Health in the Heartland:
The Crisis Continues

A Report on Health Status and Access to Care in the San Joaquin Valley

Central Valley Health Policy Institute
California State University, Fresno

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February 2004

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Published by:

Central Valley Health Policy Institute
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Funded by a Grant from

The California Endowment

The Central Valley Health Policy Institute

The Central Valley Health Policy Institute was established in 2002 at California State University, Fresno to facilitate regional research, leadership training and graduate education programs to address emerging health policy issues that influence the health status of people living in Central California. The Institute was funded in July, 2003 by a $4 million grant from The California Endowment in partnership with the University to promote health policy and planning in the region.

Suggested Citation:

Diringer, J., Curtis, K. A., Paul, C. M., Deveau, D. R. (2004). Health in the Heartland: The Crisis Continues. Fresno, CA. California State University, Fresno.

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ACKNOWLEDGEMENTS

The authors would like to sincerely thank the following people for their invaluable assistance with this report.

Data Acquisition

Louise Bauer, MSW
Anthony Martin Joy
Anton Symkovich
Nini Thomas, MBBS, MD

Communications and Public Relations

Shirley Armbruster
Brandie Campbell

Manuscript Review and Revision

Petra Sutton, PhD
Kathleen Van Der Meer

Administrative Support

Danny Armijo
Brandie Campbell

Data Mapping

Antony Martin Joy

Leadership and Project Support

Carole Chamberlain, Program Officer, The California Endowment
Benjamin Cuellar, Dean, College of Health and Human Services, California State University, Fresno
Jeromina Echeverria, Provost and Vice President for Academic Affairs, California State University, Fresno
J. Michael Ortiz, Former Provost and Vice President for Academic Affairs, California State University, Fresno and current President, California State Polytechnic University, Pomona
Regional Advisory Council, Central Valley Health Policy Institute

Photographs by: Jill K. Richards

Design by: Becky Ilic, Media Cube Design - www.mediacubedesign.com

Additional photographs courtesy of The California Endowment

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February 9, 2004

Largely unrecognized social and economic conditions exist in the San Joaquin Valley, the vast agricultural heartland of central California, where persistent poverty and poor health characterize the region. *Hurting in the Heartland: Access to Health Care in the San Joaquin Valley* first shed light on these conditions in 1996. Now, eight years later, little has changed in the Valley.

Health in the Heartland, The Crisis Continues opens the door for a continuing discussion of health disparities that exist within both specific communities and the region at large. The report takes in-depth look at the issues that drive these disparities, including lack of health insurance, poor access to services, extreme shortages of health care providers, cultural and language barriers and the region's reliance on federal and state programs.

The California Endowment, in partnership with Joel Diringer, the lead author of the 1996 *Hurting in the Heartland*, Kathleen Curtis and Benjamin Cuellar, founders of the Central Valley Health Policy Institute at California State University, Fresno, have taken the lead in bringing statewide attention to conditions that impact the health of the 3.2 million residents of the San Joaquin Valley. This publication highlights these conditions and opportunities for action in a clear and cohesive manner. The data presented in this report pinpoint the problems and communities in greatest need. This publication will serve as a critical resource for health providers and administrators, policy-makers and program planners. There is no question that we must take action to answer the call.

In an era where the region's and the State's fiscal situation severely stresses the system's ability to respond to even the most basic of health care needs, we must be creative in new approaches, while remaining cognizant of the needs of underserved populations. The severity and persistence of the conditions will clearly require collaboration with local, regional and state leadership, philanthropic organizations and advocacy through governmental, civic, social, and nonprofit organizations to establish a new community health agenda for the Central Valley. The future of the *new California* rests in our hands.

S. Kimberly Belshé
Secretary, Health and Human Services Agency

1600 Ninth Street · Room 460 · Sacramento, CA 95814 · Telephone (916) 654-3454 · Fax (916) 654-3343
Internet Address: www.chhs.ca.gov

INTRODUCTION

Central California's San Joaquin Valley is one of the largest agricultural areas in the nation and is also one of the most culturally diverse. Although the Valley enjoys agricultural riches, many of its residents endure very serious health problems.

The dire health conditions of the residents of the San Joaquin Valley were first outlined in *Hurting in the Heartland: Access to Health Care in the San Joaquin Valley* (*HIH*; Diringer, Ziolkowski, & Paramo, 1996). *HIH* was the first major report on health status and health access in the San Joaquin Valley. *HIH* detailed problems including the lack of medical providers, inadequate transportation, and a culturally insensitive health care system. *HIH* documented the health of residents in San Joaquin Valley communities, the barriers to health care faced by the residents, and the challenge of ensuring equal access to health care for all of the Valley's residents.

Eight years later, this report, *Health in the Heartland: The Crisis Continues,* provides an update on the health status of San Joaquin Valley residents and documents the changes that have taken place over the intervening years. Current information is provided to enable policymakers, health providers, and community members to understand the critical health issues in the Valley and devise strategies for overcoming the barriers to improving health status.

California's San Joaquin Valley is the southern portion of the Central Valley, and it stretches almost 300 miles from just south of Sacramento to north of Los Angeles. It is bounded by the Coastal and Sierra Nevada mountain ranges, and it comprises 17% of California's landmass. Approximately 3.3 million persons live in the eight counties that make up the San Joaquin Valley: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. The San Joaquin Valley depends on agriculture as a base for its economy. The Valley's agricultural industry is valued at over $15 billion annually, making it the richest agricultural valley in the World (California Department of Food and Agriculture, 2002).

Data on over 60 health variables are presented for the eight San Joaquin Valley counties. This report compares the counties to each other, to California as a whole, and to the *Healthy People 2010* national objectives (*HP 2010*; U.S. Department of Health and Human Services, 2000), where appropriate. The report draws upon the most current available data from a wealth of national, state, and local sources. It makes extensive use of newly released data from the 2001 *California Health Interview Survey* (*CHIS*; UCLA Center for Health Policy Research, 2003), and the 2000 U.S. Census. As in *Hurting in the Heartland*, the Valley has been divided into 61 community clusters allowing for sub-county-level analysis.

Health in the Heartland is divided into four major sections:

I. A profile of the San Joaquin Valley – describing its people and its health services, including demographics, economic indicators, environmental issues, health services, health financing, and insurance coverage. At-risk populations receive a special focus in this section.

II. An overview of the health of San Joaquin Valley residents, highlighting access to care, health status, diseases, maternal and infant health, and behavioral risks.

III. An analysis of the use of health and social services in the San Joaquin Valley, including care-seeking behavior, hospitalization rates, use of public health and nutrition programs, and cancer screening.

IV. Implications of policy decisions on the health of Valley residents, including discussions of health insurance coverage, provider shortages, hospital closures, air quality issues, language access, and fiscal resources.

METHODOLOGY

This report reviews the most current available national, state, and regional data as of December 2003. The data for over 60 demographic, economic, and health related indicators for the eight counties that comprise the San Joaquin Valley come from secondary sources. Data variables were selected on the basis of reliability, availability across the region, and usefulness for understanding conditions on the local level. These variables help provide a synopsis and succinct representation of health issues and health-related services in the eight San Joaquin Valley counties of Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare.

When possible and appropriate, data were collected to show a five-year span, providing an opportunity to compare trends. These data have been compiled from web-based and public data sets into tables and figures. These visual representations of the data allow not only for comparison between the eight counties but additional analysis and comparison with data for California as a whole and with published national health objectives.

In addition, some data were available on a zip-code-level, enabling a comparison between different communities within the Valley. This analysis allowed differences within a county or community to be depicted via maps and tables and offered a chance to pinpoint specific health problems, their characteristics, and their prevalence within each of the cluster communities. The zip-code-level data have been aggregated into 61 community clusters composed of contiguous zip codes. These clusters are similar but not identical to the Medical Service Study Areas (MSSA) used by the California Office of Statewide Health Planning and Development (OSHPD). *Hurting in the Heartland* (Diringer et al., 1996) also used these 61 community clusters, which have been updated in this report with their most recently assigned zip codes (Figure 1, Table 1).

Zip-code-based community clusters are large enough to provide reliable estimates of health indicators, but small enough to show differences between cluster communities. Residents can more easily identify their communities from the zip codes. However, it should be remembered that the clusters compiled of these zip codes are artificial composites of geographically assigned postal codes, not true communities. (See a complete list of zip codes used to determine the community clusters in the Appendix.)

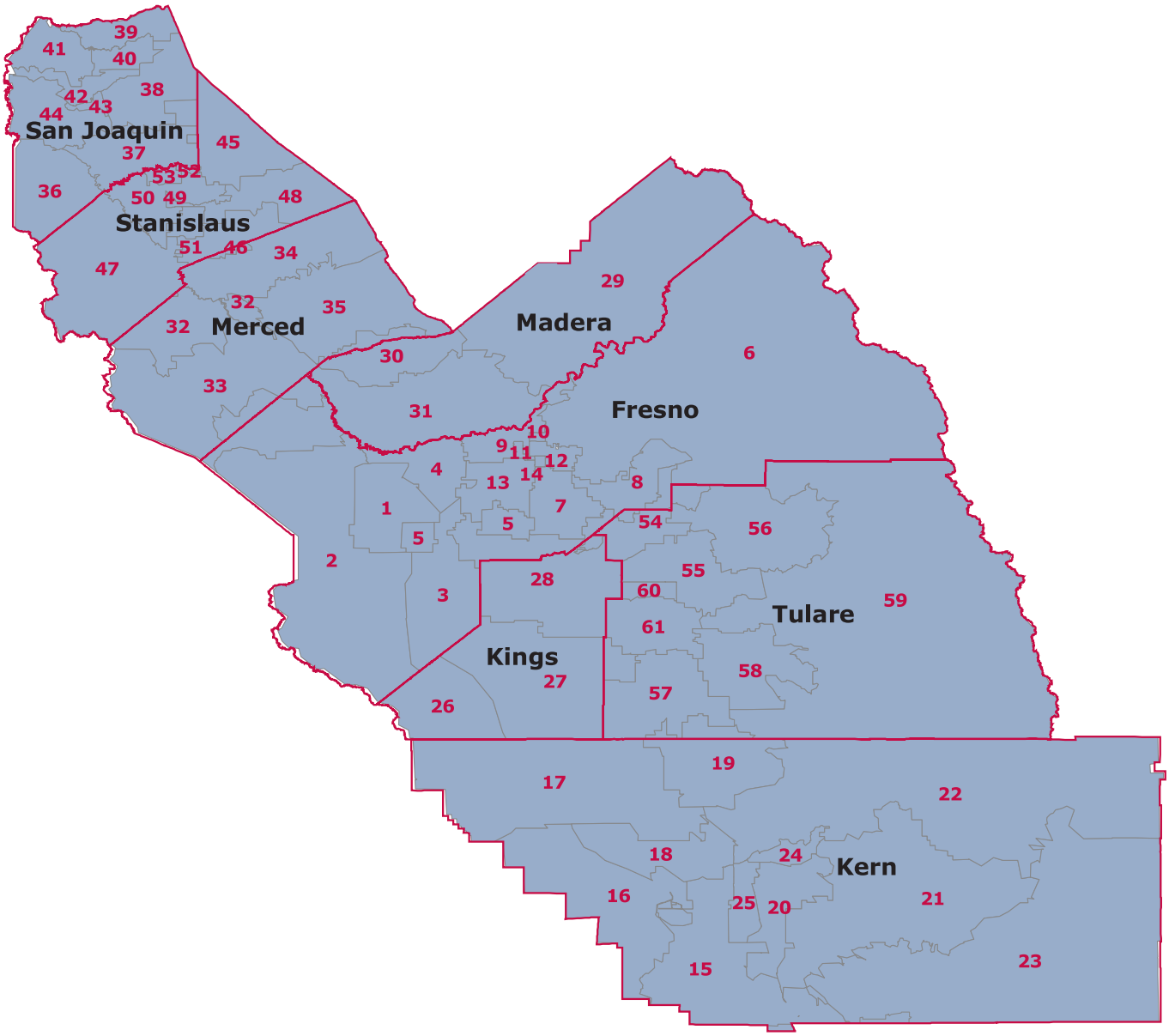

Figure 1: Community Clusters Within the San Joaquin Valley

Table 1: Legend for Community Cluster Map

Map Area	County	Community Cluster	Map Area	County	Community Cluster
1	Fresno	San Joaquin	31	Madera	Madera
2	Fresno	Coalinga/ Mendota	32	Merced	Gustine
3	Fresno	Huron	33	Merced	Los Banos/ Dos Palos
4	Fresno	Kerman/ Biola	34	Merced	N. Merced Co./ Livingston
5	Fresno	Caruthers/ W. Selma	35	Merced	Merced/ Atwater
6	Fresno	Clovis/ Sanger	36	San Joaquin	Tracy
7	Fresno	Selma/ Fowler	37	San Joaquin	Manteca/Lathrop/ Escalon/ Ripon
8	Fresno	Reedley/ Parlier	38	San Joaquin	E. Stockton
9	Fresno	Herndon/ Pinedale	39	San Joaquin	Woodbridge
10	Fresno	North Fresno	40	San Joaquin	E. Lodi
11	Fresno	Central Fresno	41	San Joaquin	Lodi
12	Fresno	Southeast Fresno	42	San Joaquin	N. Stockton
13	Fresno	W. Fresno/ Burrel	43	San Joaquin	Central Stockton
14	Fresno	S. Fresno	44	San Joaquin	S. Stockton/ French Camp
15	Kern	Frazier Park	45	Stanislaus	Oakdale
16	Kern	Taft	46	Stanislaus	Turlock
17	Kern	Shafter-Wasco	47	Stanislaus	Patterson/ Newman
18	Kern	Buttonwillow/ Elk Hills	48	Stanislaus	Waterford/ Hughson
19	Kern	Delano/ McFarland	49	Stanislaus	W. Modesto/ Empire
20	Kern	E. Bakersfield/ Lamont	50	Stanislaus	Modesto
21	Kern	Arvin/ Tehachapi	51	Stanislaus	Ceres/ Keyes
22	Kern	Inyokern	52	Stanislaus	Riverbank
23	Kern	Mojave	53	Stanislaus	N. Modesto/ Salida
24	Kern	N. Bakersfied	54	Tulare	Dinuba
25	Kern	Greater Bakersfield	55	Tulare	N. Visalia/ Exeter/ Farmersville
26	Kings	Avenal	56	Tulare	Woodlake
27	Kings	Corcoran	57	Tulare	Earlimart/ Pixley
28	Kings	Hanford/ Lemoore	58	Tulare	Porterville
29	Madera	The Mountains	59	Tulare	Lindsay
30	Madera	Chowchilla	60	Tulare	Visalia
			61	Tulare	Tulare

Data Sources

This report utilized 1990 and 2000 U.S. Census data for the demographic and economic indicator sections of the document.

The California Department of Health Services (DHS; 1998, 2003) *County Health Status Profiles* were used for several variables for disease, morbidity, and mortality data. Where appropriate, the 2003 *County Health Status Profiles* data were compared with the 1998 *County Health Status Profiles* data to provide a five-year data trend. Changes in methodology or reference populations between the two editions of the *County Health Status Profiles*, such as for age-adjusted rates, did not allow some comparisons to be made in this report.

The California Office of Statewide Health Planning and Development (OSHPD; 2003) data on Hospital and Clinic Licensure provided information on California's licensed hospitals, long-term care facilities, and clinics. In addition, detailed hospital discharge data were obtained from OSHPD, which allowed for analysis of hospital discharges for ambulatory-care-sensitive (ACS) conditions. These were available by zip code and aggregated into community clusters, which allowed for further analysis and comparison.

The 2001 *California Health Interview Survey* (*CHIS*; UCLA Center for Health Policy Research, 2003) provided another major data source. The 2001 *CHIS* is a survey conducted biennially by the UCLA Center for Health Policy Research. It is a random-digit-dial (RDD) telephone survey of over 55,000 households drawn from every county in California. The 2001 *CHIS* sample design was able to generate results for all San Joaquin Valley counties. The 2001 survey was conducted in six languages and was designed to be inclusive of the diversity found in the state. It provided data on variables such as physical and mental health status; prevalence and management of chronic conditions such as diabetes, asthma, cancer, and high blood pressure; nutrition; health insurance coverage and lack of coverage; access to prevention services; and eligibility for and participation in the Medi-Cal program.

Healthy People 2010 (*HP 2010*, U.S. Department of Health and Human Services, 2000) is a set of national health objectives developed in 2000. HP 2010 builds on initiatives pursued over the past two decades. Like its predecessors, *HP 2010* was developed through a broad consultative process, built on the best scientific knowledge, and designed to measure programs over time. The *HP 2010* national objectives were used as the standard against which health status of the Valley can be measured. Background information on many of the data indicators in this report was provided by the *HP 2010* report.

Additional data sources used less extensively include but are not limited to the following: California Children and Families Commission; California Department of Pesticide Regulation; California Food Policy Advocates; California Managed Risk Medical Insurance Board; Children Now; Center for Medicare and Medicaid Services; Centers for Disease Control and Prevention; RAND California; University of California, San Francisco, Center for Health Professions; and Environmental Defense's ScoreCard.

Data Limitations

The U.S. Census Bureau data are estimates derived from a sample and are subject to both sampling and nonsampling errors. Sampling error in data arises from the selection of people and housing units included in the sample. Nonsampling error occurs as a result of errors that may take place during the data collection and processing stage.

Similarly, the 2001 *CHIS* is a random telephone survey and it is subject to some error. Households without a telephone were not sampled for the *CHIS*. This could give rise to bias in the estimates considering that approximately 5% of households in California are without telephones. Nevertheless, recent information utilized by the 2001 *CHIS* showed that the health characteris-

tics of those with and without telephones are not as different as they had been in the past. To mitigate the effects of sampling bias, *CHIS* researchers used special weighting procedures.

The *County Health Status Profiles* (DHS, 1998, 2003a) use both crude rates and age-adjusted rates in reporting public health and vital statistics. Crude rates are based on a three-year average of events in the overall state population. Age-adjusted rates are hypothetical rates that would exist if state and county populations were distributed by age in the same proportions as a standard U.S. population. Prior to 2001, biostatisticians used the 1940 U.S. population as the reference population. Beginning in 2001, biostatisticians started using the 2000 U.S. Census age cohort proportions. Thus, comparisons between data from the 1990s and current data are not possible for age-adjusted rates. One should also keep in mind that all vital statistics rates are subject to random variation; the smaller the occurrence of an event, the more likely it is that the variable being reported has random fluctuations.

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SECTION I.

A Profile of the Valley – Its People and Its Health Services

A. Demographics

As a population grows it requires additional infrastructure and resources. Existing services are strained as new demands are made by increased needs. Unless a region can keep up with growth in a sustainable manner, negative changes can result in quality of life, environment, and basic services.

Population Growth

Over 1 in 10 California residents (10.3%), or 3.3 million persons, live in the San Joaquin Valley. Between 1990 and 2000 the Valley's population increased by approximately 560,000 persons, from 2.7 million to 3.3 million. The San Joaquin Valley continues to grow at a faster rate than does the rest of California. The Valley grew by 20.5% between 1990 and 2000, while California's population grew by only 13.8%. Madera County was the leader in the San Joaquin Valley's population growth, with a 39.8% increase between 1990 and 2000.

The San Joaquin Valley counties comprise 27,880 square miles, with an approximate population density of 118 persons per square mile. Actual density in urban areas is much greater, as much of Valley land is used for agriculture or cattle grazing. Also, large portions of some counties are national forests or parks.

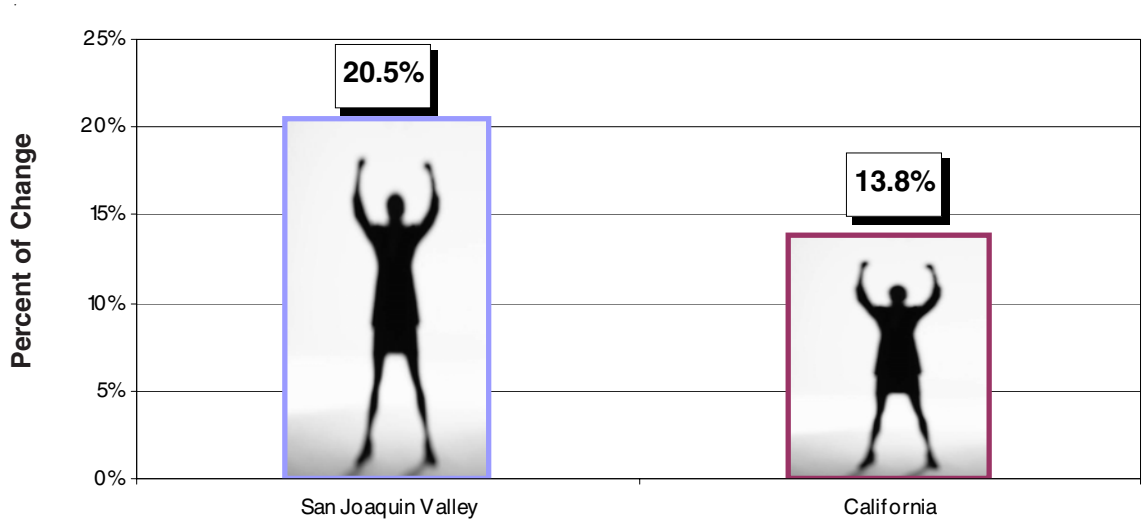

Figure 2: Population Changes in the San Joaquin Valley, 1990 to 2000
Source: U.S. Census Bureau, 1990; 2000.

Age Profile

The distribution of ages in a population has important implications for economics, programs, and health status. For example, higher percentages of youth and seniors can strain a community's financial resources. Children are not yet contributing to the economy, but resources need to be allocated for their health care and education. The elderly, on the other hand, have by and large completed their contributions to the economy and require community resources for health care and other living costs. Working-age adults are critically important to a region's well-being because they are the primary income producers for both the young and the old. The baby boomers, ages 39–57, are aging. Many will soon be out of the workforce and require additional support services.

According to the U.S. Census Bureau, in 2000, the San Joaquin Valley as a whole was younger than was the rest of California and the U.S. On average, 31.8% of Valley residents were under age 18 (virtually unchanged from 1990), compared to 27.3% for California and 25.7% for the U.S. At the other end of the age spectrum, only 9.9% of Valley residents were age 65 and over, compared to 10.6% for California and 12.3% for the United States.

In addition, there were fewer working adults ages 18-64 in the San Joaquin Valley than elsewhere in the state. Only 58.2% of the Valley's population was ages 18-64, compared to 62.1% of California's and 61.8% of the United States' population. The young adult population ages 25-44 actually decreased in the San Joaquin Valley, dropping from 31.6% in 1990 to 29.0% in 2000. Young adults constitute prime wage earners and economic suppliers, and without their contributions to the economy it might be difficult to generate revenues sufficient to support the services needed by children and adults ages 65 and over (Figure 4).

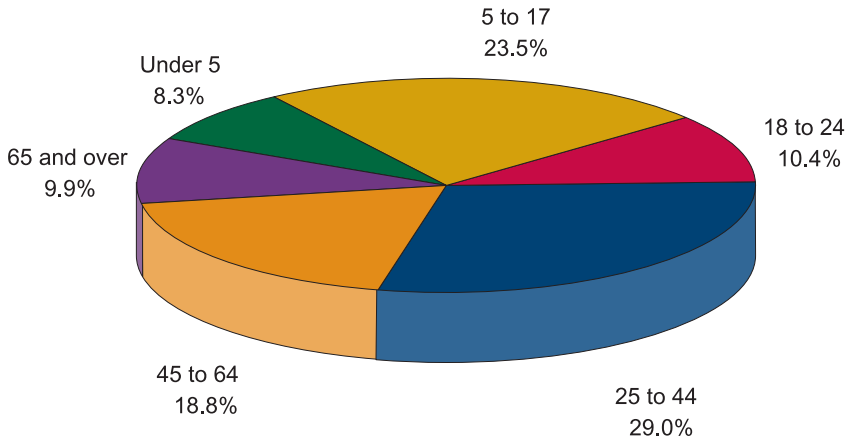

Figure 3: Age Profile of the San Joaquin Valley, 2000
Source: U.S. Census Bureau, 2000.

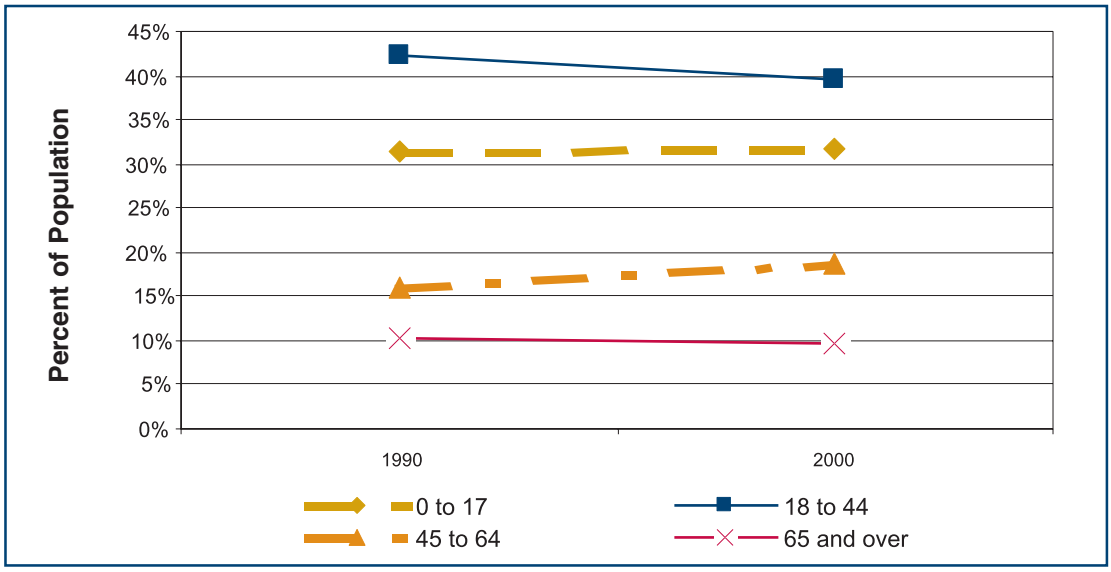

Figure 4: Age Distribution Trends in the San Joaquin Valley, 1990 to 2000
Source: U.S. Census Bureau, 1990, 2000.

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Ethnicity

A varied and diverse population can be an asset to a region, bringing together different cultures, languages, and experiences. However, ethnic diversity also means that health systems must respond to varied needs, languages, and challenges posed by differing cultural attitudes and behaviors.

The San Joaquin Valley is ethnically diverse, with no majority ethnicity. Data from the 2000 U.S. Census showed the residents of the Valley to be 39.8% Latino, 46.0% White, 6.1% Asian/Pacific Islander, and 4.6% African-American. Less than 1% of residents were Native American. Ethnic distribution varied throughout the Valley. For instance, Merced County's residents were 45.3% Latino, whereas Stanislaus County's residents were 31.7% Latino. Similarly, San Joaquin County's residents were 11.3% Asian/Pacific Islander, compared to 1.3% of residents in Madera County.

The San Joaquin Valley had approximately 1.3 million Latino residents, a much greater percentage of Latino residents than in California as a whole. Between 1990 and 2000 the percentage of Latino residents in the San Joaquin Valley increased from 30.1% of the population to 39.8%; in California, the percentage of Latino residents increased from 25.8% to 32.4%. During the same period, the White population in the San Joaquin Valley dropped from 58.3% to 46.0%.

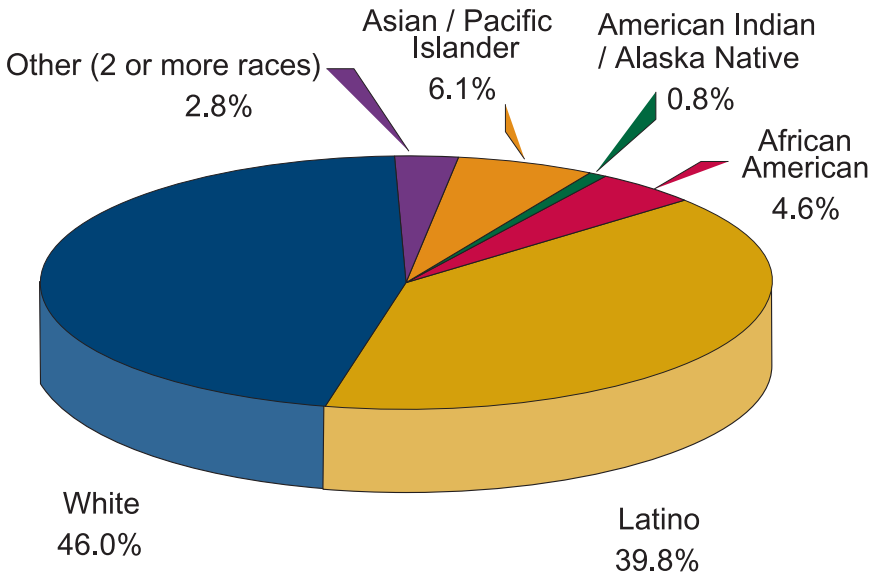

Figure 5: Ethnic Profile of the San Joaquin Valley, 2000
Source: U.S. Census Bureau, 2000.

The community clusters reflected wide variations in the percentage of Latino residents. The Fresno County community cluster of Huron had a population that consisted of 98.0% Latino residents. In contrast, the Madera County Mountains community cluster had a population that consisted of only 7.5% Latino residents.

Table 2: The 10 Communities With the Lowest Percentage of Latino Residents

County	Community Cluster	% of Latino Residents
Madera	The Mountains	7.5%
Kern	Inyokern	10.6%
Kern	Frazier Park	15.5%
Kern	Buttonwillow/Elk Hills	15.6%
Kern	Taft	15.8%
San Joaquin	Lodi	17.0%
Stanislaus	Oakdale	17.2%
San Joaquin	Woodbridge	19.3%
Kern	Mojave	19.8%
Stanislaus	N. Modesto/Salida	22.1%

Source: U.S. Census Bureau, 2000.

Table 3: The 10 Communities With the Highest Percentage of Latino Residents

County	Community Cluster	% of Latino Residents
Kings	Avenal	65.8%
Kern	E. Bakersfield/Lamont	66.0%
Tulare	Woodlake	66.3%
Tulare	Dinuba	67.2%
Kern	Shafter/Wasco	67.8%
Kern	Delano/McFarland	71.5%
Fresno	Reedley/Parlier	72.7%
Tulare	Earlimart/Pixley	76.1%
Fresno	San Joaquin	87.1%
Fresno	Huron	98.0%

Source: U.S. Census Bureau, 2000.

Languages

A lack of proficiency in the English language affects a person's ability to discuss medical problems with a physician or nurse, to complete an insurance application, or to decipher a medical bill. Language problems affect insurance coverage, because those with limited English proficiency may also have limited employment opportunities and may work in jobs less likely to offer employment-based insurance.

The inability to communicate clearly means doctors and patients cannot discuss symptoms or treatment regimens, leading to potential misdiagnoses or inappropriate treatment choices. Moreover, patients may not understand the treatments prescribed and thus may not be able to comply with the proposed therapy (Ku & Waidmann, 2003).

According to the 2000 U.S. Census, English, as the dominant household language, is becoming less common. In 1990, 70.0% of Valley households reported that their household language was English; by 2000, that number had dropped to 62.9%, ranging from a high of 67.9% in Stanislaus County to a low of 54.8% in neighboring Merced County. In California as a whole, the percentage of English-speaking households dropped from 69.9% to 62.2% (Figure 7).

Conversely, the percentage of San Joaquin Valley households that spoke Spanish as the dominant language rose from 21.0% to 28.3%, ranging from a high of 37.3% in Tulare County to a low of 20.8% in San Joaquin County. In California, the percentage of households that spoke Spanish rose from 17.3% to 22.4%.

The percentage of San Joaquin Valley households that spoke Asian languages remained constant at an average of 4.1%. San Joaquin County had the highest percentage of households that spoke an Asian language, at 8.0%. In California, the percentage of households that spoke an Asian language as the dominant language was higher at 8.6%.

The percentage of San Joaquin Valley residents who did not speak English “well or at all” increased from 8.2% in 1990 to 10.0% in 2000. In California, the percentage of individuals who did not speak English “well or at all” rose from 8.1% to 9.9%.

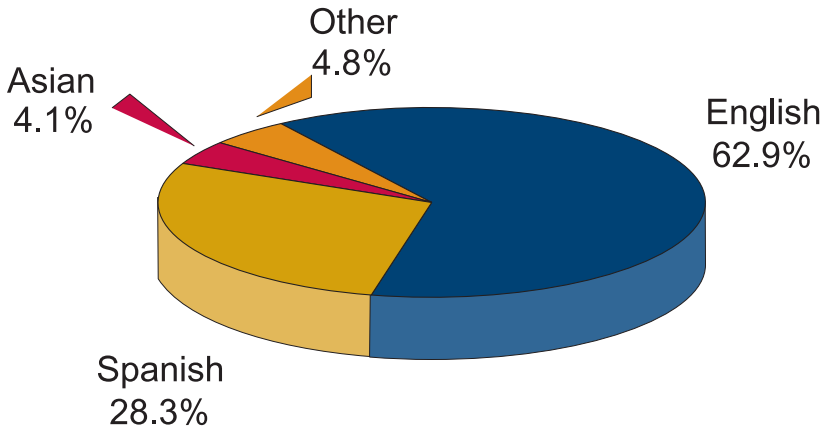

Figure 6: Dominant Household Language Profile in the San Joaquin Valley, 2000
Source: U.S. Census Bureau, 2000.

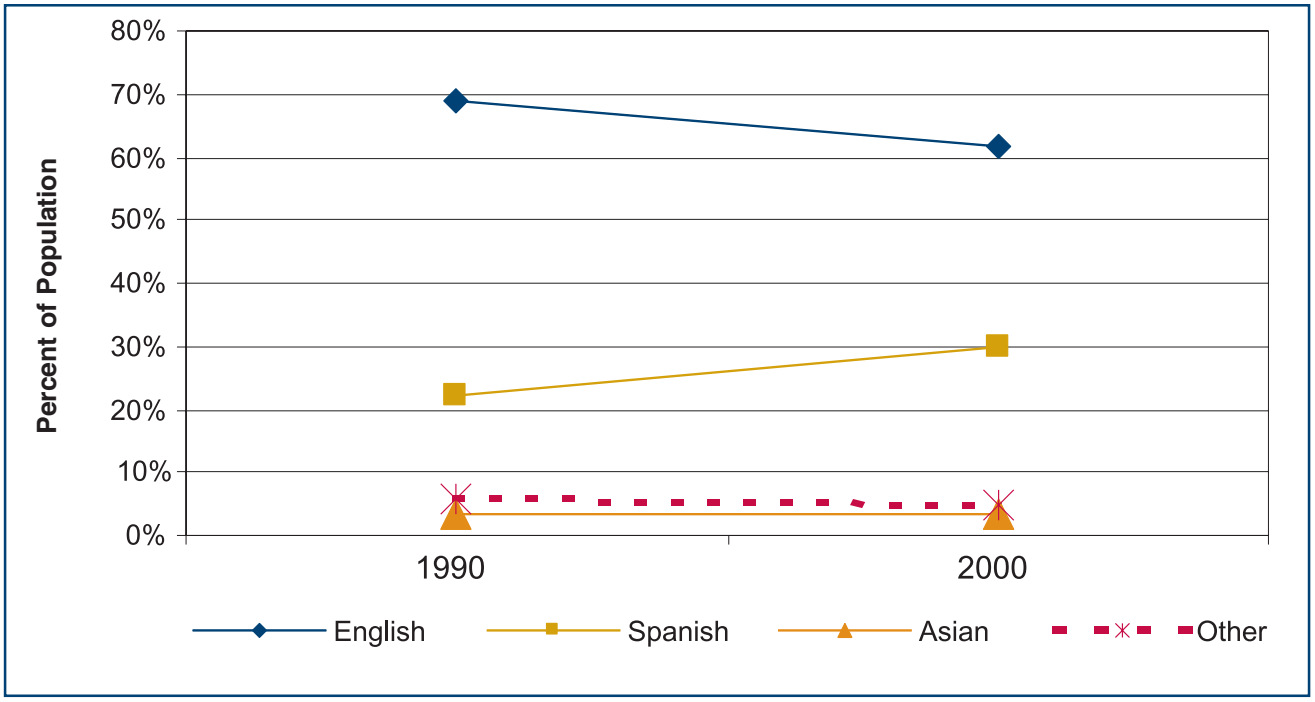

Figure 7: Dominant Household Languages in the San Joaquin Valley, 1990 to 2000
Source: U.S. Census Bureau, 1990, 2000.

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Again, there were major differences with regard to the percentages of individuals in the cluster communities who did not speak English as the dominant language at home. In Madera County, The Mountains community cluster had the lowest percentage of individuals over age 5 who did not speak English as the dominant language at home (7.4%). Huron, in Fresno County, had the highest percentage of individuals over age 5 who did not speak English as the dominant language at home (87.4%).

Table 4: The 10 Communities With the Lowest Percentage of the Population, Over Age 5, Who Do Not Speak English as the Dominant Language at Home

County	Community Cluster	% of Population Who Do Not Speak English at Home
Madera	The Mountains	7.4%
Kern	Inyokern	10.0%
Kern	Buttonwillow/Elk Hills	13.5%
Stanislaus	Oakdale	16.0%
Kern	Taft	16.4%
Kern	Frazier Park	17.7%
Kern	Mojave	18.5%
San Joaquin	Woodbridge	18.5%
Tulare	Visalia	19.4%
Stanislaus	N. Modesto/Salida	22.5%

Source: U.S. Census Bureau, 2000.

Table 5: The 10 Communities With the Highest Percentage of the Population, Over Age 5, Who Do Not Speak English as the Dominant Language at Home

County	Community Cluster	% of Population Who Do Not Speak English at Home
Kern	Shafter/Wasco	58.5%
Kings	Avenal	58.7%
Fresno	Kerman/Biola	59.1%
Tulare	Woodlake	59.5%
Fresno	Reedley/Parlier	62.4%
Fresno	S. Fresno	67.7%
Kern	Delano/McFarland	72.6%
Tulare	Earlimart/Pixley	74.4%
Fresno	San Joaquin	81.5%
Fresno	Huron	87.4%

Source: U.S. Census Bureau, 2000.

Income and Poverty

The income of the residents of a region determines its ability to provide a range of health services to its population. A family's income determines the amount of discretionary spending, beyond the necessities of housing and food, which would be available to afford medical care. Income and poverty are highly associated with health status and access to health care. Those with lower incomes generally tend to be in poorer health and to have less access to care.

Personal income in the San Joaquin Valley remains well below personal income in the remainder of California. 2000 U.S. Census data show that per capita income in the Valley was 32% less than the per capita income in California, averaging $15,541 in the Valley compared to $22,711 in California in 1999. Tulare County had the lowest per capita income at $14,006 and San Joaquin County had the highest at $17,365.

Even though per capita income in the Valley increased 36.3% in the 10-year period since 1990, from $11,404 to $15,541, this increase was still below the statewide increase of 38.4%, from $16,409 to $22,711. The increase in per capita income in the San Joaquin Valley ranged from 57.9% in Kings County to 29.7% in Kern County.

In 1999, California's median family income of $53,025 was 36.5% higher than the median family income of $38,841 in the San Joaquin Valley. The median family income in the Valley rose 29.7% between 1990 and 2000, while the median family income in California rose 30.7% (Figure 9).

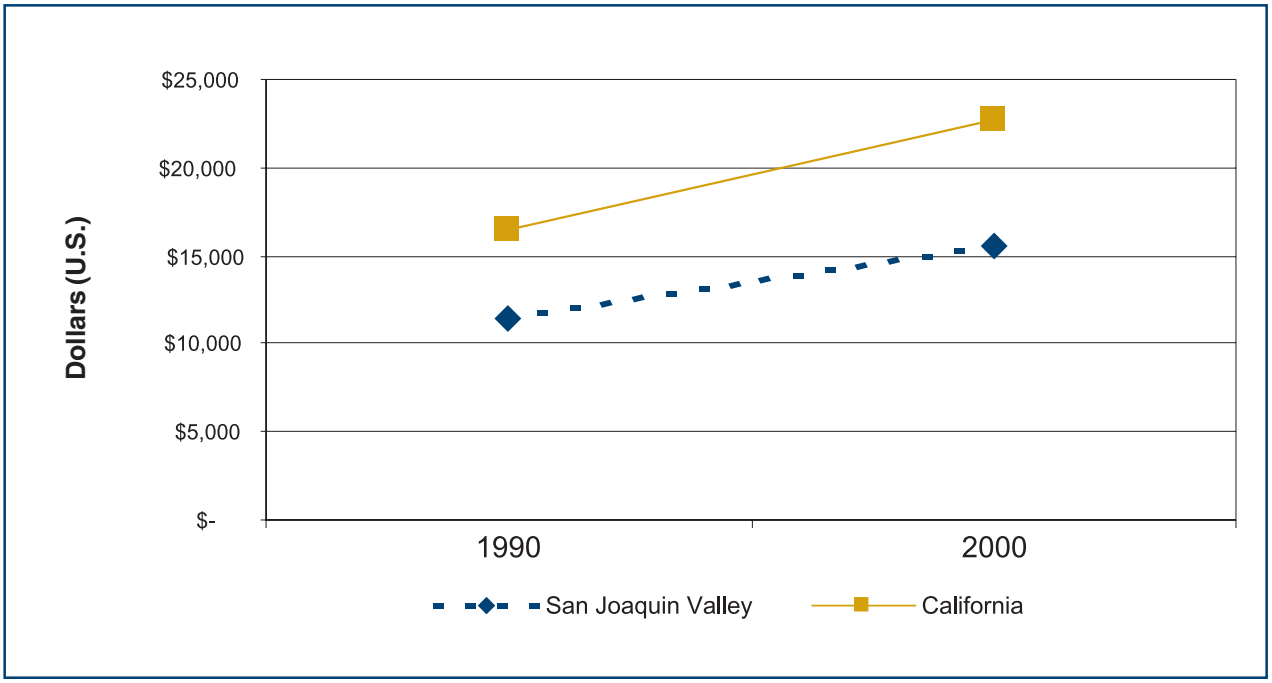

Figure 8: Per Capita Personal Income in the San Joaquin Valley, 1990 to 2000
Source: U.S. Census Bureau, 1990; 2000.

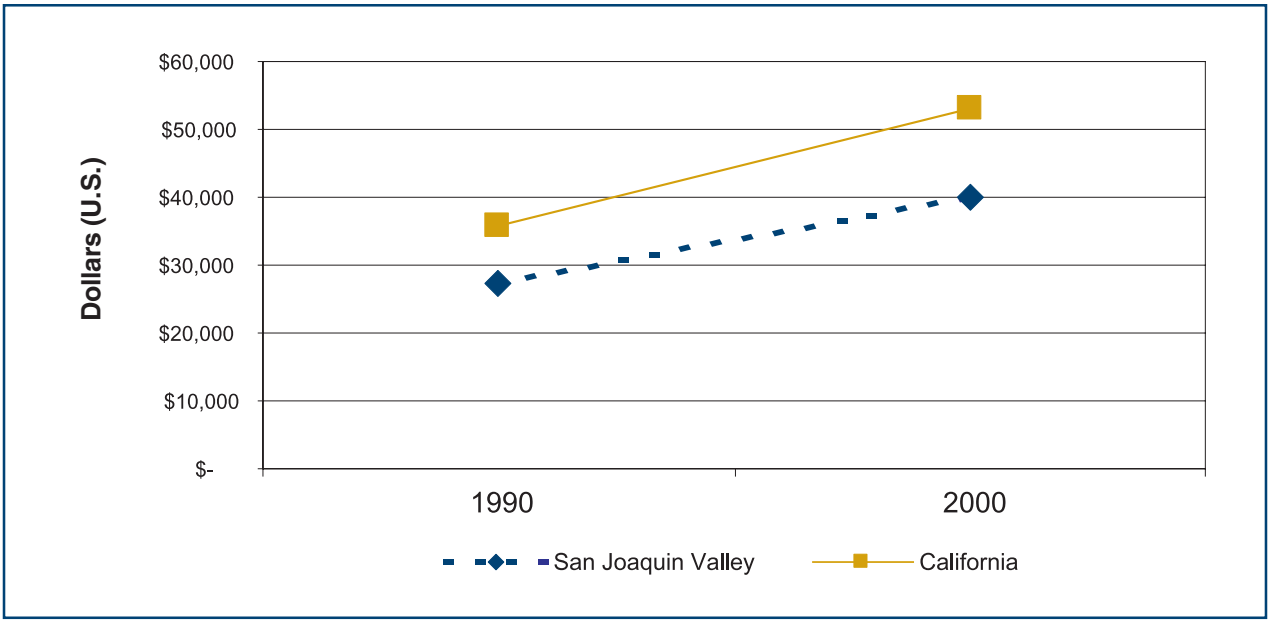

Figure 9: Median Family Income in the San Joaquin Valley, 1990 to 2000
Source: U.S. Census Bureau, 1990, 2000.

