gov/qfd/states/06000.html

US Census Bureau. (2012). *State populations 2005: US Census records.* Retrieved from http://state.1keydata.com/state-population.php

U.S. Department of Health and Human Services. (2011a). *Community health centers and the affordable care act: Increasing access to affordable, cost effective, high quality care*. Retrieved from http://www.healthcare.gov/news/factsheets/2010/08/increasing-access.html

U.S. Department of Health and Human Services. (2011b). *HHS action plan to reduce racial and ethnic disparities: A nation free of disparities and health and health care.* Retrieved from minorityhealth.hhs.gov/npa/files/Plans/HHS/HHS_Plan_complete.pdf

US Department of Health and Human Services. (2012). *Healthy people 2020.* Retrieved from http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=26

US Department if Health and Human Services, Centers for Disease Control and Prevention. (2012a). *Childhood obesity facts*. Retrieved from http://www.cdc.gov/obesity/data/childhood.html

US Department if Health and Human Services, Centers for Disease Control and Prevention. (2011a). *Children's oral health*. Retrieved from http://www.cdc.gov/OralHealth/topics/child.htm

US Department if Health and Human Services, Centers for Disease Control and Prevention. (2012b). *Cholesterol frequently asked questions*. Retrieved from http://www.cdc.gov/cholesterol/faqs.htm

US Department of Health and Human Services, Centers for Disease Control and Prevention. (2010a). *Health, United States, 2010: With special feature on death and dying.* Retrieved from http://www.cdc.gov/nchs/data/hus/hus10.pdf

US Department of Health and Human Services, Centers for Disease Control and Prevention. (2012c). *High blood pressure frequently asked questions*. Retrieved from http://www.cdc.gov/bloodpressure/faqs.htm

US Department of Health and Human Services, Centers for Disease Control and Prevention (CDC). (n.d.). *National Public Health Performance Standards Program (NPHPSP), Local Public Health System Performance Assessment – Model Standards, Version 2.0.* Retrieved from http://www.cdc.gov/nphpsp/documents/final-local-ms.pdf

US Department of Health and Human Services, Centers for Disease Control and Prevention. (2006). *Oral Health.* Retrieved from http://www.cdc.gov/OralHealth/publications/factsheets/adult.htm

US Department of Health and Human Services, Centers for Disease Control and Prevention. (2011b). *Oral health: Preventing cavities, gum disease, tooth loss, and oral cancers at a glance 2011*. Retrieved from http://www.cdc.gov/chronicdisease/resources/publications/AAG/doh.htm

US Department of Health and Human Services, Centers for Disease Control and Prevention. (2010b). *Summary health statistics for US adults: National health interview survey.* Retrieved from http://www.cdc.gov/nchs/data/series/sr_10/sr10_252.pdf

US Department of Health and Human Services, Centers for Disease Control and Prevention. (2010c). *Vital and health statistics, series 2, number 152: United States life tables by Hispanic origin.* Retrieved from http://www.cdc.gov/nchs/data/series/sr_02/sr02_152.pdf

US Department of Health and Human Services, Centers for Disease Control and Prevention. (2011c). Vital signs: prevalence, treatment, and control of hypertension--United States, 1999-2002 and 2005-2008. *MMWR, 60*(4), 103-8.

US Department of Health and Human Services, Healthcare.gov. (2012). *Health disparities and the affordable care act.* Retrieved from http://www.healthcare.gov/news/factsheets/2010/07/health-disparities.html

US Department of Health and Human Services, Health Resources and Services Administration. (n.d.). *The Lewin Group, Inc., Indicators of Cultural Competence in Health Care Delivery Organizations: An Organizational Cultural Competence Assessment Profile.* Retrieved from http://www.hrsa.gov/culturalcompetence/healthdlvr.pdf

US Department of Health and Human Services, Health Resources and Services Administration. (2011a). *Health center collaboration, program assistance letter 2011-12.* Retrieved from http://bphc.hrsa.gov/policiesregulations/policies/pal201102.html

US Department of Health and Human Services, Health Resources and Services Administration. (2012a*). Medically underserved areas and populations (MUA/Ps).* Retrieved from http://bhpr.hrsa.gov/shortage/muaps/index.html

US Department of Health and Human Services, Health Resources and Services Administration. (2012b). *Data Warehouse: Medically underserved areas/populations* [Report tool]. Retrieved from http://datawarehouse.hrsa.gov/HGDWReports/RT_App.aspx?rpt=MU

US Department of Health & Human Services. (2011b). *Health resources and services administration: Shortage designations*. Retrieved from http://bhpr.hrsa.gov/shortage/

US Department of Health and Human Services , Health Resources and Services Administration. (n.d.). *What is a health center?* Retrieved from http://bphc.hrsa.gov/about/

US Department of Health and Human Services, National Partnership for Action to End Health Disparities. (2011). *Fact Sheet: The HHS Action Plan to Reduce Racial and Ethnic Health Disparities.* Retrieved from https://minorityhealth.hhs.gov/npa/templates/content.aspx?lvl=1&lvlid=39&ID=287

US Department of Health and Human Services, Office of Minority Health. (2012). *Diabetes and Hispanic Americans.* Retrieved from http://minorityhealth.hhs.gov/templates/content.aspx?ID=3324

US Department of Health and Human Services, Office of Women's Health. (2009). *Prenatal care fact sheet.* Retrieved from http://www.womenshealth.gov/publications/our-publications/fact-sheet/prenatal-care.cfm

Warren, R. (2011). *Annual estimates of the unauthorized immigrant population in the United States, by state: 1990 to 2008*. Retrieved from http://www.ppic.org/content/pubs/wp/WP_611RWWP.html

Weissman, D. (2006). Crawford v Washington: Implications for public health policy and practice in a domestic violence context. *Public Health Reports, 121*(464-467). Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1525354/pdf/phr121000464.pdf

Yee, T., Cunningham, P. J., Jacobson, G., Neuman, T., Levinso, Z. (2012). *Cost and Access Challenges: A Comparison of Experiences Between Uninsured and Privately Insured Adults Aged 55 to 64 with Seniors on Medicare, Kaiser Family Foundation Issue Brief, May 2012.* Retrieved from http://www.kff.org/medicare/upload/8320.pdf

Zhang, J., Tong, H., Zhou, L. (2005). The effect of bereavement due to suicide on survivors'/Depression: A study of Chinese samples. *Omega(Westport), 51*(3), 217-227. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2931588/

Zuckerman, S., Waidmann, T. A., & Lawton, E. (2011). Undocumented immigrants, left out of health reform, likely to continue to grow as share of the uninsured. *Health Affairs, 30*(10), 1997-2001. doi:10.1377/hlthaff.2011.0604