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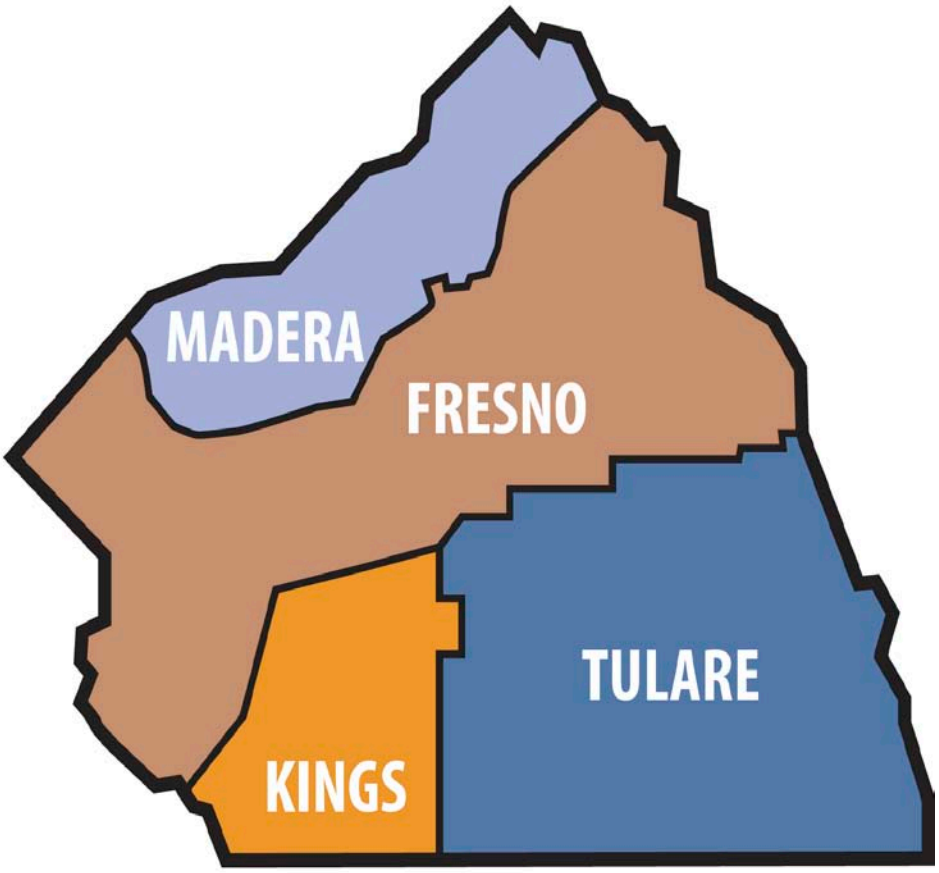
# Community Needs Assessment



# Hospital Council of Northern and Central California

# Community Needs Assessment

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# Table of Contents

## List of Tables

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This project could not have been accomplished if not for the contributions and hard work of many people.

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To those community leaders who participated in our focus groups, we extend our sincere appreciation. Your insights and perspectives added richness to the data that helps to tell the health story of our Valley.

We hope that this work will contribute to the improved quality of life for all of us.

# Executive Summary

## Background

Since the passage of SB 697 in California in 1994, many California hospitals have been required to engage in community needs assessment and benefits reporting. The passage of the federal Patient Protection and Affordable Care Act (PPACA) in 2010 applied additional requirements on all hospitals regarding community health needs assessment, reporting, financial assistance policies, charges, billing and collections.

Traditionally, the hospitals in the four-county region (Fresno, Madera, Tulare and Kings) have individually conducted community needs assessments. Independently, each hospital has worked to achieve a greater understanding of the communities it serves. Through those independent efforts, however, each has experienced difficulty accessing complete data. For several years, the Hospital Council of Northern and Central California has met with the Central Valley Health Policy Institute (CVHPI) at California State University, Fresno (CSUF) seeking a more efficient and comprehensive approach. During that time, with funding from The California Endowment, CVHPI has developed a data warehouse that brings together information from multiple sources to examine health status and healthcare issues prevalent in the San Joaquin Valley. It has conducted specialized studies on key challenges, such as Medi-Cal reform, national healthcare reform, professional shortages, prenatal care, and culturally appropriate services.

Recognizing the potential to use this resource for regional community needs assessment, the Hospital Council approached CVHPI to define and plan a regional needs assessment process for all hospitals to use as the "core" of their respective community benefits work. The Hospital Council contracted with CVHPI and CSUF to conduct and compile the regional needs assessment. This report represents one of the first times that San Joaquin Valley healthcare providers have collaborated in assessing and planning a response to community health in the region.

## Methodology

This report provides a health "snapshot" of a four-county region using secondary quantitative data and explores needs, strengths and challenges, and identifies priorities for action using primary qualitative data collected in 2010-2011. In collaboration with the Hospital Council, a set of community health indicators was identified, drawing on Healthy People 2010 and other national- and state-level projects. The indicators focus on determinants of health (economic conditions, healthcare access, health behaviors), prevalence of chronic conditions, and health outcomes (morbidity as measured by hospital use and mortality) and were examined from both quantitative and qualitative perspectives. For quantitative assessment, measures for each indicator were drawn from existing sources, such as the California Health Interview Survey (CHIS), hospital discharge records, and mortality records.

Where sufficient data was available, differences by population group within counties and temporal trends were examined. For the qualitative assessment, five focus groups were conducted throughout the four-county service area. To develop qualitative data, focus group participants reflected the full range of health and healthcare stakeholders, including patients and their advocates. Focus group members discussed key health and healthcare issues for community health within their county from the perspectives of challenges, achievements, opportunities for action, and priorities for action. Detailed content and thematic coding of the focus group data were performed to identify areas of consensus on priorities for action.

## Findings

Quantitative data on determinants of health, morbidity and mortality are reported first, followed by qualitative findings on priorities for action. The analysis of health determinants found that the four-county area has a growing and racially/ethnically diverse population. The four counties have higher poverty rates, lower median income, greater unemployment, and lower educational attainment than California as a whole. Because of these factors, in the context of current policy, the area has a higher rate than the state of persons without adequate health insurance or an ongoing relationship with a medical home. As a result, the four counties experience less use of prenatal care, worse birth outcomes, and higher prevalence of asthma and diabetes than California as a whole.

In the assessment of morbidity (cause-specific hospital use) and mortality (cause-specific death and premature death), CVHPI data warehouse information was examined from three perspectives: **place** (comparison of the four counties to the eight-county San Joaquin Valley and California as a whole), **time** (changes in morbidity and mortality during 1999-2007 compared to California as a whole), and **disparity** (differences in morbidity and mortality between racial/ethnic groups (Latinos/non-Latinos, African-Americans/Whites). Overall, these comparisons suggest several eight broad findings.

1. The four-county service area seems to be losing more residents to cardiovascular and respiratory diseases than California.
2. While the four-county service area experienced a slight reduction in respiratory disease-related death during the time between 1999-2000 and 2006-2007 (8%), California had a much higher reduction (22%).
3. For the four-county area, the San Joaquin Valley and California, Latinos experience lower overall mortality and lower overall hospital use than do whites.
4. Latinos, however, experience more diabetes, more hospitalizations and greater mortality than whites.
5. African-Americans are experiencing higher hospital use and/or death rates for cancer, cardiovascular, and diabetes than whites, yet lower hospitalization rates for other conditions.
6. The four counties have higher deaths from motor vehicle accidents, homicide and suicide than California as a whole. These rates are rising faster than in California as a whole. Latinos and African-Americans face higher risks than whites.
7. The majority of persons in need of behavioral health services are not receiving appropriate care.
8. According to the University of Wisconsin county health rankings, Fresno, Tulare, and Madera counties are ranked in the bottom quartile of California counties on mortality and morbidity. All four counties are ranked in the bottom quartile on determinants of community health.

The qualitative data drawn from the five focus groups provided some clear areas of consensus priorities for action – key challenge areas where there appeared to be opportunities for hospital and community action to improve population health and healthcare services. While there were differences in tone and emphasis across the five focus groups, there was remarkable consensus among all participants around the following six areas:

**I. Federal and state policy and access to appropriate care.** The four-county service area faces higher numbers who are uninsured and/or lack a medical home than California as a whole. California's budget woes may make these challenges worse in the short-run. Yet, the new federal healthcare law offers both a challenge and an opportunity. The challenge will be to

ensure that the healthcare system infrastructure is prepared to respond to the significant growth in the number of insured and continued access challenges for the undocumented. Development of patient-centered medical homes and other new models of care all need to be supported as they evolve in the region over the next few years.

II. **Chronic disease management.** Great strides have been made in increasing awareness of the problems/prevalence of diabetes, other chronic diseases and obesity. The region lags behind in resources and programs to ensure sustained disease management and maintenance. Existing programs may benefit from better integration into care practices. There may be an opportunity for new training/certification programs for community health workers and/or chronic disease management specialists to assist patients with self-care.