A recent publication highlighting the impact of rural poverty on our nation's children reported that "California's Central Valley houses 13 of the nation's 101 poorest communities" (Save the Children, 2002, p. 99).

The extent of poverty in the Valley is most apparent when examining the cluster communities. The 10 cluster communities with the highest percentage of families living in poverty ranged from 24.8% in Corcoran, Kings County, to 38.8% in South Fresno, Fresno County. Four of the 10 community clusters had over one third of families living in poverty (Table 7). The 10 community clusters with the lowest percentage of families living in poverty ranged from 4.6% in Buttonwillow/Elk Hills, Kern County, to 8.8% in Riverbank, Stanislaus County.

Table 6: The 10 Communities With Lowest Percentage of Families Living in Poverty

County	Community Cluster	% of Families in Poverty
Kern	Buttonwillow/Elk Hills	4.6%
San Joaquin	Tracy	5.5%
Kern	Frazier Park	5.6%
Stanislaus	N. Modesto/Salida	6.1%
San Joaquin	Woodbridge	6.2%
San Joaquin	Manteca/Lathrope/Escalon/Ripon	7.1%
Stanislaus	Oakdale	7.2%
Madera	The Mountains	7.2%
Fresno	Herndon/Pinedale	8.1%
Stanislaus	Riverbank	8.8%

Source: U.S. Census Bureau, 2000.

Table 7: The 10 Communities With Highest Percentage of Families Living in Poverty

County	Community Cluster	% of Families in Poverty
Kings	Corcoran	24.8%
Kern	Delano/McFarland	27.9%
Kern	E. Bakersfield/Lamont	27.9%
Kings	Avenal	28.3%
San Joaquin	Central Stockton	28.6%
Fresno	Central Fresno	29.1%
Tulare	Earlimart/Pixley	34.1%
Fresno	W. Fresno/Burrel	35.7%
Fresno	Huron	36.1%
Fresno	S. Fresno	38.8%

Source: U.S. Census Bureau, 2000.

The rate of children living in poverty is very high in the Valley. Over one in four Valley children (28.1%), or 287,750 children, lived at or below the federal poverty level in 2000. (The poverty level for a family of four in 2000 was $17,050; the 2003 poverty level for a family of four was $18,400.) Over half of Valley children lived in families with incomes below 185% of the poverty level (a common eligibility standard for federal health and social benefits programs). The Valley's child poverty rate was 44.5% higher than that of the state.

In the San Joaquin Valley, there were approximately 126,000 families living in poverty in 2000. The percentage of families living in poverty rose from 14.5% in 1990 to 16.0% in 2000.

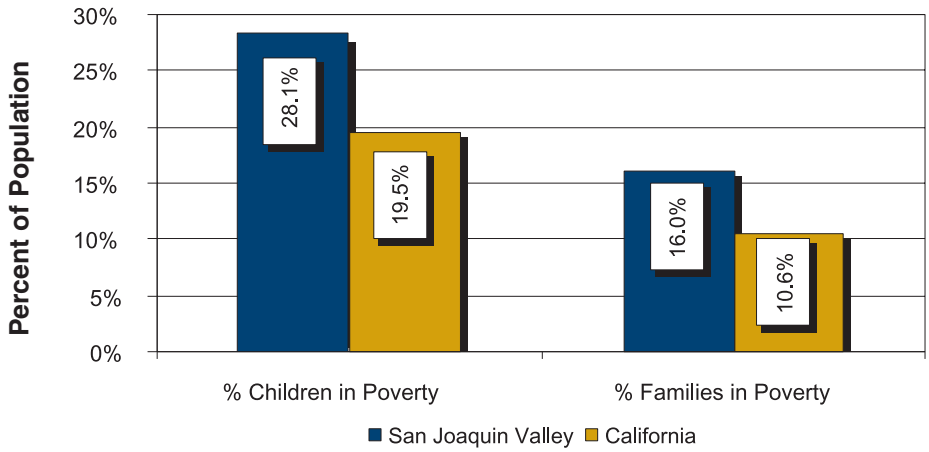

Figure 10: Children and Families in Poverty in the San Joaquin Valley, 2000
Source: U.S. Census Bureau, 2000.

Housing

The availability, quality, and cost of safe and suitable housing also have an effect on the health of the region's population. High housing costs can lead to less available income for nutrition and health care, as well as to overcrowding and homelessness. The quality of housing can directly impact health through environmental factors such as lead paint, allergens, and mold.

In 2000, the average household size in the San Joaquin Valley was 3.1 persons, compared to 2.9 persons in the average household in California. These figures were up slightly from 1990, when the average household size was 3.0 in the Valley and 2.8 in California (U.S. Census Bureau, 2000).

According to the 2000 U.S. Census data, the median price of a home in the Valley was $111,400 in 2000. This was approximately half the median price of a home in California ($211,500). However, there was a 22.4% increase (from $91,038 in 1990) in the median price of a home in the Valley over the 10 year period between 1990 and 2000. In comparison, the median price of a home in California increased by only 8.9% (from $194,300 in 1990). The 2000 U.S. Census data showed that a higher percentage of San Joaquin Valley families (61.2%) owned their home, as compared with the percentage of California families (56.9%).

For those families that rent their homes, the average monthly household rent in the Valley was $551 in 2000, much lower than the average monthly rent in California ($747). However, rents in the Valley increased by an average 25.5% between 1990 and 2000, while they only rose 20.5% in California. Madera County (32.9%) and Kings County (66.6%) had the highest percentage increases in average household rent during this period.

There was a large increase in the number of new houses built in the San Joaquin Valley between 2000 and 2003. The Valley-wide monthly average of housing starts for new single-family homes grew from 190 in 2000 to 275 in 2003. Fresno and Kern Counties had the largest increases. The average number of housing starts for multi-family housing remained constant; however, there were wide variation among the counties. Multi-family housing starts in Fresno County increased three-fold, from 35 to 104 per month, and in Tulare County there was an even larger increase, from 14 to 51 per month. On the other hand, multifamily housing starts in Merced County dropped from 50 to 2 per month, and for Stanislaus County multi-family housing starts dropped from 43 to 16 per month between 2000 and 2003 (California Building Industry Organization, 2003).

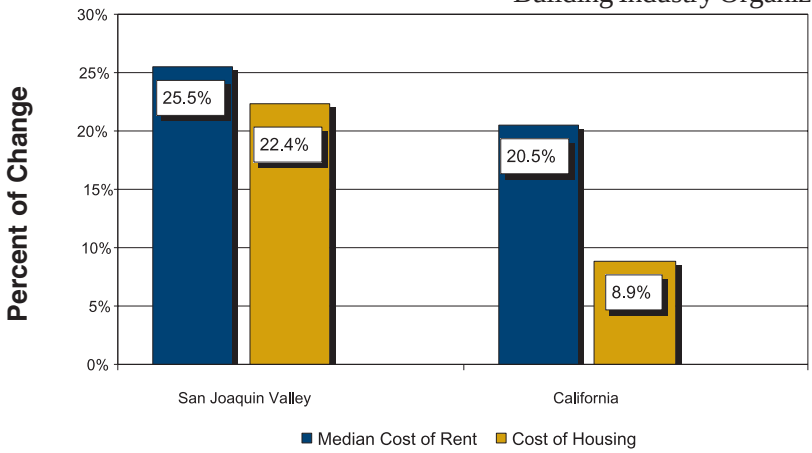

Figure 11: Housing Costs in the San Joaquin Valley, 1990 to 2000
Source: U.S. Census Bureau 1990, 2000.

Immigration

Immigration into an area can provide an economic stimulus through an increase in the size of the labor force, entrepreneurial energy, and connections with other markets. In examining health issues, when immigrants come to the United States they are often healthier than is the "native" population. However, acculturation frequently has a negative impact on health, because immigrants typically adopt poor American eating behaviors and other unhealthy behaviors. In addition, immigrants are often unfamiliar with the American health system and they may not understand or utilize it.

The percentage of persons born outside the United States living in the San Joaquin Valley was less than the percentage of such persons in California. In 2000, 19.8% of Valley residents were immigrants, compared to 26.2% of California residents. During the 10-year period ending in 2000, the percentage of the immigrant population in the Valley grew by 25.3%, from 15.8% in 1990 to 19.8% in 2000; the increase in California was 20.7%.

The percentage of immigrants who arrived in the United States during the decade of the 1990s and who settled in the San Joaquin Valley was slightly higher than that of California: 37.8% for the San Joaquin Valley versus 36.9% for California.

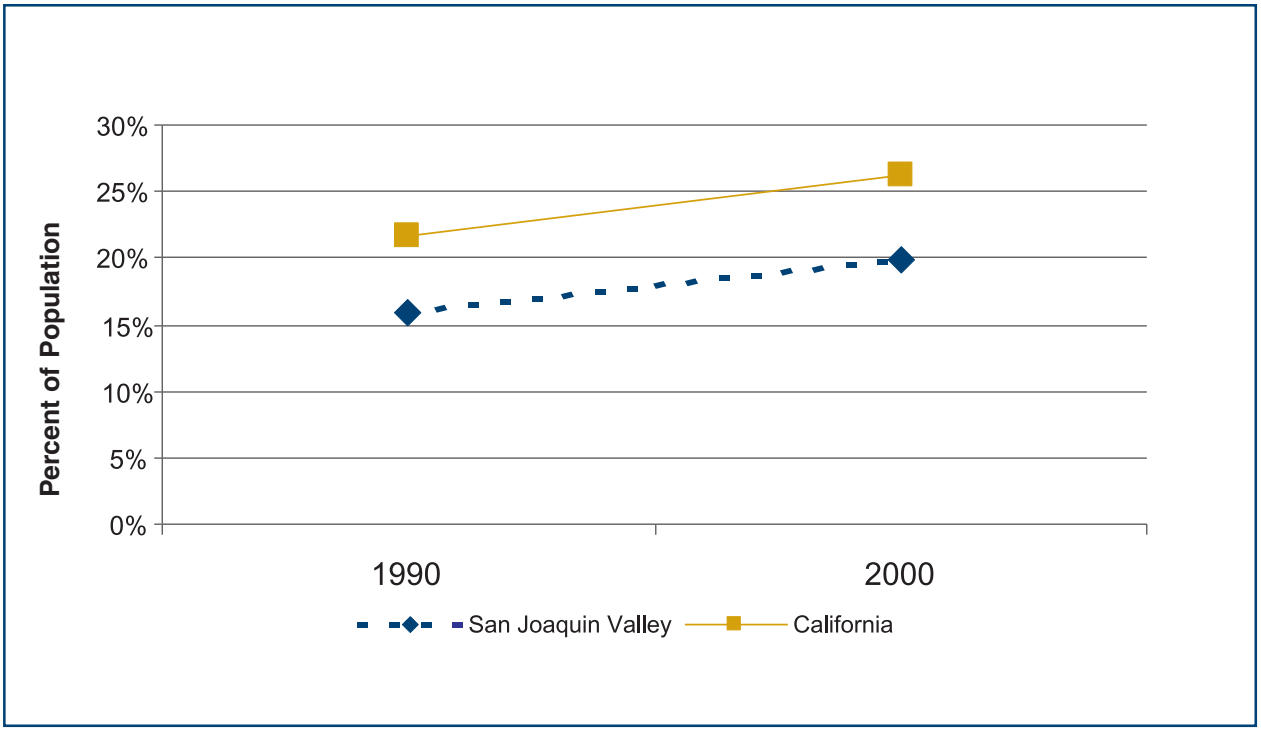

Figure 12: Residents of the San Joaquin Valley Born Outside of the United States, 1990 to 2000
Source: U.S. Census Bureau, 1990, 2000.

The cluster community of The Mountains, in Madera County, had the lowest percentage of immigrants, with 3.9% of residents born outside of the United States. On the other end of the spectrum, the Fresno County community cluster of Huron had the highest percentage of immigrants, with 54.5% of residents born outside the United States. Five of the 10 communities with the highest percentage of immigrants were in Fresno County (Caruthers/W. Selma, Reedley/Parlier, S. Fresno, San Joaquin, and Huron).

Table 8: The 10 Communities With the Lowest Percentage of Immigrants

County	Community Cluster	% of Immigrants
Madera	The Mountains	3.9%
Kern	Inyokern	4.3%
Kern	Buttonwillow/Elk Hills	6.6%
Tulare	Visalia	6.8%
Kern	Taft	7.5%
San Joaquin	Woodbridge	9.1%
Stanislaus	Oakdale	9.2%
Kern	Mojave	9.9%
Kern	Frazier Park	10.6%
Fresno	Clovis/Sanger	11.5%

Source: U.S. Census Bureau, 2000.

Table 9: The 10 Communities With Highest Percentage of Immigrants

County	Community Cluster	% of Immigrants
San Joaquin	S. Stockton/French Camp	31.4%
Fresno	Caruthers/W. Selma	32.4%
Fresno	Reedley/Parlier	32.8%
Merced	N. Merced Co./Livingston	33.6%
Tulare	Woodlake	34.1%
Fresno	S. Fresno	36.8%
Kern	Delano/McFarland	37.8%
Tulare	Earlimart/Pixley	41.2%
Fresno	San Joaquin	52.7%
Fresno	Huron	54.5%

Source: U.S. Census Bureau, 2000.

Single-Parent Households

Single-parent households have often been implicated in challenges to children and family stability. With only one potential wage earner and only one potential caretaker, single parents face pressures not faced in two-parent households. Poverty rates are highest for families headed by single women, particularly Black or Hispanic single women. Nationally, in 2001, 26.4% of female-headed families were poor, whereas 13.1% of male-headed families and 4.9% of married-couple households lived in poverty. In 2001, both Black and Hispanic female-headed families had national poverty rates exceeding 35.0% (University of Michigan National Poverty Center, 2003).

The U.S. Census Bureau reports on single-parent households headed by a female (female householder families). Since 1990 the percentage of female householder families has remained stable in the San Joaquin Valley, increasing only slightly from 16.9% in 1990 to 18.1% in 2000. California has shown an even smaller increase in female householder families, from 16.7% in 1990 to 17.5% in 2000.

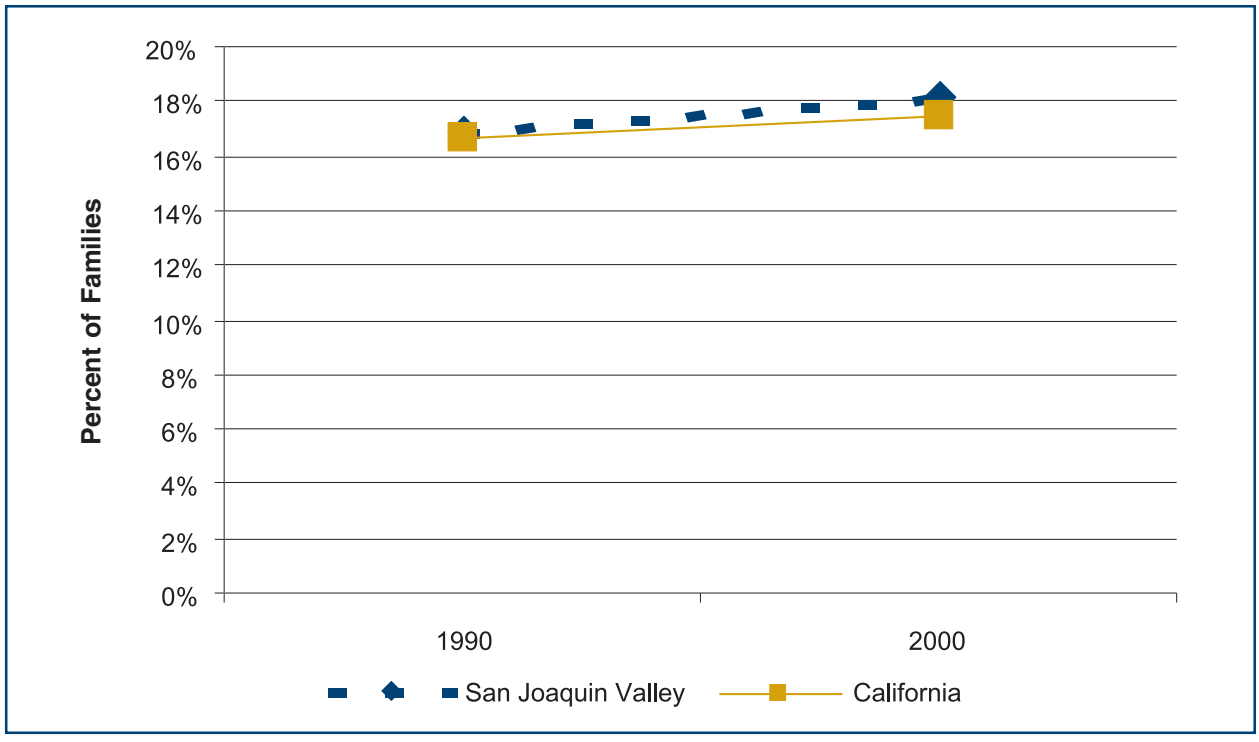

Figure 13: Female Householder Families in the San Joaquin Valley, 1990 to 2000
Source: U.S. Census Bureau, 1990, 2000.

A review of the community cluster data shows a wide variation in the percentage of female householder families. The Kern County community cluster of Buttonwillow/Elk Hills had the lowest percentage of female householder families, at 8.2%. The community cluster with the highest percentage of female householder families was W. Fresno/Burrel in Fresno County, at 31.5%.

Table 10: The 10 Communities With Lowest Percentage of Female Householder Families

County	Community Cluster	% of Female Householder Families
Kern	Buttonwillow/Elk Hills	8.2%
San Joaquin	Woodbridge	9.0%
Fresno	Caruthers/W. Selma	9.5%
Kern	Frazier Park	9.6%
Merced	Gustine	10.0%
Madera	The Mountains	10.3%
Kern	Arvin/Tehachapi	11.2%
San Joaquin	Tracy	11.2%
Fresno	San Joaquin	11.3%
Stanislaus	Waterford/Hughson	11.9%

Source: U.S. Census Bureau, 2000.

Table 11: The 10 Communities With Highest Percentage of Female Householder Families

County	Community Cluster	% of Female Householder Families
Stanislaus	W. Modesto/Empire	21.4%
San Joaquin	N. Stockton	21.9%
San Joaquin	S. Stockton/French Camp	23.2%
Kern	E. Bakersfield/Lamont	23.2%
Kern	N. Bakersfield	23.7%
Fresno	Southeast Fresno	24.8%
Fresno	S. Fresno	26.6%
San Joaquin	Central Stockton	28.0%
Fresno	Central Fresno	30.7%
Fresno	W. Fresno/Burrel	31.5%

Source: U.S. Census Bureau, 2000.

Unemployment

Having a job directly impacts one's ability to support one's self and one's family. The unavailability of jobs deprives workers of income and limits employer-provided health insurance benefits, often contributing to other physical and mental health consequences. Employment is a key source of health insurance for American workers. In addition, workers who are unemployed are often unable to pay bills and may skimp on the necessities of life such as food and medicine. Workers who are unemployed also rely more heavily on the social services system.

According to the California Employment Development Department (2003), the San Joaquin Valley's average unemployment rate (12.9%) continued to be nearly double the statewide rate (6.7%) in 2002. For the same year, the average unemployment rate in the San Joaquin Valley ranged from a high of 15.5% in Tulare County to a low of 10.1% in San Joaquin County. Seasonal differences due to the heavy reliance on agricultural employment pushed the rate to 18.3% in the fourth quarter of 2002 in Tulare County. Even higher rates existed in some localities, such as Earlimart in Tulare County, where the rate was 44.0% in 2002. California's unemployment rate was only 7.0% in the same period.

Although the San Joaquin Valley experiences wide seasonal and annual variations, the Valley has faced chronically high unemployment rates for well over a decade. During the period between 1991 and 1997, the average San Joaquin Valley unemployment rate was never lower than 12%, while state unemployment rates averaged half those of the Valley (Great Valley Center, 1999). This trend has shown no evidence of change since the beginning of the new millennium.

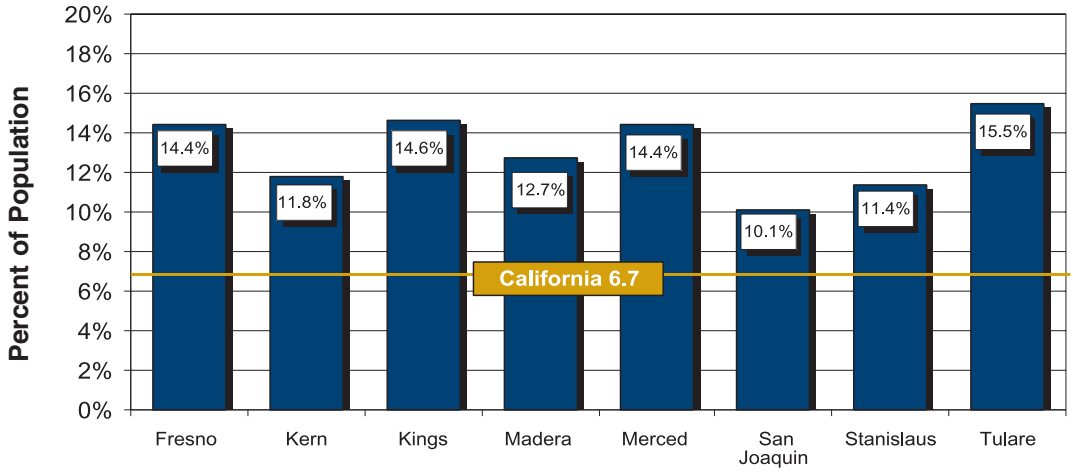

Figure 14: Average Unemployment Rates by County in the San Joaquin Valley, 2002
Source: California Employment Development Department, 2003.

Education

How much education an individual has is highly correlated with health status, poverty, and employment. Educational attainment has serious implications for health literacy and the ability to understand and follow instructions. Educational attainment is also associated with income and the ability to provide for one's family.

The 2000 U.S. Census data show that a third (32.2%) of San Joaquin Valley residents, age 25 and over, lacked a high school diploma, only slightly improved from 34.8% in 1990. In comparison, 23.2% of California adults age 25 and older lacked a high school diploma, virtually unchanged from 1990. One in five adults in Tulare County (23.1%) and Merced County (21.7%) had less than a ninth grade education, which is more than double the state average of 11.5%.

The percentage of Valley adults with a college degree (associate or above) rose slightly between 1990 and 2000, from 19.8% to 20.7%. However, in 2000 it was still much lower than the California average of 33.8%.

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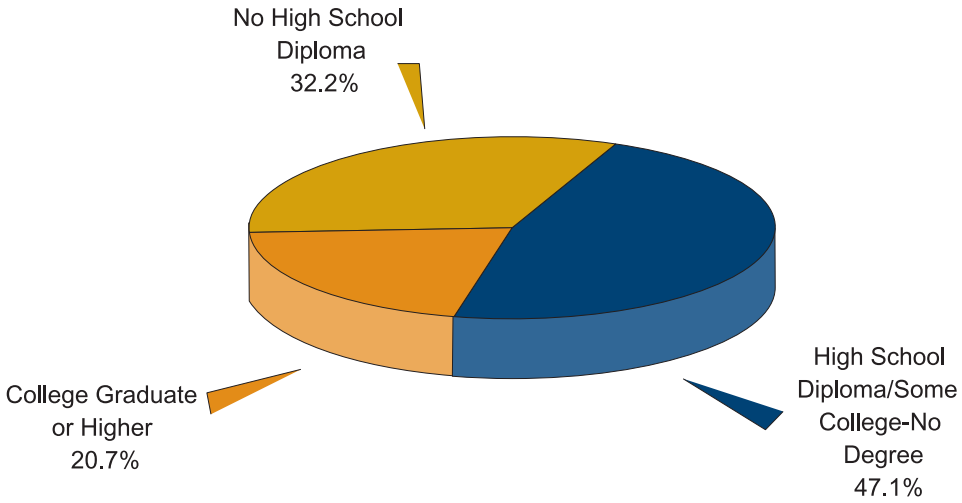

Figure 15: Levels of Educational Attainment in the San Joaquin Valley, 2000
Source: U.S. Census Bureau, 2000.

The data from the cluster communities show a vast difference between San Joaquin Valley communities in terms of educational attainment. In the cluster community of Frazier Park, in Kern County, only 9.6% of the residents ages 25 years and over did not have a high school diploma. In contrast, in the cluster community of Huron in Fresno County, 80.2% of the residents ages 25 and over did not have a high school diploma.

Table 12: The 10 Communities With the Lowest Percentage of Persons, Age 25 Years and Over, Without a High School Diploma

County	Community Cluster	% of Persons without a High School Diploma
Kern	Frazier Park	9.6%
Kern	Buttonwillow/Elk Hills	13.1%
Madera	The Mountains	14.3%
Fresno	Herndon/Pinedale	14.6%
Fresno	N. Fresno	15.8%
Tulare	Visalia	17.2%
Stanislaus	N. Modesto/Salida	17.7%
San Joaquin	Lodi	18.3%
Fresno	Clovis/Sanger	20.1%
Kern	Mojave	20.4%

Source: U.S. Census Bureau, 2000.

Table 13: The 10 Communities With the Highest Percentage of Persons, Age 25 Years and Over, Without a High School Diploma

County	Community Cluster	% of Persons without a High School Diploma
Stanislaus	W. Modesto/Empire	50.4%
Fresno	Kerman/Biola	51.2%
Kern	Delano/McFarland	52.8%
Fresno	Caruthers/W. Selma	52.9%
Fresno	W. Fresno/Burrel	54.6%
Kern	E. Bakersfield/Lamont	57.5%
Fresno	S. Fresno	63.2%
Tulare	Earlimart/Pixley	67.2%
Fresno	San Joaquin	72.3%
Fresno	Huron	80.2%

Source: U.S. Census Bureau, 2000.

B. Selected Issues of "At-Risk Populations"

Several at-risk populations have unique health needs that require special focus. These populations tend to be marginalized when it comes to accessing and receiving adequate health care because of nationality, language barriers, and poverty . Following are short summaries of issues affecting migrant and seasonal farmworkers, Southeast Asian immigrants, and children in immigrant families.

Farmworkers

The San Joaquin Valley is the richest agricultural valley in the world. Agriculture is a $15 billion a year industry in the Valley and five of the state's six top agriculturally producing counties are in the Valley. As a result of this industry there are approximately 375,000 migrant and seasonal farmworkers in the San Joaquin Valley, comprising over half (51%) of the state's farmworkers (Figure 16). Nearly all of the Valley's farmworkers are Latino. They come mostly from Mexico, increasingly from the southern rural areas (Villarejo et al., 2000).

The California Agricultural Workers Health Survey (CAWHS), conducted by the California Institute for Rural Studies, is the largest interview survey of its kind and it includes physical examinations and blood tests. The CAWHS report, *Suffering in Silence: A Report on the Health of California's Agricultural Workers* (Villarejo et al., 2000), published jointly with The California Endowment, reported that 92% of farmworkers in the study were immigrants, 59% were married, 63% had six or fewer years of formal education, and only half said they could read Spanish well. About 96% described themselves as Mexican, Hispanic, or Latino, and 8% of those were of indigenous origin.

The California Endowment

Indigenous farmworkers are those workers who are from Mexico or Central America and who, because of their language and culture, are distinct from those who speak Spanish. Thousands of newly arrived workers, legal and illegal, are from indigenous communities in the Mexican states of Oaxaca, Guerrero, Chiapas, and more recently the Yucatan, Puebla, and Tlaxcala. Many speak Mixtec, Zapotec, Trique, Chatino, Nauhatl, and Mayan rather than Spanish. In California, enclaves of thousands of Mixtecos are found in such distinct areas as Madera, Livingston, San Diego, Tulare, Santa Barbara, and the Lake Tahoe region. Similarly, groups of Zapotecos, with their own language and culture, are found in these and other areas. The total number of immigrants from Oaxaca alone is estimated at over 100,000 in California (Grieshop, 2000).

Speaking and understanding Spanish is critical for ensuring that safe work practices exist in many California agricultural work settings. If workers do not understand, speak, or read Spanish well, training administered in that language is not effective. Even for those who speak Spanish, many cannot read their written language. Thus, linguistic problems impose notable barriers to occupational health and safety in farmworker communities.

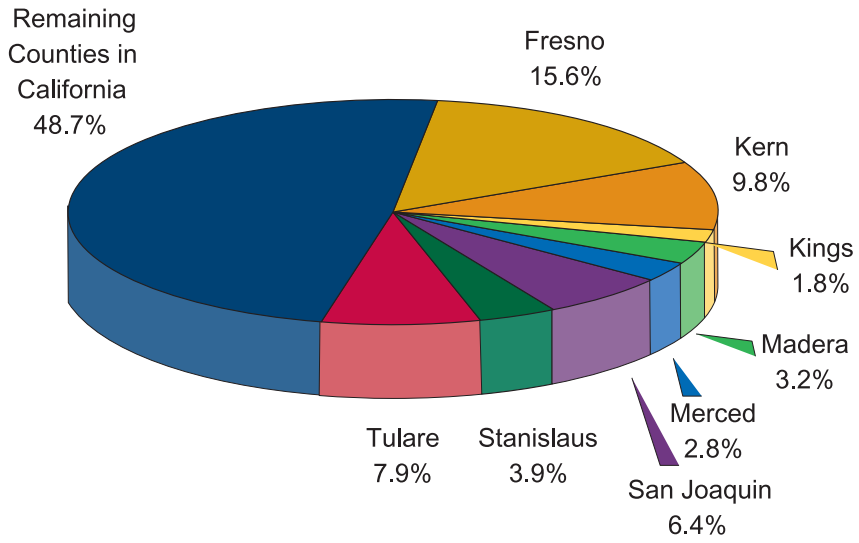

Figure 16: Migrant and Seasonal Farmworkers in the San Joaquin Valley, 2000
Source: Larson, 2000.

Various health problems have been documented among California farmworkers. The CAWHS report, *Suffering in Silence* (Villarejo et al., 2000) found that farmworkers face major challenges in four health related areas:

1. Risk of chronic disease

- Nearly one in five male farmworkers (18%) had at least two of the three risk factors for chronic disease: high serum cholesterol, high blood pressure, and/or obesity. The CAWHS found substantially greater incidence of high blood pressure among male farmworkers than existed among male adults in the U.S. population. For example, 33% of male farmworkers between the ages of 35 and 44 had high blood pressure, compared to 20% of males in the same age group in the U.S. population.

- Eighty-one percent of male and 76% of female farmworkers had unhealthful weight, as measured by the Body Mass Index (BMI). Overall, 28% of male and 37% of female farmworkers were obese.

- Farmworkers were more likely to suffer from iron deficiency anemia than were U.S. adults. The rate of iron deficiency anemia among male farmworkers was about four times greater than that among males in the general U.S. population.

2. Health insurance

- Nearly 70% of farmworkers lacked any form of health insurance and only 7% were covered by any of the various government-funded programs intended to serve low-income persons.

- Only 16.5% of farmworkers said their employer offered health insurance, but nearly one-third of these same workers did not participate in the insurance plan that was offered, most often because they could not afford either the premiums or the copayments.

3. Health care utilization

- Nearly one-third of male farmworkers (32%) said they had never been to a doctor or clinic in their lifetime. In contrast, over one-third of female farmworkers (37.5%) reported having a medical visit within the five months prior to the interview.

- One-half of all male farmworkers and two-fifths of female farmworkers said they had never been to a dentist.

- More than two-thirds of all farmworkers reported never having had an eye-care visit.

4. Occupational health and safety

- Some 18.5% of farmworkers reported having a workplace injury at some point in their farm-working career, for which they were compensated by the California Workers Compensation Insurance System. However, just one-third of all CAWHS participants believed that their employer had such coverage, despite the fact that California law requires such coverage.

- Only 57% of farmworkers said they had received mandated pesticide safety training. Although the incidents of pesticide poisonings have been reduced in recent years there were 132 definite or probable cases of pesticide poisoning reported in 2001 to the California Department of Pesticide Regulation (DPR; 2002a).

- More than 82% of farmworkers reported that their employer provided toilets, wash water, and clean drinking water, as required by law.

CAWHS concluded that the risks for chronic disease, such as heart disease, stroke, asthma, and diabetes, are startlingly high for a group that is mostly comprised of young men who would normally be in the peak of physical condition. With over one-half of California's farmworkers residing in the San Joaquin Valley, the burdens imposed by the high rates of chronic disease, the low rates of health insurance, the lack of access to care, and workplace safety issues are enormous.

Southeast Asian Refugees

Over the past 30 years, the San Joaquin Valley has become home to over 100,000 refugees from Southeast Asia. These ethnic groups, composed of Cambodians, Hmong, Laotians, Lahu, Mien, and Vietnamese reside primarily in the five Valley counties of Fresno, Merced, San Joaquin, Stanislaus, and Tulare. Merced and Fresno Counties have large populations of Hmong, whereas San Joaquin and Stanislaus Counties have a large population of Cambodians (Tom, 2001).

The Asian American/Pacific Islander (AAPI) population in the San Joaquin Valley has grown by 15% in the past 10 years, from 174,000 in 1990 to 201,000 in 2000 (U.S. Census Bureau, 1990, 2000). Population data were difficult to obtain for the Southeast Asian subgroups, but with the assistance of community resources such as Mutual Assistance Associations (MAAs), monks, ministers and other community leaders, informal estimates have been developed. According to these estimates there are approximately 110,000 Southeast Asians in the San Joaquin Valley (Tom, 2001).

Health data were also not readily available for the Southeast Asian (SEA) refugee population. Data for the SEA refugee population were not broken out into subgroups of the AAPI population for specific analysis. The 2001 *CHIS* (UCLA Center for Health Policy Research, 2003) had statewide data only for the Cambodian and Vietnamese subgroups. Further research is clearly needed to gain a more complete and accurate assessment of the health status and needs of the SEA refugee population.

Data that were available for the SEA refugee population indicated that hypertension is prevalent in the Hmong population and is recognized as an important health problem by members of the population and their health care providers. Risk factors such as a high fat diet, lack of physical

activity, overweight, and high blood pressure have been associated with acculturation. Additional issues such as mental health, particularly post traumatic stress disorder, have been described in the literature (Tom, 2001).

Numerous studies have reported that SEA refugees face language and cultural barriers when they attempt to access the health care delivery system in California. A large number of SEA refugees have limited English proficiency. A vast majority of physicians do not know Southeast Asian languages such as Hmong. Often friends, family, and ad hoc interpreters are used by physicians to convey information to their SEA patients. SEA patients often complain about the difficulty understanding what physicians are doing during physical examinations, diagnostic tests, and treatment procedures (Warner & Mochel, 1998).

The difficulty in cross-cultural communication and understanding is vividly portrayed in Anne Fadiman's 1998 book, *The Spirit Catches You and You Fall Down*, which talks about a tragedy that occurred during the treatment of a Hmong girl from Merced County who had epilepsy. As discussed in the book, many providers have no knowledge of Hmong beliefs about health and illness. The ideas of soul loss, spirit possession, and object intrusion are almost completely foreign to Western health care providers. Treatments using herbs, soul-calling ceremonies, and other Hmong health care practices are also strange to Western health care providers. For the Hmong, these are an essential part of their beliefs governing illness and health. As Western health care providers often expect that the patients themselves should make their health care decisions, the importance of the family and clan in the Hmong decision-making process may be ignored or dismissed.

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Children in Immigrant Families

Almost half of the San Joaquin Valley's one million children are either immigrants themselves or live in families with a least one immigrant parent (Inkelas et al., 2003). In the San Joaquin Valley, there are an estimated 457,000 children in immigrant families, or 44% of the 1,047,000 children ages 0-17. (Figure 17). Immigrant children are more likely to live in poverty, have the lowest rates of health coverage, and be in poorer health than are nonimmigrant children (Pourat, Lessard, Lulejian, Becerra, & Chakraborty, 2003).

Of the San Joaquin Valley children in immigrant families, 7 out of 10 (71%) were U.S.-born children of documented immigrant parents who were either naturalized, legal permanent residents, refugees, or other documented aliens (Pourat et al., 2003). A noteworthy percentage of immigrant children (10.9%) were U.S.-born and lived in families with at least one undocumented parent. Another 9.6% were immigrant children without legal documentation who lived mainly with undocumented parents.

The children in immigrant families in the Valley were far more likely to be poor (Pourat et al., 2003). In 2001 only 16% of U.S.-born children of U.S.-born parents lived at or below the poverty level, compared to 68% of U.S.-born children with at least one undocumented parent and 78% of immigrant children without documented legal status.

2001 *CHIS* findings indicate that immigrant families, especially those who were undocumented, had the lowest rates of health insurance coverage (Brown, Ponce, Rice, & Lavarreda, 2002). The coverage rate for San Joaquin Valley children in immigrant families was highly related to their parents' citizenship status.

According to 2001 *CHIS* data (Pourat et al., 2003), 90% of U.S.-born children of two U.S.-born parents had continuous health insurance coverage during the year prior to the survey. Fewer (82%) U.S.-born children of documented immigrant parents and even fewer (72%) immigrant children of documented immigrant parents had continuous health insurance coverage in the year prior to the survey. Health insurance coverage was even less likely for undocumented immigrant children; less than half (40%) of undocumented immigrant children had continuous health insurance coverage in the year prior to the survey (Pourat et al., 2003). (Figure 18)

Uninsured U.S.-born children of documented immigrant parents were largely eligible for enrollment in public programs that provide coverage. Over 90% of the U.S.-born uninsured children met the eligibility criteria for either the Medi-Cal program or the Healthy Families program. In contrast, only half (53%) of immigrant children of documented immigrant parents met eligibility criteria for these programs (Pourat et al., 2003).

The health status of San Joaquin Valley children was also directly related to immigration status. Children with immigrant parents were far less likely to have their health reported as excellent or very good than were children of U.S.-born parents. For example, 73% of U.S-born children of U.S.-born parents were reported to be in excellent or very good health, compared to 53% of U.S.-born children with documented immigrant parents, and 39% of U.S.-born children with at least one undocumented parent (Pourat et al., 2003).

Children in immigrant families present a challenge for the health care system. Immigrant parents are often unaware of government health programs or are fearful of potential harm to their immigration status if they attempt to use public programs. As such, they may be unwilling or unable to apply for programs such as the Healthy Families

program or the Medi-Cal program for their children, even if their children are eligible for such programs. Outreach efforts and education are essential to inform immigrant parents about the need for, and their right to receive assistance for their children.

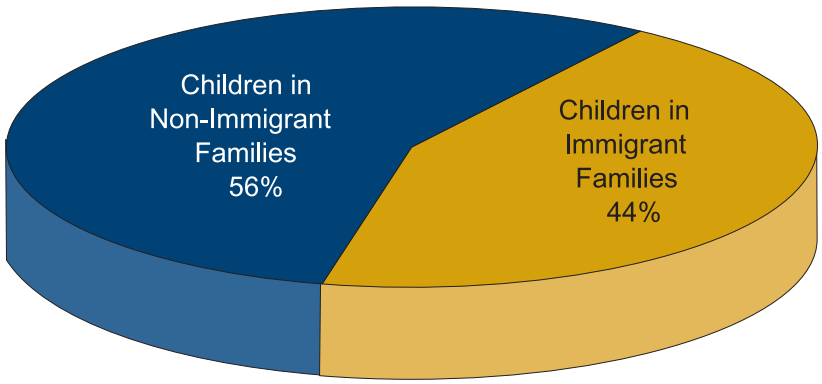

Figure 17: Children in Immigrant Families in the San Joaquin Valley, 2000
Source: UCLA Center for Health Policy Research, 2003.

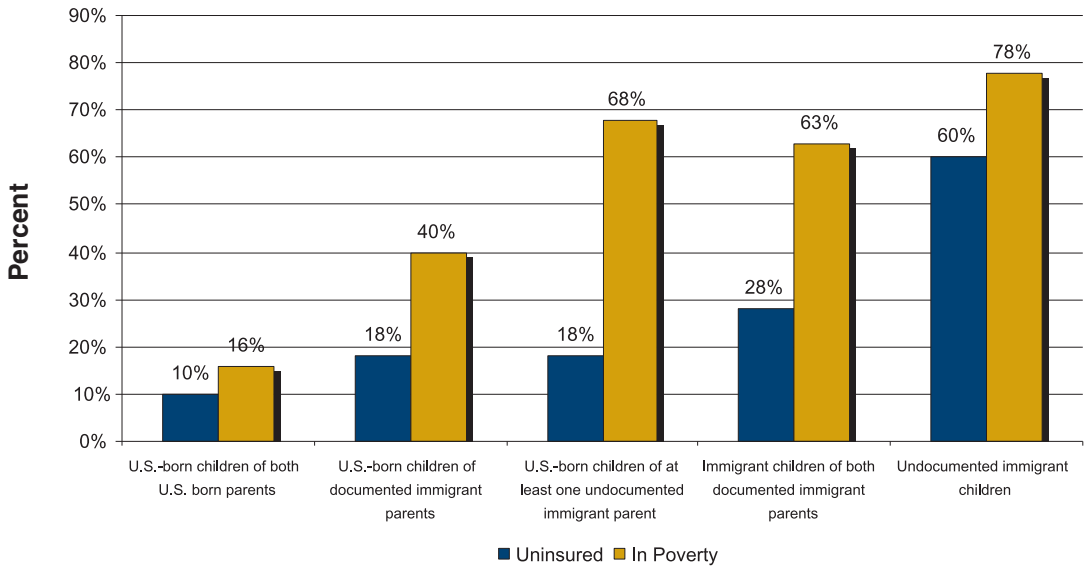

Figure 18: Status of Children in Immigrant Families in the San Joaquin Valley, 2001
Source: Pourat et al., 2003

C. Environmental Issues

Air Quality

Air pollution continues to be a widespread public health and environmental problem in the United States. Exposure to air pollution can substantially contribute to premature death, cancer, and long-term damage to respiratory and cardiovascular systems. Air pollution also reduces visibility; damages trees, crops, and buildings; and deposits pollutants on the soil and in bodies of water where they alter the chemistry of the water and the organisms living there. Approximately 113 million people live in U.S. areas designated as nonattainment areas by the U.S. Environmental Protection Agency (EPA). These nonattainment areas exceed health-based standards established by the federal government for one or more of the six pollutants commonly found in air pollution (U.S. Environmental Protection Agency, 2003).

Although some progress has been made toward reducing unhealthy air emissions, a substantial air pollution problem remains. Millions of tons of toxic air pollutants continue to be released into the air each year. The presence of unhealthy levels of ground-level ozone is the largest problem, as determined by the number of people affected and the number of areas not meeting federal standards. Ozone nonattainment areas in the United States include the San Joaquin Valley, Los Angeles, New York, Houston, Baltimore, Philadelphia, and Milwaukee. For particulate matter, nonattainment areas include the San Joaquin Valley, Los Angeles, and Phoenix (U.S. Environmental Protection Agency, 2003).

Motor vehicles produce approximately one-fourth of emissions that create ozone and one-third of nitrogen oxide emissions. Particulate and sulfur dioxide emissions from motor vehicles represent approximately 20% and 4% of motor vehicle emissions, respectively. Some 76.6% of carbon monoxide emissions are produced each year by transportation sources, such as motor vehicles (*HP 2010*, U.S. Department of Health and Human Services, 2000).

The San Joaquin Valley regularly faces unhealthy levels of ozone and small particulates. Ozone, the main ingredient in smog, is a corrosive gas that forms on sunny days when various pollution emissions combine. The Valley leads the nation, along with Los Angeles, in the number of violations of the eight-hour ozone standard. The heat in the Valley, its topography, agricultural industry, motor vehicles, and population growth all contribute to the problem. According to the San Joaquin Valley Air Pollution Control District (APCD, n.d.), approximately 60% of the Valley's smog problems come from motor vehicles. The other approximately 40% of pollutants come from sources such as business and industry, lawn and garden equipment, outdoor burning, and wood burning fireplaces and stoves. Recent legislation has removed the exemption from air quality standards for the formerly unregulated agricultural industry (Capitol Reports Environmental, 2003).

Air quality is a serious issue in the San Joaquin Valley. A nonattainment designation is assigned to an area for its failure to meet the national ambient air quality standard for ozone and particulate matter measuring less than 10 microns in diameter (PM_{10}). In December 2003, the San Joaquin Valley Air Pollution Control District requested that the Valley be downgraded from a "severe" to an "extreme" nonattainment area (Grossi, 2003).

The Valley's air has been rated among the worst in the nation, with a considerable number of days of poor-quality air every year. According to the

American Lung Association (2003a), five San Joaquin Valley counties are in the top 10 polluted counties in the nation. Overall, air quality in the Valley is in the unhealthful range one out of four (24%) days. In Fresno and Kern Counties, the number is considerably higher: 47% and 45% of days, respectively, have unhealthy air quality.

Air quality varies throughout the Valley. The northern counties—San Joaquin, Stanislaus, and Merced—have cleaner air and had no violations of the federal one-hour ozone standards in 2001. On the other hand, the central counties of Madera, Fresno, and Kings had 17 violations among them, and the southern counties of Kern and Tulare also combined for 17 violations ("Last Gasp," 2002).

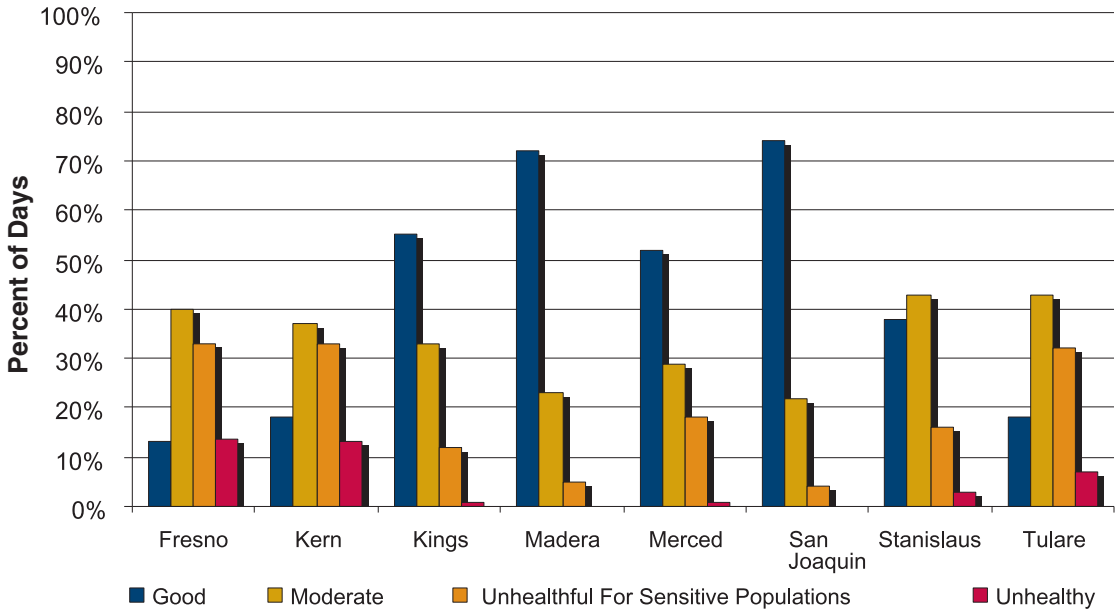

Figure 19: Air Quality in San Joaquin Valley Counties, 2002
Source: Environmental Defense, 2003.

Pesticide Use

Among toxic substances, pesticides are unique. They are not an unwanted byproduct of another process, such as an industrial operation or an automobile engine. Pesticides are industrial chemicals produced specifically for their toxicity to a target pest, and they must be purposely introduced into the environment to do their job. There are more than 865 active ingredients registered as pesticides, which are formulated into thousands of pesticide products available in the marketplace. About 350 pesticides are used on the foods we eat and to protect our homes and pets. Before a pesticide can be sold or used in California, it must be evaluated and registered by the California Department of Pesticide Regulation (California DPR; 2002b).

In 2000, over 68 million pounds of pesticides were used in the San Joaquin Valley, nearly half of the 150 million pounds used in California statewide (California DPR, 2002b). Of the 68 million pounds of pesticides used in the Valley, approximately 30 million pounds were sulfur. Some pesticides, however, are more dangerous than are others. As an example, nearly 5 million pounds of metam-so-

The California Endowment

dium, a highly toxic fumigant and carcinogen found in many pesticides, and over 1 million pounds of chlorpyrifos (Dursban, Lorsban), a cholinesterase-inhibiting pesticide, were used in the Valley in 2000. Metam-sodium was implicated in a 1999 pesticide incident in Earlimart, which sent two dozen people to the hospital complaining of nausea, vomiting, headaches, burning eyes, and shortness of breath (California DPR, 2001).

In recent years, pesticide use and reported poisonings from pesticides have been reduced in California, in large part due to strict enforcement and reporting laws (California DPR, 2002a). However, in 2001, there were still 132 definite or probable cases of pesticide poisoning reported to the California Department of Pesticide Regulation (California DPR, 2002a).

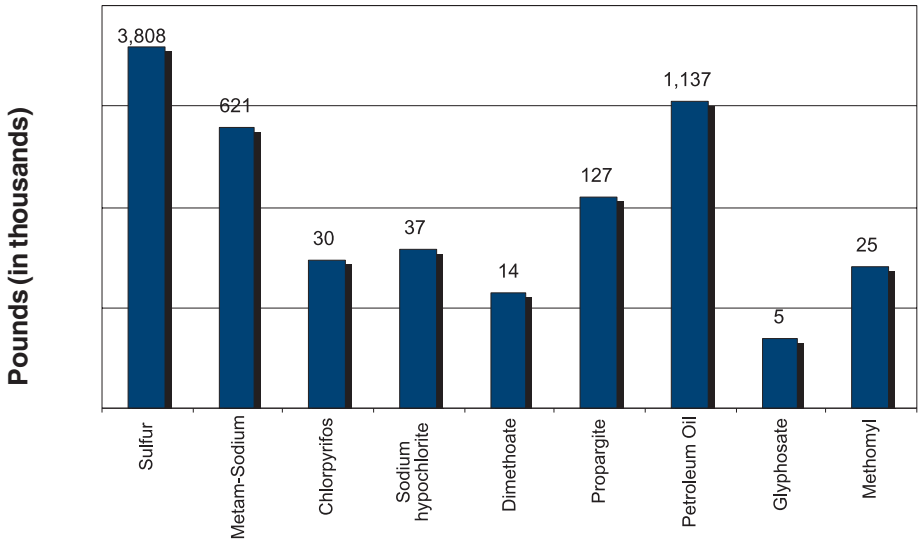

Figure 20: Types of Pesticides Used in the San Joaquin Valley, 2000
Source: California Department of Pesticide Regulation, 2002b.

D. Health Care Services

Hospitals

Closures, bankruptcies, and the financial deterioration of rural hospitals have negatively affected the Valley. Inadequate payments from public and private payers; shortages of nurses, pharmacists and other personnel; the costs of implementing nurse staffing standards; maintaining substandard facilities; compliance with the 2008 seismic standards; and lack of capital all contribute to the declining viability of vulnerable rural facilities.

"Safety-net" hospitals, including public hospitals, academic medical centers, private hospitals that serve a disproportionate share of indigent patients, and children's hospitals have struggled under the burden of increasing numbers of uninsured patients, price-driven private markets, and severe federal and state constraints on funding.

In 2003, there were 8,513 general acute hospital beds in the San Joaquin Valley, a decrease of 8.7% from 9,333 beds in 1995. California experienced a similar drop in acute hospital beds. The rate of beds per 1,000 persons in the Valley was 2.4 beds, down from 3.1 beds in 1995. California's rate dropped to 2.6 beds from 3.3 beds per 1,000 persons.

Between 1995 and 2003, the overall number of acute-care hospitals in the Valley dropped by 10 (15.2%), from 66 to 56 hospitals. In California, there was a 13.9% drop in the number of acute-care hospitals during the same period. The hospitals that closed were generally smaller, rural hospitals (California OSHPD, 2003). Tulare County lost three rural hospitals in Dinuba, Lindsay, and Exeter in 2001, losing 84 licensed acute-care beds. Stanislaus County lost hospitals in Patterson and Ceres totaling 49 beds, as well as the 100-bed county hospital in Modesto. Merced County also closed two rural hospitals in Newman and Atwater, with a total of 27 acute-care beds.

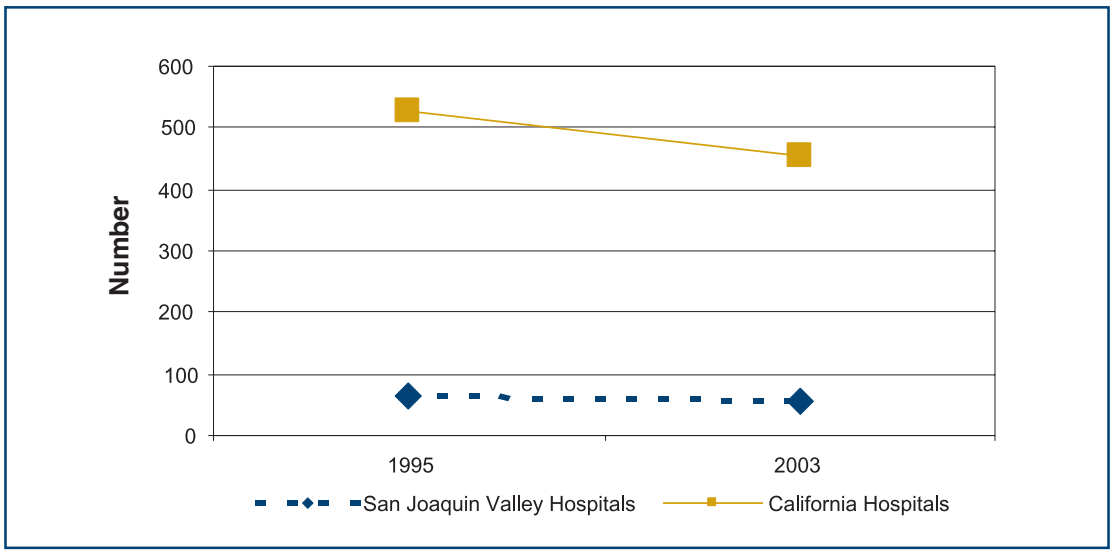

Figure 21: Hospitals in the San Joaquin Valley, 1995 to 2003
Source: California OSHPD, 2003.

Long-Term Care Facilities

As the number of elderly people in a community grows, the need for long-term care increases. Long-term care (LTC) is a generic term that includes all nursing home license classifications: skilled nursing facility, intermediate facility, and intermediate care facility/developmentally disabled. Skilled nursing facilities offer the highest level of long term care.

In the San Joaquin Valley, the number of available skilled nursing facility beds per 1,000 persons over age 65 dropped between 1995 and 2003, from 41.5 to 37.4. However, the number of skilled nursing facilities has remained constant at approximately 125 facilities (California OSHPD, 2003).

The number of long-term care facilities in the San Joaquin Valley (excluding skilled nursing facilities) has also remained relatively constant since 1995. However, the number of available long-term care beds per 1,000 persons over 65 has dropped since 1995, from 2.6 to 2.4. (California OSHPD, 2003)

Long-term care is primarily financed by the Medi-Cal program, with Medicare paying only a small portion of the cost of care in skilled nursing facilities. Private insurance for care in skilled nursing facilities is not extensively used. As the Medi-Cal program is a means-determined program, the elderly and persons with disabilities receive Medi-Cal coverage only if they are of very low income and have few assets.

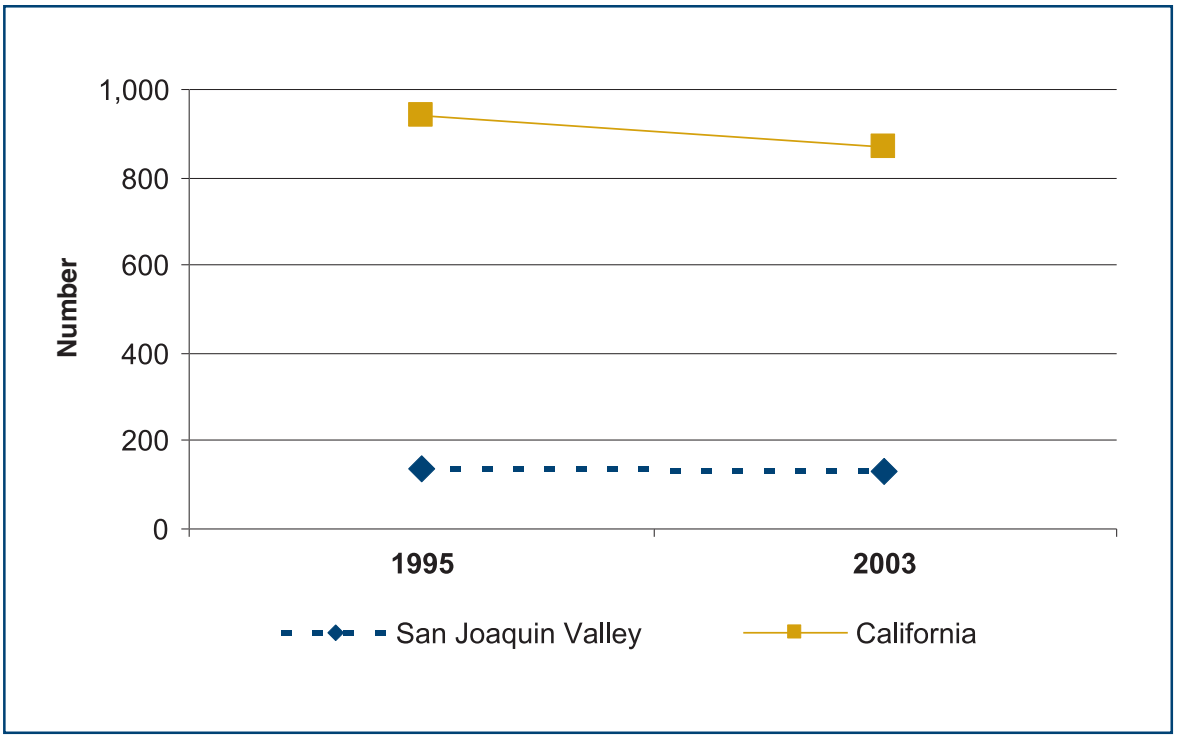

Figure 22: Number of Long-Term Care Facilities in the San Joaquin Valley and California, 1995-2003
Source: California OSHPD, 2003.

Health Providers

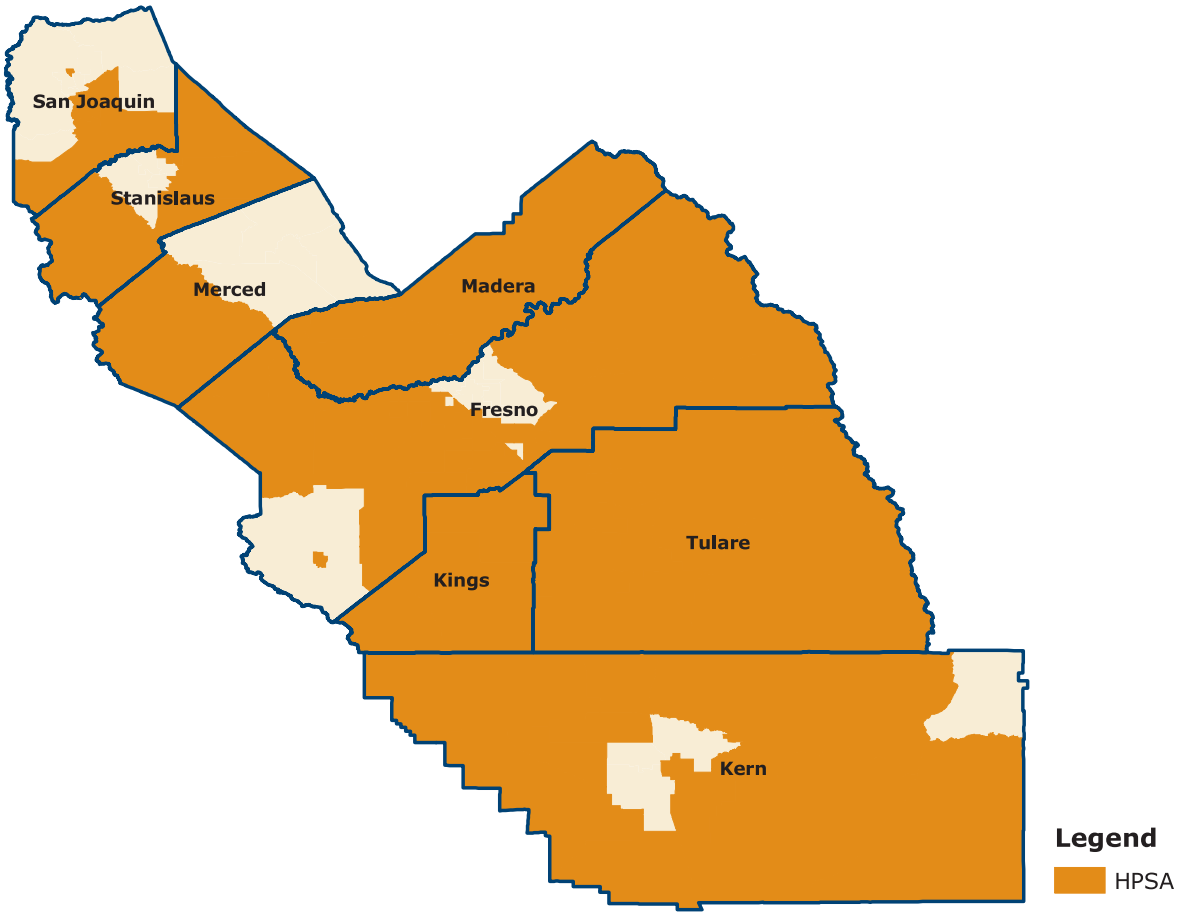

Figure 23: San Joaquin Valley Health Professional Shortage Areas (Primary Care), 2003
Source: U.S. Department of Health and Human Services, Bureau of Primary Health Care, 2003.

Physicians

A low ratio of physicians to population has plagued the San Joaquin Valley for many years. A recent study of the physician workforce by the University of California, San Francisco (UCSF) detailed the tremendous variation in the numbers of physicians across regions of the state (Dower et al., 2001). Areas such as the San Joaquin Valley have the lowest ratios of physicians to population, while coastal, urban areas such as the San Francisco Bay Area and Los Angeles have the highest (Dower et al., 2001). A lack of physicians contributes to lower availability of primary care services, which in turn is associated with increased hospitalizations and poorer health.

Not one of the counties in the San Joaquin Valley came close to California's rate for availability of primary care physicians. There were 67.4 primary care physicians for every 100,000 persons in California. In the San Joaquin Valley, there were only 51.2 physicians per 100,000 persons, approximately 24% fewer. For specialists, the disparity was even greater: 122.2 specialists per 100,000 persons in California and 73.2 in the Valley, just over half as many. In Kings County, there were only 34.3 specialists per 100,000 persons or one quarter the state rate. Not surprisingly, most of the Valley has been designated as a health professional shortage area by the federal government (Dower et al., 2001).

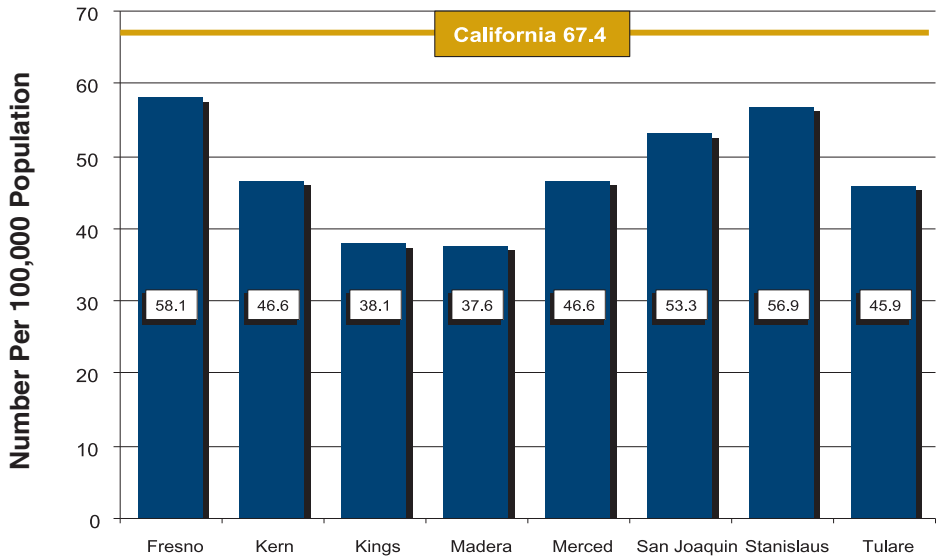

Figure 24: Primary Care Physicians in San Joaquin Valley Counties, 2000
Source: Dower et al., 2001.

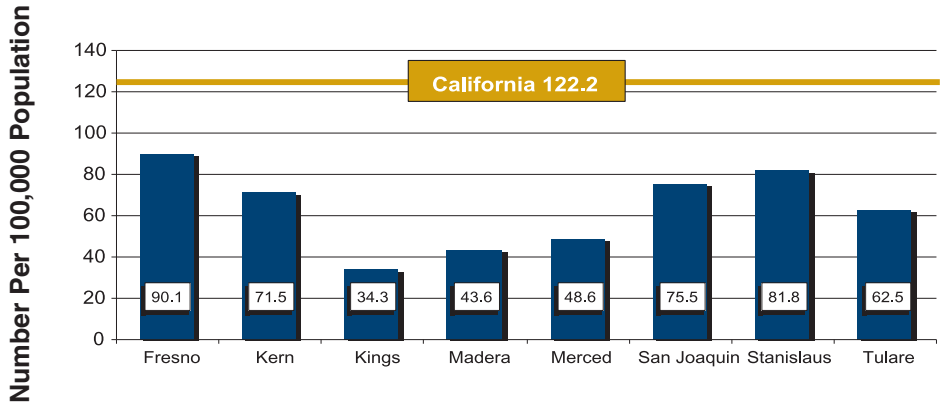

Figure 25: Specialists in San Joaquin Valley Counties, 2000
Source: Dower et al., 2001.

Nursing Workforce

California is facing a nursing workforce crisis that poses a serious threat to the public's health. Many of the state's hospitals are having great difficulty recruiting and retaining registered nurses (RNs). California will most likely need over 60,000 additional RNs to meet the projected demand for nursing services in 2020 (Coffman, Spetz, Seago, Rosenoff, & O'Neil, 2001).

The statewide nursing shortage is even more acute in the San Joaquin Valley. For all types of nurses (registered nurses, nurse practitioners, and licensed vocational nurses) the number of nurses per 100,000 persons in the San Joaquin Valley was lower than that in California in 2000 (Coffman et al., 2001). For instance, in California there were 730 registered nurses for every 100,000 persons, whereas in the Valley there were only 619, or 15.2% fewer.

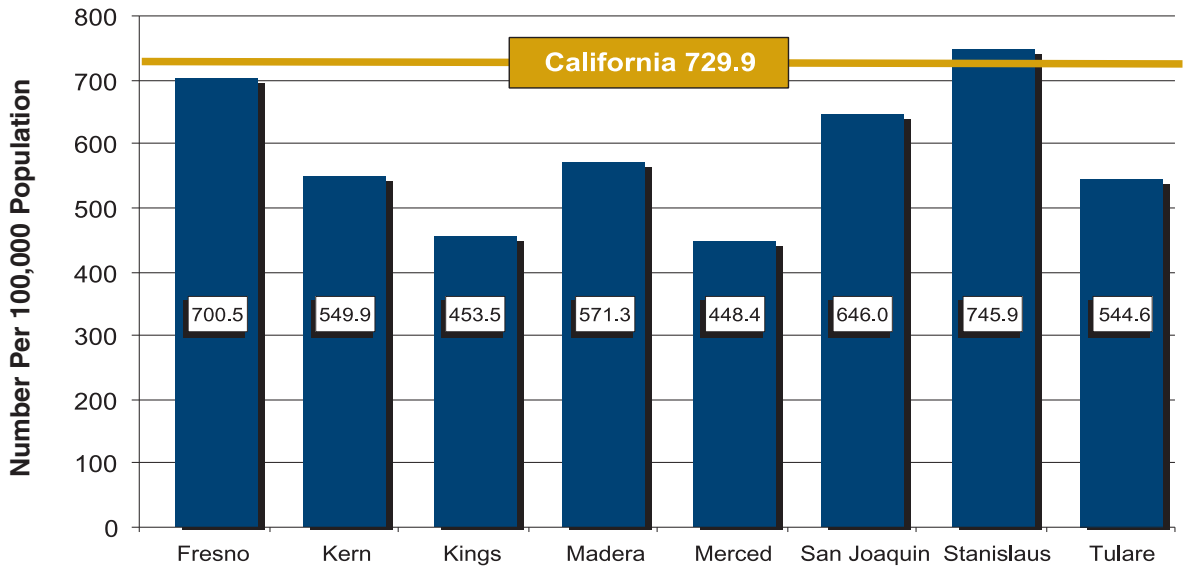

Figure 26: Registered Nurses in San Joaquin Valley Counties, 2000
Source: Coffman et al., 2001.

Dental Health

A recent study at the University of California, San Francisco documented that many of California's rural and urban communities may not have enough dentists, which could limit access to dental care (Mertz, Grumbach, Macintosh, & Coffman, 2000). Regions that have a shortage of dentists tend to have a higher percentage of minorities, lower median incomes, and a higher percentage of children. While there are a number of statewide programs aimed at increasing access to dental care, few of them work to place dentists in underserved areas such as the San Joaquin Valley (Mertz et al., 2000).

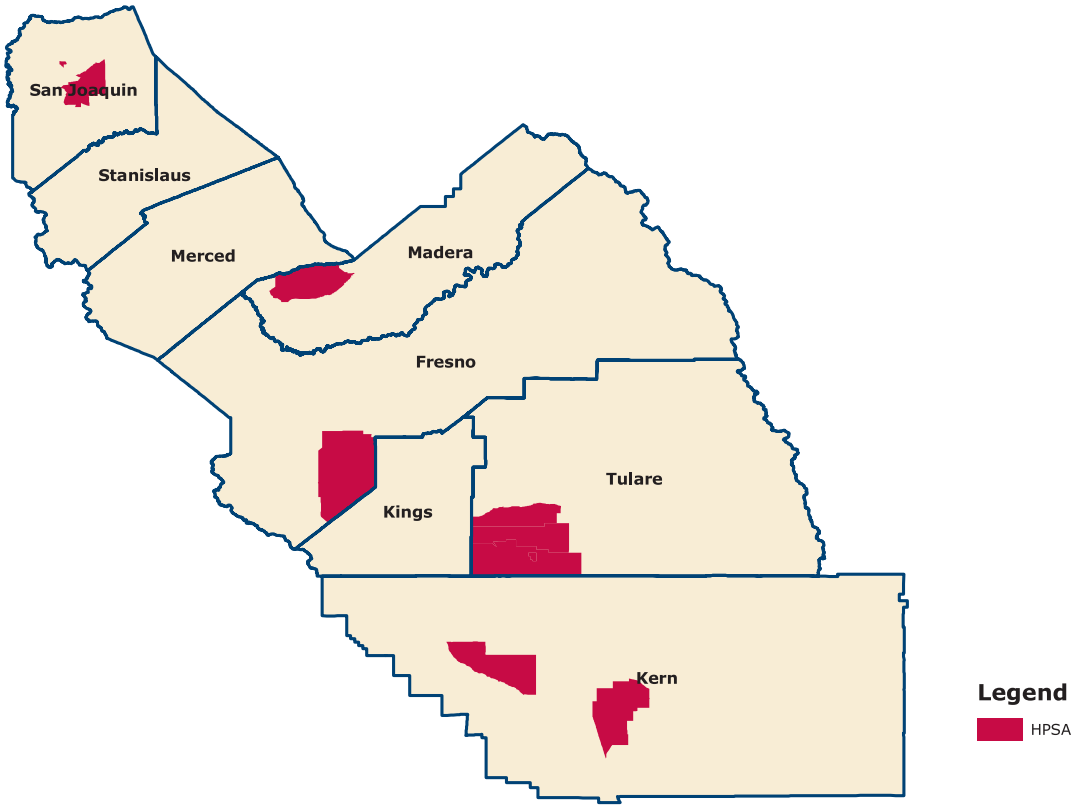

Figure 27: San Joaquin Valley Health Professional Shortage Areas (Dental Health), 2003
Source: U.S. Department of Health and Human Services, Bureau of Primary Health Care, 2003

Dental shortages severely impact the Valley. California had 80 dentists per 100,000 persons in 2000. In contrast, the San Joaquin Valley had only 51 dentists per 100,000 persons, or 36.2% fewer (Figure 28).

Despite the obvious shortage of dentists, only seven areas in the Valley had applied to be designated by the federal government as dental health professional shortage areas (Mertz et al., 2000).

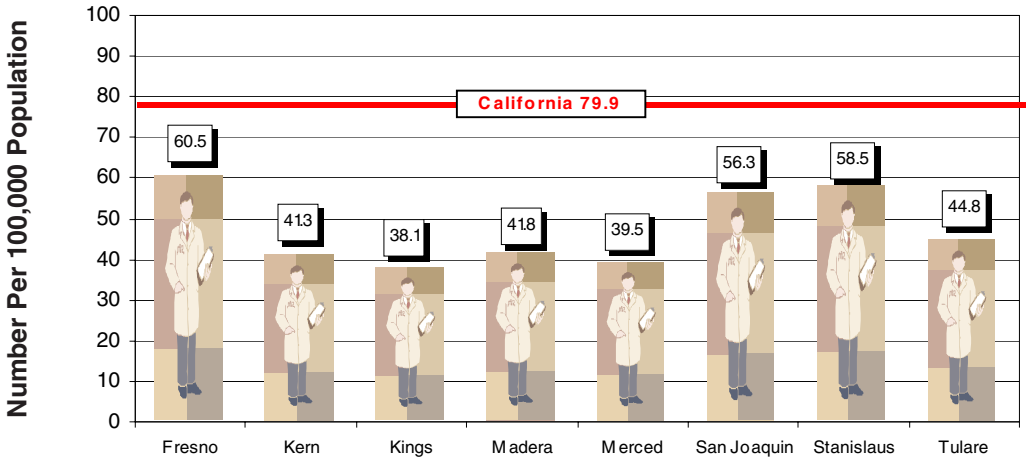

Figure 28: Dentists in San Joaquin Valley Counties, 2000
Source: Mertz et al., 2000.

Mental Health Professionals

The Surgeon General's 1999 report on mental health care in the United States indicated that about 20% of the American population experiences a diagnosable mental health condition each year (U.S. Department of Health and Human Services, 1999). The Surgeon General's report also estimated that as few as one-third received the treatment they needed. Among the reasons for not receiving care were the financing of mental health services, the stigma associated with mental health problems, and access to providers. Availability of mental health providers, particularly in the San Joaquin Valley, is one barrier to accessing necessary care (U.S. Department of Health and Human Services, 2000).

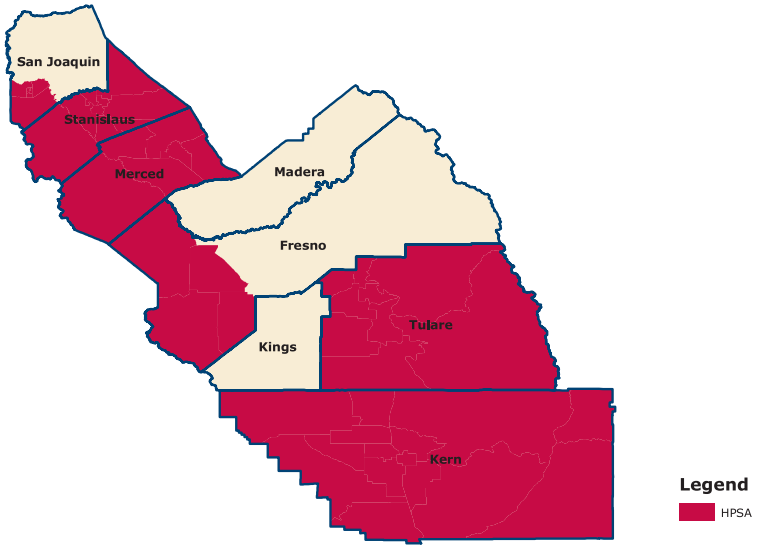

Figure 29: San Joaquin Valley Health Professional Shortage Areas (Mental Health), 2003
Source: U.S. Department of Health and Human Services, Bureau of Primary Health Care, 2003.

The most severe provider shortages in the Valley were in the mental health area. In 2000-2001, there were approximately 104 mental health and behavioral health personnel per 100,000 persons in the San Joaquin Valley, compared to 327 per 100,000 persons in the San Francisco Bay Area. Compared to California, the San Joaquin Valley, had 85% fewer psychiatrists, 70% fewer psychologists, 50% fewer licensed clinical social workers, and 65% fewer marriage and family therapists, per 100,000 persons (McRee, 2003). (Figures 30-33)

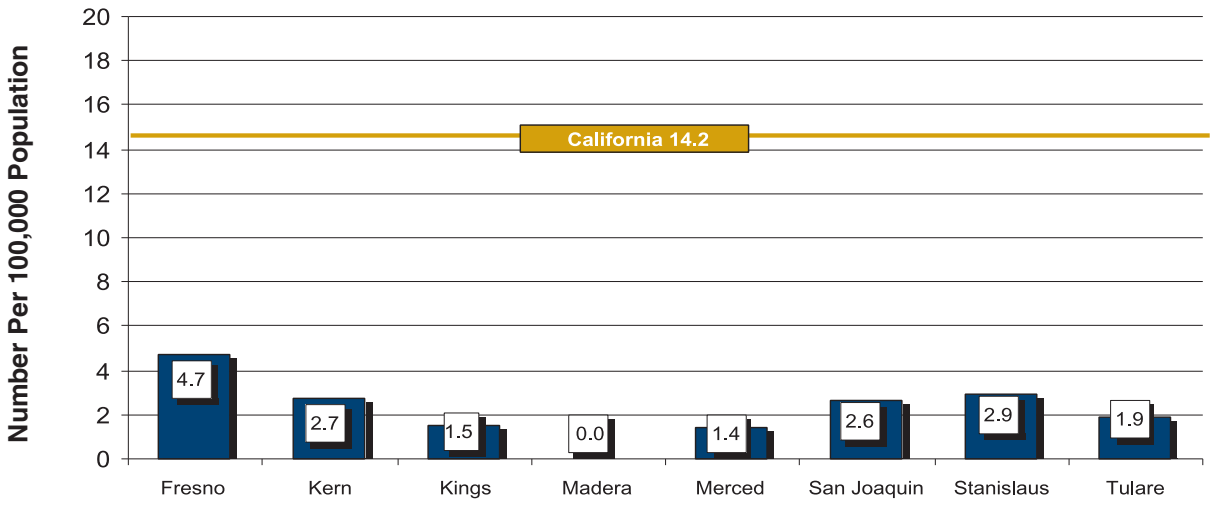

Figure 30: Mental Health Professionals in San Joaquin Valley Counties - Psychiatrists, 2000
Source: McRee et al., 2003.

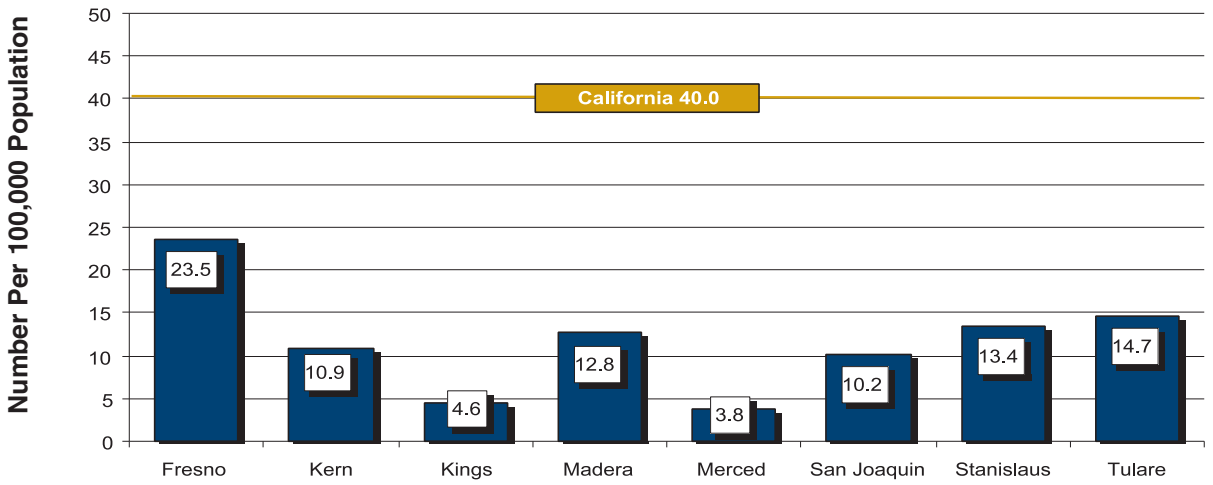

Figure 31: Mental Health Professionals in San Joaquin Valley Counties - Psychologists, 2001
Source: McRee et al., 2003.

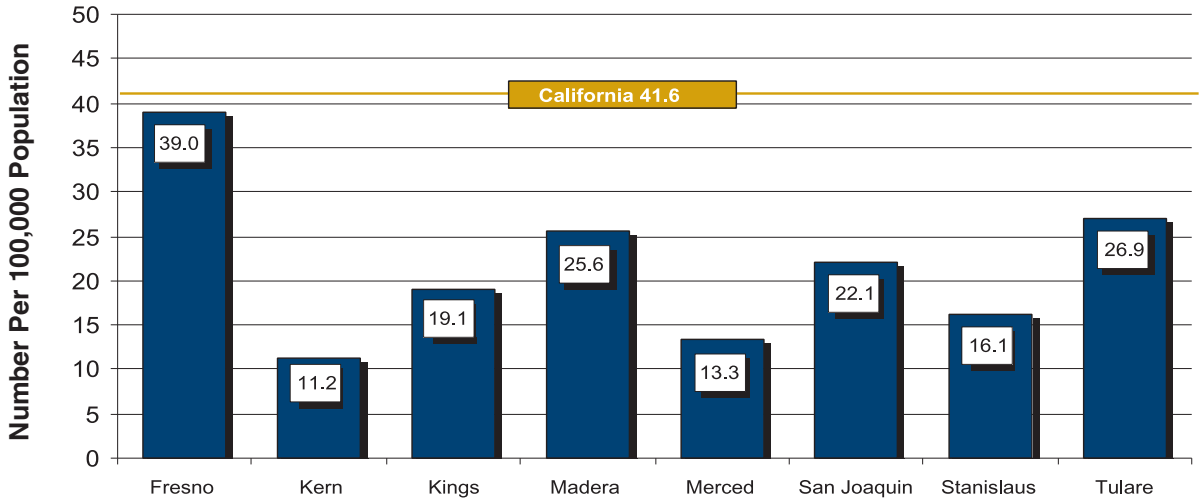

Figure 32: Mental Health Professionals in San Joaquin Valley Counties-Licensed Clinical Social Workers, 2001
Source: McRee et al., 2003.

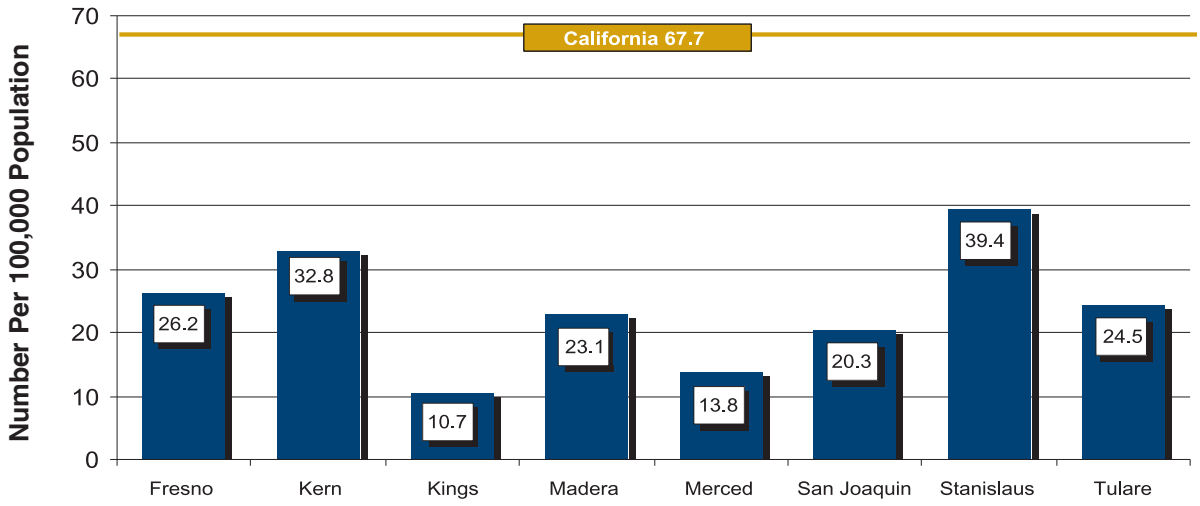

Figure 33: Mental Health Professionals in San Joaquin Valley Counties – Marriage and Family Therapists, 2001
Source: McRee et al., 2003.

Clinics

Community clinics and health centers in California provide health care services to many underserved populations: the uninsured, the homeless, rural and migrant families, women and children, the working poor, and all those in need of affordable and accessible care. According to the California Primary Care Association (CPCA, 2001), community clinics and health centers are rooted in and reflective of the communities they serve and are dedicated to providing care in the languages and cultures of these communities. The San Joaquin Valley is fortunate to have a strong system of community health centers.

Clinics are an important source of health care in the San Joaquin Valley. They include various designations such as rural health clinic, migrant health clinic, federally qualified health center, and Indian health clinic. Data collected from various agencies showed there were 126 licensed clinics in the Valley. Some of these may have been duplicates, since clinics often have more than one designation. On the other hand, there may also have been an undercount, because clinics operated by counties and Indian tribes do not need to be licensed.

Many of the larger clinics have joined together in the Central Valley Health Network. These San Joaquin Valley community clinics served over 1 in 10 San Joaquin Valley residents in 2002, with 1.2 million visits (Central Valley Health Network, 2003). This is a 20.0% increase since 1993, when there were 1 million clinic encounters at 77 clinics in the San Joaquin Valley (Diringer et al., 1996).

Increased federal funding and philanthropic spending have provided improved resources to community clinics. The California Endowment has launched major initiatives to fund infrastructure and information technology at clinics. The federal government has also made community clinics a high priority in funding.

E. Health Care Coverage and Financing

In 2002, per capita health spending in the United States exceeded $5,440 per year, up from $2,700 in 1990. Nationally, total spending on health care exceeded $1.6 trillion. In 2002, public funding accounted for 46% of spending for personal health care, private health insurance accounted for 35% of expenditures, consumer out-of-pocket expenditures accounted for 14%, and the remaining 5% came from other private sources such as philanthropy (U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, 2002).

Federal, state, local, and private funds are all used to fund the health care system. Although the use of some funds for health care is mandatory, government officials often have wide discretion in the allocation of other funds. Funds such as tobacco taxes and litigation settlements are potentially available for health care, but are not always used for those programs.

Insurance Coverage

Health insurance is an important factor in accessing quality health care. Research reviewed in the *Healthy People 2010* report showed that persons with health insurance were more likely to have a primary care provider and to have received appropriate preventive care such as a recent Pap test, immunization, mammogram, or early prenatal care. Adults with health insurance were twice as likely to receive a routine checkup as were adults without health insurance (U.S. Department of Health and Human Services, 2000).

According to a recent Census report, *Health Insurance Coverage in the United States*, 2002, the number of people in the United States without health insurance increased 5.8% between 2001 and 2002, from 41.2 to 43.6 million people. Although Medicaid insured 14.0 million people who live in poverty, another 10.5 million people, representing 30.4% of those who live in poverty, had no health insurance in 2002. This percentage was unchanged from 2001. The rate of uninsured persons in the Hispanic population was 32.4% percent in 2002; unchanged from 2001, but higher than the rate of uninsured persons in any other racial or ethnic group (Mills & Bhandari, 2003).

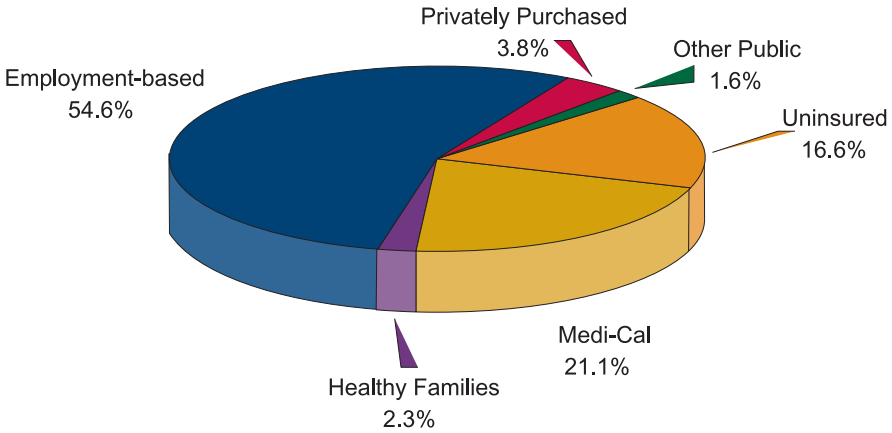

Figure 34: Self-Reported Sources of Health Insurance Coverage for Residents of the San Joaquin Valley (Ages 0-64)
Source: 2001 *CHIS* (UCLA Center for Health Policy Research, 2003).