III. **Obesity.** Obesity remains a significant health challenge that underlies many chronic diseases. There have been impressive regional achievements in raising awareness of community level policies and practices to support health locally and many organizations have focused on the environment and providing prevention programming in a more coordinated way. Nonetheless, these achievements have been inconsistent across communities and have not been brought to sufficient scale to achieve population-level effects. Beyond these policy initiatives, health system opportunities include improved coordination of programs, increased engagement of employers in the region through work-site wellness programs, and improved patient education and self-management strategies.

IV. **Mental health.** A tremendous need exists to address mental health issues at the family, school and community levels. While some resources were notably dedicated to this area, the lack of a system of care continues to be a huge challenge. All counties report excessive use of emergency room and primary care resources by behavioral health patients who are inadequately managed. New collaborative programs among hospitals and community providers are still needed.

V. **Workforce/collaboration capacity.** There continues to be a great need in the supply of healthcare providers and specialists. A focused effort on workforce development among all health-care providers would likely pay huge dividends to the region. Additionally, there likely may be new federal funds available, increased opportunities for hospital/clinic collaboration, increased use of community health workers, and the increased implementation of health information technology (i.e., EMR, telemedicine, registries) offers the chance to integrate hospitals, other providers, and public health in more efficient and effective system of care.

VI. **Culturally and linguistically appropriate healthcare services.** In the Central Valley, nearly 40 percent of the population is Latino, and the Hmong population of about 50,000 represents nearly one-half the total U.S. Hmong population. There are many other groups in this diverse region. Navigating the complexities of the healthcare system can be a daunting task for anyone. Adding cultural and language limitations to the equation, an individual's ability to competently access health care and properly follow medication directions or manage a chronic illness may be negatively impacted. Specific attention needs to be paid to improving healthcare experiences and promoting better adherence to medical recommendations for the Valley's culturally diverse residents.

# Hospital Council of Northern and Central California
# COMMUNITY NEEDS ASSESSMENT

## Background

Since the passage of SB 697 in California in 1994, many California hospitals have been engaged in community needs assessment and benefits reporting. The passage of the federal Patient Protection and Affordable Care Act (PPACA) in 2011applied additional requirements on all hospitals to comply with guidelines regarding community health needs assessment, reporting, financial assistance policies, charges, billing and collections.

The hospitals in the four-county region (Fresno, Madera, Tulare and Kings), through the Hospital Council of Northern and Central California, came together to define and plan a regional needs assessment process for all hospitals to use as the "core" of their respective community benefits work. The Hospital Council contracted with the Central Valley Health Policy Institute (CVHPI), California State University, Fresno (CSUF) to conduct and compile the regional needs assessment.

This report provides a "snapshot" of the health of the four-county region using secondary quantitative data and explores needs, strengths and challenges, and identifies priorities for action using primary qualitative data collected in 2010-2011.

## Key Definitions

***Community***

For the purpose of this report, the World Health Organization and UNICEF definitions of three types of communities has been adopted:

1. An *area* or *neighborhood* – "a group of people living together within a fixed geographic location"
2. *Social relationships* – "a set of social relationships mostly taking place within a fixed geographic location"
3. *Identity or common interest* – "a shared sense of identity such as groups of substance users."[1]

***Study Area***

The "four-county" region, as defined as Fresno, Madera, Tulare and Kings Counties, served as the foundation of this community needs assessment. San Joaquin Valley (SJV) is defined as the area from Stockton to Bakersfield, and includes the following eight counties: Fresno, Kern, Tulare, Madera, Merced, Stanislaus, San Joaquin and Kings.

***Assessment***

According to Witkin and Altschuld, an *assessment* is "a systematic set of procedures undertaken for the purpose of setting priorities and making decisions about program or organizational improvement and allocation of resources."[2]

## Overview of Community Assessment Methods

Both quantitative and qualitative data was relied upon to ensure the most complete picture of community needs, the target audience as well as the strengths, challenges and opportunities facing the four-county area. In this report, the four-county area is compared to the eight counties of the San Joaquin Valley and to the state of California as a whole, whenever possible.

**Quantitative**
Over the last six years, CVHPI has developed and maintained an extensive data warehouse on a wide range of health, socioeconomic and demographic indicators. This data warehouse served as the basis for the needs assessment, including:

- Analysis of birth, death and hospitalization data for the service area.
- Population-adjusted rates of receipt of appropriate prenatal care, low birth weight, and preterm births for each ZIP code in the service area and overall.
- Population-adjusted rates for hospitalizations for selected acute and chronic conditions.
- A composite measure of primary care-sensitive/avoidable hospitalizations, premature deaths, and premature deaths for specific conditions are described for each ZIP code in the service area and overall.
- Using available California Health Interview Survey (CHIS) data, school fitness testing, reportable health events, and other data sources, estimates of chronic disease and high-risk health behaviors for the service area or the most accurate available geographic areas within the service area.
- Most recent available estimates of demographic, educational attainment, and economic opportunity information for the service area, including data from the Community Health Indicators national county health ranking.

**Qualitative**
Focus groups comprising a cross-section of key stakeholders (e.g., public health, healthcare providers, school districts, nonprofit organizations, and funders) were conducted in each county. Facilitated by CVHPI staff, the focus groups followed the same agenda and format in each county, collecting input from participants on five areas relevant to community health and well-being:

1. Primary care, access to care, uninsured/indigent care, implementation of federal healthcare reform
2. Hospital/emergency services
3. Chronic disease management
4. Prevention (services, policies, physical environments, air/water quality, public safety, mental health, housing)
5. Community infrastructure (transportation, community development, economic development, schools and social services for children, youth and families, safe places to play, access to healthy food)

Participants were asked to identify both the conditions and opportunities in each county that support community health and well-being and policies needed to sustain these efforts, as well as those conditions and opportunities that inhibit community health and well-being and policy changes required to mitigate these. Finally, participants were asked to rank their priorities for action.

# Results: Quantitative

The community assessment begins with an understanding of the demographic and socioeconomic environment within the four-county region, and then examines data from the CHIS and other sources on prevalence of disease and health-relevant conditions. With this background, an analysis of hospital care and mortality data drawing on multiple sources is presented. We compare the four counties to California as a whole. Where data is available, we highlight differences in community health over time, and differences in community health within counties. The quantitative presentation concludes by showing University of Wisconsin county health ranking results for the four counties.

**Age**

Table 1 depicts the demographic characteristics for Fresno, Kings, Madera and Tulare counties. In 2007, the Valley had higher percentages of residents who were under 17 years of age (30.3%) than California as a whole (25.5%) [RAND California, 2007]. The presence of a higher proportion of persons under age 17 had implications for family economic well-being and the financing of public services. Madera has a higher proportion (35.4%) of younger (under 17) residents than the remaining San Joaquin Valley (SJV) counties as well as the state. Fresno had the highest proportion of residents age 65 and older (10.3%) than the region as a whole. Kings had a higher proportion of adults age 18-64 (65.1%) than the SJV and the state as a whole.

## Table 1 – Demographic Characteristics

| Demographic Characteristics | Fresno | Kings | Madera | Tulare | San Joaquin Valley | California |
|---|---|---|---|---|---|---|
| **Population[1]** | **909,153** | **149,518** | **148,333** | **426,276** | **3,862,937** | **36,756,666** |
| **Population per Square Mile[5]** | 154 | 107 | 70 | 89 | **184** | **237** |
| **% White, non-Hispanic[1]** | 35.4% | 37.4% | 40.3% | 35.8% | **39.2%** | **42.3%** |
| **% Hispanic/Latino[1]** | 48.7% | 49.3% | 50.8% | 57.5% | **47.2%** | **36.6%** |
| **% American Indian[1]** | 2.0% | 2.2% | 3.3% | 1.9% | **2.0%** | **1.2%** |
| **% Asian[1]** | 8.7% | 3.2% | 2.1% | 3.5% | **5.9%** | **12.5%** |
| **% Pacific Islander[1]** | 0.2% | 0.3% | 0.3% | 0.2% | **0.3%** | **0.4%** |
| **% African-American[1]** | 5.8% | 8.3% | 4.5% | 1.9% | **5.1%** | **6.7%** |
| **% Multirace[1]** | 2.1% | 2.0% | 2.2% | 1.7% | **2.4%** | **2.6%** |
| **% 0-17 Years[2]** | 29.8% | 27.2% | 35.4% | 31.8% | **30.3%** | **25.5%** |
| **% 18-64 Years[2]** | 60.3% | 65.1% | 55.8% | 58.6% | **59.0%** | **63.3%** |
| **% Over 65 years[2]** | 9.9% | 7.7% | 8.8% | 9.6% | **9.5%** | **11.2%** |
| **Per Capita Personal Income[3]** | $30,997 | $26,734 | $26,524 | $28,610 | **$29,227** | **$42,325** |
| **% 25 years without High School Diploma[1]** | 26.8% | 30.8% | 31.4% | 32.4% | **29.3%** | **19.7%** |
| **Annual Unemployment Rate[4]** | 15.1% | 14.6% | 13.8% | 18.4% | **15.6%** | **11.4%** |
| **% of Total Population Below 100% of FPL[2]** | 24.0% | 23.9% | 19.2% | 25.8% | **21.4%** | **15.7%** |
| **% of Children Under 18, in Families with Income Below 100% of the FPL[2]** | 31.4% | 34.8% | 34.8% | 36.4% | **29.9%** | **20.5%** |

*Sources for Table 1:*

1. *U.S. Census Bureau. American Community Survey 2009.*
2. *UCLA Center for Health Policy Research, 2007.*
3. *U.S. Bureau of Economic Analysis, 2008.*
4. *California Employment Development Department, Labor Market Information Division, 2009.*
5. *US Census Bureau. Population Finder 2009.*

**Ethnic Background**

Hispanic/Latino residents were the largest ethnic group in the San Joaquin Valley in 2009, representing 47.2% of the entire population. Following Hispanic/Latino residents were white, non-Hispanic residents, comprising 39.2% of all residents in the region. At 39.2%, the Valley had a lower proportion of non-Hispanic whites than California as a whole.