Uninsured

At the time of the 2001 *CHIS* (UCLA Center for Health Policy Research, 2003), 16.6% of the San Joaquin Valley's nonelderly residents, or 478,000 persons, reported that they had no health insurance. This included 10.3% of children, or 108,000 children with no health insurance. Moreover, 10.6% of the population or 297,000 nonelderly residents were insured at the time of the 2001 *CHIS*, but not for the entire 12 months prior to the survey. In total, there were approximately 654,000 persons (ages 0-64) in the San Joaquin Valley without health insurance at some point during the year preceding the 2001 *CHIS*.

These numbers are on par with California, where 15.5% of residents reported that they lacked health insurance at the time of the 2001 *CHIS*. The percentage of children without health insurance in the Valley (10.3%) was slightly higher than was the percentage of children without health insurance in California as a whole (9.6%).

Privately Insured

Although 62.0% of nonelderly Californians reported having employment-based insurance, only 54.6% of San Joaquin Valley nonelderly residents reported having health insurance through their employers. The percentages of persons with employment-based insurance varied widely in the Valley, from 48.3% in Tulare County to 62.8% in Stanislaus County. In addition, 3.8% of San Joaquin Valley residents reported that they purchased their own private health insurance.

Nearly 6 in 10 Valley residents (59.6%) reported that they were in some type of managed care plan where they were required to go to a primary care provider to obtain referrals for specialists. In Stanislaus County, 72.6% were in such plans, whereas in Merced County only 48.5% were in managed care plans.

Medi-Cal

Although a lower percentage of San Joaquin Valley residents than of California residents had employment-based health insurance coverage, a much higher percentage of Valley residents reported receiving health coverage through the Medi-Cal program. Over one in five (21.1%) nonelderly Valley residents reported being enrolled in the Medi-Cal program in 2002; a rate 50.7% higher than that for California (14.2%). One in three Valley children (34.9%) depended on the Medi-Cal program for health coverage (2001 *CHIS*, UCLA Center for Health Policy Research, 2003).

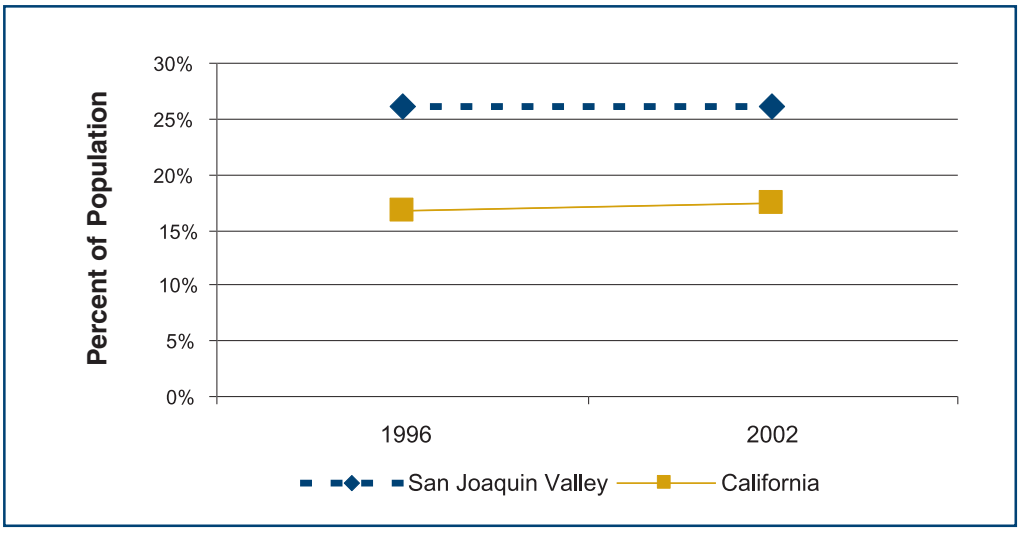

Figure 35: Average Monthly Medi-Cal Enrollment in the San Joaquin Valley, 1996 to 2002
Source: California DHS, 2003b.

Administrative data from the California Department of Health Services (2003b) differed somewhat from the self-report data from the 2001 *CHIS*. California DHS data showed a stable enrollment in the Medi-Cal program since 1996, at approximately 26.2% of the population in the San Joaquin Valley. During the same period, California showed a slight increase in enrollment, from 16.8% of the population in 1996 to 17.5% in 2001 (Figure 35).

The Medi-Cal program is a major source of revenue for San Joaquin Valley County providers. In 2001, over $1.6 billion was paid for Medi-Cal claims in the San Joaquin Valley; this represents 13% of all California state Medi-Cal expenditures in that year (California DHS, 2003b).

Healthy Families

The Healthy Families program has provided a major expansion of health coverage for children in working-class families. Children, whose household income is below 250% of the federal poverty level and who are not eligible for the Medi-Cal program, can qualify for full health insurance coverage with minimal premiums and copayments. They are free to choose from several available health plans, both public and private, where available.

As of August 2003, approximately 78,000 San Joaquin Valley children (6.6%) had enrolled in the Healthy Families program, according to the California Managed Risk Medical Insurance Board (MRMIB; 2003). This is somewhat greater than the percentage for California, where 6.1% of children were enrolled in the program across the state. However, given the higher poverty rates and the number of eligible children in the Valley, an even higher enrollment might be achievable.

Retaining children in the Healthy Families program has also been difficult. Between August 2002 and August 2003, 33,000 Valley children were enrolled in the program, but 25,000 children were disenrolled during the same period. In other words, for every four new enrollees, three children were disenrolled. Statewide, approximately one-third of disenrollment was for unavoidable reasons, such as aging out of the program or earning too much money. Two-thirds of disenrollment was for possibly avoidable reasons. Approximate one-half of the possibly avoidable disenrollments were due to nonpayment of premiums, and approximately one-third were for failure to complete renewal paperwork. (California MRMIB, 2003).

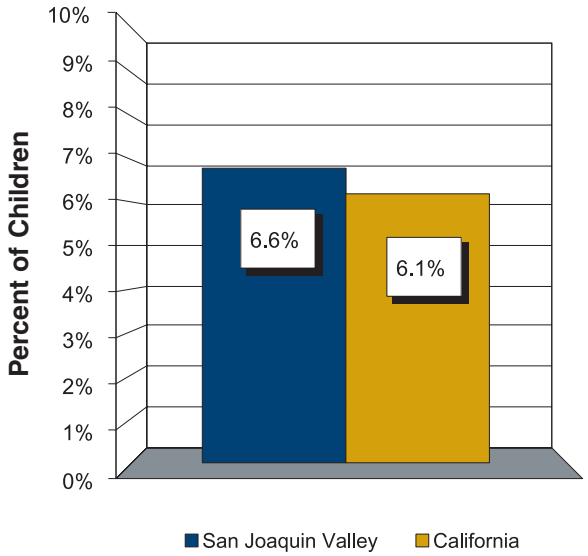

Figure 36: Enrollment in the Healthy Families Program in the San Joaquin Valley, 2002
Source: California MRMIB, 2003.

Medicare

In the San Joaquin Valley, Medicare covers nearly all elderly persons (65 years of age and older) and a substantial number of persons with disabilities. There are approximately 300,000 Medicare recipients in the Valley. The Medicare program is extremely important to health care providers and its reimbursement rates serve as the basis for the rates of many private health plans (Wallace, Pourat, Enriquez-Haas, & Sripipatana, 2003).

Almost all Valley residents ages 65 and older who are enrolled in the Medicare program have at least one other type of health coverage. 2001 *CHIS* data show that almost a quarter (23.7%) or 74,000 Valley seniors had both MediCal and Medicare coverage. Two-thirds (66.9%) of Valley seniors had both Medicare and supplemental private insurance. Only a small percentage (6.0%) had only Medicare coverage. Less than 1% of seniors reported that they were uninsured (UCLA Center for Health Policy Research, 2003).

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County Spending

Although the state and federal governments are major sources of health care funding, local county governments are also responsible for a large share of funding for public health and health care services. Depending on the types of county services (e.g., county hospital or clinics), county expenditures may differ dramatically.

Six of the eight San Joaquin Valley counties (Madera and Kings Counties are the exception) participate in the California Healthcare for Indigents Program/Rural Health Services (California Department of Health Services [DHS], Office of County Health Services, 2002). The California DHS collects data from counties participating in this program and documents both county costs and state and federal funds allocated for this program.

In fiscal year 2001-2002, local government spending in the San Joaquin Valley (excluding Madera and Kings Counties) was approximately $450 million for public health and health care services. Net county costs (including realignment revenues) accounted for approximately one-third ($163 million) of the $450 million in public health and health care spending in the Valley; funding from state and federal government sources accounted for the remaining two-thirds. In fiscal year 2001/2002, per capita net county spending in the San Joaquin Valley averaged $35.14, ranging from $19.57 in Fresno County to $56.95 in San Joaquin County (California DHS, Office of County Health Services, 2002).

Tobacco Litigation Master Settlement Agreement

A source of potential funding for health programs is the annual payments from the Tobacco Litigation Master Settlement Agreement. These funds are paid to the state and the counties in settlement of a national tobacco lawsuit. In January 2000, California began receiving its share of the settlement, which is approximately $1 billion a year. Half of the payment goes to the state's General Fund, with the legislature and governor determining how the money will be used. The remainder is divided, based on population, among California's 58 counties and four largest cities for use as decided by each local government (California Department of Justice, 2002).

The San Joaquin Valley receives approximately $30 million of tobacco litigation settlement funds annually. However, use of the funds for health services or tobacco use prevention is discretionary with each county's board of supervisors. Some counties have spent none of their funds on health-related issues. Other counties have "securitized" their funds, meaning that they have sold a portion of expected tobacco revenues to investors and received a portion of the money at one time.

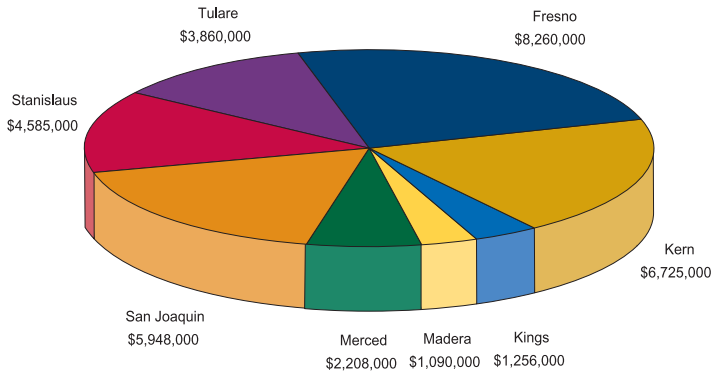

Figure 37: Tobacco Litigation Master Settlement Agreement, Division of Funds in the San Joaquin Valley, 2003
Source: California Department of Justice, Office of the Attorney General, 2003.

Proposition 10: California Children and Families Act

Another new source of potential funding for health services for children below five years of age is Proposition 10, the California Children and Families Act of 1998. The act is designed to provide all children from prenatal to five years of age, on a community-by-community basis, with a comprehensive, integrated system of early childhood development services. Funds obtained through a tobacco tax are allocated to counties based upon their birth rate (Inkelas et al., 2003).

In fiscal year 2002, San Joaquin Valley counties received $57 million to distribute for children under five years of age. Each county has its own five- to nine-member commission, which includes a county health officer; representatives of local medical, pediatric, or obstetric communities; representatives of local school districts; and a member of the county board of supervisors. Funds have been distributed for a wide range of programs to improve childhood development, including health services for both prevention and treatment. Several counties are exploring the development of insurance coverage programs for children (Figure 38).

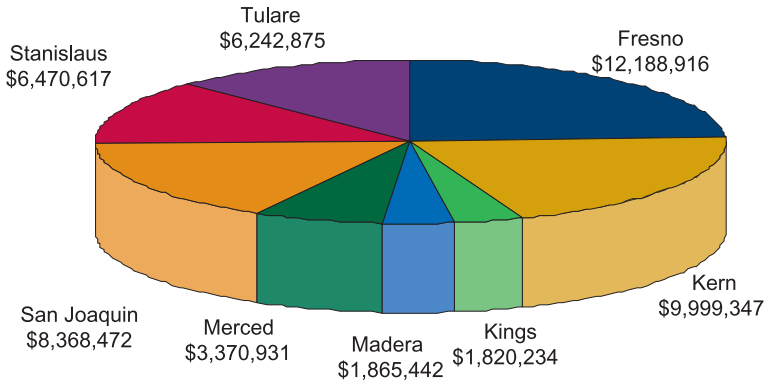

Figure 38: Proposition 10: California Children and Families Act, Distribution of Funds in the San Joaquin Valley, 2003
Source: California Children and Families Commission, 2003

Philanthropy

Private foundations have become a major source of health funding in the San Joaquin Valley, although such funding still falls short of philanthropic support in the rest of the state. With the establishment of several large California health foundations in the past 10 years, and increased spending by other foundations in the Valley, many programs have been started and sustained. Nonprofits have come to rely on foundation funding for their operations and programs, particularly as public funding is diminishing. The long-term sustainability of these programs is of concern to foundations.

Philanthropic funding in the San Joaquin Valley falls far below such spending in other parts of the state. In 1999, a study of foundation philanthropy found that the Central Valley region received less than $10 per capita in private foundation grant funds in 1999, compared to many San Francisco Bay Area counties that exceeded $400 per capita (Figure 39). Statewide, philanthropic grants averaged $3 million per 100,000 persons during the three-year period between 1995 and 1998. However, in the Central Valley, of which the San Joaquin Valley is a part, grants averaged only $1.2 million per 100,000 persons or 40% of the state rate (Great Valley Center, 2000).

The California Endowment has been a major source of health funding in the San Joaquin Valley in recent years. As of September 2002, it had provided over 300 grants, totaling in excess of $55 million, to nonprofit and public organizations in the region. Major initiatives in the San Joaquin Valley have included a farmworker initiative and a nursing initiative.

To address these growing needs in the Central Valley, the James Irvine Foundation invested approximately $38 million in the region from 1995 to 2001. In October 2001 it launched an initiative focusing on Central Valley youth and approved nearly $10 million in grant funds for programs to focus on boosting academic success, college attainment, leadership development, and nonprofit capacity.

The California Wellness Foundation has funded 64 grants in the San Joaquin Valley, totaling approximately $9,300,000 since January 1998.

Since 1996, the California Health Care Foundation has funded over $5.2 million in grants in the San Joaquin Valley, including a $5 million grant for the Valley Fever Vaccine Project.

Figure 39: Grant Dollars per Capita in California, 1999
Source: Ferris & Grady, 2003.

SECTION II.

The Health of San Joaquin Valley Residents

A. Access to Care in Valley Communities

Most health indicators are reported on a statewide or county basis; however, a number of indicators can be found on a smaller community level. This section presents data that were available on a zip-code-level. To simplify reporting and ensure greater statistical reliability, these data have been aggregated into 61 community zip-code clusters. These community clusters are the same ones that were used in the original *Hurting in the Heartland* report (Diringer et al., 1996; see Appendix for the list of clusters and their zip codes).

To give a more localized view of health access, the Health Access Index (HAI), first developed in *Hurting in the Heartland,* was used. The HAI is a composite ranking of each community zip-code cluster. Each of the community clusters in this report was ranked according to the following four variables:

1. Avoidable hospitalizations, 2001 (inpatient hospital discharge rates for ambulatory-care-sensitive diagnoses (ACS), for ages 18-64)

2. Late prenatal care, 2001 (rate of late prenatal care after the first trimester)

3. Low birthweight births, 2001 (rate of live births with birthweight less than 2500 grams)

4. Births to teen mothers, 2001 (rate of live births to mothers ages 15-19)

These ranks were then averaged to give a composite ranking to determine the HAI score. The communities with higher HAI rankings have better access to care than do those communities with lower rankings. The lowest HAI rankings are indicative of health access issues in particular community clusters; however, the ranking does not address the magnitude of the problems in those areas.

Table 14: The 10 Communities With the Lowest Health Access Index Rankings

County	Community Cluster	Rank (of 61 Community Clusters)
Kings	Corcoran	52
Tulare	Tulare	53
Kern	Taft	54
Fresno	Central Fresno	55
Kern	E. Bakersfield/Lamont	56
San Joaquin	S. Stockton/French Camp	57
Stanislaus	W. Modesto/Empire	58
Fresno	S. Fresno	59
San Joaquin	Central Stockton	60
Fresno	W. Fresno/Burrel	61

Table 15: The 10 Communities With the Highest Health Access Index Rankings

County	Community Cluster	Rank (of 61 Community Clusters)
Kern	Frazier Park	1
Fresno	Herndon/Pinedale	2
Fresno	Clovis/Sanger	3
Madera	The Mountains	4
Stanislaus	Turlock	5
Kern	Buttonwillow/Elk Hills	6
San Joaquin	Woodbridge	7
Kern	Mojave	8
Kern	Arvin/Tehachapi	9
Fresno	N. Fresno	10

In order to determine the strength of the relationship between the HAI rankings and other demographic variables, Spearman rank correlation coefficient tests were performed. The Spearman rank correlation test produces a correlation coefficient (r_s): a correlation coefficient of 1.0 indicates that the two variables are always correlated, whereas a correlation coefficient of 0 indicates no correlation. The results of the analysis indicated a strong positive correlation between poor access to care and poverty, low educational attainment, and the percentage of single-parent households. A moderate correlation was shown between poor access to care and the percentages of English-speaking households, Latino residents, and foreign-born populations. Results were similar to those in the original *Hurting in the Heartland* report (Diringer et al, 1996).

Table 16: Correlation of Health Access Index Ranking and Community Demographic Characteristics

Demographic Characteristic	r_s	p
Percentage of Female Householder Families	0.656	<.0001
Percentage of Families Below Poverty Level	0.654	<.0001
Percentage of Population Over Age 25 with Less than a High School Education	0.549	<.0001
Percentage of Population Over Age 5 Who Speak a Non-English Language at Home	0.413	0.0014
Percentage of Latino Population of Total Population	0.393	0.0023
Percentage of Population Born Outside the U.S.	0.391	0.0024

B. Health Status

Health status can be measured by a number of indicators. Commonly used indicators include birth and death rates, life expectancy, quality of life, morbidity from specific diseases, risk factors, use of ambulatory care and inpatient care, accessibility of health personnel and facilities, financing of health care, and health insurance coverage. A variety of sources are used to collect information on health status, including birth and death records, hospital discharge data, health care records, personal interviews, physical examinations, and telephone surveys (U.S. Department of Health and Human Services, 2000). Presented below are indicators of people's perceptions of their own health, as well as maternal and child health indicators, death rates, and rates of other diseases.

Perceptions of Health

The 2001 *CHIS* (UCLA Center for Health Policy Research, 2003) asked respondents how they perceived their general health status. San Joaquin Valley residents were more likely than were Californians to rate their health as "good" or "fair/poor" rather than "very good/excellent." One-half (50.9%) of Valley residents rated their health as "very good/excellent," compared to 55.8% of Californians. An additional 30.1% of Valley residents rated their health status as "good," compared to 28.9% of Californians. Similarly, one in five (19.0%) Valley residents rated their health as "fair/poor," compared to 15.3% of all Californians.

Among Latino residents in the San Joaquin Valley, 22.3% rated their health as "fair/poor." However, further analysis of the 2001 *CHIS* data showed that the Latino residents' perception of their health was highly related to family income. Whereas 35.3% of Latino residents living below the poverty level rated their health as "fair/poor," only 10.7% of those at or above 300% of the poverty level perceived their health as "fair/poor."

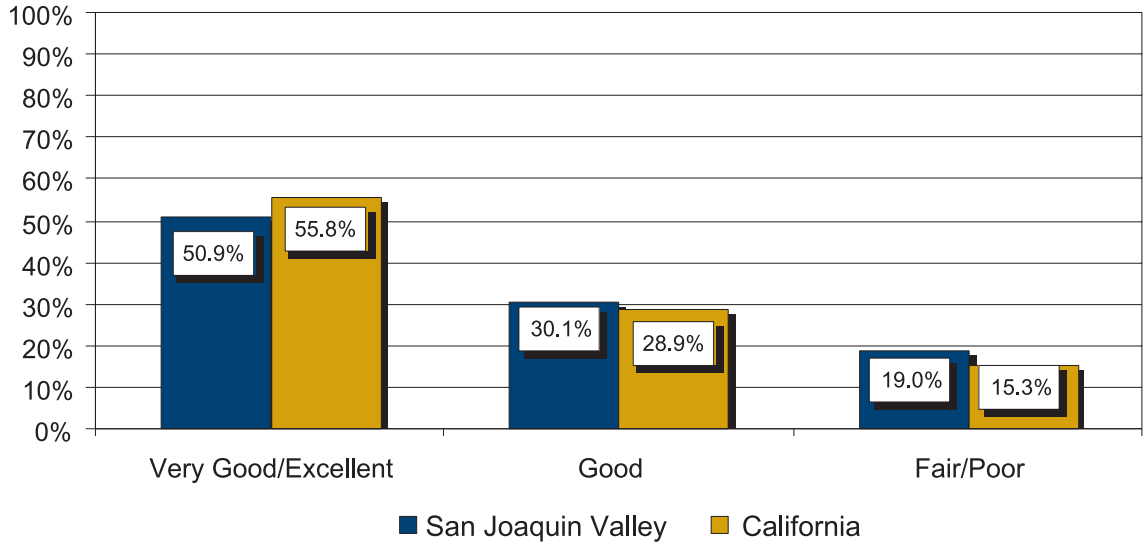

Figure 40: Perceived Health Status of Residents of the San Joaquin Valley, 2001
Source: 2001 *CHIS* (UCLA Center for Health Policy Research, 2003).

Maternal and Infant Health

Low Birthweight

Low birthweight (LBW) is associated with long-term disabilities, such as cerebral palsy, autism, mental retardation, vision and hearing impairments, and other developmental disabilities. According to research reviewed by *Healthy People 2010* (U.S. Department of Health and Human Services, 2000), expenditures for the care of LBW infants totaled more than half of the costs incurred for all newborns, despite the low proportion of pregnancies resulting in LBW babies.

The percentage of babies born in the San Joaquin Valley with low birthweight (under 2,500 grams or approximately 5.5 pounds) in 2001 was 6.2%, which was the same as the California rate. The rates of low birthweight births in the Valley ranged from 5.5% in Madera County to 6.6% in Fresno County. Over the past five years, the overall rate of low weight births in the Valley has dropped slightly from 6.3%, while the rate in California edged up slightly from 6.1% to 6.2%. Overall the rate of low birthweight births in the San Joaquin Valley has decreased in five of the eight counties.

Table 17: Percentage of Low Birthweight Births by County and Ranking in California

	1994-1996		1999-2001	
County	% of Low Birthweight Babies	Rank out of 58 California Counties	% of Low Birthweight Babies	Rank out of 58 California Counties
Fresno	6.7%	54	6.6%	51
Kern	6.6%	53	6.3%	47
Kings	6.0%	38	6.1%	44
Madera	5.3%	18	5.5%	25
Merced	5.8%	35	6.0%	39
San Joaquin	6.5%	49	6.1%	45
Stanislaus	6.2%	41	6.0%	43
Tulare	5.8%	34	5.7%	35
SJV Average	6.3%		6.2%	
California	6.1%		6.2%	

Source: California DHS, 1998, 2003a

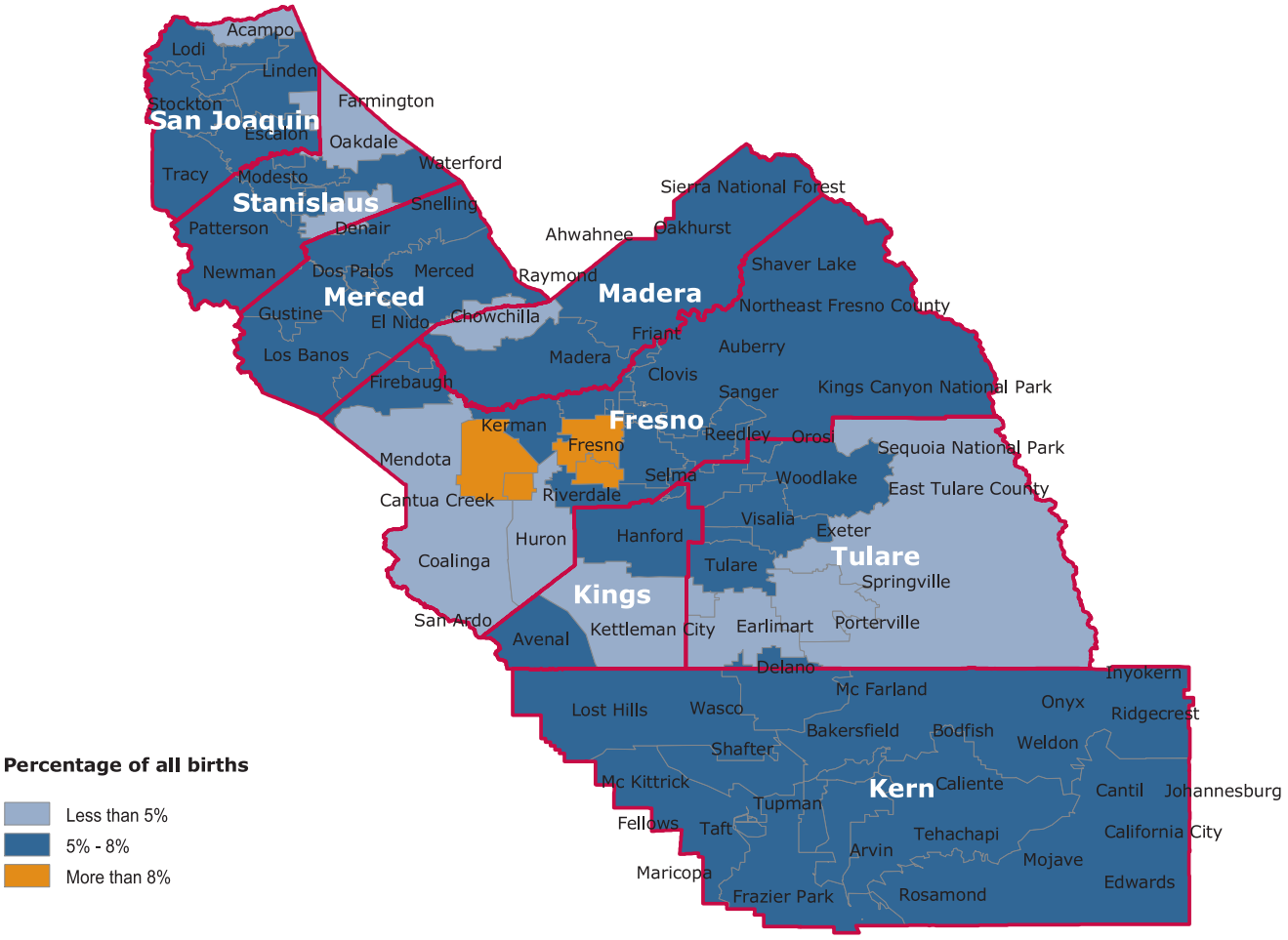

Figure 41: Rates of Low Birthweight (Less than 2,500 Grams) Births in the San Joaquin Valley, 2001
Source: California DHS, 2003a.

The community clusters in the San Joaquin Valley still show wide disparities in the rate of low birthweight births. The community cluster with the lowest percentage of low birthweight births in 2001 was Woodbridge in San Joaquin County (0.7%), whereas the highest percentage of low birthweight births, at 13.0%, was in the Caruthers/W. Selma community cluster. (Figure 41)

Table 18: The 10 Communities With Lowest Percentage of Low Birthweight Births (Less than 2,500 Grams)

County	Community Cluster	% of Low Birthweight Births
San Joaquin	Woodbridge	0.7%
Stanislaus	Oakdale	3.2%
Fresno	Coalinga/Mendota	3.3%
Stanislaus	Riverbank	4.5%
Tulare	Lindsay	4.5%
Tulare	Earlimart/Pixley	4.5%
Fresno	Huron	4.5%
Stanislaus	Turlock	4.6%
Kings	Corcoran	4.8%
Madera	Chowchilla	4.9%

Source: California DHS, 2001.

Table 19: The 10 Communities With Highest Percentage of Low Birthweight Births (Less than 2,500 Grams)

County	Community Cluster	% of Low Birthweight Births
Fresno	Central Fresno	7.3%
Tulare	Woodlake	7.3%
Kern	Taft	7.6%
Stanislaus	Patterson/Newman	7.6%
Fresno	Southeast Fresno	7.7%
Fresno	S. Fresno	7.9%
Stanislaus	Modesto	8.0%
Fresno	San Joaquin	8.3%
Fresno	W. Fresno/Burrel	9.3%
Fresno	Caruthers/W. Selma	13.0%

Source: California DHS, 2001.

Infant Mortality

Infant mortality is an important measure of a nation's health and a worldwide indicator of health status and social well-being. In 1999, the U.S. infant mortality rate of 7.1 per 1,000 live births ranked 28th among industrialized nations. The disparity in infant mortality rates between Whites and specific racial and ethnic groups (especially African-Americans, American Indians or Alaska Natives, Native Hawaiians, and Puerto Ricans) persists. Although the national overall infant mortality rate has reached record low levels (6.9 deaths per 1,000 live births in 2000), the rate for African Americans (13.5) remains nearly twice that for Whites (Freid, Prager, MacKay, & Xia, 2003).

From 1997-2000, the overall infant mortality rate in the San Joaquin Valley was 6.8 per 1,000 live births, higher than the state rate of 5.7. There were large disparities among the counties: Stanislaus had a rate of 7.5, whereas neighboring Merced County had a rate of 5.0. There were also disparities among the races and ethnicities. The infant mortality rate among African-American residents in the Valley was 15.3, with a high of 22.4 among African-Americans in Tulare County. The infant mortality rate among Latino residents was 5.9 Valley-wide, but 7.5 in Stanislaus County.

Between 1994-1996 and 1997-2000, the infant mortality rate in the San Joaquin Valley dropped from 8.4 to 6.8. The infant mortality rate for African-Americans in the Valley dropped from 18.7 to 15.3, and the rate for Latinos fell from 7.0 to 5.9. These decreases are consistent with the trend in the California rates, which fell from 7.0 to 5.7 during this period.

Table 20: Infant Mortality Rates in San Joaquin Valley Counties

	1992-1994		1997, 1999, 2000	
County	Infant Mortality Rate (No. of infant deaths per 1,000 live births)	Rank within 58 California Counties	Infant Mortality Rate (No. of infant deaths per 1,000 live births)	Rank within 58 California Counties
Fresno	8.8	48	7.3	49
Kern	10.6	53	7.1	47
Kings	8.2	45	6.7	45
Madera	7.7	38	5.8	36
Merced	7.4	35	5	20
San Joaquin	7.9	41	6.4	41
Stanislaus	7.4	34	7.5	51
Tulare	6.4	25	6.2	38
SJV Average	8.4		6.8	
California	7		5.7	

Source: California DHS, 1998, 2003a.

Prenatal Care

Prenatal care should begin early and continue throughout pregnancy, according to accepted standards. Studies have shown that prenatal care can contribute to reductions in perinatal illness, disability, and death by identifying and mitigating potential risks. Early prenatal care also helps women to address behavioral factors that contribute to poor outcomes, such as smoking and alcohol use. According to *Healthy People 2010* (U.S. Department of Health and Human Services, 2000), since 1990 there has been a considerable increase in the percentage of mothers who begin prenatal care in the first trimester. Mothers receiving early prenatal care increased 8.8% between 1990 and 2000, from 76% to 83%. Among African-American and Latino women this proportion grew even more dramatically, 19% and 22% respectively.

Overall, most women receive adequate prenatal care, although care varies across racial and ethnic groups. The likelihood of receiving adequate prenatal care rises with maternal age. While nearly three-quarters of all women receive adequate prenatal care, fewer than half of young pregnant girls, aged 15 years and under, receive adequate care (U.S. Department of Health and Human Services, 2000).

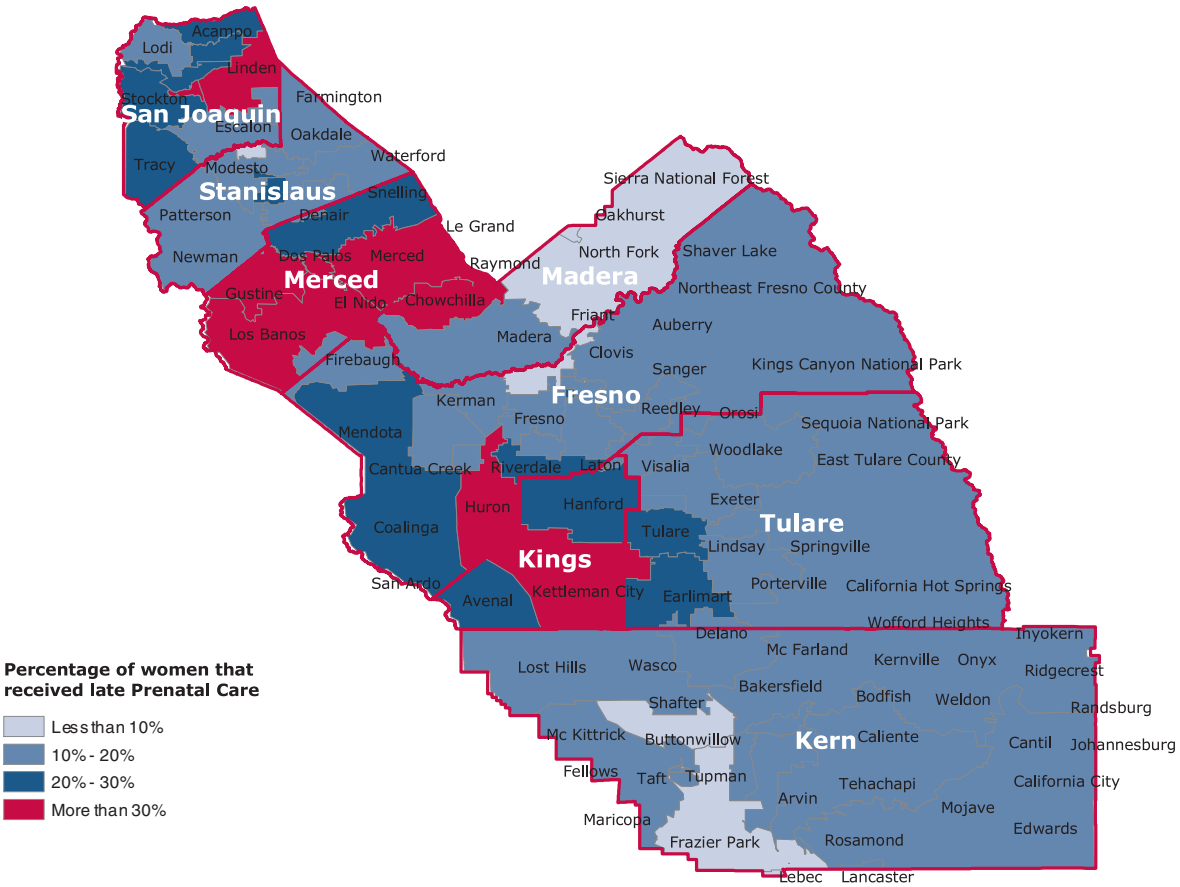

Figure 42: Late Prenatal Care (After the First Trimester) in the San Joaquin Valley, 2001
Source: California DHS, 2001.

Overall, more women in California have reported receiving timely prenatal care beginning in the first trimester of pregnancy than was the case five years ago. However, the San Joaquin Valley still lags behind the rest of California and has yet to reach the 1995 state rate of 20.9%.

In 1999-2001, 20.8% of pregnant women in the Valley received late prenatal care (after the first trimester), compared to 25.3% in 1994-1996, a decrease of 17.7%. In 1999-2001, the rate of late prenatal care for women in California was 15.5%, down from 20.9% in 1994-1996, a 26.3% decrease.

The change in the rate of women receiving late prenatal care differed notably among the Valley counties. Although six of the eight counties showed improvement in the rate of women receiving late prenatal care, the rate in Merced County and San Joaquin County climbed to among the highest in the state for late prenatal care.

Table 21: Percentage of Women Receiving Late Prenatal Care (After the First Trimester) in San Joaquin Valley Counties

	1994-1996		1999-2001	
County	% of Women Receiving Late Prenatal Care (after first trimester)	Rank out of 58 California Counties	% of Women Receiving Late Prenatal Care (after first trimester)	Rank out of 58 California Counties
Fresno	20.3%	21	15.8%	18
Kern	29.6%	45	17.0%	21
Kings	26.4%	34	21.6%	39
Madera	23.6%	28	20.0%	34
Merced	32.3%	49	38.8%	56
San Joaquin	27.6%	39	28.0%	48
Stanislaus	20.6%	23	17.7%	26
Tulare	27.3%	37	20.9%	37
SJV Average	25.3%		20.8%	
California	20.9%		15.5%	

Source: California DHS, 1998, 2003a.

Among the San Joaquin Valley cluster communities, The Mountains community cluster in Madera County had the lowest percentage (8.5%) of women who received late prenatal care. On the other hand, Huron in Fresno County had the highest rate of late prenatal care, with 42.9% of women receiving late prenatal care (Figure 42).

Table 22: The 10 Communities With Lowest Percentage of Women Receiving Late Prenatal Care

County	Community Cluster	% of Women Receiving Late Prenatal Care
Madera	The Mountains	8.5%
Kern	Frazier Park	8.6%
Fresno	Herndon/Pinedale	8.7%
Stanislaus	N. Modesto/Salida	9.1%
Kern	Buttonwillow/Elk Hills	9.9%
Fresno	Clovis/Sanger	10.7%
Tulare	Visalia	12.9%
Tulare	Porterville	13.6%
Kern	Shafter-Wasco	13.9%
Fresno	Selma/Fowler	13.9%

Source: California DHS, 2001.

Table 23: The 10 Communities With the Highest Percentage of Women Receiving Late Prenatal Care

County	Community Cluster	% of Women Receiving Late Prenatal Care
Kings	Avenal	29.3%
San Joaquin	S. Stockton/French Camp	30.0%
Kings	Corcoran	31.5%
Madera	Chowchilla	31.6%
San Joaquin	E. Stockton	32.0%
San Joaquin	Central Stockton	34.8%
Merced	Gustine	35.1%
Merced	Los Banos/Dos Palos	35.8%
Merced	Merced/Atwater	42.6%
Fresno	Huron	42.9%

Source: California DHS, 2001.

Births to Teen Mothers

The number of births to teen mothers is an indicator of the status of overall adolescent health services, education on and the availability of family planning, and it is associated with a host of other social and demographic factors. The risk of poor birth outcomes is greatest among the youngest mothers, ages 15 years and under (U.S. Department of Health and Human Services, 2000).

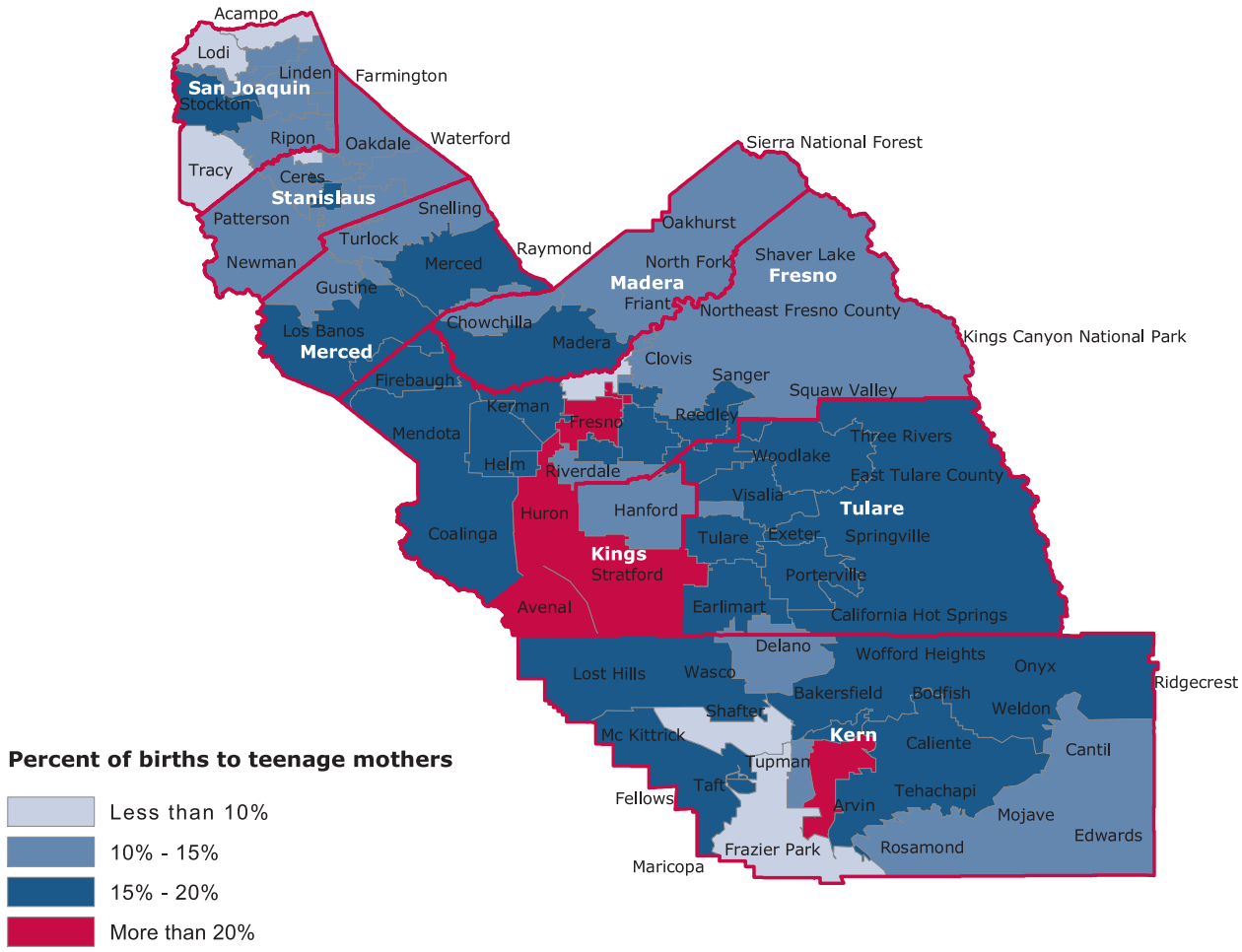

Figure 43: Percentage of Births to Teenage Mothers, Ages 15-19, in the San Joaquin Valley, 2001
Source: California DHS, 2001.

From near epidemic proportions in the mid-1990s, the San Joaquin Valley and California have seen a drop in the rate of teen births. In 1999-2001, the rate of births to women ages 15-19, per 1,000 females in the San Joaquin Valley, was 67.8. This represents a 23.6% drop from the 1994-1996 rate of 88.7. California as a whole saw a slightly larger drop (28.4%) in births to teenage mothers, from 66.6 to 47.7. The rate of teen births in the San Joaquin Valley, despite the decrease, remains 42.1% higher than the state rate (California DHS, 2003a); (Table 24).

Table 24: Births to Teenage Mothers, Ages 15-19, per 1000 Females in San Joaquin Valley Counties

County	1994-1996		1999-2001	
	Birth Rate per 1,000 Females Aged 15-19	Rank out of 58 California Counties	Birth Rate per 1,000 Females Aged 15-19	Rank out of 58 California Counties
Fresno	93.5	54	72.4	55
Kern	95.3	56	71.3	54
Kings	96.4	57	77.4	57
Madera	89.4	52	76.1	56
Merced	94.7	55	66.2	52
San Joaquin	76.6	49	58.4	47
Stanislaus	71.2	46	53.1	43
Tulare	97.9	58	78.3	58
SJV Average	88.7		67.8	
California	66.6		47.7	

Source: California DHS, 1998, 2003a.

Among the San Joaquin Valley cluster communities the disparities in the percentage of births to teenage mothers continue. The community cluster with the lowest percentage of births to teen mothers was Tracy in San Joaquin County at 6.7%, whereas South Fresno in Fresno County had the highest percentage, at 22.2%. (Table 26)

Table 25: The 10 Communities With the Lowest Percentage of Births to Teen Mothers, Ages 15-19, of All Live Births

County	Community Cluster	% of Births to Teen Mothers
San Joaquin	Tracy	6.7%
Kern	Buttonwillow/Elk Hills	7.2%
Kern	Frazier Park	7.3%
Fresno	Herndon/Pinedale	8.9%
Stanislaus	N. Modesto/Salida	9.0%
San Joaquin	Lodi	9.4%
San Joaquin	Woodbridge	9.4%
Madera	The Mountains	10.1%
San Joaquin	Manteca/Lathrop/Escalon/Ripon	10.2%
Fresno	Clovis/Sanger	11.2%

Source: California DHS, 2001.

Table 26: The 10 Communities With the Highest Percentage of Births to Teen Mothers, Ages 15-19, of All Live Births

County	Community Cluster	% of Births to Teen Mothers
Fresno	Caruthers/W. Selma	19.4%
San Joaquin	Central Stockton	19.6%
Kern	Taft	19.6%
Kings	Corcoran	20.1%
Kings	Avenal	20.1%
Fresno	Central Fresno	20.1%
Fresno	Huron	20.8%
Kern	E. Bakersfield/Lamont	20.9%
Fresno	W. Fresno/Burrel	22.1%
Fresno	S. Fresno	22.2%

Source: California DHS, 2001.

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Cancer

Cancer is the second leading cause of death in the United States. During 2000, an estimated 1,220,100 persons in the United States were diagnosed with cancer and 553,000 persons died from cancer, according to *Healthy People 2010* (U.S. Department of Health and Human Services, 2000). These estimates did not include most skin cancers. New cases of skin cancer are estimated to exceed 1 million per year. One-half of new cases of cancer occur in people aged 65 years and over.

In addition to the human cost of cancer, the financial toll of cancer is substantial. The overall annual costs for cancer are estimated at $107 billion. Treatment for lung, breast, and prostate cancers alone accounts for more than half of all direct medical costs for cancer treatment (U.S. Department of Health and Human Services, 2000).

Cancer deaths are reported as the number of deaths due to all cancers, using three-year averages. The rates have been age-adjusted to show what the rate would be if the population were distributed by age in the same proportions as was the United States population in 2000. This adjustment helps to account for differences in age distribution in individual counties (California DHS, 2003a).

In the San Joaquin Valley, in the three-year period from 1999 to 2001, the age-adjusted cancer death rate per 100,000 persons ranged from 164.5 in Madera County to 190.6 in Stanislaus County. In the same period, California had a rate of 176.1 per 100,000 persons. However, both the Valley rates and the California rate were higher than the *Healthy People 2010* national objective of 159.9 (California DHS, 2003a.).

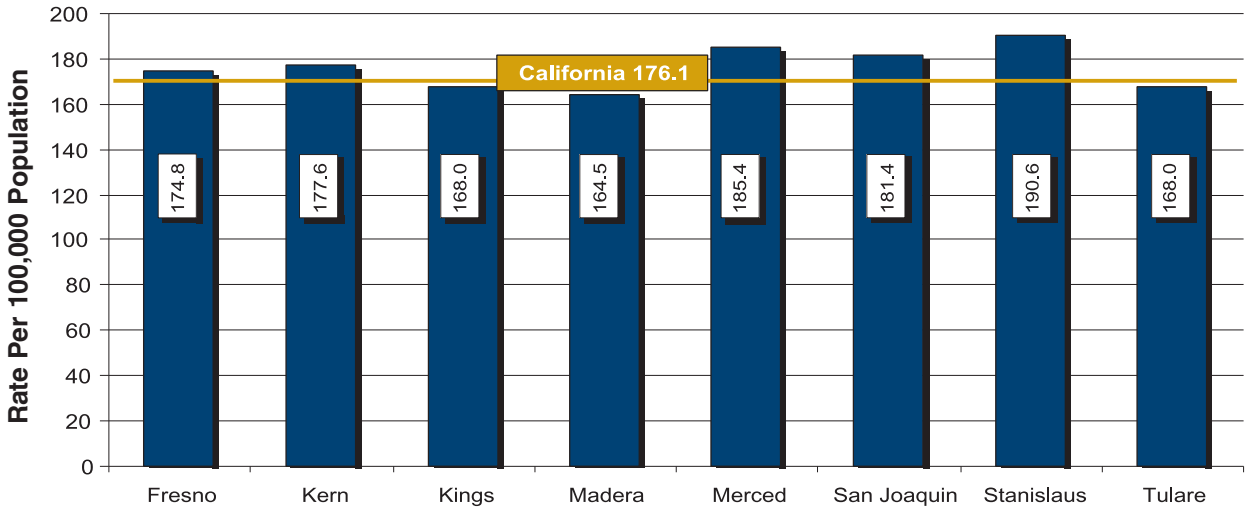

Figure 44: Age-Adjusted Rates of Cancer Deaths in San Joaquin Valley Counties, 1999-2001
Source: California DHS, 2003a.

Lung Cancer

Lung cancer is the most common cause of cancer death in the United States. Data estimates from *Healthy People 2010* (U.S. Department of Health and Human Services, 2000) indicated that 164,100 (74,600 females and 89,500 males) new cases of lung cancer were diagnosed in 2000 and 156,900 persons (67,600 females and 89,300 males) died from lung cancer in 2000, accounting for 28% of all cancer deaths.

Cigarette smoking is the most important risk factor for lung cancer, accounting for up to 78% of lung cancer deaths among females and up to 91% of lung cancer deaths among males. Abstaining from smoking for 10 years or more has been shown to decrease the risk of lung cancer by 30% to 50% compared to the risk of lung cancer among continuing smokers (U.S. Department of Health and Human Services, 2000).

The age-adjusted rate for lung cancer deaths in California in 1999-2001 was 45.9 per 100,000 persons. In the San Joaquin Valley, the age-adjusted death rate for lung cancer during the same period ranged from a low of 39.8 in Kings County to a high of 55.9 in Stanislaus County (California DHS, 2003a).

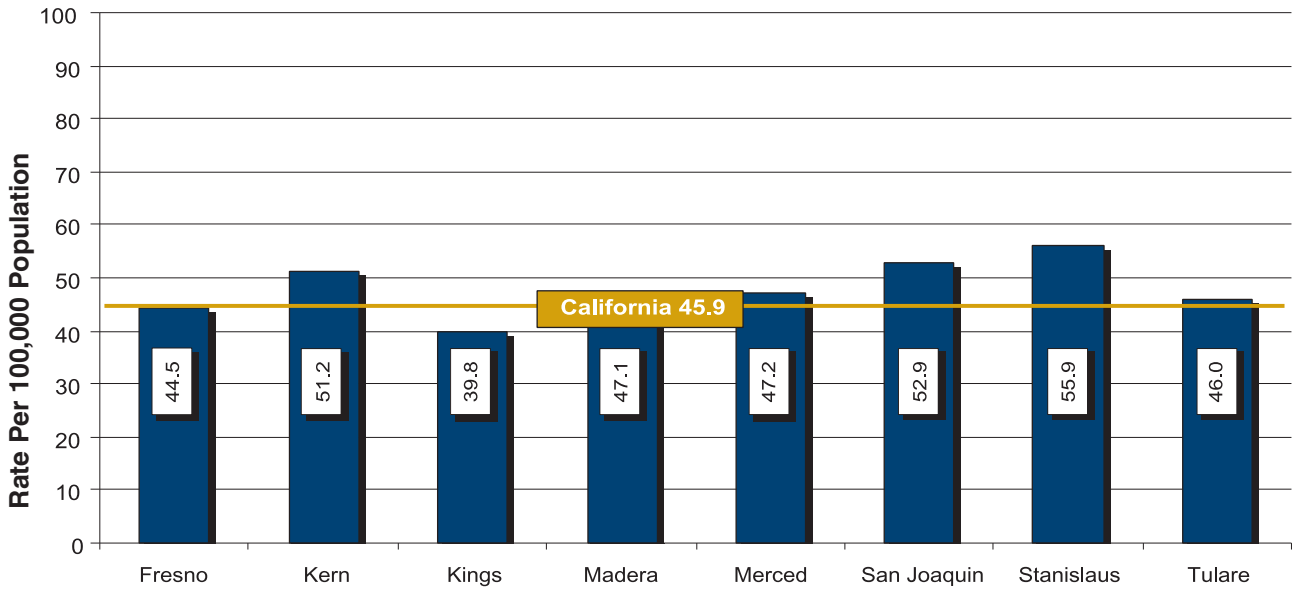

Figure 45: Age-Adjusted Rates of Lung Cancer Deaths in San Joaquin Valley Counties, 1999-2001
Source: California DHS, 2003a.

Breast Cancer

Breast cancer is the most common type of cancer among women in the United States. An estimated 213,300 new cases were expected to be diagnosed in 2003. About 39,800 U.S. women were expected to die from breast cancer in 2003. Death from breast cancer can be reduced substantially if the tumor is discovered at an early stage (American Cancer Society, 2003a).

In a recent study of women diagnosed with breast cancer between 1992 and 1998, as reported by the American Cancer Society in 2003, significant disparities existed among the diagnosis, treatment, and survival rates for breast cancer among women of different ethnic and racial backgrounds. African-American, Native American, and Hispanic White women were more likely than non-Hispanic White and Asian/Pacific Islander women to be diagnosed with tumors that were more advanced, indicating a lack of access to early screening services. African-
American and Latina (Puerto Rican) women were most likely to receive substandard and inappropriate treatment. African-American, Native American, and Hispanic White women faced a 10% to 70% greater risk of

In 1999-2001, the age-adjusted death rate for female breast cancer in California was 24.5 per 100,000 females. In the San Joaquin Valley, Merced County had the highest rate of deaths from breast cancer in 1999-2001, at 28.0; neighboring Madera County had the lowest rate, at 13.5 (California DHS, 2003a).

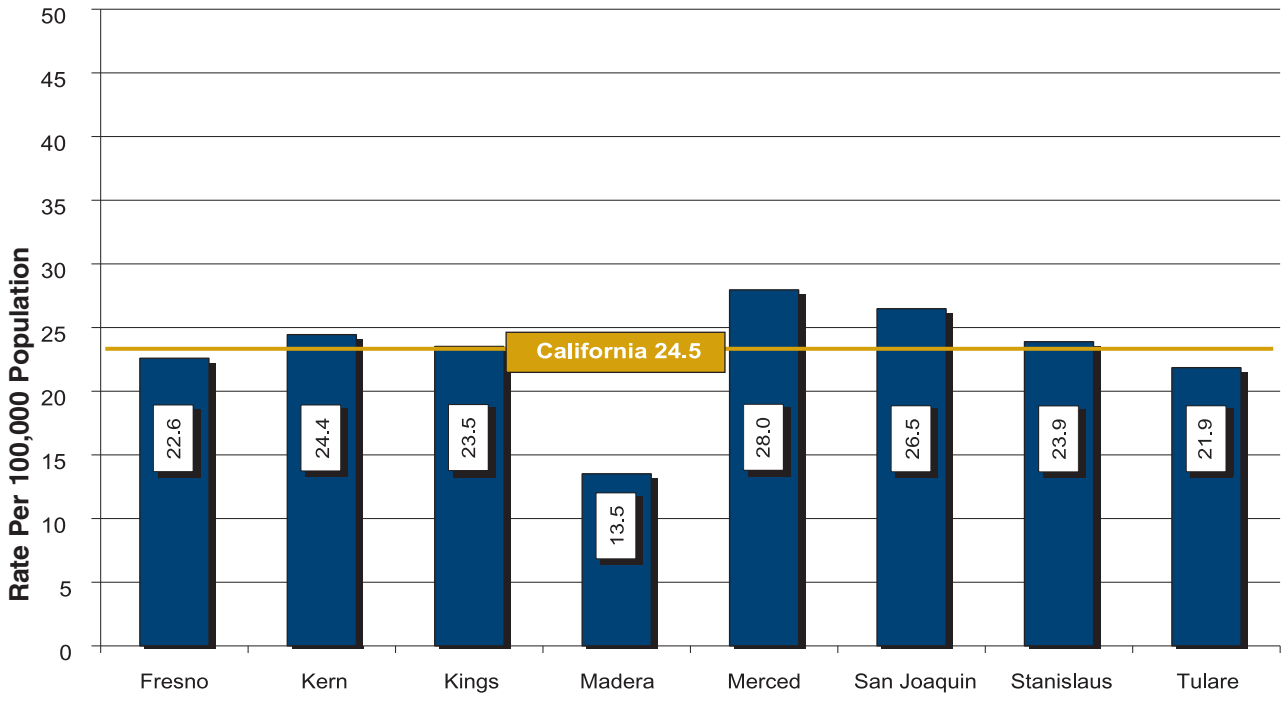

Figure 46: Age-Adjusted Rates of Breast Cancer Deaths in San Joaquin Valley Counties, 1999-2001
Source: California DHS, 2003a.

Infectious Diseases

Infectious diseases remain a major cause of illness, disability, and death. In the United States, the number of deaths from infectious diseases, including HIV-associated diseases, rose 58% between 1980 and 1992. Even when HIV-associated diagnoses were eliminated, deaths from infectious diseases still increased by 22% during this period. Considered as a group, three infectious diseases, pneumonia, influenza, and HIV infection, constituted the fifth leading cause of death in the United States in 1997 (U.S. Department of Health and Human Services, 2000).

Tuberculosis

The *Strategic Plan for the Elimination of TB in the United States* (Centers for Disease Control and Prevention, 1989) set a tuberculosis (TB) elimination goal of one new case per million by 2010, with an interim goal of 3.5 cases per 100,000 persons by 2000. However, in the mid-1980s, the trend toward TB elimination was reversed and drug-resistant strains emerged that were even deadlier. This resulted in a 20% increase in TB cases between 1985 and 1992. Between 1993 and 1998, new cases of TB again declined (U.S. Department of Health and Human Services, 2000). In 2001, there were 15,989 cases of TB reported in the U.S., or 5.68 cases per 100,000 persons (Freid et al., 2003).

During 1999-2000, the rate of TB per 100,000 persons in the San Joaquin Valley was 8.6, which was somewhat lower than the California rate of 9.9. The *Healthy People 2010* national objective is 1 case per 1,000,000 persons, substantially reduced from the *Healthy People 2000* national objective of 3.5 per 100,000 persons (California DHS, 2003a).

Over the past five years, the TB rate has dropped dramatically (27.7%) in the Valley, from 11.9 per 100,000 persons in 1994-1996 to 8.6 in 1999-2001. California's rate dropped 32% during the same period, from 14.4 to 9.9 per 100,000 persons (California DHS, 1998, 2003a).

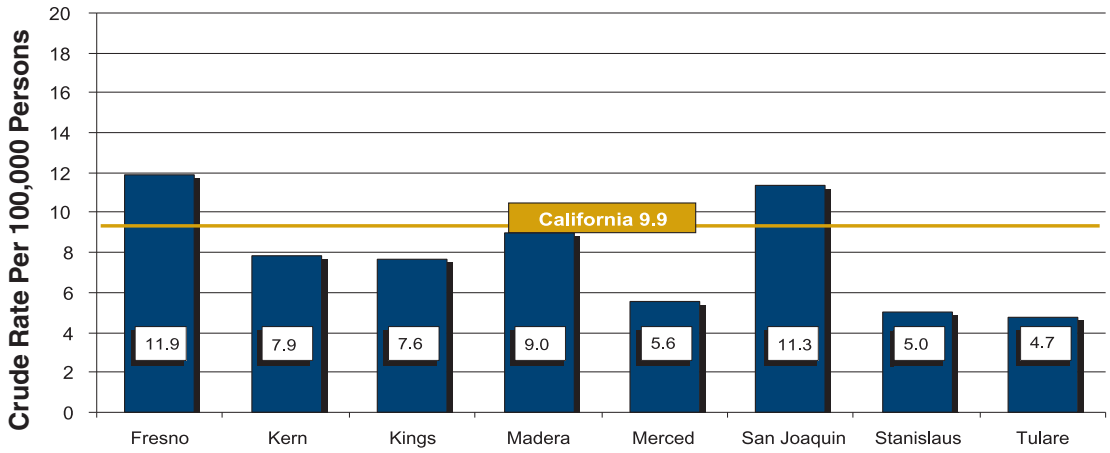

Figure 47: Reported Cases of Tuberculosis in San Joaquin Valley Counties, 1999-2001
Source: California DHS, 2003.

Sexually Transmitted Infections

Sexually transmitted infections (STIs) refer to the more than 25 infectious organisms transmitted primarily through sexual activity. STIs cause many harmful, often irreversible, and costly clinical complications, such as reproductive health problems, fetal and perinatal health problems, and cancer. (As of November 2003, the term sexually transmitted diseases (STDs) has been changed to sexually transmitted infections (STIs) by the National Institute of Health and in 1999 by the World Health Organization.)

Syphilis is easy to detect and cure, given adequate access to and use of care. Nationally, it is at the lowest rate ever recorded and is confined to a very limited number of geographic areas. The last epidemic peaked in 1990, with the highest syphilis rate in 40 years. By 1997, the number of cases had declined by 84% (U.S. Department of Health and Human Services, 2000). In 2001, there were 32,221 cases of syphilis reported in the U.S., or 11.45 per 100,000 persons (Freid et al. 2003).

Chlamydia is the most common reportable communicable disease in the United States, with an estimated 3 million new cases per year. California carries a disproportionate burden of these infections. In their 1997 landmark report, *The Hidden Epidemic: Confronting Sexually Transmitted Diseases*, the Institute of Medicine (Eng & Butler, 1997), strongly advocated widespread screening for chlamydia in the United States to identify asymptomatic infections. Expanded screening efforts are critical to chlamydia prevention and control (U.S. Department of Health and Human Services, 2000). In 2001, there were 783,242 cases of chlamydia reported in the U.S., or 278.3 per 100,000 persons (Freid et al., 2003).

Syphilis

The average 1999-2001 rate of syphilis in the San Joaquin Valley was 1.0 case per 100,000 residents, which was slightly lower than the California rate of 1.1. In the San Joaquin Valley, the rate was lower than the California rate in five of the eight counties. Even so, these rates were five times greater than the *Healthy People 2010* national objective of 0.2 cases per 100,000 residents (California DHS, 2003a).

Table 27: Rates of Syphilis in San Joaquin Valley Counties

County	1994-1996		1999-2001	
	Crude Rate of Syphilis per 100,000 Persons	Rank within 58 California Counties	Crude Rate of Syphilis per 100,000 Persons	Rank within 58 California Counties
Fresno	5.6	57	0.9	49
Kern	4.9	56	1.4	54
Kings	0.6	37	0.8	47
Madera	3.8	53	0.5	43
Merced	0.3	33	2.5	57
San Joaquin	8.1	58	1.2	53
Stanislaus	0.6	40	0.5	40
Tulare	1.0	48	0.2	29
SJV Average	4.1		1.0	
California	2.0		1.1	

Source: California DHS, 1998, 2003a.

Chlamydia

In 1999-2001, the rate of chlamydia infection, per 100,000 persons, in the San Joaquin Valley varied widely among the counties, from 213.5 in Merced County to 465.1 in Fresno County. Fresno County had the highest rate of chlamydia infections in the state (California DHS, 2003a). Six of the eight San Joaquin Valley counties had a rate above that of California. The 1994-1996 data on chlamydia infections are not available.

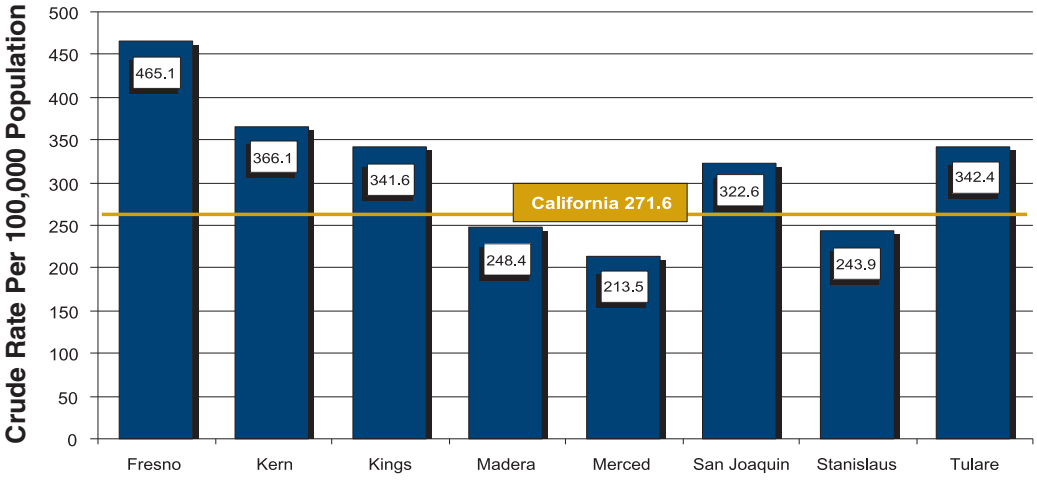

Figure 48: Reported Cases of Chlamydia in San Joaquin Valley Counties, 1999-2001
Source: California DHS, 2003a.

Table 28: Rate of Chlamydia Infections in San Joaquin Valley Counties

1999-2001		
County	**Rate per 100,000 Persons**	**Rank within 58 California States**
Fresno	465.1	58
Kern	366.1	55
Kings	341.6	53
Madera	248.4	44
Merced	213.5	38
San Joaquin	322.6	50
Stanislaus	243.9	43
Tulare	342.4	54
SJV Average	348.1	
California	271.6	

Note: Data were not available on rates of Chlamydia infection for 1994-1996.
Source: California DHS, 2003a.

HIV/AIDS

According to *Healthy People 2010*, (U.S. Department of Health and Human Services, 2000) HIV/AIDS has been reported in virtually every racial and ethnic group, every age group, and every socioeconomic group in every state in the United States. Initially identified among men who have sex with men on the East and West Coasts, the AIDS epidemic is composed of diverse multiple subepidemics that vary by region and community. By the end of 2001, more than 816,000 cases of AIDS had been reported, and nearly 468,000 people had died from HIV disease or AIDS.

The 1999-2001 average San Joaquin Valley crude rate for HIV/AIDS infections was 11.1 new cases per 100,000 persons aged 13 and older. The state rate was 16.4 for the same period. Although the rate of HIV/AIDS infection in the Valley was considerably lower than the state rate, it continues to be much higher than the *Healthy People 2010* national objective of 1.0 (California DHS, 2003a).

Over the past five years, the crude rate of reported AIDS cases in the San Joaquin Valley has decreased slightly from 12.4 to 11.1. On the other hand, the state rate has dropped dramatically, from 27.4 to 16.4 (California DHS, 1998, 2003a).

Table 29: Rates of AIDS Cases in San Joaquin Valley Counties

County	1994-1996		1999-2001	
	Crude Rate of Reported AIDS Cases 100,000 Persons (Ages 13 and Over)	Rank within 58 California Counties	Crude Rate of Reported AIDS Cases 100,000 Persons (Ages 13 and Over)	Rank within 58 California Counties
Fresno	14.5	40	9.0	35
Kern	16.1	42	18.1	52
Kings	13.3	37	7.0	30
Madera	6.3	11	15.1	50
Merced	6.0	10	6.2	27
San Joaquin	18.9	27	11.3	46
Stanislaus	9.4	21	6.7	28
Tulare	5.9	8	11.3	18
SJV Average	12.4		11.1	
California	27.4		16.4	

Source: California DHS, 2003a.

Chronic Diseases and Conditions

Diabetes

The number of persons with diabetes, especially Type 2 diabetes, has increased steadily over the past decade. According to *Healthy People 2010* (U.S. Department of Health and Human Services, 2000), there are presently 10.5 million persons who have been diagnosed with diabetes, whereas 5.5 million persons are estimated to have the disease but are undiagnosed. This increase in the number of cases of diabetes has occurred particularly within certain racial and ethnic groups. Over the past decade, diabetes has remained the seventh leading cause of death in the United States, primarily from associated cardiovascular disease. The presence of diabetes in women is associated with a three to four fold increase in coronary heart disease.

Healthy People 2010 (U.S. Department of Health and Human Services, 2000) data show that in the United States, diabetes is the leading cause of nontraumatic amputations (approximately 57,000 per year or 150 per day), blindness among working-aged adults (approximately 20,000 per year or 60 per day), and end-stage renal disease (approximately 28,000 per year or 70 per day).

Diabetes disproportionately affects non-White populations. The relative number of persons with diabetes in African-American, Hispanic, and American Indian communities is one to five times greater than that in White communities.

Diabetes is a costly disease. The total annual national cost of diabetes is estimated to be $88 billion ($43 billion direct; $45 billion indirect). Hospitalizations for diabetes-associated cardiovascular disease account for the largest component of the direct costs. However, diabetes management is occurring more frequently in the outpatient setting, and more people with diabetes are using skilled-nursing and long-term care facilities (U.S. Department of Health and Human Services, 2000).

According to the 2001 *CHIS* (UCLA Center for Health Policy Research, 2003), 7.4% of adults ages 18 and over in the San Joaquin Valley had been diagnosed with diabetes, compared to 5.9% statewide. Tulare County had the highest percentage of adults with diabetes (10.0%) and Stanislaus had the lowest (6.0%). (Figure 49)

The diabetes death rate was added to the reported indicators in the California Department of Health Services *County Health Status Profiles* in 2001. In the San Joaquin Valley, the three-year average age-adjusted diabetes death rate per 100,000 persons for the period 1999-2001 ranged from 23.0 in Kern County to 48.4 in Kings County, the highest rate in the state. California's age-adjusted diabetes death rate for that period was 20.7. All of the San Joaquin Valley counties were in the lowest quartile of the state (California DHS, 2003a).

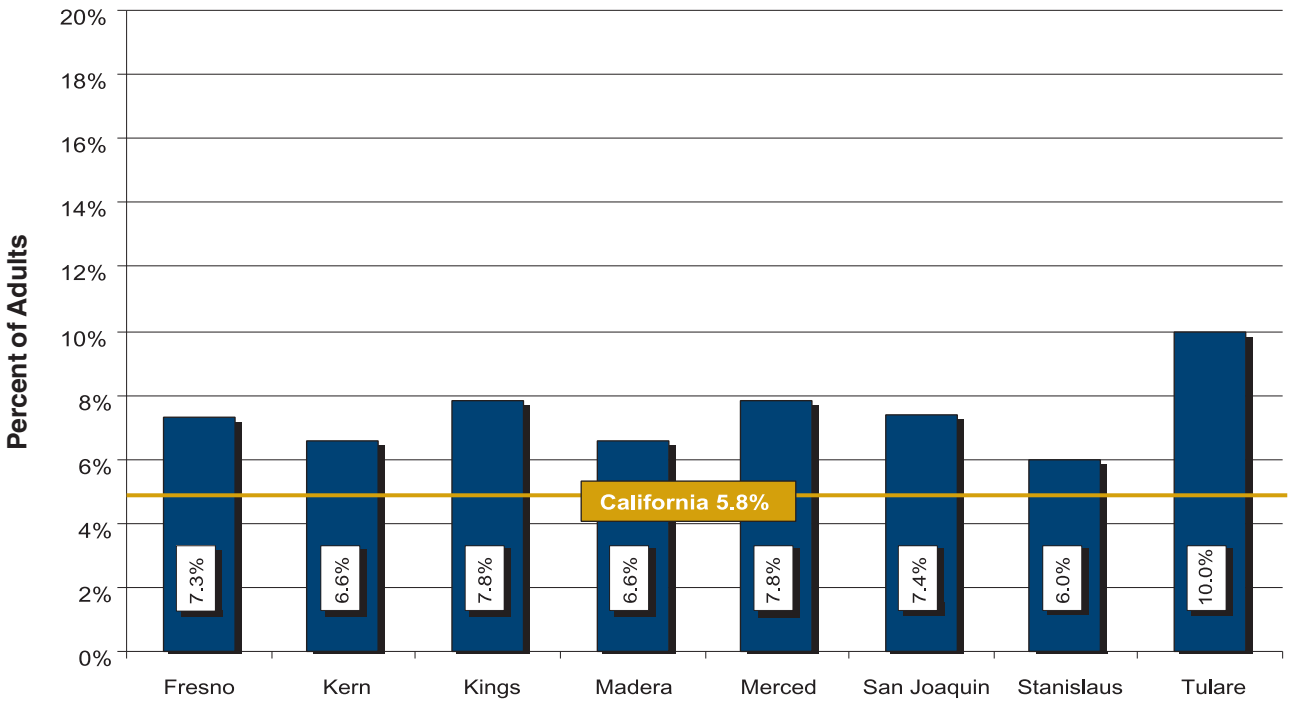

Figure 49: Adults Diagnosed With Diabetes in San Joaquin Valley Counties, 2001
Source: 2001 *CHIS* (UCLA Center for Health Policy Research, 2003).

Asthma

Nationally, and in the San Joaquin Valley, asthma is a serious and growing health problem. Over 15 million persons in the United States have asthma. Asthma places a growing burden on the medical system, and it accounts for approximately 500,000 hospitalizations, 5,000 deaths, and 134 million days of restricted activity each year. In 2000, there were 9.3 million physician office visits, 1 million hospital outpatient department visits, and 1.8 million emergency room visits due to asthma. The annual national economic cost for direct health care for the treatment of asthma is estimated at $9.4 billion; indirect costs (lost productivity) add another $4.6 billion for a total of $14.0 billion. Inpatient hospital services represent the largest single direct medical expenditure -- over $4 billion. The value of reduced productivity due to loss of school days represents the largest single indirect cost at $1.4 billion (American Lung Association, 2003b).

Environmental and occupational factors contribute to illness and disability from asthma. Decreases in lung function and a worsening of asthma have been associated with exposure to allergens, indoor pollutants (e.g. tobacco smoke), and ambient air pollutants (e.g., ozone, sulfur dioxide, nitrogen dioxide, acid aerosols, and particulate matter). Approximately 25% of children in the United States live in areas such as the San Joaquin Valley, which exceed the federal government's standard for ozone. Environmental factors are associated with upper respiratory infections that contribute to illness and disability in children and adults (U.S. Department of Health and Human Services, 2000).

Asthma is not a reportable public health condition, so determining the number of asthma cases has been difficult. One source of asthma data is the 2001 *CHIS* (UCLA Center for Health Policy Research, 2003), which asked interviewees whether they had ever been diagnosed with asthma. The other source is hospital utilization reports that show the number of hospital discharges with a primary diagnosis of asthma. These hospitalization rates are useful for comparing the rates of asthma among counties and for gauging the effectiveness of asthma management on an outpatient basis.

In the San Joaquin Valley, the percentage of 2001 *CHIS* respondents who said they had been diagnosed with asthma was 13.8%, slightly higher than the California rate of 12.1% (UCLA Center for Health Policy Research, 2003). However, rates among counties in the San Joaquin Valley varied between 17.2% for Fresno County and 11.7% for Tulare County. Fresno County had the second highest percentage of persons diagnosed with asthma in the state. Of those diagnosed with asthma, 79.0% had symptoms within the year prior to the interview.

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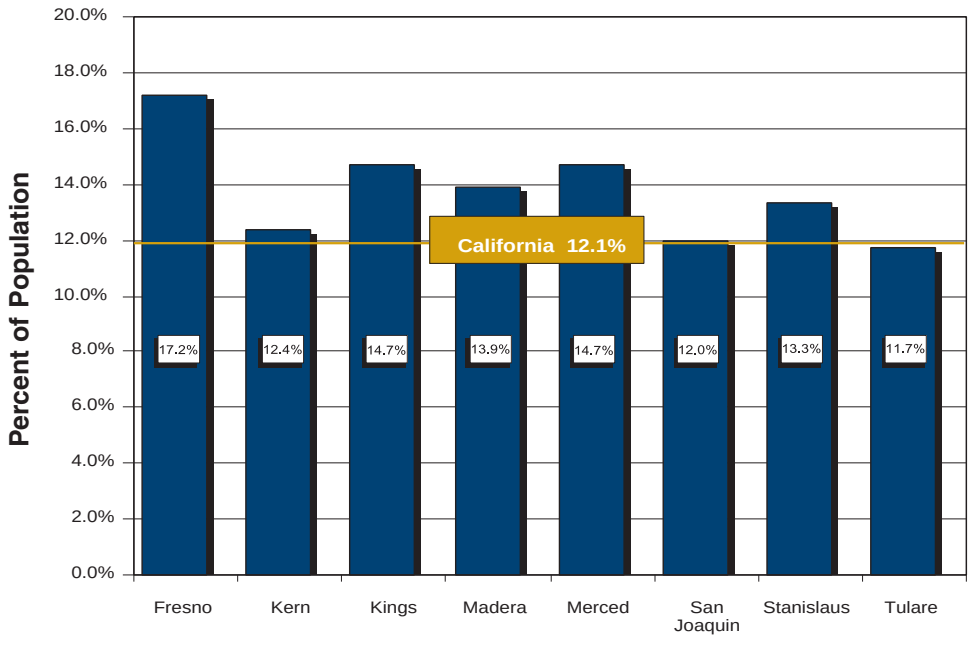

Figure 50: Residents Diagnosed With Asthma in San Joaquin Valley Counties, 2001
Source: 2001 *CHIS* (UCLA Center for Health Policy Research, 2003).

Coronary Heart Disease

Affecting approximately 12 million people in the United States, coronary heart disease (CHD) is the leading cause of death for all people in the United States. In 2000, 710,760 U.S. residents died from heart disease, down from 761,085 in 1980 (Freid et al., 2003).

A major risk factor for CHD that can be modified is high blood cholesterol. More than 50 million U.S. adults have blood cholesterol levels that require medical advice and treatment. More than 90 million adults have cholesterol levels that are higher than desirable. *Healthy People 2010* also reported that about 50 million adults in the United States have high blood pressure, another major risk factor for CHD (U.S. Department of Health and Human Services, 2000).

In 1999-2001, the crude death rate for CHD (per 100,000 persons) in the San Joaquin Valley was 172.7, slightly above the California rate of 166.0 and the *Healthy People 2010* national objective of 166.0. Rates ranged from a high of 200.9 in Stanislaus County to a low of 119.5 in Kings County (California DHS, 2003a).

According to the 2001 *CHIS* (UCLA Center for Health Policy Research, 2003), 7.6% of San Joaquin Valley adults have been diagnosed with CHD, compared to 6.9% of adults across the state. In the Valley, rates of diagnosis of CHD ranged from 10.4% in Madera County to 5.7% in Stanislaus County (Figure 51).

Table 30: Rates of Coronary Heart Disease Deaths in San Joaquin Valley Counties

County	1994-1996		1999-2001	
	Crude Rate of Death Due to CHD per 100,000 Persons (Ages 13 and Over)	Rank within 58 California Counties	Crude Rate of Death Due to CHD per 100,000 Persons (Ages 13 and Over)	Rank within 58 California Counties
Fresno	177.2	46	162.2	49
Kern	192.4	57	189.9	55
Kings	144.8	53	119.5	47
Madera	180.7	41	174.3	45
Merced	138.7	38	138.3	46
San Joaquin	199.4	49	183.3	50
Stanislaus	190.9	50	200.9	57
Tulare	190.0	51	151.3	44
SJV Average	183.8		172.7	
California	181.5		166.0	

Source: California DHS, 2003a.

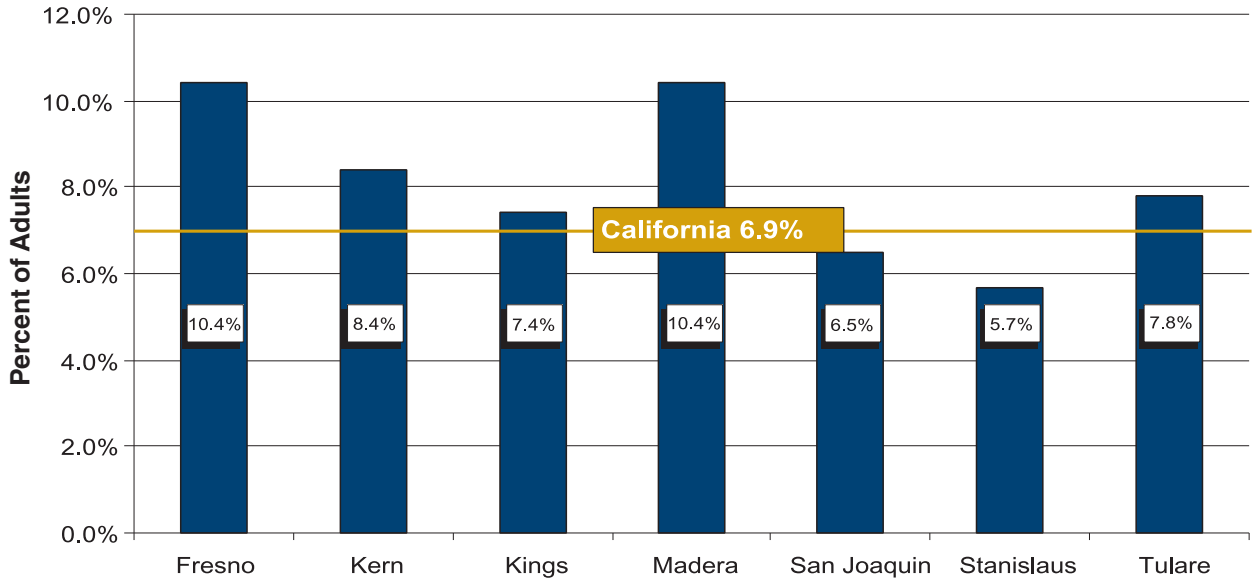

Figure 51: Adults Diagnosed With Coronary Heart Disease in San Joaquin Valley Counties, 2001
Source: 2001 *CHIS* (UCLA Center for Health Policy Research, 2003).

Childhood Obesity

Studies have shown that nutritional and dietary factors contribute substantially to the burden of preventable illnesses and premature deaths in the United States. According to *Healthy People 2010* (U.S. Department of Health and Human Services, 2000), dietary factors are associated with 4 of the 10 leading causes of death: coronary heart disease, some types of cancer, stroke, and Type 2 diabetes. These health conditions are estimated to cost society over $200 billion each year in medical expenses and lost productivity.

There is much concern about the increasing prevalence of obesity in children and adolescents. Obesity acquired during childhood or adolescence may persist into adulthood and increase the risk for some chronic diseases later in life.

The California Pediatric Nutrition Surveillance System (PedNSS), as analyzed and reported by California Food Policy Advocates (2003a), provides indicators of child obesity using the Body Mass Index (BMI). In the San Joaquin Valley, 16.4% of children ages 2-5 and 20.2% of children ages 6-20 are considered obese. The California percentages are similar, 16.6% and 20.0%, respectively (Figure 52).

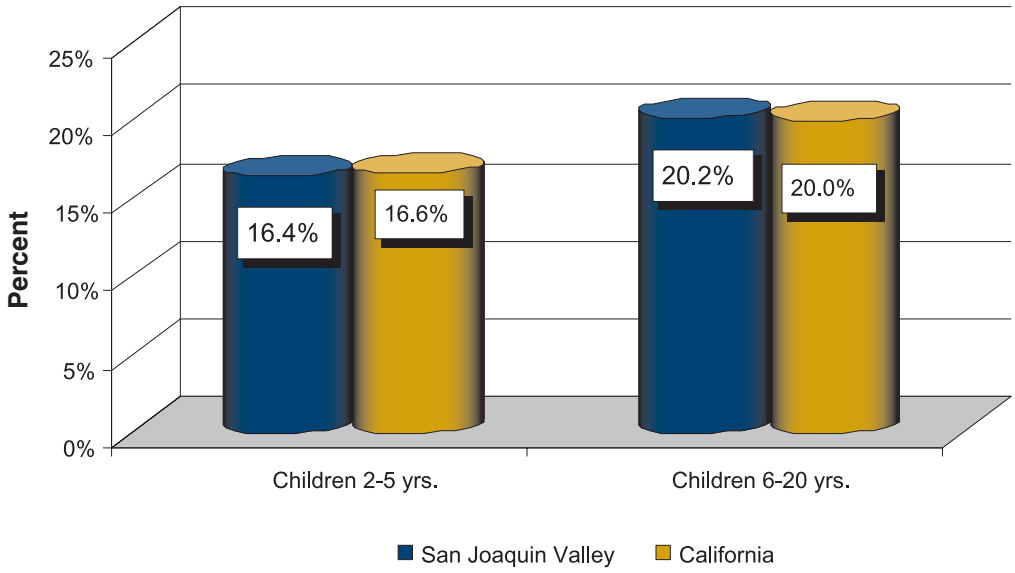

Figure 52: Childhood Obesity in the San Joaquin Valley, 2001
Source: California Food Policy Advocates, 2003a.

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Mental Health

Approximately 20% of the U.S. population is affected by mental illness during a given year, with depression being the most common disorder. According to *Healthy People 2010* (U.S. Department of Health and Human Services, 2000), major depression is the leading cause of disability and is the cause of more than two-thirds of suicides each year. The stigmatization and the misunderstanding of mental illness prevent many persons with depression from seeking professional help. Depression is also related to other medical conditions, such as heart disease, cancer, and diabetes, as well as anxiety and eating disorders. Alcohol and drug abuse have also been associated with depression. An estimated 8 million persons aged 15 to 54 years had coexisting mental health and substance abuse disorders in 1999. (U.S. Department of Health and Human Services, 2000).

Nearly 15% of San Joaquin Valley adults reported that they had felt they needed mental health treatment in the year prior to the 2001 *CHIS*. The responses were consistent across all of the Valley's counties and with California as a whole (UCLA Center for Health Policy Research, 2003).

Suicide

In 2000, suicide was the eighth leading cause of death for males in the United States and the third leading cause of death among young persons ages 15-24 (Freid et al., 2003). Suicide can be prevented, in many cases, by early recognition and treatment of mental health disorders. At least 90% of all persons who commit suicide have a mental health or substance abuse disorder, or a combination of disorders (U.S. Department of Health and Human Services, 2000).

The most recent data showed that for the three-year period between 1999 and 2001, the average age-adjusted rate of suicide for California residents was 9.5 per 100,000 persons. This represents a decrease from an average state rate of 10.6 for the three-year period between 1994 and 1996 (California DHS, 1998).

For the period between 1999 and 2001, the average age adjusted rate for suicide (per 100,000 persons) in San Joaquin Valley counties ranged from a low of 8.6 in Tulare County to a high of 10.7 in both Madera and Merced Counties. Five of the eight Valley counties exceeded the state rate during this period (California DHS, 2003a). The age-adjusted suicide rate in every county in the San Joaquin Valley exceeded the *Healthy People 2010* national objective of 5.0 deaths per 100,000 persons (California DHS, 2003a; Figure 53).

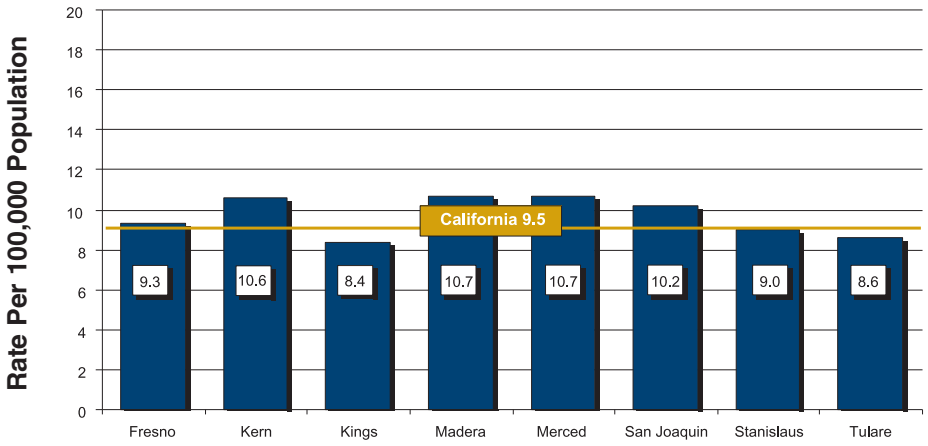

Figure 53: Age Adjusted Suicide Death Rates in San Joaquin Valley Counties, 1999 to 2001
Source: California DHS, 2003a.

C. Behavioral Risks

Substance Abuse

Substance abuse, primarily alcohol abuse, is one of society's most pervasive health and social concerns. According to *Healthy People 2010* (U.S. Department of Health and Human Services, 2000), approximately 100,000 deaths annually in the United States are related to alcohol consumption. Illicit-drug abuse and related AIDS deaths account for at least another 12,000 deaths. In 1995, the economic cost of alcohol and drug abuse was estimated to be $276 billion; this includes the costs of health care, motor vehicle accidents, crime, lost productivity, and other adverse outcomes of alcohol and drug abuse. This amount represents more than $1,000 for every man, woman, and child in the United States (U.S. Department of Health and Human Services, 2000).

Alcohol Use

According to *Healthy People 2010* (U.S. Department of Health and Human Services, 2000), alcohol abuse is associated with numerous health and social conditions such as child and spousal abuse; sexually transmitted diseases, including HIV infection; teen pregnancy; school failure; motor vehicle accidents; escalation of health care costs; low worker productivity; and homelessness.

Alcohol abuse is also associated with the leading causes of death among youth — motor vehicle accidents, homicides, suicides, and drowning. For long-term heavy drinkers, alcohol can lead to heart disease, cancer, alcohol-related liver disease, and pancreatitis. During pregnancy, alcohol use is known to cause fetal alcohol syndrome, a leading cause of preventable mental retardation (U.S. Department of Health and Human Services, 2000).

Over half of San Joaquin Valley adults (53.1%) reported drinking alcohol in the month preceding the 2001 *CHIS*, compared to 59.0% of all Californians. Although most drinkers are light or moderate drinkers, binge drinking (consuming more than five drinks at a single time) is at a dangerously high level in the Valley. According to the 2001 *CHIS* (UCLA Center for Health Policy Research, 2003), 29.8% of Valley adults who drank alcohol reported consuming five or more drinks at a single time at least once in the month preceding the survey, compared to only 26.3% of California drinkers. In Tulare and Kern Counties, over 15% of adult drinkers said that they had been binge drinking three or more times in the month preceding the survey.