The next largest ethnic group was Asian, estimated at 5.9%, less than the 12.5% state figures. African-Americans followed with 5.1%, American Indian 2.0%, multiracial population 2.4%, and Pacific Islander at 0.3% [U.S. Census Bureau, American Community Survey, 2009].

In 2009, Fresno, Kings and Madera had higher percentages of Latino residents (48.7%, 49.3% and 50.8%, respectively) than the state (36.6%). The percentage of African-Americans in Kings County was higher (8.3%) than the remaining SJV counties (5.1%) and the state (6.7%). Fresno County had a higher proportion of Asian residents (8.7%) than the SJV (5.9%), but still lower than the statewide percentage of 12.5%.

Despite the overall lower percentage of Asian residents, the Central Valley has the largest concentration of Laotian and Hmong refugees in the United States [The California Endowment, 2002]. In 2000, residents of the SJV represented more than 70 ethnicities and spoke approximately 105 languages, making the region among the most culturally diverse in California and the nation.

**The Economy**

Today, the San Joaquin Valley is still one of the least affluent areas of California. Per capita income is well below the national average, and poverty in both urban and rural areas is a significant problem. Valley residents have among the lowest per capita personal incomes, higher rates of unemployment, and more residents living below the Federal Poverty Level (FPL) than California as a whole.

In 2008, Madera County had the lowest per capita income in the four-county region. Though the Valley as a whole had a higher percentage of residents living below the FPL than the rest of California, Fresno (24.0%), Kings (23.9%), Tulare (25.8), and Madera (19.2%) by far exceed the state percentage of 15.7% [UCLA Center for Health Policy Research, 2007].

All four counties have a higher unemployment rate than the state average (11.4%), with Fresno County having the highest annual unemployment rate at 15.1%. The SJV has an average annual unemployment rate of 15.6% [U.S. Bureau of Economic Analysis, 2009]. Unemployment in the San Joaquin Valley is a chronic problem that has lasted for generations.

**Uninsured adults and children**

Table 2 shows the percentage of children and nonelderly adults who were uninsured for all or part of the year in 2007. In 2007, 23.8% of nonelderly Californians, ages 18-64, or 5,468,000 adults, reported not having health insurance the entire or part of the year prior to being surveyed. In 2009, that percentage escalated to 26% or 5,855,000 adults. The percentage of San Joaquin Valley (eight counties) nonelderly adults who reported not having health insurance for all or part of 2007 was 29.3% (662,000 persons), that percentage remained stable at 29.1 or 674,000 adults in 2009 [UCLA

Center for Health Policy Research, 2003; 2009.] Madera had the highest rate among the four counties with adults uninsured or insured part of the year at 38%.

## Table 2 – % nonelderly adults with no insurance or insured only part of the past year

| STATE/COUNTY | % AGE 0-11 | % AGE 12-17 | % AGE 18-64 |
|---|---|---|---|
| **California** | **9.1** | **9.9** | **23.8** |
| Fresno | 5.4 | 16.2 | 24.7 |
| Kings | 7.5 | 23.8 | 28.0 |
| Madera | 10.4 | 9.6 | 38.0 |
| Tulare | 8.2 | 10.8 | 28.6 |
| SJV | 8.2 | 13.5 | 29.3 |

*Source: California Health Interview Survey 2007*

Table 3 shows California and the four counties insurance status and source of coverage for 2009, also from the CHIS. According to 2009 estimates, the number of residents in all four counties without health insurance exceeded the statewide average of 24.3%.

As in 2007, Madera County had the largest total proportion of uninsured residents, with 32% nonelderly adults uninsured for all or part of the year. The rate of job-based coverage in both Tulare and Madera counties was relatively low, perhaps a reflection of a deteriorating job market and increased unemployment.

## Table 3 – Insurance status and type during the past 12 months by state and county, ages 0-64, ( 2009)

| State/ County | % Job-based Coverage All Year | % Medi-Cal Healthy Families All Year | % Other Coverage All Year | % Uninsured All or Part Year | Total Population |
|---|---|---|---|---|---|
| **California** | **50.1** | **16.3** | **9.3** | **24.3** | **34,387,000** |
| Fresno | 43.2 | 27.6 | 4.8 | 24.4 | 875,000 |
| Tulare | 33.0 | 32.4 | 9.0 | 25.6 | 414,000 |
| Kings | 40.9 | 23.4 | 7.5 | 28.3 | 149,000 |
| Madera | 34.4 | 27.5 | 6.1 | 32.0 | 140,000 |

*Source: Rates are predicted estimates from a simulation model based on the 2007 California Health Interview Survey and 2007/2009 California Employment Development Department data.*

**Prenatal Care**

As shown in Table 4, the percentage of California babies born at low birth weight increased from 6.1% in 1995 to 6.8% in 2009. At the county level, that figure ranged from 5.9% in Tulare County to 7.3% in Fresno County in 2009. None of the four counties met the Healthy People 2010 objective of 5% or fewer low birth weight infants.

California's infant mortality rate declined from 5.9 per 1,000 live births in 1996-98 to 5.2 in 2005-07. The infant mortality rate ranged from 5.4 in Madera County to 6.2 in Fresno County. The most common reasons for infant deaths are congenital defects and disorders related to preterm birth and low birth weight.

In California in 2009, 18.7% of infants were born to mothers who received late or no prenatal care in the first trimester of pregnancy. This figure declined from 1995 to 2003, then increased from 2004 to 2008, and declined again slightly in 2009. At the county level, the percentage of mothers who received no or late prenatal care ranged widely, from 17.3% in Fresno County to 28.9% in Madera County in 2009. None of the four counties met the Healthy People 2010 objective that at least 90% of infants' mothers receive prenatal care beginning in the first trimester.

## Table 4 - Percent low birth weight, preterm birth, late/no prenatal care by county

| STATE/COUNTY | % LOW BIRTH WEIGHT* | % INFANT MORTALITY** | % LATE PRENATAL CARE*** |
|---|---|---|---|
| **California** | **6.8** | **5.2** | **18.7** |
| Fresno | 7.3 | 6.2 | 17.3 |
| Kings | 6.4 | 5.9 | 28.4 |
| Madera | 6.3 | 5.4 | 28.9 |
| Tulare | 5.9 | 5.9 | 24.2 |

*Source: Kidsdata.org*
*Retrieved December 10, 2010, from http://www.kidsdata.org/Data/Topic/Table.aspx?gsa=1&ind=301*
**2009*
***2005-2007*
****2009*

**Health Fitness Zone (HFZ)**

Optimal health for children does not stop at prenatal care. Children are happier and more productive when they are healthy – and physical fitness is vital to overall health. FITNESSGRAM provides accurate and reliable information about a child's level of physical fitness. FITNESSGRAM was developed by The Cooper Institute in an effort to provide physical educators with a tool to facilitate communication of fitness testing results to students and parents.

The assessment measures three components of health-related physical fitness that have been identified as important to overall health and physical fitness:

- Aerobic capacity
- Body composition
- Muscular strength, endurance and flexibility

FITNESSGRAM is based on rock-solid research, and uses criterion-referenced standards, called Health Fitness Zones, to determine students' fitness levels based on what is optimal for good health. These standards are backed by the highly respected FITNESSGRAM Scientific Advisory Board. To learn more about the FITNESSGRAM, visit www.fitnessgram.net.

Table 5 shows the percentage of 5th and 9th grade students who were not in the HFZ, according to a comprehensive battery of tests developed by FITNESSGRAM to test the physical fitness for students in California public schools. Students from Fresno and Tulare show similar HFZ achievement to the California students on all six of the fitness standards. However, the percentage of students from Kings County (especially 5th grade) who did not achieve the HFZ in the fitness standards was much higher than students from California. The percentage of Madera County students for 5th grade was higher than the state on one of the six standards and for the 9th grade was higher than the state on two of the six fitness standards.

## Table 5 – 2008-09 percent of 5th and 9th grade students NOT in Health Fitness Zone

| Physical Fitness Area | California | | Fresno | | Kings | | Madera | | Tulare | |
|---|---|---|---|---|---|---|---|---|---|---|
| **School Grade** | **5th** | **9th** | **5th** | **9th** | **5th** | **9th** | **5th** | **9th** | **5th** | **9th** |
| **Aerobic Capacity** | 34.3 | 37.0 | 32.0 | 39.6 | **46.3** | **41.6** | 34.5 | **43.9** | 37.1 | 32.4 |
| **Body Composition** | 31.6 | 30.2 | 35.4 | 32.0 | **37.0** | 34.3 | **36.2** | **35.4** | 35.4 | 31.0 |
| **Abdominal Strength** | 19.9 | 14.0 | 20.1 | 13.8 | **24.4** | 11.5 | 24.2 | 17.1 | 18.8 | 9.5 |
| **Trunk Extensor Strength** | 11.8 | 9.3 | 11.9 | 8.2 | **19.5** | 10.0 | 12.8 | 9.7 | 8.5 | 6.7 |
| **Upper Body Strength** | 30.2 | 23.2 | 25.6 | 23.8 | **43.0** | 23.1 | 30.7 | 21.1 | 34.5 | 26.8 |
| **Flexibility** | 29.2 | 19.0 | 28.8 | 21.3 | **34.2** | 20.9 | 34.7 | 22.1 | 27.1 | 16.3 |

*Source: California Department of Education- Statewide Assessment Division.*
*Retrieved December 10, 2010, from http://data1.cde.ca.gov/dataquest/*

**Chronic Disease and Risk Behavior**

Table 6 shows state- and county-level data for chronic diseases for ages 18 and above (asthma for ages 0-17 only). With the exception of Tulare County, Fresno, Kings and Madera counties had notably higher percentages for asthma as compared to state as a whole.

The proportion of adults reporting diabetes in the four counties was also higher than California. Fresno, Madera and Tulare counties report higher proportions of high blood pressure than the state, and Madera County had higher percentage of heart disease than the state.

## Table 6 – Percent chronic conditions by age

| Chronic Condition | State/County | % Age 0-17 | % Age 18+ |
|---|---|---|---|
| **Asthma** | **California** | **15.4%** | **13.0%** |
| | Fresno | 19.2% | 18.0% |
| | Kings | 20.0 | 15.2 |
| | Madera | 16.0 | 15.5 |
| | Tulare | 15.6 | 11.9 |
| **Diabetes** | **California** | - | **7.8** |
| | Fresno | - | 10.5 |
| | Kings | - | 10.4 |
| | Madera | - | 8.1 |
| | Tulare | - | 11.3 |
| **Blood Pressure** | **California** | - | **26.1** |
| | Fresno | - | 28.4 |
| | Kings | - | 23.5 |
| | Madera | - | 28.3 |
| | Tulare | - | 27.3 |
| **Heart** | **California** | - | **6.3** |
| | Fresno | - | 6.1 |
| | Kings | - | 5.6 |
| | Madera | - | 8.4 |
| | Tulare | - | 6.5 |

*Source: 2007 California Health Interview Survey*

Table 7 shows state- and county-level data for risk health behavior for adults and seniors. All four counties had higher proportions of obesity and reported more sedentary lifestyles for adults and seniors as compared to the state. The indicator selected for physical activity was use of outdoor public spaces for recreation.

Because the CHIS does not provide indicators of non-leisure time physical activity or other comprehensive measure of physical activity, this variable was selected. Nonetheless, low rates of use of public outdoor space relative to the state as a whole provide clear evidence that many Valley residents are not engaged in active lifestyles. Smoking habits were higher for the state (14.3%) than in Fresno County, but lower than Tulare, Madera, and Kings Counties (15.3%, 16.2%, and 17.3%, respectively).

## Table 7 – Percent risk health behavior by age

| Health Behavior | State/County | % Ages 12-64 | % Ages 65+ |
|---|---|---|---|
| **Overweight or obese** | **California** | 51.4 | 56.3 |
| | Fresno | 57.6 | 66.2 |
| | Kings | 57.1 | 68.7 |
| | Madera | 60.7 | 68.6 |
| | Tulare | 61.1 | 69.5 |
| **Did not visit park or other open space** | **California** | 27.6 | 55.4 |
| | Fresno | 34.6 | 73.8 |
| | Kings | 40.9 | 63.7 |
| | Madera | 38.7 | 71.4 |
| | Tulare | 34.6 | 69.2 |
| **Current smoker** | **California** | 14.3 | 6.4 |
| | Fresno | 10.7 | 5.8 |
| | Kings | 17.3 | 9.8 |
| | Madera | 16.2 | 9.5 |
| | Tulare | 15.3 | 7.8 |

*Source: 2007 California Health Interview Survey*

# Morbidity: Hospitalization Rates

Hospitalization rates represent one of the best indicators of the burden of disease upon a community. Data was obtained from several sources, including Office of Statewide Health Planning and Development (OSHPD), California birth and death records, and census population data.

Hospitalizations, ambulatory care-sensitive hospitalizations, overall mortality, and premature mortality for the four-county area were examined from several perspectives, including comparing the service area to the San Joaquin Valley and California (state-wide), examining temporal trends and racial/ethnic and residence-based inequalities.

Table 8 examines hospitalization rates, a strong indicator of morbidity, because hospital use increases as the total burden of disease on a community increases. Hospitalizations per 100,000 for 2006/2007 for the four-county service area, the eight-county SJV, and California as a whole are compared.

While the overall hospitalization rate in the four-county service area was similar to eight-county SJV and California, there were some notable exceptions. The four-county area has higher hospitalization rates for coronary atherosclerosis, pneumonia, acute bronchitis, birth and pregnancy-related hospitalization, urinary tract infection and appendicitis.

Table 9 examines changes in hospitalization rates between 1999/2000 and 2006/2007. While there was little overall change, notable increases in hospitalization rates were seen for acute renal failure and osteoarthritis. Notable reductions in hospital admissions rates were seen for breast cancer and acute bronchitis.

Table 10 provides disparity findings. Although Latinos face overall similar rates of hospitalization to non-Latinos, there are some notable differences. Non-Latinos are hospitalized at twice the rate or more of Latinos for all cancers except breast cancer, all cardiovascular, and Chronic Obstructive Pulmonary Disease (COPD)**.** Latino children were at higher risk for hospitalizations due to asthma and diabetes, as well as higher rates for acute bronchitis and appendicitis.

Overall, while whites have higher hospitalization rates than African-Americans, there are some notable differences. African-Americans experience hospitalization rates that are double or more than whites for hypertension, asthma for all ages, diabetes, and mental retardation.

Note that the hospitalization data may not offer as strong an indicator of morbidity associated with mental health, alcohol use and mental retardation because most care for these conditions occurs in community settings.

## Table 8

### Hospitalization Rates per 100K

*(2006-2007 Four-County service area compared to the San Joaquin Valley and California)*

| CONDITION | 06/07 Hospitalization Rate Four-County | 06/07 Hospitalization Rate SJV | 06/07 Hospitalization Rate* Four-County vs. SJV *(CI - 95% )* | 06/07 Hospitali-zation Rate California | 06/07 Hospitalization Rate Four-County vs. California *(CI- 95% )* |
|---|---|---|---|---|---|
| **All Cancer** | 421.0 | 447.8 | 0.94 *(0.92 - 0.96)* | 465.2 | 0.91 (0.89 - 0.92) |
| Lung Cancer | 25.8 | 28.0 | 0.92 *(0.86 - 0.99)* | 30.6 | 0.85 (0.79 - 0.91) |
| Breast Cancer | 25.6 | 24.7 | 1.04 *(0.97 - 1.11)* | 28.1 | 0.91 (0.85 - 0.98) |
| Colon, Rectum, Anal Cancer | 33.1 | 33.1 | 1.00 *(0.94 - 1.06)* | 38.6 | 0.86 (0.81 - 0.91) |
| **All Cardiovascular** | 1,273.8 | 1,310.6 | 0.97 *(0.96 - 0.98)* | 1,230.7 | 1.04 (1.02 - 1.05) |
| Acute myocardial infarction | 151.9 | 152.9 | 0.99 *(0.97 - 1.02)* | 146.6 | 1.04 (1.01 - 1.07) |
| Heart failure | 223.9 | 252.5 | 0.89 *(0.87 - 0.91)* | 229.2 | 0.98 (0.95 - 1.00) |
| Coronary Atherosclerosis | 278.0 | 259.4 | 1.07 *(1.05 - 1.09)* | 196.1 | 1.42 (1.39 - 1.45) |
| Hypertension | 55.0 | 56.3 | 0.98 *(0.93 - 1.02)* | 70.6 | 0.78 (0.74 - 0.82) |
| **All Respiratory** | 779.7 | 850.6 | 0.92 *(0.91 - 0.93)* | 661.4 | 1.18 (1.16 - 1.19) |
| Asthma All Age | 101.1 | 101.3 | 1.00 *(0.96 - 1.03)* | 85.7 | 1.18 (1.14 - 1.22) |
| Asthma 0-19 | 108.5 | 90.2 | 1.20 *(1.14 - 1.27)* | | |
| Pneumonia | 315.8 | 340.6 | 0.93 *(0.91 - 0.95)* | 257.8 | 1.22 (1.20 - 1.25) |
| COPD | 99.4 | 119.8 | 0.83 *(0.80 - 0.86)* | 105.4 | 0.94 (0.91 - 0.98) |
| Acute Bronchitis | 56.9 | 62.1 | 0.92 *(0.87 - 0.96)* | 35.8 | 1.59 (1.52 - 1.66) |
| **All Mental Disorders** | 325.1 | 388.3 | 0.84 *(0.82 - 0.85)* | | |
| Mental Retardation | 249.6 | 294.9 | 0.85 *(0.83 - 0.87)* | 402.6 | 0.62 (0.61 - 0.63) |
| Alcohol-Related Mental | 75.6 | 93.4 | 0.81 *(0.78 - 0.84)* | | |
| **Diabetes All Age** | 132.4 | 144.5 | 0.92 *(0.89 - 0.94)* | 138.0 | 0.96 (0.93 - 0.99) |
| Diabetes 0-19 | 17.1 | 21.0 | 0.82 *(0.70 - 0.94)* | | |
| **Birth & Pregnancy Related** | 3,990.2 | 3,919.7 | 1.02 *(1.01 - 1.02)* | 1,565.0 | 2.55 (2.54 - 2.56) |
| **Injury & Poisoning Accidents** | 713.6 | 783.6 | 0.91 *(0.90 - 0.92)* | 788.9 | 0.90 (0.89 - 0.92) |
| **Other Conditions** | | | | | |
| Urinary Tract Infection | 150.9 | 141.1 | 1.07 *(1.04 - 1.10)* | 115.2 | 1.31 (1.27 - 1.35) |
| Acute Renal Failure | 92.5 | 98.1 | 0.94 *(0.91 - 0.98)* | 82.8 | 1.12 (1.08 - 1.16) |
| Appendicitis | 111.0 | 119.7 | 0.93 *(0.90 - 0.96)* | 94.2 | 1.18 (1.14 - 1.22) |
| Pancreatic Disorders | 83.6 | 93.8 | 0.89 *(0.86 - 0.93)* | 80.5 | 1.04 (1.00 - 1.08) |
| Osteoarthritis | 170.5 | 176.6 | 0.97 *(0.94 - 0.99)* | 181.0 | 0.94 (0.92 - 0.97) |
| **All Hospitalizations** | 10,835.0 | 11,237.5 | 0.96 *(0.96 - 0.97)* | 10,612.8 | 1.02 (1.02 - 1.02) |
| **Ambulatory Care Sensitive Admissions** | 949.1 | 995.6 | 0.95 *(0.94 - 0.96)* | | |