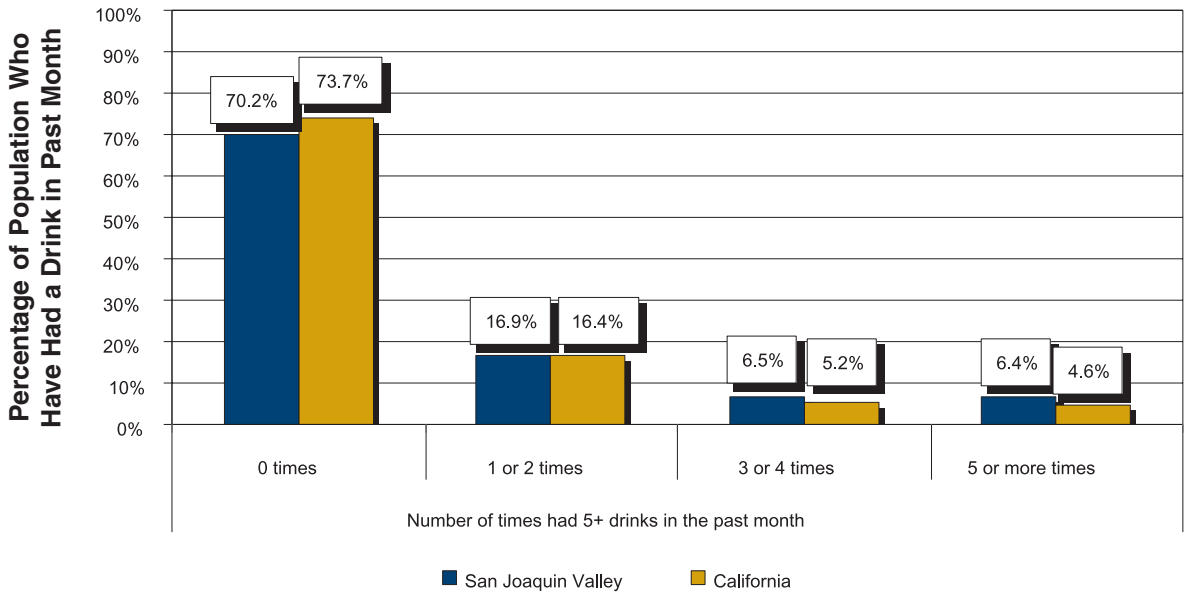

Figure 54: Binge Drinking in the San Joaquin Valley, 2001
Source: 2001 *CHIS* (UCLA Center for Health Policy Research, 2003).

Tobacco Use

Cigarette smoking is the single most preventable cause of disease and death in the United States. According to *Healthy People 2010*, smoking results in more deaths each year than do AIDS, alcohol, cocaine, heroin, homicide, suicide, motor vehicle accidents, and fires combined. Smoking is a major risk factor for the leading causes of death, such as heart disease, stroke, lung cancer, and chronic lung diseases. Smoking by women during pregnancy can result in miscarriages, premature delivery, and sudden infant death syndrome (U.S. Department of Health and Human Services, 2000).

Data from *Healthy People 2010* (U.S. Department of Health and Human Services, 2000) show that tobacco use is responsible for more than 430,000 deaths per year among adults in the United States, representing more than 5 million years of potential life lost. If tobacco use patterns persist in the United States, an estimated 5 million persons who are currently under age 18 years will die prematurely from a smoking-related disease. Direct medical costs related to smoking total at least $50 billion per year and direct medical costs related to smoking during pregnancy are approximately $1.4 billion per year (U.S. Department of Health and Human Services, 2000).

According to the 2001 *CHIS* (UCLA Center for Health Policy Research, 2003), one in six San Joaquin Valley adults (18.5%) reported being a current smoker, compared to 16.9% of California adults. One in three San Joaquin Valley adults (32.4%) who ever smoked cigarettes reported smoking every day, compared to the 28.2% of Californians who ever smoked cigarettes. On a more positive note, over half of Valley residents (57.3%) reported that they never smoked, comparable to 58% in California. Both the Valley and California have yet to reach the *Healthy People 2010* national objective of 87% nonsmokers.

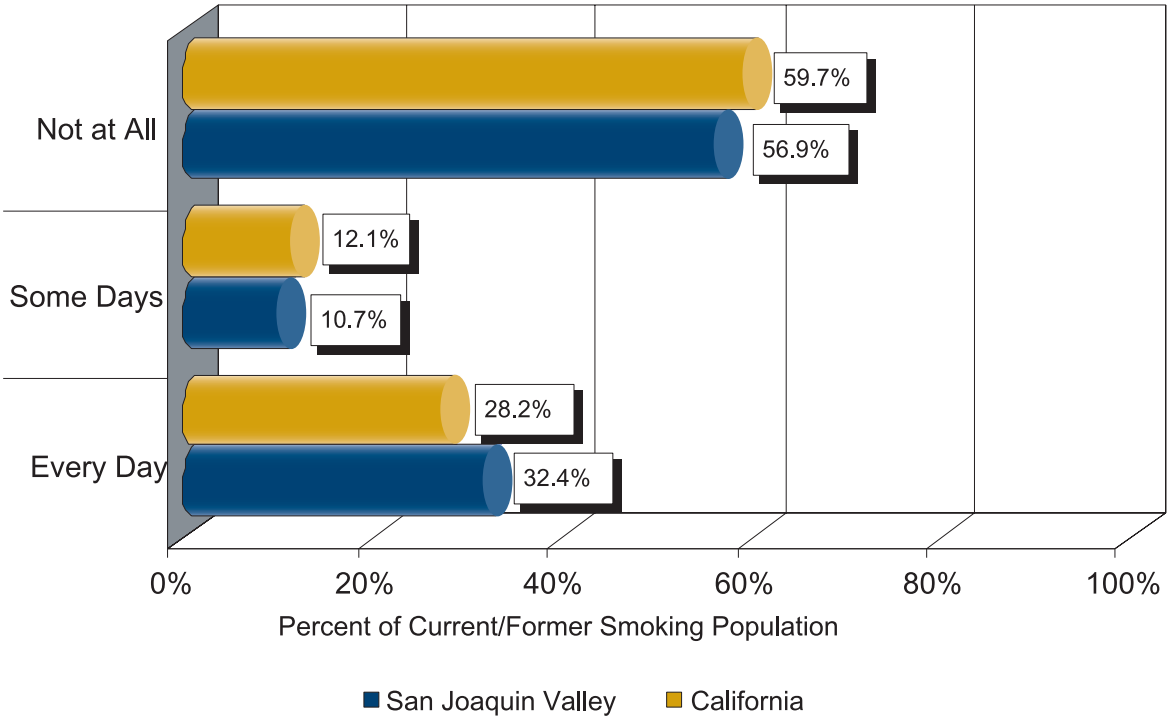

Figure 55: Smoking Habits of Current and Former Smokers in the San Joaquin Valley, 2001
Source: 2001 *CHIS* (UCLA Center for Health Policy Research, 2003).

Motor Vehicle Deaths

Motor vehicle accidents are a major source of injury and death. Nationally, death rates associated with motor vehicle traffic injuries are highest in the 15-24 age group. In 1996, teenagers accounted for only 10% of the U.S. population but 15% of the deaths resulting from motor vehicle accidents, according to *Healthy People 2010* (U.S. Department of Health and Human Services, 2000). Those aged 75 years and older had the second highest rate of motor-vehicle-related deaths. Increased use of safety belts and reductions in driving while impaired have been demonstrated to be the most effective means to reduce the risk of death and serious injury in motor vehicle crashes (U.S. Department of Health and Human Services, 2000).

The rate of deaths due to motor vehicle accidents is high in the Valley. In recent years there have been numerous reports of accidents involving farmworker transportation that kill multiple workers. Intense efforts have gone into improving the safety and regulation of farmworker transportation. Although the death rate from motor vehicle accidents dropped by 23.7% between 1996 and 2001, it was still nearly double the California rate.

In the three-year period ending in 2001, the annual rate of age-adjusted motor-vehicle-related deaths per 100,000 persons in all eight of the San Joaquin Valley counties exceeded the California rate of 10.3. Madera County had the highest age-adjusted rate at 22.9 and San Joaquin County the lowest at 16.2. Four Valley counties, Fresno, Kings, Madera and Merced had rates that were more than double the state rate. The *Healthy People 2010* national objective is an age-adjusted rate of 9.2 deaths per 100,000 persons (California DHS, 2003a).

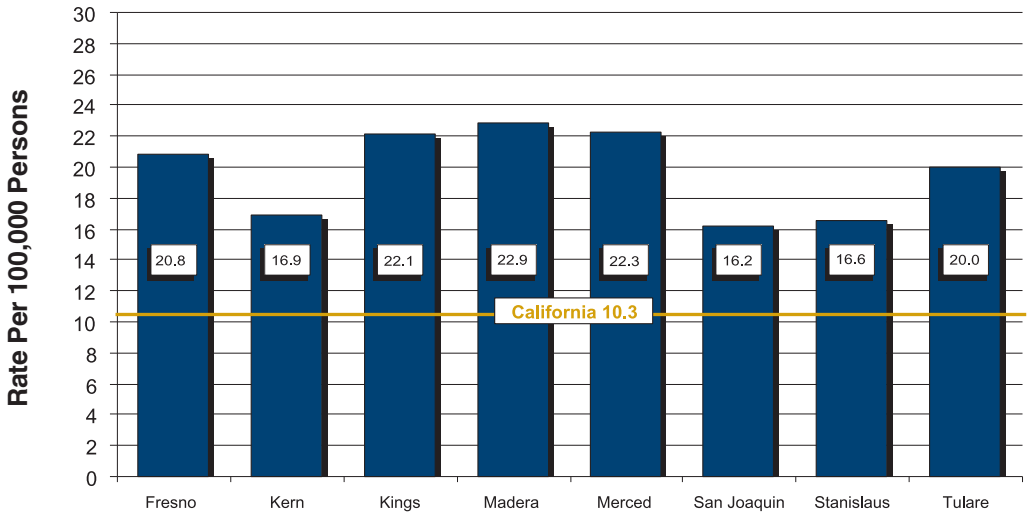

Figure 56: Age-Adjusted Motor Vehicle Death Rate in San Joaquin Valley Counties, 1999-2001
Source: California DHS, 2003a.

SECTION III.

Use of Health and Social Services in the San Joaquin Valley

A. Care-Seeking Behavior

Having a usual source of primary care, such as a physician, can help people clarify the nature of their health problems and can direct them to appropriate health services, including specialty care. A usual source of primary care also emphasizes continuity, which implies that individuals use this source over time for most of their health care needs. Patients beginning an acute episode of care with a primary care physician have been shown to benefit from more after-hours care, shorter travel time to a practice site, and shorter office waits. Other advantages of primary care include the provider's ability to deal with all common health needs (comprehensiveness) and to coordinate health care services, such as referrals to specialists. Evidence suggests that first contact care provided by an individual's primary care provider leads to less costly medical care in the future (U.S. Department of Health and Human Services, 2000).

Usual Source of Primary Care

Despite the shortage of primary care physicians, in 2001 only one in eight Valley residents (12.2%) reported not having a usual source of primary health care, which was comparable to the rate in California (12.0%). More than half of Valley residents had a physician as their usual source of care, with a range from 45.7% in Tulare County to 66.1% in San Joaquin County.

Clinics are an important source of care in the San Joaquin Valley. In Tulare County, 32.8% of residents reported that they had a clinic as their usual source of care. Conversely, only 17.2% of San Joaquin County residents reported using a clinic as their primary source of care (2001 *CHIS*; UCLA Center for Health Policy Research, 2003).

According to the 2001 *CHIS* (UCLA Center for Health Policy Research, 2003), one out of four (24.9%) uninsured children in the Valley did not have a usual source of care, compared to 1 out of 25 (4.5%) children with employment-based insurance.

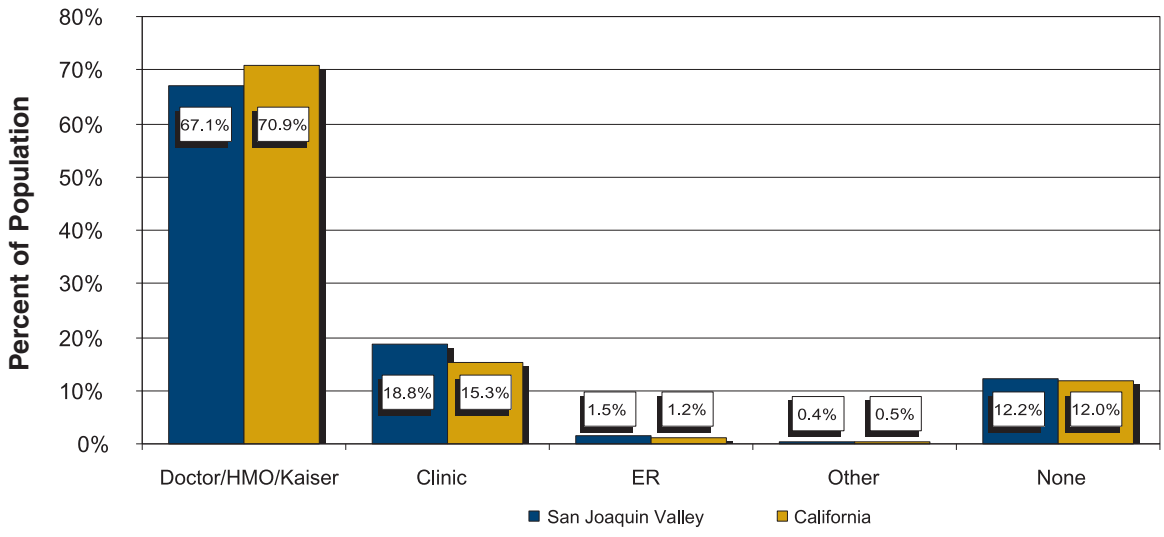

Figure 57: Usual Source of Health Care in the San Joaquin Valley, 2001
Source: 2001 CHIS (UCLA Center for Health Policy Research, 2003).

Avoidable Hospitalization Rates

Comprehensive primary care services can reduce the severity of certain illnesses. Hospital admission rates for ambulatory care sensitive (ACS) conditions serve as an indicator for both limited access to primary care and evidence of low-quality primary care. Hospitalizations for ACS conditions are often preventable with appropriate access to and use of primary and preventive care. Disparities in hospital admission rates among racial and ethnic groups and low-income populations have been well documented (U.S. Department of Health and Human Services, 2000).

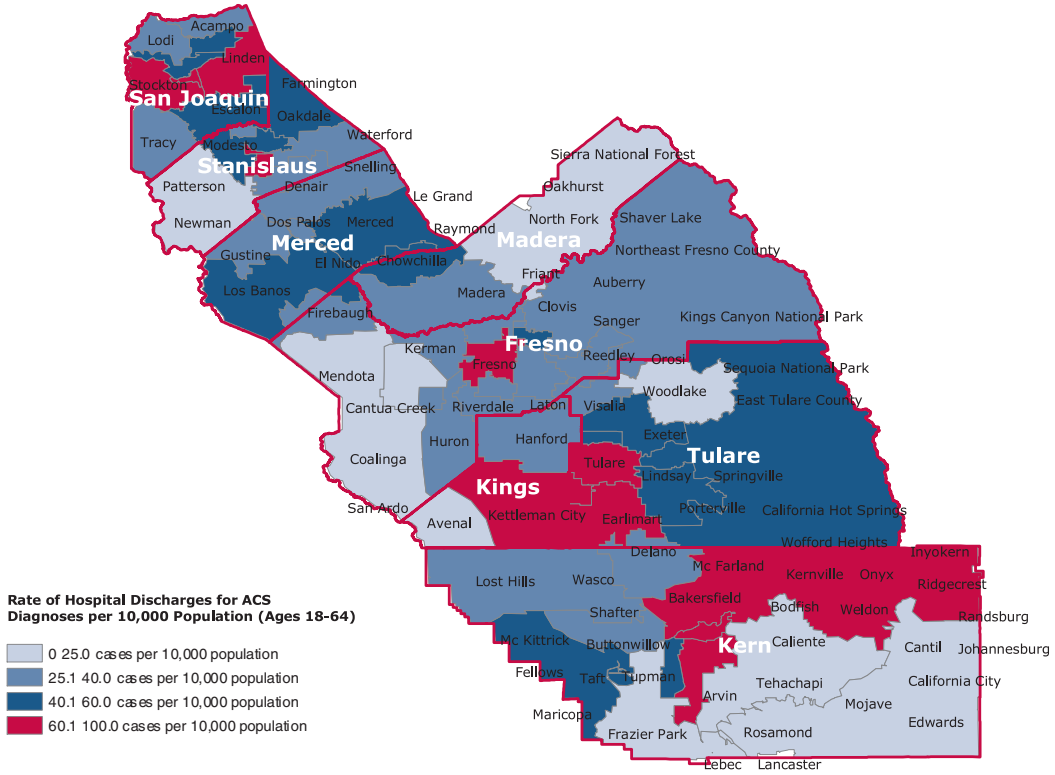

Figure 58: Rates of Hospital Discharges for Ambulatory Care Sensitive Diagnosis (Ages 18-64)
Source: California OSHPD, 2001

Ambulatory care sensitive (ACS) conditions are common problems encountered in primary care and serve as indicators of hospitalization rates for nonelderly adults. These diagnoses include asthma, chronic obstructive pulmonary disease, congestive heart failure, diabetes mellitus, and hypertension. The coordination of community preventive services, public health interventions, clinical preventive services, and primary care assist in the management of these chronic illnesses. However, cultural and language barriers may limit the effectiveness of these services.

Table 31: Hospital Discharges for Ambulatory Care Sensitive Conditions, 1999

County	Rate per 1,000 Persons
Fresno	36.6
Kern	37.3
Kings	37.1
Madera	31.9
Merced	41.8
San Joaquin	44.6
Stanislaus	36.0
Tulare	50.7
California	40.2
San Joaquin Valley	39.8

Source: California OSHPD, 2000.

In 2000, the last period for which comparable data were available, the San Joaquin Valley had an age adjusted rate of 39.8 hospital discharges per 1,000 population for ACS diagnoses. The state rate was slightly higher at 40.2. The Valley rates ranged from a high of 50.7 in Tulare to a low of 31.9 in Madera.

Analysis of 2001 zip code data for nonelderly adults supplied by California OSHPD, showed that San Joaquin Valley cluster communities have wide variability in the rate of hospital discharges for ACS conditions. The community with the lowest rate was Mojave in Kern County (7.0), whereas the highest rate of discharges for ACS conditions was in Central Stockton in San Joaquin County (99.4).

Table 32: The 10 Communities With the Lowest Hospital Discharge Rates for Ambulatory Care Sensitive Conditions, 2001 (Ages 18-64)

County	Community Cluster	Rate of ACS Discharges (per 10,000 Persons)
Kern	Mojave	7.0
Kern	Frazier Park	12.2
Kings	Avenal	14.5
Madera	The Mountains	16.5
Fresno	San Joaquin	17.4
Stanislaus	Patterson/Newman	18.1
Tulare	Woodlake	21.4
Fresno	Coalinga/Mendota	22.2
Kern	Arvin/Tehachapi	22.7
Fresno	Herndon/Pinedale	25.6

Source: California OSHPD, 2001.

Table 33: The 10 Communities with the Highest Hospital Discharge Rates for Ambulatory Care Sensitive Conditions, 2001 (Ages 18-64)

County	Community Cluster	Rate of ACS Discharges (per 10,000 Persons)
San Joaquin	E. Stockton	65.3
Kern	N. Bakersfield	67.4
Stanislaus	W. Modesto/Empire	68.7
Tulare	Earlimart/Pixley	70.2
Fresno	Central Fresno	71.5
Kern	E. Bakersfield/Lamont	72.2
San Joaquin	S. Stockton/French Camp	85.1
Fresno	W. Fresno/Burrel	87.9
Kern	Inyokern	98.1
San Joaquin	Central Stockton	99.4

Source: California OSHPD, 2001.

Cancer Screening

According to *Healthy People 2010* (U.S. Department of Health and Human Services, 2000) several types of cancer can be prevented and the prospects for surviving cancer continue to improve. The ability to reduce cancer death rates depends, in part, on providing culturally and linguistically appropriate information regarding prevention, early detection, and treatment to the public and to health care professionals.

Cervical Cancer

Healthy People 2010 (U.S. Department of Health and Human Services, 2000) data show that cervical cancer is the 10th most common cancer among females in the United States. The American Cancer Society (2003a) estimated 12,200 new cases of cervical cancer in 2003, and an estimated 4,100 U.S. females were expected to die from cervical cancer in 2003. Ethnic and racial disparities exist, as the number of new cases of cervical cancer is higher among females from racial and ethnic groups than it is among White females.

Almost all cervical cancer deaths could be avoided if all females obtained screening and follow-up. If cervical cancer is detected early, the likelihood of survival is almost 100% with appropriate treatment and followup care (U.S. Department of Health and Human Services, 2000).

According to the 2001 *CHIS* (UCLA Center for Health Policy Research, 2003), 64.6% of San Joaquin Valley women over the age of 18 had a Pap smear within the year preceding the survey, compared to 65.3% of women across the state. An additional 20.5% of adult women reported having the test within the past one to five years preceding the survey, which is almost identical to the state rate of 20.9%. However, 6.3% of adult Valley women reported never having a Pap smear, which is slightly lower than the 7.1% of women across the state who reported never having a Pap smear.

In the San Joaquin Valley, 18.6% of Asian American adult women reported never having a Pap smear, compared to 9.5% of Latina adult women and 3.8% of White adult women. (The data for African-American adult women were statistically unreliable.)

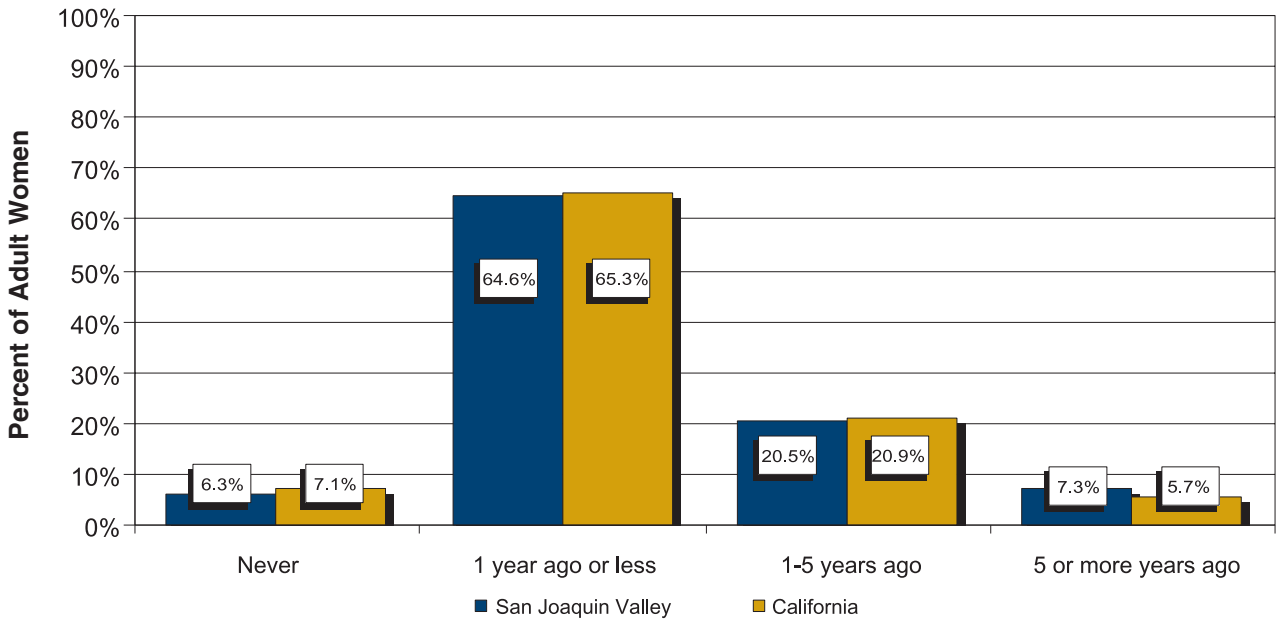

Figure 59: Percentage of San Joaquin Valley Women, Over Age 18, Receiving Cervical Cancer Screening, 2001
Source: 2001 *CHIS* (UCLA Center for Health Policy Research, 2003).

Breast Cancer

Breast cancer is the most common cancer among women in the United States. Approximately 211,300 U.S. women were expected to be diagnosed with breast cancer in 2003, and 39,800 U.S. women were expected to die from breast cancer in 2003 (American Cancer Society, 2003a). Early detection can substantially reduce the possibility of death from breast cancer. National experts agree that mammography is the most effective method for detecting early malignancies and that breast cancer deaths can be reduced through increased adherence to recommendations for regular mammography screening (U.S. Department of Health and Human Services, 2000).

Rates for breast cancer screenings in the San Joaquin Valley were similar to those of the state, but unfortunately 29.1% of Valley women over 30 years of age reported they never had a mammogram. In addition, 58.7% of adult women in the Valley reported they had a mammogram within the two-year period preceding the 2001 *CHIS*; the percentage for California was similar, at 59.3% (UCLA Center for Health Policy Research, 2003).

There are wide ethnic disparities on the use of mammograms in the San Joaquin Valley: 45.1% of both Latina and Asian-American women over age 30 responded in 2001 *CHIS* interviews that they had never had a mammogram, compared to 29.2% of African-American and 21.1% of White adult women.

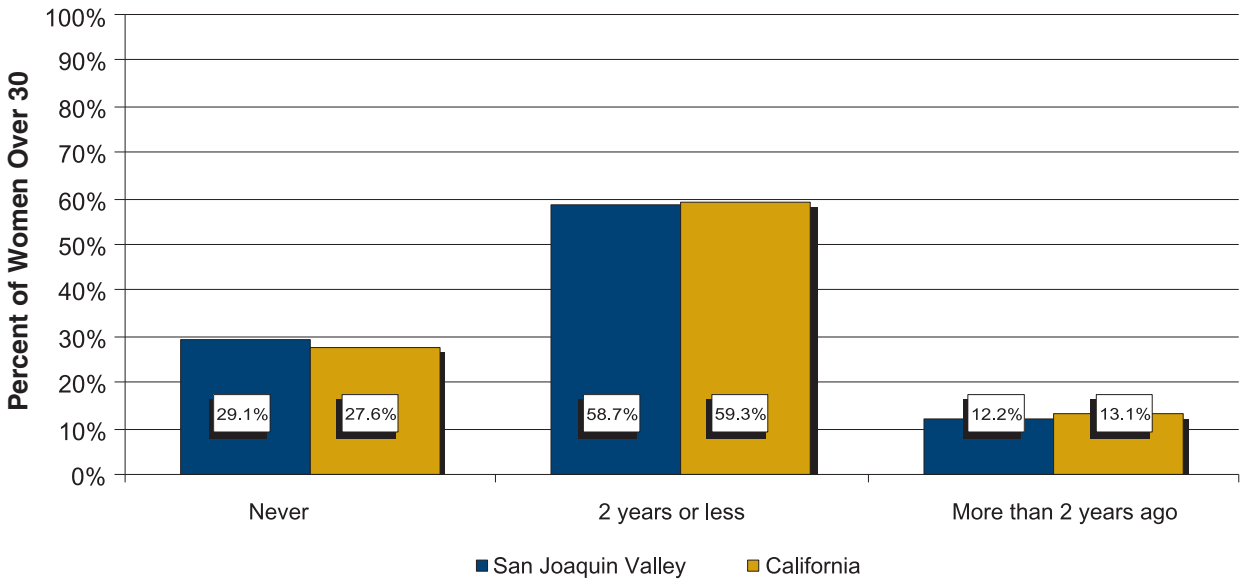

Figure 60: Percentage of San Joaquin Valley Women, Over Age 30, Receiving Breast Cancer Screening, 2001
Source: 2001 *CHIS* (UCLA Center for Health Policy Research, 2003).

Colorectal Cancer

Colorectal cancer (CRC) is the second leading cause of cancer-related death in the United States. In 2003, there were expected to be 147,500 cases of CRC and 57,100 deaths from CRC (American Cancer Society, 2003a).

The colorectal screening rate for San Joaquin Valley adults over age 40 was similar to that of California. In the Valley, 38.5% of residents over age 40 had a colorectal screening within the year preceding the 2001 *CHIS*, 15.1% had a colorectal screening more than one year before the 2001 *CHIS*, and 46.5% had never had a colorectal exam. Statewide, the numbers were similar: 39.6% had a colorectal screening in the year preceding the survey, 14.9% more than one year preceding the survey, and 45.4% never had a colorectal exam (UCLA Center for Health Policy Research, 2003).

In the Valley, colorectal screening was more prevalent among White adults over age 40, of whom 43.4% had a colorectal exam, than it was for Latino (23.5%), Asian (29.8%), and African American (32.3%) adults in the same age group (UCLA Center for Health Policy Research, 2003).

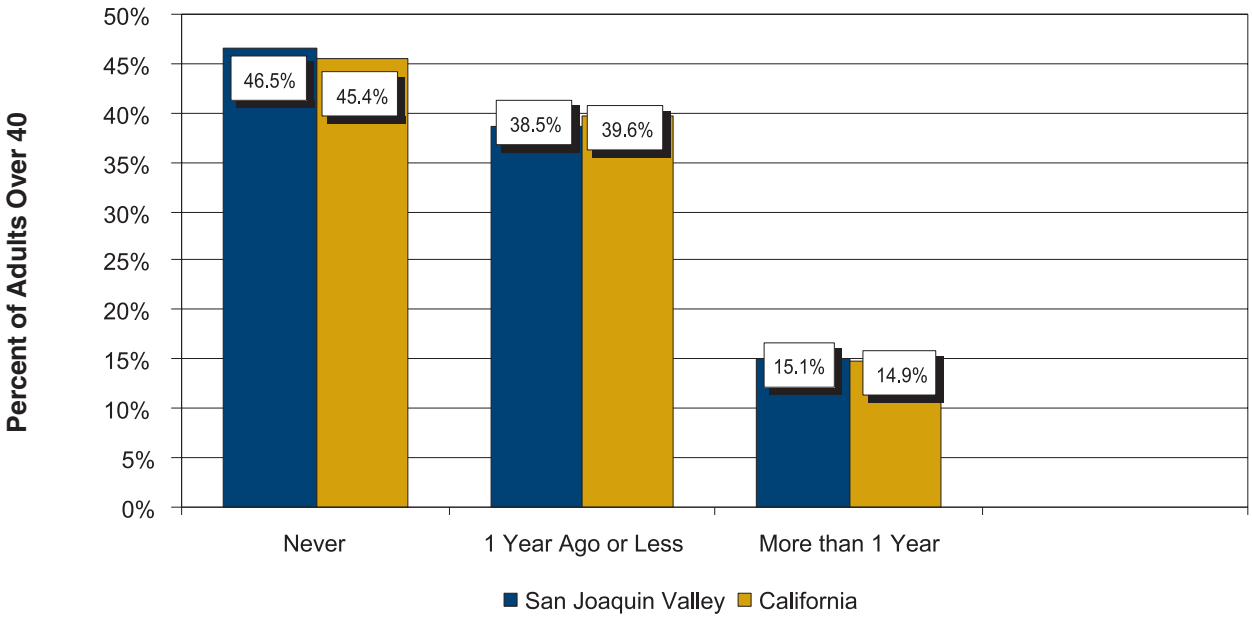

Figure 61: Percentage of San Joaquin Valley Adults, Over Age 40, Receiving Colorectal Cancer Screening, 2001
Source: 2001 *CHIS* (UCLA Center for Health Policy Research, 2003).

Prostate Cancer Screening

Prostate cancer is the second most commonly diagnosed form of cancer (other than skin cancer) in males and the second leading cause of cancer death among males in the United States. Prostate cancer is most common in men aged 65 years and older, who account for approximately 80% of all cases of prostate cancer. Prostate cancer was expected to account for an estimated 220,900 cases and 28,900 deaths in 2003 (American Cancer Society 2003a). Digital rectal examination (DRE) and the prostate-specific antigen (PSA) test are two commonly used methods for detecting prostate cancer (U.S. Department of Health and Human Services, 2000).

A prostate-specific antigen (PSA) test is a blood test used to detect prostate cancer. In the 2001 *CHIS* (UCLA Center for Health Policy Research, 2003), men 40 years and older were first asked if they had ever heard of a PSA test to detect prostate cancer. If the response was affirmative they were asked if they ever had a PSA test.

Six in 10 men (60.2%) in the San Joaquin Valley either had never had a PSA test or never heard of it. The rates for San Joaquin Valley men who had never heard of or had a PSA test ranged from 53.3% in Merced County to 62.7% in Tulare County. Statewide, this rate was 58.6%.

Racial and ethnic disparities also exist in the frequency of PSA testing for prostate cancer. One-half of White men in the Valley reported having had a PSA test, compared to 21.3% of Latino men, 24.4% of Asian men, and 33.8% of African American men.

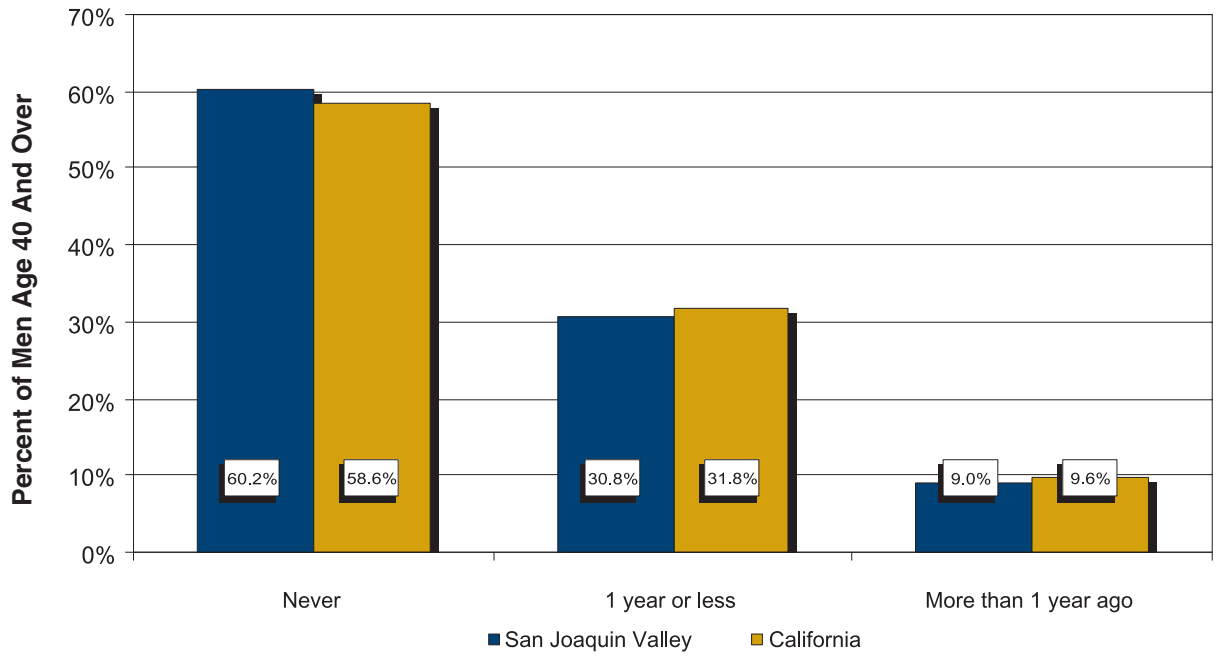

Figure 62: Percentage of San Joaquin Valley Men, Age 40 and Over, Receiving Prostate Cancer Screening, 2001
Source: 2001 *CHIS* (UCLA Center for Health Policy Research, 2003).

Delayed or Foregone Care

According to the Medical Expenditure Panel Survey (MEPS) in 1996, 12.8 million families (11.6%) experienced difficulty or delay in obtaining care or did not receive health care services they thought they needed. The survey found that families experience barriers to care for a variety of reasons: (1) inability to afford health care (60%); (2) insurance-related causes (20%), including (a) the insurance company will not approve, cover, or pay for care, (b) preexisting conditions for which insurance coverage is often restricted, (c) lack of access to required referrals, and (d) clinicians refusing to accept the family's insurance plan; and (3) other problems (21%), such as lack of transportation, physical barriers, communication problems, child care limitations, lack of time or information, or refusal of services (U.S. Department of Health and Human Services, 2000).

The 2001 *CHIS* (UCLA Center for Health Policy Research, 2003) asked interviewees whether they had delayed or foregone care in the year preceding the survey. In the San Joaquin Valley, 11.0% responded that they had delayed or foregone care, compared to 11.6% statewide. Similarly, 8.7% said that they had delayed or not filled prescriptions, compared to 7.7% statewide.

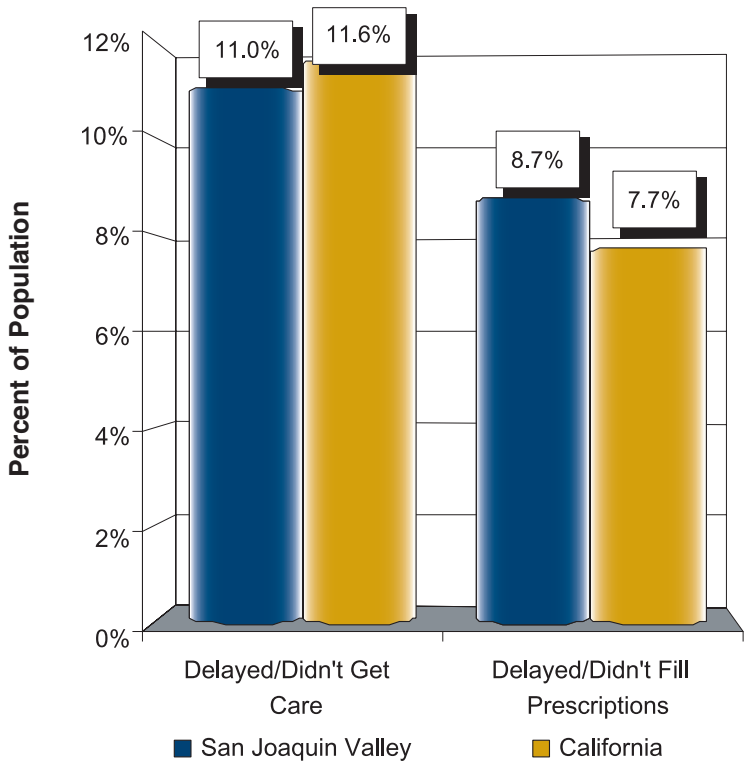

Figure 63: Delayed or Foregone Care in the San Joaquin Valley, 2001
Source: 2001 *CHIS* (UCLA Center for Health Policy Research, 2003).

Immunizations

Immunizations can prevent disability and death from infectious diseases for individuals and can help control the spread of infections within communities. For the 2002-2003 school year, the Centers for Disease Control and Prevention estimated that over 95% of children entering school nationally had received required immunizations (Shaw, Stanwyck, & McCauley, 2003).

Childhood immunization rates in the San Joaquin Valley exceed those in California and are nearly at the *Healthy People 2010* national objective. In 2002, 94.6% of incoming kindergarteners had been immunized, as had 95.5% of those in licensed childcare and 74.1% of seventh graders. The comparable state numbers are 92.3%, 94.3% and 74.1%, respectively. *The Healthy People 2010* national objective is 95% of children in kindergarten and childcare with immunizations.

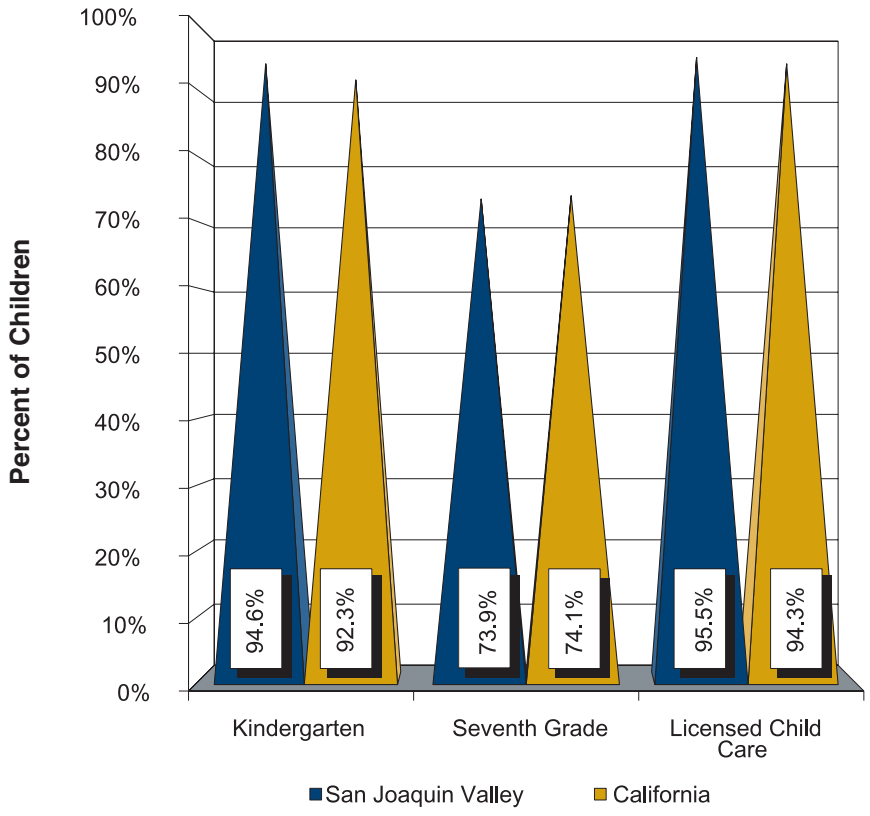

Figure 64: Percentage of Immunized Children in the San Joaquin Valley, 2002
Source: California DHS, Division of Communicable Disease Control, Immunization Branch, 2003.

B. Use of Public Prevention Programs

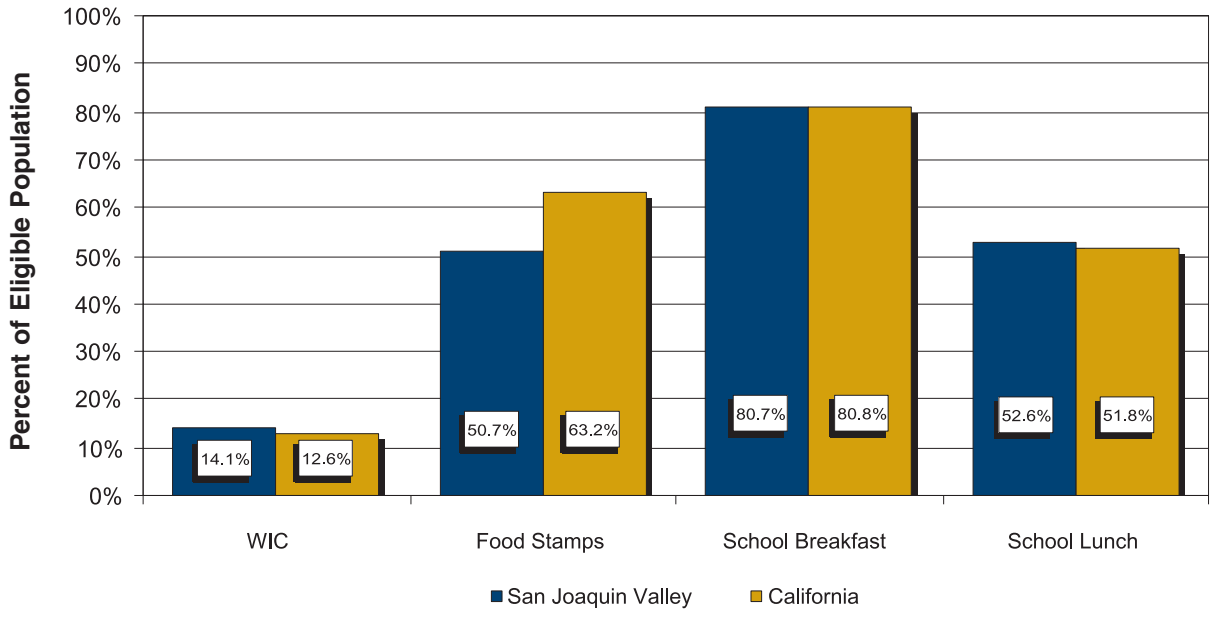

Figure 65: Non-Participation in Nutrition/Food Programs in the San Joaquin Valley, 2001
Source: California Food Policy Advocates, 2003a.

Child Health and Disability Prevention Program

California's Child Health and Disability Prevention (CHDP) program provides health services such as physical examinations and screenings for vision, hearing, fine-motor skills, oral health, and language development to over 2 million children. Eligible children include those participating in the Medi-Cal program and children in families with incomes at or below 200% of the federal poverty level. The state has recently started using the CHDP program as a gateway to enroll eligible, but not yet enrolled, children into the Medi-Cal program and the Healthy Families program, while maintaining the CHDP program for children who are not eligible for either state health program. The gateway model is designed to facilitate the enrollment of thousands of eligible children into state health programs, thereby improving their chances for regular health care (Children Now, 2002).

In 1999-2000, 327,900 children the San Joaquin Valley received services from the CHDP program, up from 319,500 in 1997-1998 (Children Now, 2002). Over one in three San Joaquin Valley children is served by the CHDP Program.

WIC

WIC, the Special Supplemental Nutrition Program for Women, Infants, and Children, is a 100% federally funded program that provides nutritious food, individual counseling, breastfeeding promotion and support, and referrals to health care to high-risk, low-income (up to 185% of the federal poverty level) women and children up to age five. The purpose of the WIC program is to prevent poor birth outcomes, such as infant mortality and low birthweight, and to improve the nutrition and health of participants (California WIC Association, 2003).

WIC advocates have estimated that 12.7% of potentially eligible WIC recipients in the San Joaquin Valley are not served by the program. The estimate of potentially eligible but not enrolled persons in California is 12.6%. There is great disparity among the counties in the percentage of unserved, ranging from 23.5% in both Kings and Madera Counties to 10.1% in San Joaquin County (California Food Policy Advocates, 2003a). (WIC enrollment by county was not consistently available across all counties.)

The California Endowment

Food Stamps

The Food Stamp Program, developed in the late 1930s, provides a basic food safety net to millions of Americans. The current program structure was implemented in 1977 with a goal of alleviating hunger and malnutrition by permitting low-income households to obtain a more nutritious diet through normal channels of trade (Food Research and Action Center, 2003).

In the San Joaquin Valley, approximately 318,000 persons (or approximately 10% of the population) received food stamps in 2002, adding $275 million in federal funds to spending on food in the Valley. According to California Food Policy Advocates (2003a), in 2003, about half (54.1%) of the estimated eligible residents of the Valley did not receive food stamps. In California, an estimated 63.2% of those eligible to receive food stamps did not participate in the program (California Food Policy Advocates, 2003a).

4. School Nutrition

All children, regardless of their citizenship status, may receive a discounted meal from the National School Lunch Program. As compensation for the meals schools receive a federal cash subsidy and federal farm commodities. Children from families with incomes at or below 185% of the federal poverty level are eligible for these free or reduced-price meals.

Modeled after the National School Lunch Program, the School Breakfast Program provides a nutritious breakfast to children at affordable prices. The breakfasts must conform to the Dietary Guidelines for Americans and provide one-quarter of the Recommended Dietary Allowances for key nutrients (Food Research and Action Center, 2003).

The National School Lunch Program reached over 300,000 children in the San Joaquin Valley in 2003; however, about one in five (19%) of the children who were eligible for the program were not served. Moreover, only 33.1% of eligible children (129,589) participated in the School Breakfast program out of an estimated 391,478 children who were eligible to participate (California Food Policy Advocates, 2003a).

SECTION IV.

Implications of Policy Decisions on the Health of ValleyResidents

The data used in this report clearly show the current conditions in the San Joaquin Valley, as well as the trends over time. However, it is important to review the policies and programs that can help improve health in the Valley. As government health officials and policymakers develop policies to grapple with issues of health status and access to care, the Valley's unique demographics and health indicators should inform their decisions. Furthermore, as communities develop approaches to improving health in the region, they need to be aware of the impact of federal and state policies. Presented here are several key policy areas that affect the Valley with a discussion of their implications on the health of San Joaquin Valley residents.

A. Health Disparities

The term *health disparities* refers to differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups in the United States.

The National Institutes of Health (2002) has selected six focus areas in which people from non-White racial and ethnic groups experience serious disparities in health access and outcomes. The Health Disparities Focus Areas are:

1. Infant Mortality
2. Cancer Screening and Management
3. Cardiovascular Disease
4. Diabetes
5. HIV Infection/AIDS
6. Immunizations

In the San Joaquin Valley, numerous communities and certain ethnic groups face severe disparities in health access and outcomes. Although some communities have adequate access to care, the Health Access Index demonstrates wide differences within counties and even cities. The communities with worse health care access and health status tend to have a higher percentage of Latino residents, with more households that do not speak English, compared to communities with better health access. The residents of communities with poor health access also have high rates of poverty, low educational attainment, a high percentage of immigrants, and a higher percentage of female householder families.

Although some of the differences in access and health status in these communities can potentially be explained by demographic differences such as income and educational attainment, there is a large body of research that suggests that the disparate health outcomes are related to how different races and ethnic groups are treated by our health care system. A recent congressionally mandated report from the Institute on Medicine, *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care* (Smedley, Stith & Nelson, 2002), found that White individuals received a higher quality of care than did individuals from other racial and ethnic groups, even when insurance status, income, age, and severity of conditions were comparable. Evidence reviewed in the report suggests that bias, prejudice, and stereotyping on the part of health care providers may contribute to differences in care.

The implications for communities whose residents are in poor health are enormous. The prevalence of chronic conditions, high rates of disease, and poor access to care translate into economic losses for those communities, reduced civic participation, and a diminished quality of life. Adults who are in poor health are less likely to be employed, thus contributing to the persistent levels of poverty. Children who are not healthy cannot go to school, thus limiting their educational attainment and future earning potential and costing the school districts state funding. Moreover, the cost of providing treatment further straps economically challenged communities.

The challenge for the San Joaquin Valley lies in overcoming persistent disparities in health access and outcomes. The report from the Institute of Medicine (IOM; Smedley et al., 2002) proposed a series of recommendations for action. The first recommendation in the IOM's report was to increase awareness of these disparities among the general public, health care providers, insurance companies, and policy-makers. The report also suggested other recommendations to reduce and eliminate disparities, such as patient education on how to access the health care system, interact with providers, and participate in treatment decisions, and increasing the number of minority health care providers, community health workers and language interpreters. Lastly, the report suggested that eliminating the disparities in health plans could also reduce the disparities in treatment. For example, if patients enrolled in the Medi-Cal program were able to access the same scope and level of services as those with private insurance plans are able to, it could potentially eliminate some disparities in care.

B. Expanding Access to Health Care

Universal Health Coverage Proposals – State, Federal, and Local

With one in six (16.4%) San Joaquin Valley nonelderly adults and 1 in 10 (10.3%) Valley children without health insurance in 2001, expanded efforts are necessary to provide health insurance coverage to a larger portion of the population. The last few years have seen renewed efforts at the local, state, and federal levels to expand coverage for these uninsured individuals.

Each of the following suggested approaches and pending proposals for coverage will have an impact on the San Joaquin Valley that should be considered. With the Valley's agricultural economy, its unique demographics, and its heavy reliance on government-sponsored programs, careful analysis is required to understand the potential benefits and pitfalls of the different approaches to cover the uninsured.

State-Level Proposals

On the state level, the legislature has been considering a number of proposals to expand health coverage to additional persons. Some of the bills include mechanisms for universal coverage for all Californians.

The current state proposals fall into three major categories:

- Employer-mandate or "pay or play" proposals
- Single-payer proposals
- Incremental approaches

Employer-Mandate or "Pay or Play" Proposals

SB2 may provide only limited relief to uninsured workers in the San Joaquin Valley. Almost two-thirds (64%) of uninsured San Joaquin Valley adults, who are employed by private companies, worked for businesses with 50 or fewer employees. They will only benefit from SB2 if the state provides additional funding to their employers to cover the cost of coverage.

The newly signed employer-mandate or "pay or play" health insurance legislation (Senate Bill 2) builds on the current employment-based system of health coverage. This legislation requires employers to either offer insurance to employees and dependents or pay into a state fund that would provide such coverage. Senate Bill 2 (SB2) requires employers with 200 or more employees to provide health coverage to their workers and their dependents by 2006 to avoid paying into the state fund. Businesses that employ 50 to 199 workers have to offer health insurance to only employees (not their dependents) by 2007. Employers with fewer than 20 workers are exempt from the law, and those with 20 to 49 workers are exempt from the law unless the state provides tax credits to offset the cost of health benefits (California Office of Legislative Counsel, 2003).

SB2 may provide only limited relief to uninsured workers in the San Joaquin Valley. Almost two-thirds (64%) of uninsured San Joaquin Valley adults who were employed by private companies, worked for businesses with 50 or fewer employees in 2001 (UCLA Center for Health Policy Research, 2003).

In the Fresno Metropolitan Statistical Area, 21% of workers were employed by firms with fewer than 20 employees (Small Business Administration, 2003). None of these workers who work for companies with fewer than 20 employees would receive any benefit, and those who work for employers with 20 to 49 employees would only benefit from SB2 if the state provided additional funding to their employers to cover the cost of coverage.

Moreover, with the average per capita income of Valley residents at two-thirds of the California average, it is likely that many workers will voluntarily decline the insurance because they cannot afford it. Voluntary enrollment in insurance programs offered by employers is much lower among the lower income employees who characterize many of the Valley's workers (Brown et al., 2002).

On the other hand, Valley workers could have much to gain from "pay or play" proposals as they are less likely to have employment-based insurance coverage than are workers statewide. The percentage of residents covered by employment-based insurance in the Valley is 54.6%, compared to the state coverage rate of 62.0%. However, the additional costs of health coverage to employers may impede economic growth and the stability of many Valley employers.

Immigrants may gain under an expansion of "pay or play" employment-based insurance. One benefit of employer-based coverage is that it would provide coverage to all workers, regardless of their immigration status. It is well-known that much of the agricultural workforce includes undocumented workers (over 50%, as estimated in the 1997-1998 *National Agricultural Workers Survey,* U.S. Department of Labor, 2000) who would not be eligible for public coverage. Employment-based coverage would avoid this problem, unless federal public subsidies were involved.

Migrant and seasonal agricultural workers would face additional challenges under an employment-based system. These workers may be employed by a number of firms throughout the year, and often work through a farm labor contractor rather than directly for a grower. Health coverage for these employees would be difficult without a pooling of resources or another type of arrangement that provides for employees who work for many different employers.

"Pay or play" proposals represent an incremental expansion of health coverage in the Valley, but fall short of reforming the health coverage system that has left over 478,000 Valley residents (ages 0-64) without health insurance coverage.

Single-Payer Proposals

Single-payer proposals would create a single, government-based health insurance entity in the place of existing public and private coverage. It is contemplated that the savings from reduced administrative costs for insurance companies and processing would provide funding to expand coverage to the uninsured. However, privately insured Californians would have to give up their current coverage for a government-sponsored plan. Specifics as to those who would be covered (e.g., undocumented workers) and the scope of benefits under the single-payer plans would need to be evaluated to determine their overall benefit in the San Joaquin Valley.

A single-payer system would drastically change existing public program coverage. Over one in five (21.1%) nonelderly Valley residents reported that he or she was enrolled in the Medi-Cal program, a rate one-third higher than that of California overall (2001 CHIS, UCLA Center for Health Policy Research, 2003). These residents would face a potentially confusing restructuring of their health coverage.

Incremental Approaches

For the nearly one in four Valley residents who has public coverage through the Medi-Cal program and the Healthy Families program, the integration of programs could ease the burdensome and confusing requirements.

Incremental approaches to expanding health insurance would extend coverage to certain low-income workers through an expansion of current public coverage programs, such as the Healthy Families program, and through a consolidation of all the existing health programs (e.g., the Medi-Cal program, the Healthy Families program, and the CHDP program). The state has already received approval for, but not yet implemented, an expansion of the Healthy Families program to cover parents of enrolled children. Additional waivers from the federal government would be required to implement these proposals to extend public coverage.

The incremental approaches would also impact the Valley positively. For the nearly one in four Valley residents who has public coverage through the Medi-Cal program and the Healthy Families program, the integration of these programs could ease the burdensome and confusing requirements. Consolidation could also ease enrollment and retention rates, as well as provide welcome relief for providers who have long complained about Medi-Cal paperwork.

Expansion of the Healthy Families program to lower-income workers would also assist Valley families. However, if the use of federal funds is contemplated, complicated issues of immigration eligibility arise and need to be considered.

Federal Medicare Reform

Recent landmark federal legislation provided for sweeping changes in the Medicare program for elderly and disabled Americans. The bill, which is estimated to cost approximately $400 billion over the next 10 years, added a limited prescription drug benefit to be phased in until full implementation in January 2006. A complicated system provides subsidies for prescription drugs to low-income Medicare recipients. The bill does not provide for increased competition or cost cutting on prescription drugs, nor does it allow for the re-importation of prescription drugs from Canada without approval from the Food and Drug Administration. A series of demonstration programs will allow for competition with the traditional Medicare plan by private health plans. In addition, some rural hospitals will receive additional reimbursement for services, as will physicians who were scheduled to have their fees reduced under prior rulings.

Local Initiatives for Children's Coverage

For uninsured children, local efforts exist to enroll and retain children who are eligible for existing public programs such as the Medi-Cal program and the Healthy Families program, and to provide coverage for ineligible children. A number of San Joaquin Valley counties are following the lead of Los Angeles, Santa Clara, Alameda, San Mateo, and Riverside Counties, which have developed local programs to provide universal health coverage to children in families with incomes up to 300% of the federal poverty level, including undocumented children. These programs provide avenues to process applications for all children and enroll them in the Medi-Cal program, the Healthy Families program, or a new local coverage program.

Experience in other counties is that approximately two-thirds of uninsured children who apply for coverage are eligible for the Medi-Cal program or the Healthy Families program, and only one-third of children require the new local program. University of California, Los Angeles researchers estimate that 80,000 of the approximately 108,000 uninsured children in the San Joaquin Valley are eligible for but are not enrolled in either the Medi-Cal program or the Healthy Fami-

lies program. The remaining 28,000 uninsured children are not eligible for either the Healthy Families program or the Medi-Cal program, primarily because their family income is over 250% of the federal poverty level or they lack appropriate immigration documentation to become eligible.

If all of the eligible but uninsured children were enrolled in the existing coverage programs, most of the costs of treating them would shift to the federal and state governments that pay for the programs. For the Medi-Cal program, the federal government pays approximately half of the costs; for the Healthy Families program, the federal government pays two-thirds of the cost. The rest of the funds are paid by the state, with no local match. There would also be additional revenues to the providers – hospitals, clinics, and doctors – who are now treating these children without reimbursement.

To be successful, local children's coverage programs must address the retention of families in the programs. Although the San Joaquin Valley did quite well with initial enrollment of children in the Medi-Cal program and the Healthy Families program, many children have been subsequently disenrolled from the programs. In 2002, for every four San Joaquin Valley children who enrolled in the Healthy Families program three were disenrolled, according to data from California's Managed Risk Medical Insurance Board (2003).

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Provider Supply and Participation

With 24% fewer primary care physicians in the San Joaquin Valley than is the statewide average, a number of efforts are under way to recruit and retain physicians for the Valley. Provider participation in the Medi-Cal program has historically been low. Providers – doctors and dentists – have long complained about extremely low reimbursement rates and excessive paperwork. The future of provider participation looks bleak in the light of the recently adopted state budget, which imposed a 5% reduction in provider reimbursement on top of the already low rates. Additional reductions in reimbursement are currently being proposed.

A designation as a Health Professional Shortage Area (HPSA) can potentially open up access to more than 34 federal programs that depend on this designation to determine program eligibility or to establish preferences for funding. Benefits of this designation include increased Medicare reimbursement and participation in the National Health Service Corps. Considering many private health plans base their reimbursement rates on Medicare rates, increasing Medicare reimbursements is a critical step for revenue enhancement.

Although there are many designated Primary Care and Mental Health HPSAs in the Valley, the Dental HPSA designations are sparse. The University of California, San Francisco has recently reviewed the criteria for a Dental HPSA and made recommendations to allow for more needy regions to be designated as HPSAs (Orlans, Mertz, & Grumbach, 2002).

With 24% fewer primary care physicians in the Valley than is the statewide average, a number of efforts are under way to recruit and retain physicians for the Valley. Recent efforts to recruit more physicians have focused on international physicians who are more willing to serve the Valley's population and who often speak the language of their patients.

Recent efforts to recruit more physicians have focused on international physicians who are more willing to the serve the Valley's population, and who often speak the language of their patients. The J-1 visa program allows for sponsorship of visa waivers for physicians who practice in United States areas with physician shortages. Otherwise, physicians born outside of but educated in the U.S. must return to their home country for two years following completion of their studies. Recently, the U.S. Department of Health and Human Services began sponsoring the visa waiver applications after the United States Department of Agriculture, which had been sponsoring the physicians, withdrew from the program. Many clinics in underserved areas rely on immigrant physicians to serve their patients.

In 2002, Governor Davis signed Assembly Bill 1045, which allows 60 Mexican doctors and dentists to practice in Latino communities in California's poor rural areas. Sponsored by the California Hispanic Health Care Association, but opposed by the California Medical Association, the bill established a pilot program to increase the number of physicians serving low-income communities. To participate under Assembly Bill 1045, Mexican doctors must be board certified in Mexico, take English-language classes, and practice under a three-year temporary license (California Office of Legislative Council, 2002).

Although increased use of physicians trained outside of the U.S. may ease some of the provider shortages in the San Joaquin Valley, this will not alter the disparities in placement of U.S.-trained physicians who tend to practice in California's urban, coastal areas. More efforts need to be explored to recruit physicians to the Valley and keep them in the Valley.

Provider shortages continue to exist in the Valley in other health professions as well, such as nursing and mental health. Nursing as a profession is facing a crisis, according to the University California, San Francisco's (UCSF) California Workforce Initiative researchers. The aging of the nursing workforce, as well as the increasing population demands as baby boomers age, are exacerbating the nursing shortage (Coffman et al., 2001). Various initiatives in the San Joaquin Valley are underway to fund nursing scholarships, expand nursing education programs, build the cultural competence of the current workforce, and promote nursing as a career.

The UCSF's California Workforce Initiative is only beginning to study the extent of the mental health workforce issues. The current patchwork of mental health care planning, financing, and service provision structures is being explored to improve utilization of the limited resources (McRee et al., 2003).

Hospital Closures and Available Beds

The closure of many rural hospitals in the U.S. has captured national attention. A recent report from the U.S. Department of Health and Human Services' Office of the Inspector General (2003) reviewed rural hospitals that closed from 1990 through 2000. It found that 208 rural hospitals closed, which is equal to 7.8% of all rural hospitals nationally at the beginning of the trend period. Generally, rural hospitals that closed were smaller and treated fewer patients than rural hospitals nationally. Also, officials associated with most rural hospitals that closed reported the reasons to be business-related decisions or a low number of patients. Lastly, the national study found that following a closure, alternative forms of health care were often available within the community.

In the San Joaquin Valley, the number of hospitals decreased from 66 in 1995 to 56 in 2003, totaling a loss of 260 licensed acute-care beds. From 1995 to 2003, the number of beds available per 1,000 persons in the Valley dropped from 3.1 to 2.4, mirroring the drop in the state's number of available beds from 3.3 to 2.6.

In the San Joaquin Valley, the number of hospitals fell from 66 in 1995 to 56 in 2003, totaling a loss of 260 licensed acute-care beds. Most closures were for financial reasons that stemmed from low utilization, low reimbursement rates, and lack of HMO contracts.

Trends in health care, such as increased outpatient surgery and management of disease in an outpatient setting, have reduced hospital use nationwide. In the absence of federal or California state guidelines for an appropriate level of health care resources in a given community, it is unknown whether the bed capacity in the Valley is sufficient for the population.

Low Medicare reimbursement rates in the San Joaquin Valley also adversely affect hospitals. Different counties are paid different rates for Medicare patients, in large part due to their location and their proximity to major urban areas. Lower volume rural hospitals receive less reimbursement per patient than do larger facilities. Reimbursement rates are set according to a county wage index. Bakersfield has been assigned the lowest reimbursement rate in the state, whereas San Francisco has received the highest.

The economics of rural communities make it difficult to sustain marginal hospitals. With hospitals losing money on each patient admission, it is difficult to maintain long-term operation. Meanwhile, care is being provided in the urban facilities, albeit at greater distance from the rural communities.

C. Chronic Disease Prevention

There is a growing recognition that rates of chronic diseases such as asthma and diabetes are at critical levels in the San Joaquin Valley. With the burgeoning costs of treatment and hospitalization, the allocation of public health resources must include increased emphasis on preventive programs. Despite the cost-effectiveness of health-promotion and disease-prevention programs, the vast majority of health care funding goes to treatment rather than prevention.

With a growing recognition that rates of chronic diseases such as asthma and diabetes are at critical levels in the San Joaquin Valley, and with the burgeoning costs of treatment and hospitalization, the allocation of public health resources must include increased emphasis on preventive programs.

A recent report, *The Power of Prevention: Reducing the Health and Economic Burden of Chronic Disease*, released by the Centers for Disease Control and Prevention (CDC; 2003), outlined the major challenges to controlling chronic disease. Chronic disease accounts for approximately 75% of health spending nationally. Even though we know that prevention works, the focus in the health care system has been on treatment of short-term, acute health problems, not prevention of chronic disease. Despite awareness of the seriousness of chronic illnesses, most Americans have not changed their lifestyles sufficiently to reduce their risk of death or illness. Three modifiable health-damaging behaviors—tobacco use, physical inactivity, and poor eating habits—are responsible for one-third of all U.S. deaths (CDC, 2003).

The CDC has developed a National Chronic Disease Prevention Agenda that recommends the nation do the following:

- Promote health and wellness programs at schools and work sites and in faith and community-based settings
- Enact policies that promote healthy environments
- Ensure access to a full range of quality health services
- Implement programs that focus on eliminating health disparities based on race, ethnicity, and socioeconomic status

- Educate the public effectively about their health

The San Joaquin Valley will need to focus efforts on chronic disease surveillance, prevention, and screening if it is to reduce the increasing social and economic costs of chronic disease.

D. Children and Nutrition

One in five Valley children (20.2%) ages 6-20 is considered obese. The increasing prevalence of obesity in children and adolescents places them at risk for future chronic diseases such as stroke, hypertension, and diabetes. Obesity in children and adolescents is generally caused by physical inactivity, unhealthy eating habits, or a combination of the two, with both genetics and lifestyle playing important roles in determining a child's weight (American Public Health Association, 2003).

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Public programs (WIC, National School Lunch and School Breakfast) exist to provide the basics for good childhood nutrition. Yet, as the data show, these programs do not reach all eligible children. For example, only one-third of eligible children in the Valley actually receive school breakfasts. Even with maximum participation in nutrition programs, it is not certain that the epidemic of childhood obesity can be overcome.

Numerous other efforts are underway that could lead to a reduction in child obesity. In 2001, the Office of the Surgeon General issued *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity (*U.S. Department of Health and Human Services, 2001), which stressed improved diet and exercise as tools to reduce childhood obesity. The governor recently signed a bill, SB677, barring elementary and middle schools from selling soda during school hours beginning July 1, 2004. Schools could instead sell milk, water, fruit juice, and fruit-based drinks that contain at least 50% fruit juice and have no added sweeteners. The legislation also would allow soda sales more than 30 minutes before or after school, at school athletic events or as part of student fundraising events. Children could continue to bring soda from home to school.

California Project LEAN (Leaders Encouraging Activity and Nutrition) works with state and local physical activity and nutrition leaders to conduct programs in communities throughout California. Project LEAN provides funding for 12 regional offices that are housed within local health departments, community-based organizations, and other local agencies.

The Strategic Alliance to Prevent Childhood Obesity (California Food Policy Advocates, 2000), an alliance of California's leading child nutrition programs and advocates, is committed to reducing preventable childhood obesity among California's children. The Alliance has a policy agenda that includes the following objectives:

- Eliminating unhealthy foods and advertising in schools
- Adopting new and enforceable nutritional standards for all competitive foods sold on middle and high school campuses
- Eliminating all soda sales and contracts with school districts, for students, teachers, and staff
- Increasing state reimbursement for all school meal programs
- Making changes to the WIC food package to include more fresh fruits and vegetables, and less high fat cheese and juice
- Enforcing current physical education (PE) requirements at all levels
- Improving the overall quality of PE programs

Hunger and nutrition coalitions in the Valley, such as Fresno Metropolitan Ministry's Hunger and

Nutrition project, are attempting to address childhood obesity through efforts to improve school nutrition by eliminating soda in the schools and providing subsidized meals for all eligible children. Their efforts need to be strengthened and replicated throughout the Valley if today's children are to become healthy adults.

E. Air Quality

The San Joaquin Valley is considered to be one of the worst air basins in the United States. Ozone pollution, small particulates, dust, and soot adversely affect the Valley's air. For years, political and bureaucratic problems have stalled improvement of the Valley's air.

Air quality has a major impact on the health of residents and agricultural productivity in the Valley. In addition, economic consequences for businesses and industry in the Valley also result from poor air quality. Populations at increased risk for suffering adverse health effects from air pollution include children, people of all ages with asthma, and the elderly with illnesses such as bronchitis, emphysema, and pneumonia. For example, Fresno County has the highest childhood asthma rate in the state.

Finding a solution to critical air quality problems has not been easy. The heat in the Valley, its topography, agricultural industry, motor vehicles, and population growth all contribute to the problem. According to the San Joaquin Valley Air Pollution Control District (APCD, n.d.), approximately 60% of the Valley's smog problems come from motor vehicles. The other approximately 40% of air pollution comes from other sources such as business and industry, lawn and garden equipment, outdoor burning, and fireplaces and wood stoves.

The APCD is charged with developing the region's strategy for achieving National Ambient Air Quality Standards (NAAQS). However, the district does not have the power to regulate motor vehicle and fuel standards, a major source of the pollution. In mid-December 2003, the Governing Board of the San Joaquin Valley Air Pollution Control District requested that the U.S. Environmental Protection Agency downgrade the Valley's ozone status from "severe" to "extreme" nonattainment. This marks the first time nationwide that an air district has voluntarily sought a downgrade to extreme nonattainment status. The move prevents a federal takeover of smog reduction plans, avoids $36 million in annual penalties for Valley businesses, and prevents the loss of $2.2 billion in federal highway funds (Grossi, 2003).

Solutions to the air quality woes in the Valley have generated political controversy. The agricultural exemption from emissions law had been strongly criticized and new 2003 legislation (Senate Bill 700) has removed the permit exemption for agricultural air pollution sources as of January 2004. Implementation of the new legislation is underway, which will involve evaluation of socioeconomic impact and cost effectiveness.

In June 2003, the APCD adopted a new PM_{10} attainment plan, which outlines measures that should assist the Valley in reaching attainment by 2010. (PM_{10} is particulate matter with a diameter of 10 micrograms or less.) The most significant new control strategy in the plan is the Agricultural Conservation Management Practices Program. Prior to this plan, no controls on agricultural production were in place, although voluntary participation in conservation practices and incentive programs had been established.

Whatever final plans are ultimately implemented, it will undoubtedly take a concerted effort by public officials, industry, agriculture, motorists, and the public to attain healthy air. In the interim, the high rates of asthma and other respiratory conditions, and the increased burdens on the health care system, the economy, and the quality of life are likely to continue.

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F. Language Access

With at least 10% of the population in the Valley not speaking English "well or at all," the demand for linguistically competent services is apparent. Concerted efforts to increase interpreter training and funding are required to ensure that quality health care is delivered to all Valley residents.

Approximately 40% of households in the San Joaquin Valley have a dominant language other than English. More than 1 in 10 persons in the Valley (over 300,000 persons) reports that he or she does not speak English "well or at all."

Much research has documented the adverse impact on access to health care imposed by language barriers. Providers have difficulty communicating with patients; patients have trouble understanding providers, following directions, and obtaining insurance (Dower, 2003). A recent poll of 1,200 mostly immigrant California residents found a direct relationship between a person's ability to speak English and the quality of health care he or she receives (The California Endowment, 2003a).

Until recently, providers have typically relied on relatives or staff to interpret for non-English-speaking patients. Problems arise when using family members, such as lack of confidentiality, lack of knowledge, and an unfair burden on children who often must take on the interpreter role. Similar issues of confidentiality and lack of medical knowledge arise when health providers use untrained bilingual staff members, such as maintenance or clerical staff, as interpreters.

Providers who receive federal funding (including those who accept Medicare and Medi-Cal reimbursements) must ensure language access, which includes oral interpretation and written translations, for their patients who have limited English proficiency. Medi-Cal managed care plans are required to provide language assistance under the terms of their contracts with the state. Although other Medi-Cal providers are also required under federal law to provide language services, there is currently no reimbursement mechanism for these costs.

Recent publications have suggested several options that would ensure language access for California's health consumers with limited-English-proficiency and would maximize federal funding for language assistance services. If the state required managed care health plans under contract with the Medi-Cal program and the Healthy Families program to provide full language services, the need would be better met, and potentially increased contract rates for the plans could be justified. Furthermore, if the state were to develop additional methods for reimbursing for language services for Medi-Cal providers, then federal funds could be used to pay half the expenses. Additional models for providing services, such as community interpreter banks, could also be explored (The California Endowment, 2003b).

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G. Resources

State and Federal Budgets

The San Joaquin Valley is highly dependent on federal and state spending to assist its lower income residents. Given the large and ever-increasing budget deficits at the federal and state level, and proposals to cut back on funding, the Valley needs to be especially aware of the potential impact these deficits may have.

With a San Joaquin Valley Medi-Cal enrollment rate that is one-third higher than that of California, the Valley receives over $1.6 billion in revenues from Medi-Cal payments, a disproportion-

ate share given its population. These are entirely state and federal funds, and they bolster the local economy. Any reduction in these funds will have a negative impact on the local economy.

A recent report, *Medicaid: Good Medicine for California's Economy* (Families USA, 2003), has suggested that Medi-Cal spending has a large multiplier effect in local spending:

- Economic activity multiplier: $2.38 for every $1 in spending
- Jobs multiplier: 20.75 new jobs for every $1 million in spending
- Wage and salary multiplier: $0.87 for every $1 in spending

The multiplier effect means that a reduction in Medi-Cal payments, such as the recent 5% cut in provider reimbursements, ripples through the local economy. For example, every $10 million loss in Medi-Cal revenue would translate into a $23.8 million loss for the local economy, the loss of 208 jobs, and the loss of $8.7 million in wages and salaries.

With a Medi-Cal enrollment rate that is one-third higher than that of California, the Valley receives over $1.6 billion in revenues from Medi-Cal payments, a disproportionate share given its population. Every $10 million loss in Medi-Cal revenue would translate into a $23.8 million loss for the local economy, the loss of 208 jobs, and the loss of $8.7 million in wages and salaries.

San Joaquin Valley hospitals are also dependent on federal funding for facilities that serve large numbers of uninsured and Medi-Cal patients. This "disproportionate-share" funding has been in jeopardy for several years. The federal government is proposing changes in the funding that will seriously affect hospital budgets.

Medicare fee-for-service spending was approximately $25 billion in California in fiscal year 2001. In 1998, Medicare spending was approximately $6,000 per beneficiary in California, which provided over $1.8 billion in reimbursements for approximately 300,000 Medicare recipients in the Valley (Henry J. Kaiser Family Foundation, 2001). Changes in Medicare benefits or in reimbursement to providers could have a major effect on the San Joaquin Valley. For instance, Medicare coverage for prescription drugs for seniors will not only provide a needed health benefit but also give seniors additional resources to spend elsewhere in the economy.

The federal and state budgets have other, more direct, impacts on spending. County spending on healthcare was offset by $288 million in revenue in fiscal year 2001, mostly through federal and state payments (California DHS, Office of County Health Services, 2002). Any decrease in funds will directly affect the availability of services in the Valley. Enrollment in the Medi-Cal program and the Healthy Families program is potentially reduced when funds are eliminated for outreach and enrollment, as occurred in 2003. Further delays in coverage for the parents of children who are already enrolled in the Healthy Families program will continue to impact the large number of *working-poor* families in the Valley.

Use of Potential Health Funds

The Valley has yet to maximize available funds for health care. For example, three out of four uninsured children in the San Joaquin Valley are potentially eligible for the Medi-Cal program or the Healthy Families program. Full enrollment of these 80,000 children would result in millions of additional dollars in the local health economy.

The Valley has yet to maximize available funds for health care. For example, most of the $30 million in annual Tobacco Litigation Settlement Agreement revenue that is distributed to Valley counties goes into the county general funds and is not used for either health care or smoking prevention programs.

Funds from the Tobacco Litigation Master Settlement Agreement are distributed to counties throughout the state. However, most of the $30 million in annual revenue that is distributed to Valley counties goes into the county general funds and is not used for either health care or smoking prevention programs.

Another source of local health funding is the First 5 Children and Families Commissions in Valley counties. These commissions, governed by locally selected commissioners, allocate over $57 million per year for the health and well-being of children under age five to ensure their readiness to enter school and learn. These commissions have allocated funds for improving the health of and providing health care to young children and their families. Local organizations should work toward the continued commitment of First 5 Children and Families Commissions to fund health programs.

Lastly, anecdotal evidence suggests that San Joaquin Valley organizations are less experienced in seeking philanthropic funds than are organizations elsewhere in the state. Although historically foundation spending has been low in the Valley, the recent creation of new health foundations has begun to bring new resources into the Valley. Nevertheless, many Valley organizations struggle to maintain existing programs and lack the capacity to pursue new programs.

CONCLUSION

This report paints a bleak picture of health status and access in San Joaquin Valley communities. Many programs have been instituted over the past eight years and many millions of dollars have been invested in health programs and care for Valley residents. However, the progress that has been made in the health status of Valley residents in the past eight years still falls short of statewide improvements in many cases.

The Valley continues to have high rates of disease, poor community health, and a lack of an adequate provider network. The Valley still leads the state in infant mortality, teen births, and late access to prenatal care. Some Valley residents have a harder time than do other Californians in finding care due to lack of health insurance, a scarcity of providers, and language and cultural barriers. Valley residents report binge drinking and smoking more frequently than do their statewide counterparts.

Perhaps the biggest challenge to Valley health is the quality of the air. The Valley has some of the worst air quality in the nation, which has severe impacts on the health of residents, the economy of the region, and the overall quality of life.

The data demonstrate that poor health access and health status in the San Joaquin Valley exist in the context of communities with high rates of poverty, low educational attainment, a high number of female householder families, and a larger percentage of immigrants and non-English speakers. Although many of the San Joaquin Valley's health issues can potentially be explained by demographics, the economy also has an impact. The Valley's low-wage agricultural industry has left many Valley residents without health insurance and with fewer resources to improve their health. The demand for low-wage labor has fueled the immigration of new residents, mostly from Latin America, to work in the fields. Those who provide health services to these newly arrived workers struggle with limited public resources.

On a positive note, there is strong support for economic and educational solutions to existing Valley problems. Regional leaders recently strongly endorsed the Regional Jobs Initiative, a plan for creating 30,000 new jobs in the next five years and nurturing Valley industries that can compete nationally and internationally, in areas such as health care, manufacturing, and distribution. Similarly, recent discussions of bringing a University of California medical school to Fresno provide hope for potential solutions to the current health provider and delivery system crises.

The data clearly show the continuing crisis in the health of Valley communities since the publication of *Hurting in the Heartland* in 1996. If current trends continue, the Valley will be less and less able to adequately care for its needy residents. Despite advances in medical care across the state, many Valley residents still lack the most basic of services. The rising costs of treatment for chronic disease and continued reliance on state and federal funding in a climate of budgetary deficits will lead to further erosion in the health care delivery system and further economic decline.

This report identifies the interdependence of demographic, economic, environmental, health status, and health system issues affecting the San Joaquin Valley. A coordinated approach, supported by a strong public health infrastructure, is necessary to improve conditions in the Valley. Environmental threats to health, such as air pollution, need to be eliminated. Redeploying existing resources to provide services to those communities in highest need will increase the effective allocation of limited funds. Lastly, greater efforts at reaching the Valley's culturally diverse populations are necessary to improve the health of residents in the Valley.

Although further research on understanding the underlying causes of the health conditions in the Valley is clearly important, this should not deter immediate action on disparities already identified.

Government, health institutions, and providers all have the charge to work with communities to devise and implement solutions that are affordable, practical, and effective. Collaborative efforts and more strategic allocation of funding are crucial to improve the health of San Joaquin Valley residents. Failing this, the crisis can only continue.

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References

REFERENCES

American Cancer Society. (2003a, January). *Cancer facts and figures 2003*. Available from http://www.cancer.org/

American Cancer Society. (2003b, February). *Race and ethnicity affect breast cancer outcome.* Available from http://www.cancer.org/

American Lung Association. (2003a). *State of the air: 2003.* Available from http://lungaction.org/reports/

American Lung Association, Epidemiology & Statistics Unit, Research and Scientific Affairs. (2003b, March). *Trends in asthma morbidity and mortality.* Available from www.lungusa.org/

American Public Health Association. (2003). *The hidden epidemic: Childhood obesity*. Available from http://www.apha.org/

Brown, E. R., Ponce, N., Rice, T., & Lavarreda, S. A. (2002, June). *The state of health insurance in California: Findings from the 2001 California Health Interview Survey.* Available from UCLA Center for Health Policy Research Web site: http://www.healthpolicy.ucla.edu/

Brown, E. R., Yu, H., Lavarreda, S. A., Becerra, L., Arindajit, D., & Fronick, R. (2003, September). *SB2 will extend coverage to 1 million uninsured workers and dependents.* Retrieved December 20, 2003, from UCLA Center for Health Policy Research Web site: http://www.healthpolicy.ucla.edu/pubs/files/SB2_FactSheet.pdf.

California Building Industry Association. (2003). Housing and Economic Data. Available at http://ww.cbia.org

California Children and Families Commission. (2003). *County disbursements – FY02/03.* Retrieved September 2003, from http://www.ccfc.ca.gov//PDF/Fiscal/County Fund Disb - FY02-03.pdf.

California Department of Food and Agriculture. (2002). *Resource directory*. *California agriculture: A tradition of innovation.* Retrieved September 15, 2003, from http:// www.cdfa.ca.gov/card/pdfs/CDFA_RD02.pdf

California Department of Health Services. (1998.) *County health status profiles: 1998*. Sacramento, CA: Author.

California Department of Health Services. (2001). *Birth profiles by zip code, California 1989-2001*. Available from http://www.dhs.cahwnet.gov/hisp/chs/OHIR/Publication/ZIPCodeTables/BZindex.htm

California Department of Health Services. (2003a). *County health status profiles: 2003.* Retrieved January 15, 2004, http://www.dhs.cahwnet.gov/hisp/chs/phweek/cprofile2003/Profile2003.pdf

California Department of Health Services. (2003b). *Medi-Cal beneficiary profiles by county.* Available from http://www.medi-cal.ca.gov/

California Department of Health Services, Division of Communicable Disease Control, Immunization Branch. (2003). *Fall 2002 kindergarten and seventh grade assessment results*. Available from http://www.dhs.cahwnet.gov/

California Department of Health Services, Office of County Health Services (2002). *County health services budget and actual data.* Retrieved December 17, 2003, from http://www.dhs.cahwnet.gov/hisp/ochs/chsu/trendata.htm.

California Department of Justice, Office of the Attorney General. (2003, August). *Tobacco litigation master settlement agreement.* Available from http://caag.state.ca.us/

California Department of Pesticide Regulation. (2001). *Summary of results from the California pesticide illness surveillance program – 1999*. Available from http://www.cdpr.ca.gov/

California Department of Pesticide Regulation. (2002a). *Illnesses and injuries related to pesticide exposure – 2001.* Available from http://www.cdpr.ca.gov/

California Department of Pesticide Regulation. (2002b). *2002 summary data*. Available from http://www.cdpr.ca.gov/

California Employment Development Department. (2003, August). *Labor market information*. Available from http://www.calmis.ca.gov/

California Food Policy Advocates. (2000). *Strategic alliance to prevent childhood obesity: A school-community approach.* Available from http://cfpa.net

California Food Policy Advocates. (2003a). *2003 county profiles of hunger, poverty and food assistance.* Available from http://cfpa.net

California Managed Risk Medical Insurance Board. (2003). *Enrollment and disenrollment data.* Available from http://www.mrmib.ca.gov/

California Office of Statewide Health Planning and Development. (2000). *Inpatient hospital discharges--Ambulatory care sensitive conditions (ACSC) pivot profile.* Retrieved October 10, 2003, from http://www.oshpd.ca.gov/HQAD/HIRC/patient/discharges/Pivots/ACSC/index.htm.

California Office of Statewide Health Planning and Development. (2001). *Inpatient hospital discharges-Non-public data set.* Sacramento, CA: Author.

California Office of Statewide Health Planning and Development. (2003). *Hospital and clinic licensure data.* Available from http://www.oshpd.state.ca.us/

California, Office of the Legislative Council. (2002). *AB 1045 assembly bill - status*. Retrieved January, 22, 2004 from http://www.leginfo.ca.gov

California Office of the Legislative Council. (2003). SB 2 senate bill - status. Retrieved January, 22, 2004 from http://www.leginfo.ca.gov/pub/bill/sen/sb_0001-0050/sb_2_bill_20031006_chaptered.pdf.

California Primary Care Association. (2001). *CPCA mission*. Available from http://www.cpca.org/

California WIC Association. (2003, September). *WIC facts & figures*. Available from http://www.calwic.org/

Capitol Reports Environmental. (2003, September 24) *California Governor signs landmark air quality legislative package.* Retrieved December 15, 2003, from http://www.caprep.com/0903053.htm.

Centers for Disease Control and Prevention. (1989). *A strategic plan for the elimination of tuberculosis in the United States. Morbidity and Mortality Weekly Report, 38 (No.* S-3), 1-25. Available from http://www.cdc.gov/mmwr/

Centers for Disease Control and Prevention. (2003, February). *The power of prevention: Reducing the health and economic burden of chronic disease.* Available from http://www.cdc.gov/nccdphp/power_prevention

Central Valley Health Network. (2003). *Statistical reports*. Available from http://www.cvhnclinics.org

Children Now. (2002, April). *Annual report 2002 highlights.* Available from http://www.childrennow.org/

Coffman, J., Spetz, J., Seago, J. A., Rosenoff, E., & O'Neil, E. (2001, January). *Nursing in California: A workforce crisis.* San Francisco: California Workforce Initiative, The Center for the Health Professions, University of California, San Francisco.

Diringer, J., Ziolkowski, C., & Paramo, N. (1996). *Hurting in the Heartland: Access to Health Care in the San Joaquin Valley – A report and recommendations.* Sacramento, CA: Rural Health Advocacy Institute and the California Rural Legal Assistance Foundation.

Dower, C. (2003). *Health care interpreters in California.* San Francisco: The Center for the Health Professions, University of California, San Francisco.

Dower, C., McRee, T., Grumbach, K., Briggance, B., Mutha, S., Coffman, J., et al. (2001, February). *The practice of medicine in California: A profile of the physician workforce.* San Francisco: California Workforce Initiative, The Center for the Health Professions, University of California, San Francisco.

Eng, T. R., & Butler, W. T. (Eds.). (1997). *The hidden epidemic: Confronting sexually transmitted diseases.* Washington, DC: Institute of Medicine, National Academies Press.

Environmental Defense. (2003). *Hazardous air pollutants report: California.* Available from http://www.scorecard.org

Environmental Protection Agency. (2003). *Green book.* Available from http://www.epa.gov/oar/oaqps/greenbk/oindex.html

Fadiman, A. (1998). *The spirit catches you and you fall down.* New York: Farrar, Strauss, and Giroux.

Families USA. (2003, January). *Medicaid: Good medicine for California's economy* (Publication No. 03-102). Washington, DC: Families USA Foundation. Available from http://www.familiesusa.org

Ferris, J. M., & Grady, E. A. (2003, April). *Philanthropic activity in California's Central Valley: 1996-1999.* Los Angeles: University of Southern California, Center on Philanthropy and Public Policy.

Fitzenberger, J. M. (2003, November 14). UC medical school in Fresno pushed-Committee is being formed to convince university officials of the need here. *Fresno Bee*. Retrieved December 5, 2003, from http://www.fresnobee.com/local/story/7730950p-8633201c.html.

Food Research and Action Center. (2003). *Federal food programs.* Available from http://www.frac.org/

Freid, V. M., Prager, K., MacKay, A. P., & Xia, H. (2003). *Health, United States, 2003 with chartbook on trends in the health of Americans.* Hyattsville, MD: National Center for Health Statistics.

Ginnis, K., (2003, December 5). City, business leaders join to fight joblessness. *Fresno Bee*. Retrieved December 5, 2003, from http://www.fresnobee.com/local/story/7850621[-8732951c.html

Great Valley Center. (1999, May). *The state of the great central valley of California: Assessing the region via indicators.* Retrieved December 2, 2003, from http://www.greatvalley.org/indicators/economic/employment/unemploy.asp

Great Valley Center. (2000). *Survey of current area needs (SCAN): Opportunities for community investment and philanthropy in California's great valley.* Retrieved September 15, 2003, from http://www.greatvalley.org/publications/pub_files/scan.pdf

Grieshop, J. I. (2000, April 26-28). *Migrant best practice: Community education and community relations for "exotic" language farmworkers.* Available from University of California, Davis Web site: http://migration.ucdavis.edu/

Grossi, M. (2003, December 19). Valley seeks extreme air polluter designation. *Fresno Bee*. Retrieved December 22, 2003, from http://fresnobee.com/local/politics/story/7916689p-8793407c.html.