*Source: Central Valley Health Policy Institute. California State University Fresno (2010)*

**A rate of 1.00 = no difference; < 1.00 = lower than; > 1.00 = higher than*

## Table 9

### Hospitalization Rates per 100K

*(Four-County Area vs. California Comparison by Year 99/00 to 06/07)*

| CONDITION | 99/00 Hosp Rate Four-County | 06/07 Hosp Rate Four-County | Four-County Hospitalization Rate* 06/07 vs. 99/00 *(CI 95%)* | 99/00 Hosp Rate California | 06/07 Hosp Rate California | California Hospitalization Rate 06/07 vs. 99/00 *(CI 95%)* |
|---|---|---|---|---|---|---|
| **All Cancer** | 463.3 | 421.0 | 0.91 *(0.89 - 0.92)* | 473.2 | 465.2 | 0.98 (0.98 - 0.99) |
| Lung Cancer | 29.8 | 25.8 | 0.87 *(0.81 - 0.93)* | 40.5 | 30.6 | 0.75 (0.74 - 0.77) |
| Breast Cancer | 39.4 | 25.6 | 0.65 *(0.61 - 0.70)* | 34.0 | 28.1 | 0.83 (0.81 - 0.84) |
| Colon, Rectum, Anal Cancer | 36.9 | 33.1 | 0.90 *(0.84 - 0.95)* | 46.0 | 38.6 | 0.84 (0.83 - 0.85) |
| **All Cardiovascular** | 1,320.6 | 1,273.8 | 0.96 *(0.96 - 0.97)* | 1,376.0 | 1,230.7 | 0.89 (0.89 - 0.90) |
| Acute myocardial infarction | 187.6 | 151.9 | 0.81 *(0.79 - 0.83)* | 190.9 | 146.6 | 0.77 (0.76 - 0.77) |
| Heart Failure | 231.7 | 223.9 | 0.97 *(0.94 - 0.99)* | 249.8 | 229.2 | 0.92 (0.91 - 0.92) |
| Coronary Atherosclerosis | 323.4 | 278.0 | 0.86 *(0.84 - 0.88)* | 276.3 | 196.1 | 0.71 (0.70 - 0.71) |
| Hypertension | 70.7 | 55.0 | 0.78 *(0.74 - 0.82)* | 89.7 | 70.6 | 0.79 (0.78 - 0.80) |
| **All Respiratory** | 932.2 | 779.7 | 0.84 *(0.83 - 0.85)* | 931.0 | 661.4 | 0.71 (0.71 - 0.71) |
| Asthma All Age | 115.6 | 101.1 | 0.87 *(0.84 - 0.91)* | 119.5 | 85.7 | 0.72 (0.71 - 0.73) |
| Asthma 0-19 | 173.8 | 108.5 | 0.62 *(0.59 - 0.66)* | | | |
| Pneumonia | 389.1 | 315.8 | 0.81 *(0.80 - 0.83)* | 396.6 | 257.8 | 0.65 (0.65 - 0.65) |
| COPD | 138.3 | 99.4 | 0.72 *(0.69 - 0.74)* | 171.7 | 105.4 | 0.61 (0.61 - 0.62) |
| Acute Bronchitis | 92.4 | 56.9 | 0.62 *(0.59 - 0.65)* | 66.4 | 35.8 | 0.54 (0.53 - 0.55) |
| **All Mental Disorders** | 347.8 | 325.1 | 0.94 *(0.92 - 0.95)* | | | |
| Mental Retardation | 246.4 | 249.6 | 1.01 *(0.99 - 1.04)* | 422.0 | 402.6 | 0.95 (0.95 - 0.96) |
| Alcohol Related Mental | 101.4 | 75.6 | 0.75 *(0.72 - 0.78)* | | | |
| **Diabetes All Age** | 124.4 | 132.4 | 1.06 *(1.03 - 1.10)* | 132.5 | 138.0 | 1.04 (1.03 - 1.05) |
| Diabetes 0-19 | 17.9 | 17.1 | 0.96 *(0.82 - 1.10)* | | | |
| **Birth & Pregnancy Related** | 3,748.6 | 3,990.2 | 1.06 *(1.06 -1.07)* | 1,445.0 | 1,565.0 | 1.08 (1.08 - 1.09) |
| **Injury & Poisoning Accidents** | 755.9 | 713.6 | 0.94 *(0.93 - 0.96)* | 842.0 | 788.9 | 0.94 (0.93 - 0.94) |
| **Other Conditions** | | | | | | |
| Urinary Tract Infection | 125.6 | 150.9 | 1.20 *(1.17 - 1.24)* | 131.2 | 115.2 | 0.88 (0.87 - 0.89) |
| Acute Renal Failure | 42.2 | 92.5 | 2.19 *(2.11 - 2.27)* | 35.9 | 82.8 | 2.31 (2.28 - 2.33) |
| Appendicitis | 109.9 | 111.0 | 1.01 *(0.98 - 1.04)* | 96.6 | 94.2 | 0.98 (0.97 - 0.99) |
| Pancreatic Disorders | 77.2 | 83.6 | 1.08 *(1.04 - 1.12)* | 69.9 | 80.5 | 1.15 (1.14 -1.17) |
| Osteoarthritis | 126.7 | 170.5 | 1.35 *(1.31 - 1.38)* | 131.7 | 181.0 | 1.37 (1.36 - 1.38) |
| **All Hospitalizations** | 10,764.3 | 10,835.0 | 1.01 *(1.00 - 1.01)* | 11,286.3 | 10,612.8 | 0.94 (0.94 - 0.94) |
| **Ambulatory Care Sensitive Admissions** | 1220.8 | 949.1 | 0.78 *(0.77 - 0.79)* | | | |

*Source: Central Valley Health Policy Institute. California State University Fresno (2010)*

**A rate of 1.00 = no difference; < 1.00 = lower than; > 1.00 = higher than*

## Table 10

### Hospitalizations per 100K Population
*(06/07 Hospitalization Rates Race Comparison)*

| CONDITION | Raw Count Non-Hispanic Hosp Rates Four-County | 06/07 Hospitalization Rate* Non-Hispanics vs. Hispanics *(CI 95%)* | Raw Count White Hosp Four-County | 06/07 Hospitalization Rate White vs. Blacks *(CI 95%)* |
|---|---|---|---|---|
| **All Cancer** | 3,397 | 0.42 *(0.41 - 0.43)* | 8,654 | 1.23 *(1.20 - 1.25)* |
| Lung Cancer | 89 | 0.14 *(0.11 - 0.17)* | 592 | 1.09 *(1.00 - 1.18)* |
| Breast Cancer | 269 | 1.37 *(1.21 - 1.55)* | 568 | 1.37 *(1.26 - 1.49)* |
| Colon, Rectum, Anal Cancer | 375 | 0.48 *(0.43 - 0.53)* | 757 | 1.83 *(1.70 - 1.96)* |
| **All Cardiovascular** | 14,902 | 0.56 *(0.55 - 0.57)* | 27,432 | 1.11 *(1.09 - 1.12)* |
| Acute myocardial infarction | 1,702 | 0.53 *(0.50 - 0.55)* | 3,305 | 1.59 *(1.53 - 1.64)* |
| Heart failure | 2,532 | 0.53 *(0.51 - 0.55)* | 4,746 | 0.71 *(0.69 - 0.73)* |
| Coronary Atherosclerosis | 3,147 | 0.553 *(0.52 - 0.55)* | 6,143 | 1.79 *(1.74 - 1.83)* |
| Hypertension | 807 | 0.83 *(0.77 - 0.88)* | 906 | 0.42 *(0.39 - 0.45)* |
| **All Respiratory** | 10,873 | 0.75 *(0.74 - 0.77)* | 17,031 | 1.10 *(1.09 - 1.12)* |
| Asthma All Age | 1,693 | 1.07 *(1.02 - 1.12)* | 1,966 | 0.50 *(0.47 - 0.52)* |
| Asthma 0-19 | 745 | 2.57 *(2.39 - 2.76)* | 795 | 0.62 *(0.58 - 0.66)* |
| Pneumonia | 4,371 | 0.74 *(0.72 - 0.77)* | 6,959 | 1.35 *(1.32 - 1.38)* |
| COPD | 806 | 0.33 *(0.31 - 0.35)* | 2,473 | 1.38 *(1.33 - 1.44)* |
| Acute Bronchitis | 1,301 | 2.43 *(2.30 - 2.56)* | 1,219 | 2.06 *(1.95 - 2.18)* |
| **All Mental Disorders** | 4,906 | 0.87 *(0.85 - 0.89)* | 4,962 | 0.64 *(0.62 - 0.66)* |
| Mental Retardation | 3,695 | 0.84 *(0.81 - 0.87)* | 3,616 | 0.56 *(0.54 - 0.58)* |
| Alcohol Related Mental | 1,211 | 0.98 *(0.92 - 1.03)* | 1,346 | 1.03 *(0.97 - 1.08)* |
| **Diabetes All Age** | 2,322 | 1.18 *(1.13 - 1.23)* | 2,327 | 0.64 *(0.61 - 0.66)* |
| Diabetes 0-19 | 101 | 1.77 *(1.44 - 2.15)* | 98 | 1.32 *(1.07 - 1.60)* |
| **Birth & Pregnancy Related** | 85,436 | 1.97 *(1.95 - 1.98)* | 67,095 | 1.31 *(1.30 - 1.32)* |
| **Injury & Poisoning Accidents** | 10,206 | 0.79 *(0.77 - 0.80)* | 13,821 | 1.39 *(1.36 - 1.41)* |
| **Other Conditions** | | | | |
| Urinary Tract Infection | 2,098 | 0.75 *(0.72 - 0.78)* | 3,347 | 1.47 *(1.42 - 1.52)* |
| Acute Renal Failure | 1,104 | 0.58 *(0.55 - 0.61)* | 1,959 | 0.82 *(0.79 - 0.86)* |
| Appendicitis | 2,356 | 1.92 *(1.84 - 2.00)* | 1,965 | 2.92 *(2.79 - 3.05)* |
| Pancreatic Disorders | 1,606 | 1.12 *(1.07 - 1.18)* | 1,786 | 1.16 *(1.11 - 1.22)* |
| Osteoarthritis | 1,686 | 0.44 *(0.42 - 0.46)* | 4,144 | 3.05 *(2.96 - 3.14)* |
| **All Hospitalizations** | 18,0518 | 1.06 *(1.05 - 1.06)* | 20,6886 | 1.22 *(1.22 - 1.23)* |
| **Ambulatory Care Sensitive Admissions** | 9,896 | 0.51 *(0.50 - 0.52)* | 21,002 | 0.85 *(0.84 - 0.86)* |

*Source: Central Valley Health Policy Institute. California State University Fresno (2010)*

**A rate of 1.00 = no difference; < 1.00 = Hispanics/Blacks have lower rates; > 1.00 = Hispanics/Blacks have higher rates*

## Morbidity: Avoidable Hospitalizations

Table 11 also presents data on ambulatory care-sensitive condition hospitalizations – so-called "avoidable hospitalizations" – that provide an indicator of the performance of the health system in managing health conditions through primary care. These measures have been developed over many years by the Agency for Healthcare Research and Quality (AHRQ) in collaboration with California and other states. Data is presented on the Ambulatory Sensitive Conditions (ASCs) hospitalizations for which there was comparable California data only.

As Table 11 indicates, the four-county area has generally higher rates for these avoidable hospitalizations than the state. The four-county area rates were higher than California in 2006/2007 for nine of 12 indicators, and most notably for amputations of lower extremities (69%), diabetes short-term complications (54%), angina without procedure (46%), chronic obstructive pulmonary disease – COPD (40%), congestive heart failure (35%), and diabetes long-term complications (35%) for example, that the long-likelihood of being hospitalized for COPD was 40% higher in the four counties than in California as a whole. Avoidable hospitalization rates in the four counties were lower than California for four conditions: dehydration (12%), hypertension (12%), urinary tract infections – UTI (1%), and low birth weight (5%).

### Table 11

**Prevention Quality Indicators (PQI) [1] Hospitalization Age-Adjusted Rates per 100K Population -- Four-County Service Area**

| Avoid Hosp CA ACSC List | 2007 CA Hospitalization Rate | 06/07 Four-County ZIP Codes Hospitalization Rate | Four-County ZIP Codes vs. CA Rate Ratio (CI -95%) |
|---|---|---|---|
| Hypertension | 24.37 | 21.32 | 0.88 (0.80 - .96) |
| Congestive Heart Failure | 225.59 | 307.43 | 1.36 (1.33 -1.40) |
| Adult Asthma | 55.71 | 73.33 | 1.32 (1.25 -1.38) |
| Bacterial Pneumonia | 185.86 | 205.12 | 1.10 (1.08 -1.13) |
| COPD | 79.39 | 111.04 | 1.40 (1.34 -1.46) |
| Urinary Tract Infection | 106.18 | 105.21 | 0.99 (0.96 -1.02) |
| Lower Extremity Amputation | 21.02 | 35.48 | 1.69 (1.57 -1.81) |
| Low Birth Weight | 76.64 | 73.00 | 0.95 (0.91 -1.00) |
| Angina without procedure | 20.9 | 30.44 | 1.46 (1.35 -1.57 ) |
| Dehydration | 52.58 | 46.39 | 0.88 (0.84 -.93) |
| Perforated Appendix | 21.88 | 25.08 | 1.15 (1.05 -1.25) |
| Diabetes short-term complications | 33.33 | 51.29 | 1.54 (1.45 -1.63) |
| Diabetes long-term complications | 78.91 | 106.15 | 1.35 (1.29 -1.40) |

*Source: Central Valley Health Policy Institute. California State University Fresno (2010)*
**A rate of 1.00 = no difference; < 1.00 = lower rates; >1.00 = higher rates*

Table 12 examines changes in adjusted death rates per 100,000 between 1999/2000 and 2006/2007 for the four-county area and for California as a whole. While overall age-adjusted death rates declined in the four counties and in the state, several causes of death showed increases, including homicide, suicide, Alzheimer's disease and diabetes. Compared to California as a whole, the four-county area experienced slightly less improvement for lung, breast cancer, colon and other cancers.

## Table 12

### Mortality – Age-Adjusted Death Rates (AADR) per 100K Population

*(06/07 AADR Four-county service area compared to the San Joaquin Valley and California)*

| CONDITION | 06/07 AADR Four- County Area | 06/07 AADR SJV | 06/07 AADR Rate* Four-County Area vs. SJV *(CI 95%)* | 06/07 AADR California | 06/07 AADR Four-County Area vs. California *(CI 95%)* |
|---|---|---|---|---|---|
| **All Cancer** | 170.2 | 176.1 | 0.97 *(0.94 - 1.00)* | 166.4 | 1.02 *(0.99 - 1.05)* |
| Lung Cancer | 42.5 | 46.1 | 0.92 *(0.87 - 0.98)* | 40.6 | 1.05 *(0.98 - 1.11)* |
| Breast Cancer | 11.6 | 12.5 | 0.93 *(0.82 - 1.04)* | 12.2 | 0.95 *(0.84 - 1.06)* |
| Colon, Rectum, Anal Cancer | 14.9 | 15.5 | 0.96 *(0.86 - 1.06)* | 15.1 | 0.98 *(0.89 - 1.09)* |
| **All Cardiovascular** | 200.5 | 219.8 | 0.91 *(0.89 - 0.94)* | 177.6 | 1.13 *(1.10 - 1.16)* |
| Acute myocardial infarction | 42.4 | 43.9 | 0.97 *(0.91 - 1.02)* | 35.7 | 1.19 *(1.12 - 1.26)* |
| Heart failure | 18.6 | 16.8 | 1.11 *(1.02 - 1.21)* | 12.2 | 1.53 *(1.40 - 1.67)* |
| Atherosclerotic Cardiovascular Disease | 13.0 | 20.0 | 0.65 *(0.58 - 0.72)* | 21.1 | 0.61 *(0.55 - 0.68)* |
| **Injury and Violence** | | | | | |
| Homicide | 7.6 | 7.1 | 1.08 *(0.95 - 1.22)* | 6.4 | 1.19 *(1.05 - 1.35)* |
| Suicide | 10.5 | 10.0 | 1.05 *(0.94 - 1.17)* | 9.3 | 1.13 *(1.01 - 1.26)* |
| MVA | 21.0 | 19.5 | 1.08 *(1.00 - 1.16)* | 11.1 | 1.89 *(1.75 - 2.05)* |
| **All Respiratory** | 78.7 | 83.7 | 0.94 *(0.90 - 0.98)* | 66.1 | 1.19 *(1.14 - 1.24)* |
| Pneumonia | 21.2 | 20.7 | 1.02 *(0.94 - 1.11)* | 19.0 | 1.11 *(1.02 - 1.21)* |
| **Alzheimer's Disease** | 19.6 | 22.8 | 0.86 *(0.79 - 0.93)* | 22.2 | 0.88 *(0.81 - 0.96)* |
| **Diabetes** | 32.9 | 31.8 | 1.04 *(0.97 - 1.11)* | 21.9 | 1.50 *(1.40 - 1.61)* |
| **All Deaths** | 1062.1 | 793.2 | 1.34 *(1.32 - 1.36)* | 664.1 | 1.60 *(1.58 - 1.62)* |