Henry J. Kaiser Family Foundation. (2001). *California: Medicare spending, state health facts online.* Available from http://statehealthfacts.kff.org.

Inkelas, M., Halfon, N., Uyeda, K., Stevens, G., Wright, J., Holtby, S., et al. (2003). *Health of young children in California: Findings from the 2001 California Health Interview Survey.* Available from UCLA Center for Health Policy Research Web site: http://www.healthpolicy.ucla.edu/

Ku, L., & Waidmann, T. (2003, August). *How race/ethnicity, immigration status, and language affect health insurance coverage, access to and quality of care among the low-income population* (Publication No. 4132). Menlo, CA: Kaiser Family Foundation, Kaiser Commission on Medicaid and the Uninsured.

Larson, A. C. (2000, September). *Migrant and seasonal farmworker enumeration profiles study, California.* Vashon Island, WA: Larson Assistance Services. Available from http://bphc.hrsa.gov/

Last gasp. (2002, December 15). *Fresno Bee*, pp. 1-24.

McRee, T. (2003, May). *Chartbook: Resources for mental and behavioral health care in California's counties. Supplement to the mental health workforce: Who's meeting California's needs?* San Francisco: California Workforce Initiative. Available from http://www.futurehealth.ucsf.edu/

McRee, T., Dower, C., Briggance, B., Vance, J., Keane, D., & O'Neil, E. H. (2003, February). *The mental health workforce: Who's meeting California's needs? California Workforce Initiative.* San Francisco: California Workforce Initiative, The Center for the Health Professions, University of California, San Francisco. Available from http://www.futurehealth.ucsf.edu/

Mertz, E., Grumbach, K., MacIntosh, L., & Coffman, J. (2000, January). *The geographic distribution of dentists in California Project.* San Francisco: The Center for the Health Professions, University of California, San Francisco. Available from http://futurehealth. ucsf.edu/

Mills, R., & Bhandari, S. (2003, September). *Health insurance coverage in the United States, 2002.* Washington, DC: U.S. Census Bureau. Available from http://www.census.gov/

National Institutes of Health. (n.d.) *What are health disparities, addressing health disparities: The NIH program of action webpage*. Retrieved November 10, 2003, from http://healthdisparities.nih.gov/whatare.html.

National Institutes of Health. (2002). *National Institute of Health's strategic plan to reduce and ultimately eliminate health disparities.* Available from http://healthdisparities.nih.gov/

Orlans, J., Mertz, E., & Grumbach, K. (2002, October). *Dental health shortage area methodology: A critical review.* San Francisco: The Center for the Health Professions, University of California, San Francisco. Available from http://www.futurehealth.ucsf.edu/

Pourat, N., Lessard, G., Lulejian, A., Becerra, L., Chakraborty, R. (2003, March). *Demographics, health, and access to care of immigrant children in California: Identifying barriers to staying healthy.* Available from UCLA Center for Health Policy Research Web site: http://www.healthpolicy.ucla.edu/

San Joaquin Valley Air Pollution Control District. (n.d.). *Air pollution in the San Joaquin Valley*. Retrieved January 21, 2003, from http://valleyair.org/newsed/apvalley.htm

Save the Children. (2002). *America's forgotten children: Child poverty in rural America.* Westport, CT: Author. Available from http://www.savethechildren.org/

Shaw, K., Stanwyck, C., & McCauley, M. (2003, August). Vaccination coverage among children entering school – United States, 2002-03 school year. *Morbidity and Mortality Weekly Report, 52*(33), 791-793. Available from Centers for Disease Control and Prevention Web site: http://www.cdc.gov/mmwr/

Small Business Administration, Office of Advocacy. (2003, September). *Firm size data: Statistics of U.S. businesses and nonemployer statistics*. Available from http://www.sba.gov/

Smedley, B. D., Stith, A. Y., & Nelson, A. R. (Eds.). (2002). *Unequal treatment: Confronting racial and ethnic disparities in health care.* Washington, DC: National Academies Press.

Strategic alliance to prevent childhood obesity: A school-community approach. (2003). Available from California Food Policy Advocates Web site: http://cfpa.net

The California Endowment. (2003a, July). *Bridging language barriers in health care: Public opinion survey of California immigrants from Latin America, Asia and the Middle East.* Woodland Hills, CA: Author. Available from NCM Web site: http://www.ncmonline.com/

The California Endowment (2003b, April). *Improving access to health care for limited English proficient health care consumers: Options for federal funding for language assistance services. Health In Brief, 2*(1). Retrieved December 19, 2003, from http://www.calendow.org/pub/publications/LanguageHIB03.pdf

Tom, D. (2001, June). *Report on Southeast Asians and Asian American and Pacific Islanders in the Central Valley.* Woodland Hills, CA: The California Endowment.

UCLA Center for Health Policy Research. (2003). *2001 California Health Interview Survey* [Data files]. Available from www.chis.ucla.edu

University of Michigan National Poverty Center. (2003). *Poverty in the United States: Frequently asked questions.* Available from http://www.npc.umich.edu/

U.S. Census Bureau. (1990). *Census 1990* [Data files]. Available from http://www.census.gov.

U.S. Census Bureau. (2000). *Census 2000* [Data files]. Available from http://www.census.gov.

U.S. Department of Health and Human Services. (1999). *Mental health: A report of the Surgeon General.* Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health.

U.S. Department of Health and Human Services. (2000). *Healthy people 2010: Understanding and improving health* (2nd ed.). Washington, DC: U.S. Government Printing Office. Available from http://www.healthypeople.gov/document/tableofcontents.htm

U.S. Department of Health and Human Services, Center for Medicare and Medicaid Services. (2003). *Highlights – National health expenditures, 2002.* Retrieved January, 2003, from http://www.cms.hhs.gov/statistics/nhe/historical/highlights.asp

U.S. Department of Health and Human Services, Bureau of Primary Health Care. (2003). *HPSA (health professional shortage areas)* [Data file]. Retrieved June 10, 2003, from http://belize.hrsa.gov/newhpsa/newhpsa.cfm

U.S. Department of Health and Human Services, Office of the Inspector General. (2003, May). *Trends in rural hospital closure: 1990-2000*. Available from http://oig.hhs.gov/

U.S. Department of Health and Human Services, Office of the Surgeon General. (2001). *The Surgeon General's call to action to prevent and decrease overweight and obesity.* Retrieved December 15, 2003, from http://www.surgeongeneral.gov/topics/obesity/calltoaction/CalltoAction.pdf

U.S. Department of Labor, Office of the Secretary for Policy, Office of Program Economics. (2000). *Findings from the demographic and national agricultural employment profile of workers survey United States farmworkers (NAWS) 1997-1998*. Available at http://www.dol.gov/asp/programs/agworker/report_8.pdf.

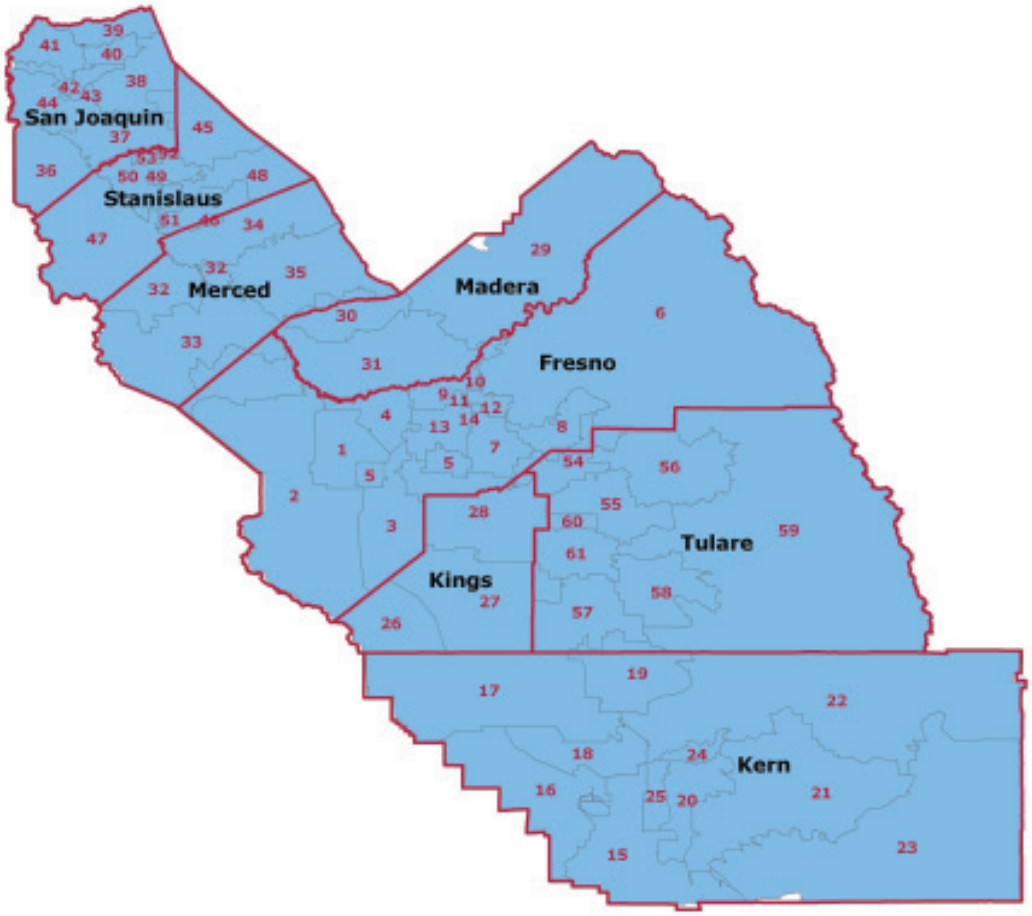
Villarejo, D., Lighthall, D., Williams, D. Souter, A., Mines, R., Bade, B., et al. (2000). *Suffering in silence: A report on the health of California's agricultural workers.* Davis: California Institute for Rural Studies.

Wallace, S. P., Pourat, N., Enriquez-Haas, V., & Sripipatana, A. (2003, October). *Health of older Californians: County data book.* Available from UCLA Center for Health Policy Research Web site: http://www.healthpolicy.ucla.edu/

Warner, M. E., & Mochel, M. (1998). The Hmong and health care in Merced, California. *Hmong Studies Journal, 2*(2). Retrieved September 22, 2003, from http://members.aol.com/ hmongstudiesjrnl/HSJ-v2n2_Warner_Frames.html

Appendix

Appendix 1
Community Cluster Zip Codes



# Map Location	County	Cluster Name	Zip code(s) in Cluster
1	Fresno	San Joaquin	93608, 93624, 93660, 93668
2	Fresno	Coalinga/ Mendota	93210, 93640
3	Fresno	Huron	93234
4	Fresno	Kerman/ Biola	93606, 93630
5	Fresno	Caruthers/ W. Selma	93609, 93627, 93652
6	Fresno	Clovis/ Sanger	93602, 93605, 93611, 93612, 93613, 93621, 93629, 93633, 93634, 93641, 93651, 93657, 93664, 93667, 93675
7	Fresno	Selma/ Fowler	93625, 93662, 93725, 93745
8	Fresno	Reedley/ Parlier	93616, 93648, 93649, 93654
9	Fresno	Herndon/ Pinedale	93650, 93704, 93711, 93720, 93722, 93741, 93755, 93765
10	Fresno	North Fresno	93710, 93729, 93740, 93759,93784
11	Fresno	Central Fresno	93701, 93705, 93728, 93744, 93761, 93790, 93791, 93792, 93793, 93794
12	Fresno	Southeast Fresno	93703, 93726, 93727, 93782, 93844, 93888
13	Fresno	W. Fresno/ Burrel	93607, 93706, 93707, 93708, 93709, 93712, 93714, 93715, 93716, 93717, 93718, 93721, 93724, 93760, 93762, 93764, 93771, 93772, 93773, 93774, 93775, 93776, 93777, 93778, 93779, 93780, 93786

# Map Location	County	Cluster Name	Zip code(s) in Cluster
14	Fresno	S. Fresno	93702, 93750
15	Kern	Frazier Park	93222, 93225, 93311
16	Kern	Taft	93224, 93251, 93252, 93268, 93276
17	Kern	Shafter-Wasco	93249, 93263, 93280
18	Kern	Buttonwillow/ Elk Hills	93206, 93312
19	Kern	Delano/ McFarland	93215, 93216, 93250
20	Kern	E. Bakersfield/ Lamont	93217, 93220, 93241, 93307
21	Kern	Arvin/ Tehachapi	93203, 93518, 93531, 93561, 93570, 93581, 93582
22	Kern	Inyokern	93205, 93226, 93238, 93240, 93255, 93283, 93285, 93287, 93302, 93303, 93308, 93380, 93388, 93527
23	Kern	Mojave	93501, 93502, 93504, 93505, 93516, 93523, 93524, 93528, 93554, 93560, 93596
24	Kern	N. Bakersfield	93301, 93305, 93306, 93381, 93386, 93387
25	Kern	Greater Bakersfield	93304, 93309, 93313, 93382, 93383, 93384, 93385, 93389
26	Kings	Avenal	93204
27	Kings	Corcoran	93212, 93239, 93266
28	Kings	Hanford/ Lemoore	93202, 93230, 93231, 93232, 93242, 93245, 93246, 93656
29	Madera	The Mountains	93604, 93614, 93626, 93643, 93644, 93645, 93669
30	Madera	Chowchilla	93610
31	Madera	Madera	93622, 93637, 93638, 93639
32	Merced	Gustine	95322
33	Merced	Los Banos/ Dos Palos	93620, 93635, 93661, 93665
34	Merced	N. Merced Co./ Livingston	95303, 95312, 95315, 95324, 95334, 95369, 95374, 95388
35	Merced	Merced/ Atwater	95301, 95317, 95333, 95340, 95341, 95342, 95343, 95344, 95348, 95365
36	San Joaquin	Tracy	95304, 95376, 95377, 95378, 95385
37	San Joaquin	Manteca/Lathrop/ Escalon/ Ripon	95320, 95330, 95331, 95336, 95366
38	San Joaquin	E. Stockton	95215, 95236
39	San Joaquin	Woodbridge	95220, 95227, 95258
40	San Joaquin	E. Lodi	95237, 95240, 95241, 95253
41	San Joaquin	Lodi	95209, 95242, 95686
42	San Joaquin	N. Stockton	95204, 95207, 95210, 95211, 95212, 95219, 95267, 95269, 95297
43	San Joaquin	Central Stockton	95202, 95203, 95205, 95290
44	San Joaquin	S. Stockton/ French Camp	95201, 95206, 95213, 95231, 95234
45	Stanislaus	Oakdale	95208, 95230, 95361, 95384
46	Stanislaus	Turlock	95316, 95380, 95381, 95382
47	Stanislaus	Patterson/ Newman	95313, 95360, 95363, 95387
48	Stanislaus	Waterford/ Hughson	95323, 95326, 95386
49	Stanislaus	W. Modesto/ Empire	95319, 95351
50	Stanislaus	Modesto	95350, 95352, 95353, 95354, 95355, 95357, 95358
51	Stanislaus	Ceres/ Keyes	95307, 95328
52	Stanislaus	Riverbank	95367, 95390
53	Stanislaus	N. Modesto/ Salida	95356, 95368
54	Tulare	Dinuba	93615, 93618, 93631, 93646, 93666, 93673
55	Tulare	N. Visalia/ Exeter/ Farmersville	93221, 93223, 93227, 93235, 93291, 93292, 93670
56	Tulare	Woodlake	93237, 93244, 93262, 93271, 93286, 93603, 93628, 93647
57	Tulare	Earlimart/ Pixley	93201, 93218, 93219, 93256, 93261, 93272
58	Tulare	Porterville	93257, 93258, 93267, 93270
59	Tulare	Lindsay	93207, 93208, 93247, 93260, 93265
60	Tulare	Visalia	93277, 93278, 93279
61	Tulare	Tulare	93274, 93275, 93282

Appendix 2
Community Cluster Demographics

Map Location #	County	Cluster Name	Total population all ages	% Latino of total population	% of population over age 25 with less than high school education	% of population over age 5 who speak non-English language at home	Total all families	% Female Housholder Families	% Families below poverty level	% Foreign - Born
1	Fresno	San Joaquin	9,018	87.1%	72.3%	81.5%	1,795	11.3%	23.1%	52.7%
2	Fresno	Coalinga/ Mendota	27,193	63.9%	48.6%	55.2%	4,709	14.3%	22.6%	28.2%
3	Fresno	Huron	6,902	98.0%	80.2%	87.4%	1,420	20.6%	36.1%	54.5%
4	Fresno	Kerman/ Biola	14,835	63.2%	51.2%	59.1%	3,384	15.2%	21.3%	29.5%
5	Fresno	Caruthers/ W. Selma	5,827	56.0%	52.9%	54.1%	1,280	9.5%	18.0%	32.4%
6	Fresno	Clovis/ Sanger	122,183	28.1%	20.1%	23.6%	31,636	14.8%	8.9%	11.5%
7	Fresno	Selma/ Fowler	52,825	65.8%	44.5%	56.0%	12,090	19.2%	19.6%	26.4%
8	Fresno	Reedley/ Parlier	40,444	72.7%	46.8%	62.4%	9,099	17.2%	20.7%	32.8%
9	Fresno	Herndon/ Pinedale	172,045	24.2%	14.6%	24.0%	45,484	16.3%	8.1%	12.3%
10	Fresno	North Fresno	29,327	24.4%	15.8%	26.7%	6,952	20.9%	11.9%	13.9%
11	Fresno	Central Fresno	65,626	48.5%	37.0%	43.6%	14,799	30.7%	29.1%	20.8%
12	Fresno	Southeast Fresno	124,984	40.5%	32.4%	40.8%	29,421	24.8%	20.3%	20.3%
13	Fresno	W. Fresno/ Burrel	42,617	51.5%	54.6%	50.4%	8,266	31.5%	35.7%	26.3%
14	Fresno	S. Fresno	47,997	64.9%	63.2%	67.7%	9,383	26.6%	38.8%	36.8%
15	Kern	Frazier Park	26,433	15.5%	9.6%	17.7%	7,040	9.6%	5.6%	10.6%
16	Kern	Taft	20,401	15.8%	28.7%	16.4%	4,707	16.9%	18.0%	7.5%
17	Kern	Shafter-Wasco	40,425	67.8%	49.9%	58.5%	7,548	16.5%	23.2%	27.6%
18	Kern	Buttonwillow/ Elk Hills	42,900	15.6%	13.1%	13.5%	11,496	8.2%	4.6%	6.6%
19	Kern	Delano/ McFarland	52,469	71.5%	52.8%	72.6%	9,903	21.0%	27.9%	37.8%
20	Kern	E. Bakersfield/ Lamont	74,529	66.0%	57.5%	56.9%	16,314	23.2%	27.9%	29.6%
21	Kern	Arvin/ Tehachapi	44,439	43.7%	34.2%	38.0%	10,132	11.2%	16.7%	21.7%
22	Kern	Inyokern	61,913	10.6%	25.2%	10.0%	16,016	18.6%	13.4%	4.3%
23	Kern	Mojave	38,323	19.8%	20.4%	18.5%	9,943	14.0%	12.1%	9.9%
24	Kern	N. Bakersfield	102,049	49.1%	34.3%	36.2%	24,089	23.7%	21.3%	17.0%
25	Kern	Greater Bakersfield	128,304	30.5%	24.6%	26.2%	32,363	20.6%	14.6%	12.8%
26	Kings	Avenal	14,696	65.8%	44.0%	58.7%	1,657	15.8%	28.3%	25.3%
27	Kings	Corcoran	27,009	59.7%	39.6%	48.3%	3,558	18.1%	24.8%	16.7%
28	Kings	Hanford/ Lemoore	95,070	36.8%	27.4%	31.2%	23,689	17.2%	13.7%	15.8%
29	Madera	The Mountains	23,476	7.5%	14.3%	7.4%	7,166	10.3%	7.2%	3.9%
30	Madera	Chowchilla	19,383	32.4%	39.4%	31.6%	3,076	12.9%	18.1%	13.7%
31	Madera	Madera	87,149	62.1%	43.9%	51.6%	19,989	15.9%	19.4%	28.6%
32	Merced	Gustine	7,868	38.4%	40.7%	46.7%	2,017	10.0%	11.6%	28.4%
33	Merced	Los Banos/ Dos Palos	38,837	51.3%	35.8%	42.6%	9,463	14.1%	13.8%	20.9%
34	Merced	N. Merced Co./ Livingston	45,356	50.2%	46.6%	56.2%	10,575	12.9%	16.5%	33.6%
35	Merced	Merced/ Atwater	118,367	42.2%	32.1%	41.7%	28,034	20.5%	18.7%	22.5%
36	San Joaquin	Tracy	70,048	27.1%	21.7%	26.7%	16,693	11.2%	5.5%	15.8%
37	San Joaquin	Manteca/Lathrop/ Escalon/ Ripon	71,628	25.0%	22.3%	22.7%	18,509	13.1%	7.1%	11.8%
38	San Joaquin	E. Stockton	26,913	39.1%	40.2%	35.4%	5,973	14.9%	14.1%	19.8%
39	San Joaquin	Woodbridge	11,189	19.3%	21.4%	18.5%	3,103	9.0%	6.2%	9.1%

Map Location #	County	Cluster Name	Total population all ages	% Latino of total population	% of population over age 25 with less than high school education	% of population over age 5 who speak non-English language at home	Total all families	% Female Housholder Families	% Families below poverty level	% Foreign - Born
40	San Joaquin	E. Lodi	48,937	33.1%	32.6%	34.8%	11,817	17.6%	14.1%	21.8%
41	San Joaquin	Lodi	54,350	17.0%	18.3%	23.1%	14,412	14.2%	9.6%	14.3%
42	San Joaquin	N. Stockton	147,054	23.3%	24.4%	34.7%	35,801	21.9%	15.7%	20.0%
43	San Joaquin	Central Stockton	57,534	52.3%	49.9%	49.5%	12,374	28.0%	28.6%	28.0%
44	San Joaquin	S. Stockton/ French Camp	54,736	49.8%	44.7%	55.7%	11,434	23.2%	20.7%	31.4%
45	Stanislaus	Oakdale	25,958	17.2%	21.5%	16.0%	6,966	13.9%	7.2%	9.2%
46	Stanislaus	Turlock	70,728	29.1%	30.0%	35.9%	17,308	16.7%	12.5%	21.0%
47	Stanislaus	Patterson/ Newman	26,412	54.1%	37.5%	47.9%	6,149	13.2%	12.0%	27.6%
48	Stanislaus	Waterford/ Hughson	16,163	30.3%	31.0%	27.8%	4,194	11.9%	11.7%	15.8%
49	Stanislaus	W. Modesto/ Empire	47,531	53.9%	50.4%	54.5%	10,450	21.4%	24.5%	31.1%
50	Stanislaus	Modesto	171,575	25.4%	25.6%	26.6%	42,843	18.9%	12.0%	14.6%
51	Stanislaus	Ceres/ Keyes	34,988	36.4%	36.2%	33.7%	8,570	18.6%	11.9%	17.4%
52	Stanislaus	Riverbank	16,514	44.6%	34.6%	41.3%	4,082	15.0%	8.8%	22.1%
53	Stanislaus	N. Modesto/ Salida	38,502	22.1%	17.7%	22.5%	10,018	13.5%	6.1%	13.2%
54	Tulare	Dinuba	53,143	67.2%	48.1%	57.4%	12,257	16.3%	21.0%	30.6%
55	Tulare	N. Visalia/ Exeter/ Farmersville	93,563	47.1%	34.3%	39.1%	22,356	17.6%	17.4%	19.5%
56	Tulare	Woodlake	21,604	66.3%	46.6%	59.5%	5,012	14.7%	22.7%	34.1%
57	Tulare	Earlimart/ Pixley	21,217	76.1%	67.2%	74.4%	4,449	17.3%	34.1%	41.2%
58	Tulare	Porterville	77,094	51.6%	42.6%	45.0%	17,782	19.3%	21.8%	24.4%
59	Tulare	Lindsay	19,677	56.6%	42.8%	48.7%	4,715	15.5%	22.1%	25.4%
60	Tulare	Visalia	44,737	25.4%	17.2%	19.4%	11,932	16.9%	9.0%	6.8%
61	Tulare	Tulare	56,158	45.5%	36.5%	39.2%	13,756	17.1%	17.0%	19.2%
San Joaquin Valley Totals (All Clusters)			3,249,172	40.1%	32.4%	37.6%	771,448	18.2%	16.1%	19.9%

Source: U.S. Census, 2000

Appendix 3
Health Access Indicators I

Map Location #	County	Cluster Name	Total population age 18-64	ACS Conditions: Number of Hospital Discharges, 2001 (age 18-64)	ACS rate per 10,000 population, age 18-64 (2001)	Rank of 61 Community Clusters- ACS Hospital Discharges, 2001 (age 18-64)	Total Live Births, 2001	Teen Births, 2001	% of Births to Teens, 2001	Rank of 61 Community Clusters- % Teen Births
1	Fresno	San Joaquin	5,158	9	17.4	5	192	34	17.7%	45
2	Fresno	Coalinga/ Mendota	17,974	40	22.3	8	398	68	17.1%	42
3	Fresno	Huron	4,011	15	37.4	26	154	32	20.8%	58
4	Fresno	Kerman/ Biola	8,468	30	35.4	22	286	54	18.9%	48
5	Fresno	Caruthers/ W. Selma	3,221	9	27.9	15	108	21	19.4%	52
6	Fresno	Clovis/ Sanger	72,645	199	27.4	14	1656	185	11.2%	10
7	Fresno	Selma/ Fowler	29,618	113	38.2	28	1062	172	16.2%	39
8	Fresno	Reedley/ Parlier	22,998	82	35.7	23	799	124	15.5%	33
9	Fresno	Herndon/ Pinedale	105,342	270	25.6	10	2623	233	8.9%	4
10	Fresno	North Fresno	18,767	50	26.6	12	385	48	12.5%	15
11	Fresno	Central Fresno	36,366	260	71.5	56	1401	282	20.1%	57
12	Fresno	Southeast Fresno	70,282	311	44.3	36	2388	457	19.1%	51
13	Fresno	W. Fresno/ Burrel	23,776	209	87.9	59	820	181	22.1%	60
14	Fresno	S. Fresno	24,086	150	62.3	50	1150	255	22.2%	61
15	Kern	Frazier Park	16,466	20	12.1	2	314	23	7.3%	3
16	Kern	Taft	12,904	76	58.9	47	275	54	19.6%	54
17	Kern	Shafter-Wasco	24,907	77	30.9	18	771	147	19.1%	50
18	Kern	Buttonwillow/ Elk Hills	25,757	69	26.8	13	670	48	7.2%	2
19	Kern	Delano/ McFarland	31,626	116	36.7	25	1140	171	15.0%	28
20	Kern	E. Bakersfield/ Lamont	40,872	295	72.2	57	1754	367	20.9%	59
21	Kern	Arvin/ Tehachapi	26,476	60	22.7	9	614	97	15.8%	35
22	Kern	Inyokern	36,385	357	98.1	60	749	121	16.2%	38
23	Kern	Mojave	22,809	16	7	1	625	80	12.8%	17
24	Kern	N. Bakersfield	57,006	384	67.4	53	2076	347	16.7%	41
25	Kern	Greater Bakersfield	75,390	337	44.7	38	2233	319	14.3%	23
26	Kings	Avenal	11,002	16	14.5	3	174	35	20.1%	56
27	Kings	Corcoran	19,975	121	60.6	48	289	58	20.1%	55
28	Kings	Hanford/ Lemoore	55,466	201	36.2	24	1827	263	14.4%	25
29	Madera	The Mountains	13,355	22	16.5	4	189	19	10.1%	8
30	Madera	Chowchilla	13,729	69	50.3	44	247	37	15.0%	27
31	Madera	Madera	49,761	188	37.8	27	1950	369	18.9%	49
32	Merced	Gustine	4,335	17	39.2	31	148	18	12.2%	12
33	Merced	Los Banos/ Dos Palos	21,645	96	44.4	37	730	110	15.1%	29
34	Merced	N. Merced Co./ Livingston	25,707	91	35.4	21	815	109	13.4%	19
35	Merced	Merced/ Atwater	66,109	315	47.6	42	2203	353	16.0%	36
36	San Joaquin	Tracy	43,100	138	32	19	1281	86	6.7%	1
37	San Joaquin	Manteca/Lathrop/ Escalon/ Ripon	41,931	198	47.2	41	1038	106	10.2%	9
38	San Joaquin	E. Stockton	16,242	106	65.3	52	391	56	14.3%	24
39	San Joaquin	Woodbridge	6,668	19	28.5	16	138	13	9.4%	7
40	San Joaquin	E. Lodi	28,079	121	43.1	35	886	132	14.9%	26

Map Location #	County	Cluster Name	Total population age 18-64	ACS Conditions: Number of Hospital Discharges, 2001 (age 18-64)	ACS rate per 10,000 population, age 18-64 (2001)	Rank of 61 Community Clusters- ACS Hospital Discharges, 2001 (age 18-64)	Total Live Births, 2001	Teen Births, 2001	% of Births to Teens, 2001	Rank of 61 Community Clusters- % Teen Births
41	San Joaquin	Lodi	31,823	122	38.3	30	754	71	9.4%	6
42	San Joaquin	N. Stockton	85,064	474	55.7	46	2323	303	13.0%	18
43	San Joaquin	Central Stockton	32,603	324	99.4	61	1394	273	19.6%	53
44	San Joaquin	S. Stockton/ French Camp	31,036	264	85.1	58	1281	195	15.2%	31
45	Stanislaus	Oakdale	15,519	65	41.9	33	344	47	13.7%	22
46	Stanislaus	Turlock	41,439	143	34.5	20	1208	139	11.5%	11
47	Stanislaus	Patterson/ Newman	14,910	27	18.1	6	484	60	12.4%	14
48	Stanislaus	Waterford/ Hughson	9,251	24	25.9	11	238	32	13.4%	20
49	Stanislaus	W. Modesto/ Empire	26,351	181	68.7	54	1106	199	18.0%	46
50	Stanislaus	Modesto	101,397	477	47	39	2625	329	12.5%	16
51	Stanislaus	Ceres/ Keyes	20,057	124	61.8	49	595	90	15.1%	30
52	Stanislaus	Riverbank	9,686	39	40.3	32	292	36	12.3%	13
53	Stanislaus	N. Modesto/ Salida	23,268	89	38.2	29	670	60	9.0%	5
54	Tulare	Dinuba	29,845	91	30.5	17	1089	169	15.5%	32
55	Tulare	N. Visalia/ Exeter/ Farmersville	53,718	253	47.1	40	1774	305	17.2%	43
56	Tulare	Woodlake	12,139	26	21.4	7	422	68	16.1%	37
57	Tulare	Earlimart/ Pixley	11,254	79	70.2	55	578	100	17.3%	44
58	Tulare	Porterville	43,161	228	52.8	45	1662	308	18.5%	47
59	Tulare	Lindsay	10,797	53	49.1	43	356	59	16.6%	40
60	Tulare	Visalia	26,157	112	42.8	34	728	99	13.6%	21
61	Tulare	Tulare	31,535	205	65	51	1090	170	15.6%	34
		TOTAL	1,891,424	8672	45.8		57962	8796	15.2%	

Sources: California Department of Health Services, 2001
California OSHPD Hospital Discharge Data, 2001 (ACS Conditions)

ACS (Ambulatory Care Sensitive) Conditions were defined by the following ICD-9-CM codes:

1. Asthma with Status Asthmaticus: 493.01, 493.11, 493.21, or 493.91
2. Asthma without Status Asthmaticus: 493.00, 493.10, 493.20,or 493.90
3. Congestive Heart Failure (CHF): 428.0, 428.1, 428.9, 402.01, 402.11, 402.91, 404.01, 404.11, 404.91, 404.03, 404.13, 404.93
4. Chronic Obstructive Pulmonary Disease (COPD): 491, 492, 494, 495, or 496 (inclusive)
5. Diabetes with Complication: 250.10 - 250.93
6. Diabetes without Complication: 250.00 - 250.03
7. Hypertension: 401.0, 401.1, 401.9, 402.00, 402.10, 402.90, 403.00, 403.10, 403.90, 404.00, 404.10, 404.90

Appendix 4
Health Access Indicators II

Map Location #	County	Cluster Name	Low Birth Weight Births, 2001 (<2500g)	% Low Birth Weight Births of All Births, 2001	Rank of 61 Community Clusters-Low Birth Weight Infants, 2001	Women Receiving late (3rd Trimester) Prenatal Care	% Late Prenatal Care of All Live Births	Rank of 61 Community Clusters- Late Prenatal Care, 2001
1	Fresno	San Joaquin	16	8.3%	59	28	14.6%	12
2	Fresno	Coalinga/ Mendota	13	3.3%	3	96	24.1%	47
3	Fresno	Huron	7	4.5%	7	66	42.9%	61
4	Fresno	Kerman/ Biola	15	5.2%	13	47	16.4%	23
5	Fresno	Caruthers/ W. Selma	14	13.0%	61	17	15.7%	18
6	Fresno	Clovis/ Sanger	101	6.1%	31	177	10.7%	6
7	Fresno	Selma/ Fowler	65	6.1%	32	148	13.9%	10
8	Fresno	Reedley/ Parlier	43	5.4%	15	153	19.1%	38
9	Fresno	Herndon/ Pinedale	149	5.7%	21	227	8.7%	3
10	Fresno	North Fresno	25	6.5%	39	57	14.8%	14
11	Fresno	Central Fresno	102	7.3%	52	221	15.8%	19
12	Fresno	Southeast Fresno	183	7.7%	56	370	15.5%	16
13	Fresno	W. Fresno/ Burrel	76	9.3%	60	156	19.0%	37
14	Fresno	S. Fresno	91	7.9%	57	232	20.2%	40
15	Kern	Frazier Park	19	6.1%	28	27	8.6%	2
16	Kern	Taft	21	7.6%	54	47	17.1%	27
17	Kern	Shafter-Wasco	47	6.1%	30	107	13.9%	9
18	Kern	Buttonwillow/ Elk Hills	44	6.6%	45	66	9.9%	5
19	Kern	Delano/ McFarland	63	5.5%	18	181	15.9%	20
20	Kern	E. Bakersfield/ Lamont	115	6.6%	43	296	16.9%	26
21	Kern	Arvin/ Tehachapi	35	5.7%	22	90	14.7%	13
22	Kern	Inyokern	49	6.5%	42	117	15.6%	17
23	Kern	Mojave	41	6.6%	44	96	15.4%	15
24	Kern	N. Bakersfield	131	6.3%	36	362	17.4%	29
25	Kern	Greater Bakersfield	148	6.6%	47	322	14.4%	11
26	Kings	Avenal	10	5.7%	23	51	29.3%	52
27	Kings	Corcoran	14	4.8%	9	91	31.5%	54
28	Kings	Hanford/ Lemoore	113	6.2%	34	451	24.7%	48
29	Madera	The Mountains	13	6.9%	48	16	8.5%	1
30	Madera	Chowchilla	12	4.9%	10	78	31.6%	55
31	Madera	Madera	115	5.9%	27	368	18.9%	36
32	Merced	Gustine	9	6.1%	29	52	35.1%	58
33	Merced	Los Banos/ Dos Palos	45	6.2%	33	261	35.8%	59
34	Merced	N. Merced Co./ Livingston	43	5.3%	14	237	29.1%	51
35	Merced	Merced/ Atwater	123	5.6%	19	939	42.6%	60
36	San Joaquin	Tracy	75	5.9%	25	279	21.8%	42
37	San Joaquin	Manteca/Lathrop/ Escalon/ Ripon	56	5.4%	16	169	16.3%	21
38	San Joaquin	E. Stockton	23	5.9%	26	125	32.0%	56
39	San Joaquin	Woodbridge	1	0.7%	1	32	23.2%	46
40	San Joaquin	E. Lodi	56	6.3%	37	239	27.0%	50

Map Location #	County	Cluster Name	Low Birth Weight Births, 2001 (<2500g)	% Low Birth Weight Births of All Births, 2001	Rank of 61 Community Clusters-Low Birth Weight Infants, 2001	Women Receiving late (3rd Trimester) Prenatal Care	% Late Prenatal Care of All Live Births	Rank of 61 Community Clusters- Late Prenatal Care, 2001
41	San Joaquin	Lodi	39	5.2%	12	148	19.6%	39
42	San Joaquin	N. Stockton	163	7.0%	49	589	25.4%	49
43	San Joaquin	Central Stockton	91	6.5%	41	485	34.8%	57
44	San Joaquin	S. Stockton/ French Camp	90	7.0%	50	384	30.0%	53
45	Stanislaus	Oakdale	11	3.2%	2	57	16.6%	24
46	Stanislaus	Turlock	55	4.6%	8	197	16.3%	22
47	Stanislaus	Patterson/ Newman	37	7.6%	55	87	18.0%	32
48	Stanislaus	Waterford/ Hughson	15	6.3%	35	40	16.8%	25
49	Stanislaus	W. Modesto/ Empire	78	7.1%	51	245	22.2%	44
50	Stanislaus	Modesto	209	8.0%	58	449	17.1%	28
51	Stanislaus	Ceres/ Keyes	38	6.4%	38	132	22.2%	45
52	Stanislaus	Riverbank	13	4.5%	4	54	18.5%	34
53	Stanislaus	N. Modesto/ Salida	44	6.6%	46	61	9.1%	4
54	Tulare	Dinuba	63	5.8%	24	205	18.8%	35
55	Tulare	N. Visalia/ Exeter/ Farmersville	98	5.5%	17	317	17.9%	31
56	Tulare	Woodlake	31	7.3%	53	74	17.5%	30
57	Tulare	Earlimart/ Pixley	26	4.5%	6	127	22.0%	43
58	Tulare	Porterville	81	4.9%	11	226	13.6%	8
59	Tulare	Lindsay	16	4.5%	5	64	18.0%	33
60	Tulare	Visalia	41	5.6%	20	94	12.9%	7
61	Tulare	Tulare	71	6.5%	40	221	20.3%	41
		TOTAL	3,631	6.3%		11350	19.6%	

Appendix 5
Health Access Index

Map Location #	County	Cluster Name	Rank Among 61 Community Clusters- ACS Conditions Hospital Discharges	Rank Among 61 Community Clusters - % Teen Births	Rank Among 61 Community Clusters - Low Birth Weight Infants, 2001	Women Receiving late (3rd Trimester) Prenatal Care	Composite Health Access Index (HAI) Mean of Ranks	Rank among 61 Community Clusters- Composite Health Access Index
1	Fresno	San Joaquin	5	45	59	12	30.25	30
2	Fresno	Coalinga/ Mendota	8	42	3	47	25	20
3	Fresno	Huron	26	58	7	61	38	43
4	Fresno	Kerman/ Biola	22	48	13	23	26.5	22
5	Fresno	Caruthers/ W. Selma	15	52	61	18	36.5	40
6	Fresno	Clovis/ Sanger	14	10	31	6	15.25	3
7	Fresno	Selma/ Fowler	28	39	32	10	27.25	26
8	Fresno	Reedley/ Parlier	23	33	15	38	27.25	27
9	Fresno	Herndon/ Pinedale	10	4	21	3	9.5	2
10	Fresno	North Fresno	12	15	39	14	20	10
11	Fresno	Central Fresno	56	57	52	19	46	55
12	Fresno	Southeast Fresno	36	51	56	16	39.75	48
13	Fresno	W. Fresno/ Burrel	59	60	60	37	54	61
14	Fresno	S. Fresno	50	61	57	40	52	59
15	Kern	Frazier Park	2	3	28	2	8.75	1
16	Kern	Taft	47	54	54	27	45.5	54
17	Kern	Shafter-Wasco	18	50	30	9	26.75	23
18	Kern	Buttonwillow/ Elk Hills	13	2	45	5	16.25	6
19	Kern	Delano/ McFarland	25	28	18	20	22.75	18
20	Kern	E. Bakersfield/ Lamont	57	59	43	26	46.25	56
21	Kern	Arvin/ Tehachapi	9	35	22	13	19.75	9
22	Kern	Inyokern	60	38	42	17	39.25	44
23	Kern	Mojave	1	17	44	15	19.25	8
24	Kern	N. Bakersfield	53	41	36	29	39.75	49
25	Kern	Greater Bakersfield	38	23	47	11	29.75	29
26	Kings	Avenal	3	56	23	52	33.5	36
27	Kings	Corcoran	48	55	9	54	41.5	52
28	Kings	Hanford/ Lemoore	24	25	34	48	32.75	34
29	Madera	The Mountains	4	8	48	1	15.25	4
30	Madera	Chowchilla	44	27	10	55	34	37
31	Madera	Madera	27	49	27	36	34.75	38
32	Merced	Gustine	31	12	29	58	32.5	33
33	Merced	Los Banos/ Dos Palos	37	29	33	59	39.5	46
34	Merced	N. Merced Co./ Livingston	21	19	14	51	26.25	21
35	Merced	Merced/ Atwater	42	36	19	60	39.25	45
36	San Joaquin	Tracy	19	1	25	42	21.75	15
37	San Joaquin	Manteca/Lathrop/ Escalon/ Ripon	41	9	16	21	21.75	16
38	San Joaquin	E. Stockton	52	24	26	56	39.5	47
39	San Joaquin	Woodbridge	16	7	1	46	17.5	7
40	San Joaquin	E. Lodi	35	26	37	50	37	41

Map Location #	County	Cluster Name	Rank Among 61 Community Clusters- ACS Conditions Hospital Discharges	Rank Among 61 Community Clusters - % Teen Births	Rank Among 61 Community Clusters - Low Birth Weight Infants, 2001	Women Receiving late (3rd Trimester) Prenatal Care	Composite Health Access Index (HAI) Mean of Ranks	Rank among 61 Community Clusters- Composite Health Access Index
41	San Joaquin	Lodi	30	6	12	39	21.75	17
42	San Joaquin	N. Stockton	46	18	49	49	40.5	50
43	San Joaquin	Central Stockton	61	53	41	57	53	60
44	San Joaquin	S. Stockton/ French Camp	58	31	50	53	48	57
45	Stanislaus	Oakdale	33	22	2	24	20.25	11
46	Stanislaus	Turlock	20	11	8	22	15.25	5
47	Stanislaus	Patterson/ Newman	6	14	55	32	26.75	24
48	Stanislaus	Waterford/ Hughson	11	20	35	25	22.75	19
49	Stanislaus	W. Modesto/ Empire	54	46	51	44	48.75	58
50	Stanislaus	Modesto	39	16	58	28	35.25	39
51	Stanislaus	Ceres/ Keyes	49	30	38	45	40.5	51
52	Stanislaus	Riverbank	32	13	4	34	20.75	13
53	Stanislaus	N. Modesto/ Salida	29	5	46	4	21	14
54	Tulare	Dinuba	17	32	24	35	27	25
55	Tulare	N. Visalia/ Exeter/ Farmersville	40	43	17	31	32.75	35
56	Tulare	Woodlake	7	37	53	30	31.75	32
57	Tulare	Earlimart/ Pixley	55	44	6	43	37	42
58	Tulare	Porterville	45	47	11	8	27.75	28
59	Tulare	Lindsay	43	40	5	33	30.25	31
60	Tulare	Visalia	34	21	20	7	20.5	12
61	Tulare	Tulare	51	34	40	41	41.5	53

Sources: California Department of Health Services, 2001
California OSHPD Hospital Discharge Data, 2001 (ACS Conditions)

ACS (Ambulatory Care Sensitive) Conditions were defined by the following ICD-9-CM codes:

1. Asthma with Status Asthmaticus: 493.01, 493.11, 493.21, or 493.91
2. Asthma without Status Asthmaticus: 493.00, 493.10, 493.20,or 493.90
3. Congestive Heart Failure (CHF): 428.0, 428.1, 428.9, 402.01, 402.11, 402.91, 404.01, 404.11, 404.91, 404.03, 404.13, 404.93
4. Chronic Obstructive Pulmonary Disease (COPD): 491, 492, 494, 495, or 496 (inclusive)
5. Diabetes with Complication: 250.10 - 250.93
6. Diabetes without Complication: 250.00 - 250.03
7. Hypertension: 401.0, 401.1, 401.9, 402.00, 402.10, 402.90, 403.00, 403.10, 403.90, 404.00, 404.10, 404.90

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To order this report contact:

Central Valley Health Policy Institute
1625 E. Shaw Avenue, Suite 146
Fresno, CA 93710-8106
Tel: (559) 228-2150
Fax: (559) 228-2168

This Report Was Funded by a Grant from
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Prepared with the Assistance of