*Source: Central Valley Health Policy Institute. California State University Fresno (2010)*

**A rate of 1.00 = no difference; < 1.00 = lower than; > 1.00 = higher than*

Table 13 examines age-adjusted death rates per 100,000 for 2006/2007 for selected leading causes of death in the four-county area, the eight San Joaquin Valley counties, and California. The four counties show lower age-adjusted death rates for all cancers, all cardiovascular conditions (except for heart failure), and Alzheimer's disease than the SJV. The four-county area was higher than the San Joaquin Valley as a whole (34%) and notably higher (60%) than California for all causes of death. The four counties were lower than California for breast, colon, rectum and anal cancer, atherosclerotic cardiovascular disease, and Alzheimer's disease.

## Table 13

### Mortality – Age-Adjusted Death Rates (AADR) per 100K Population

*(AADR Four-County and California Comparison by Year 1999/2000 to 2006/2007)*

| CONDITION | 99/00 AADR Four-County | 06/07 AADR Four-County | *Four-County AADR Rate 06/07 vs. 99/00 (CI - 95%)* | 99/00 AADR California | 06/07 AADR California | *California AADR Rate 06/07 Compared to 99/00 (95% Lower CI - 95% Upper)* |
|---|---|---|---|---|---|---|
| **All Cancer** | 188.4 | 170.2 | 0.90 *(0.88 - 0.93)* | 187.1 | 166.4 | 0.89 (0.88 - 0.89) |
| Lung Cancer | 49.0 | 42.5 | 0.87 *(0.81 - 0.92)* | 48.6 | 40.6 | 0.84 (0.83 - 0.85) |
| Breast Cancer | 12.6 | 11.6 | 0.92 *(0.82 - 1.03)* | 14.1 | 12.2 | 0.87 (0.85 - 0.88) |
| Colon, Rectum, Anal Cancer | 17.2 | 14.9 | 0.87 *(0.78 - 0.96)* | 17.8 | 15.1 | 0.85 (0.83 - 0.86) |
| **All Cardiovascular** | 243.5 | 200.5 | 0.82 *(0.80 - 0.85)* | 227.3 | 177.6 | 0.78 (0.78 - 0.79) |
| Acute myocardial infarction | 69.6 | 42.4 | 0.61 *(0.57 - 0.65)* | 56.0 | 35.7 | 0.64 (0.63 - 0.65) |
| Heart failure | 18.5 | 18.6 | 1.01 *(0.92 - 1.10)* | 9.9 | 12.2 | 1.23 (1.21 - 1.26) |
| Atherosclerotic Cardiovascular Disease | 19.3 | 13.0 | 0.67 *(0.60 - 0.75)* | 28.8 | 21.1 | 0.73 (0.72 - 0.74) |
| **Injury and Violence** | | | | | | |
| Homicide | 4.6 | 7.6 | 1.67 *(1.47 - 1.89)* | 5.8 | 6.4 | 1.10 (1.07 - 1.14) |
| Suicide | 8.9 | 10.5 | 1.18 *(1.05 - 1.32)* | 9.5 | 9.3 | 0.98 (0.96 - 1.00) |
| MVA | 19.7 | 21.0 | 1.07 *(0.99 - 1.15)* | 9.5 | 11.1 | 1.17 (1.14 - 1.19) |
| **All Respiratory** | 86.0 | 78.7 | 0.92 *(0.88 - 0.96)* | 80.3 | 66.1 | 0.82 (0.82 - 0.83) |
| Pneumonia | 22.6 | 21.2 | 0.94 *(0.86 - 1.02)* | 25.5 | 19.0 | 0.75 (0.73 - 0.76) |
| **Alzheimer's Disease** | 12.7 | 19.6 | 1.54 *(1.42 - 1.68)* | 13.1 | 22.2 | 1.69 (1.67 - 1.72) |
| **Diabetes** | 33.4 | 32.9 | 0.99 *(0.92 - 1.06)* | 21.0 | 21.9 | 1.04 (1.03 - 1.06) |
| **All Deaths** | 1136.1 | 1062.1 | 0.93 *(0.92 - 0.95)* | 751.7 | 664.1 | 0.88 (0.88 - 0.89) |

*Source: Central Valley Health Policy Institute. California State University Fresno (2010)*

**A rate of 1.00 = no difference; < 1.00 = lower than; > 1.00 = higher than*

Table 14 examines racial/ethnic and place disparities in age-adjusted death rates. Overall, non-Latinos experience higher death rates (43% higher) and experience notably higher rates for cancers and cardiovascular conditions. Latinos face higher age-adjusted death rates for homicide, motor vehicle accidents and diabetes. Age-adjusted death rates for African-Americans compared to whites are also shown. Overall, African-Americans face slightly higher age-adjusted death rate compared to whites (3% higher), mostly linked to higher deaths for cardiovascular conditions and homicide.

## Table 14

### Mortality – Age-Adjusted Death Rates (AADR) per 100K Population

*(06/07 AADR Race Comparison)*

| CONDITION | 06/07 Raw Death Counts Non-Hispanic | 06/07 AADR Ratio Non-Hispanic vs. Hispanic (CI - 95%) | 06/07 Raw Death Counts Whites | 06/07 AADR Ratio Whites vs. Blacks (CI - 95%) |
|---|---|---|---|---|
| **All Cancer** | 3,378 | 1.50 *(1.45 - 1.55)* | 3,885 | 1.00 (0.97 - 1.04) |
| Lung Cancer | 910 | 2.69 *(2.52 - 2.87)* | 932 | 0.93 (0.87 - 0.99) |
| Breast Cancer | 235 | 1.53 *(1.34 - 1.74)* | 277 | 0.80 (0.71 - 0.91) |
| Colon, Rectum, Anal Cancer | 281 | 1.24 *(1.10 - 1.40)* | 339 | 1.18 (1.06 - 1.31) |
| **All Cardiovascular** | 4,420 | 1.57 *(1.53 - 1.62)* | 4,834 | 0.80 (0.78 - 0.83) |
| Acute myocardial infarction | 927 | 1.63 *(1.53 - 1.74)* | 1,011 | 0.94 (0.88 - 1.00) |
| Heart failure | 418 | 1.49 *(1.35 - 1.64)* | 459 | 0.55 (0.50 - 0.61) |
| Atherosclerotic Cardiovascular Disease | 263 | 1.45 *(1.28 - 1.63)* | 286 | 0.59 (0.52 - 0.66) |
| **Injury and Violence** | | | | |
| Homicide | 102 | 0.75 *(0.61 - 0.91)* | 195 | 0.41 (0.35 - 0.47) |
| Suicide | 235 | 2.69 *(2.36 - 3.06)* | 277 | 1.85 (1.64 - 2.08) |
| MVA | 264 | 0.64 *(0.57 - 0.73)* | 587 | 3.64 (3.35 - 3.95) |
| **All Respiratory** | 1,706 | 1.93 *(1.84 - 2.02)* | 1,839 | 1.60 (1.53 - 1.68) |
| Pneumonia | 452 | 1.27 *(1.16 - 1.40)* | 500 | 1.10 (1.01 - 1.21) |
| **Alzheimer's Disease** | 504 | 2.37 *(2.17 - 2.59)* | 536 | 1.16 (1.06 - 1.26) |
| **Diabetes** | 498 | 0.61 *(0.56 - 0.67)* | 695 | 0.71 (0.66 - 0.77) |
| **All Deaths** | 15,709 | 1.43 *(1.41 - 1.45)* | 18,565 | 0.97 (0.96 - 0.98) |

*Source: Central Valley Health Policy Institute. California State University Fresno (2010)*

**A rate of 1.00 = no difference; < 1.00 = Hispanics/Blacks have lower rates; >1.00 = Hispanics/Blacks have higher rates*

**Years of potential life lost** (**YPLL**), sometimes referred to as **potential years of life lost** (**PYLL**), is an estimate of the average years a person would have lived if he or she had not died prematurely (before age 65). It is, therefore, a measure of premature mortality. As a method, it is an alternative to death rates which gives more weight to deaths that occur among younger people. Table 15 examines change in years of potential life lost (YPLL) before age 65 between 1999/2000 and 2006/2007 for the four-county area and compares the region to the SJV and to California for the same period of time. Attention to early deaths offers another perspective on the burden of disease on the region's residents. While the four-county area experienced an approximate 7% increase in productive years lost, the state experienced a 5% reduction in these early deaths. Further, the four-county service area experienced greater increase over this period than did California in YPPLs associated with colon, rectum, and anal cancers, heart failure, homicide, suicide, all respiratory conditions including pneumonia, Alzheimer's disease, and diabetes.

## Table 15

**Years of Potential Life Lost (YPLL) per 10K Population**
*(06/07 YPLL Four-county area compared to the San Joaquin Valley and California)*

| CONDITION | 06/07 YPLL Four-County | 06/07 YPLL SJV | 06/07 YPLL* Four-County Area vs. SJV *(CI- 95% )* | 06/07 YPLL CA | 06/07 YPLL Four-County Area vs CA *(95% Lower CI - 85% Upper CI)* |
|---|---|---|---|---|---|
| **All Cancer** | 54.1 | 56.0 | 0.96 *(0.95 - 0.98)* | 54.5 | 0.99 *(0.98 - 1.01)* |
| Lung Cancer | 6.7 | 7.8 | 0.86 *(0.82 - 0.90)* | 7.3 | 0.91 *(0.88 - 0.95)* |
| Breast Cancer | 5.5 | 6.0 | 0.92 *(0.87 - 0.96)* | 6.1 | 0.89 *(0.85 - 0.94)* |
| Colon, Rectum, Anal Cancer | 4.4 | 4.4 | 0.99 *(0.93 - 1.04)* | 4.4 | 1.00 *(0.95 - 1.05)* |
| **All Cardiovascular** | 35.5 | 39.5 | 0.90 *(0.88 - 0.92)* | 34.5 | 1.03 *(1.01 - 1.05)* |
| Acute myocardial infarction | 7.6 | 7.5 | 1.02 *(0.98 - 1.06)* | 5.5 | 1.38 *(1.33 - 1.44)* |
| Heart failure | 1.3 | 1.3 | 1.03 *(0.93 - 1.13)* | 0.9 | 1.52 *(1.37 - 1.67)* |
| Atherosclerotic Cardiovascular Disease | 3.1 | 5.1 | 0.61 *(0.57 - 0.65)* | 5.2 | 0.59 *(0.56 - 0.63)* |
| **Injury and Violence** | | | | | |
| Homicide | 25.9 | 25.8 | 1.00 *(0.98 - 1.02)* | 22.7 | 1.14 *(1.12 - 1.17)* |
| Suicide | 20.7 | 19.5 | 1.06 *(1.04 - 1.09)* | 17.5 | 1.18 *(1.16 - 1.21)* |
| MVA | 59.1 | 54.9 | 1.08 *(1.06 - 1.09)* | 29.7 | 1.99 *(1.96 - 2.02)* |
| **All Respiratory** | 17.4 | 17.0 | 1.02 *(0.99 - 1.05)* | 9.7 | 1.80 *(1.75 - 1.85)* |
| Pneumonia | 5.5 | 5.2 | 1.06 *(1.01 - 1.11)* | 2.7 | 2.07 *(1.98 - 2.17)* |
| **Alzheimer's Disease** | 0.3 | 0.2 | 1.70 *(1.36 - 2.09)* | 0.1 | 1.92 *(1.54 - 2.37)* |
| **Diabetes** | 8.7 | 8.5 | 1.03 *(0.99 - 1.07)* | 6.2 | 1.41 *(1.36 - 1.46)* |
| **All Deaths** | 419.9 | 420.4 | 1.00 *(0.99 - 1.00)* | 320.6 | 1.31 *(1.30 - 1.32)* |

*Source: Central Valley Health Policy Institute. California State University Fresno (2010)*
**A rate of 1.00 = no difference; < 1.00 = lower rates; > 1.00 = higher rates*

Table 16 compares YPPLs/10,000 in the four-county area to the San Joaquin Valley and California for 2006/2007. The four-county area and the San Joaquin Valley experience similar rates of early deaths, but these are notably higher (31%) than found in California as a whole. Further, the four-county service area is losing notably more years of life before age 65 than California for all respiratory conditions including pneumonia, motor vehicle accidents, Alzheimer's disease, heart failure, diabetes, and acute myocardial infarction.

## Table 16

### Years of Potential Life Lost (YPLL) per 10K Population

*(YPLL Four-County Area and California Comparison by Year 1999/2000 to 2006/2007)*

| CONDITION | 99/00 YPLL Four-County | 06/07 YPLL Four-County | *Four-County YPLL 06/07 vs.99/00 (CI - 95% )* | 99/00 YPLL CA | 06/07 YPLL CA | *California YPLL 06/07 Compared to 99/00 (95% Lower CI - 95% Upper)* |
|---|---|---|---|---|---|---|
| **All Cancer** | 56.9 | 54.1 | 0.95 (0.94 - 0.96) | 59.5 | 54.5 | 0.92 (0.91 - 0.92) |
| Lung Cancer | 9.2 | 6.7 | 0.72 (0.69 - 0.76) | 9.4 | 7.3 | 0.78 (0.78 - 0.79) |
| Breast Cancer | 5.8 | 5.5 | 0.94 (0.90 - 0.99) | 7.1 | 6.1 | 0.86 (0.85 - 0.87) |
| Colon, Rectum, Anal Cancer | 3.7 | 4.4 | 1.18 (1.11 - 1.24) | 4.3 | 4.4 | 1.02 (1.01 - 1.03) |
| **All Cardiovascular** | 34.7 | 35.5 | 1.02 (1.00 - 1.04) | 37.2 | 34.5 | 0.93 (0.92 - 0.93) |
| Acute myocardial infarction | 10.1 | 7.6 | 0.75 (0.72 - 0.78) | 7.3 | 5.5 | 0.75 (0.74 - 0.76) |
| Heart failure | 0.7 | 1.3 | 1.78 (1.61 - 1.96) | 0.5 | 0.9 | 1.63 (1.59 - 1.68) |
| Atherosclerotic Cardiovascular Disease | 1.6 | 3.1 | 1.99 (1.87 - 2.12) | 4.7 | 5.2 | 1.12 (1.11 - 1.13) |
| **Injury and Violence** | | | | | | |
| Homicide | 16.3 | 25.9 | 1.59 (1.56 - 1.63) | 20.6 | 22.7 | 1.10 (1.10 - 1.11) |
| Suicide | 16.6 | 20.7 | 1.25 (1.22 - 1.28) | 18.0 | 17.5 | 0.98 (0.97 - 0.98) |
| MVA | 51.4 | 59.1 | 1.15 (1.13 - 1.17) | 24.8 | 29.7 | 1.20 (1.19 - 1.20) |
| **All Respiratory** | 14.1 | 17.4 | 1.23 (1.20 - 1.26) | 11.4 | 9.7 | 0.85 (0.84 - 0.85) |
| Pneumonia | 4.4 | 5.5 | 1.25 (1.19 - 1.31) | 3.4 | 2.7 | 0.78 (0.77 - 0.79) |
| **Alzheimer's Disease** | 0.0 | 0.3 | 7.56 (6.04 - 9.33) | 0.1 | 0.1 | 2.01 (1.89 - 2.14) |
| **Diabetes** | 6.0 | 8.7 | 1.46 (1.40 - 1.51) | 5.7 | 6.2 | 1.08 (1.07 -1.09) |
| **All Deaths** | 394.2 | 419.9 | 1.07 (1.06 - 1.07) | 335.4 | 320.6 | 0.95 (0.95 -0.96) |

*Source: Central Valley Health Policy Institute. California State University Fresno (2010)*

**A rate of 1.00 = no difference; < 1.00 = lower rates; > 1.00 = higher rates*

Table 17 examines inequalities by race/ethnicity and place for YPPLs/10,000 in the four-county service area in 2006/2007. Rate ratios are displayed for non-Latinos compared to Latinos, Whites compared to Blacks, and high/low proportions of YPLL rates in the four-county service area. The high/low proportions are a calculation of the highest YPLL rate divided by the lowest YPLL rate within the four-county service area. Although non-Latinos experienced similar age-adjusted death rate than Whites, their YPPL rate was almost identical. For cardiovascular conditions and cancers, non-Latinos have notably higher YPPLs, while Latinos lose more young lives to homicides and motor vehicle accidents. African-Americans also had similar rates of YPLL compared to whites, for most causes of death. African-Americans were notably higher for heart failure, homicide, all cardiovascular diseases, lung cancer, and diabetes. African-Americans are at much lower risk of losing lives before age 65 in motor vehicle accidents.

## Table 17

**Years of Potential Life Lost (YPLL) per 10K Population**
*(06/07 YPLL Race Comparison )*

| CONDITION | 06/07 Non Hispanic Raw YPLL | 06/07 YPLL * Non Hispanic vs. Hispanic CI - 95%) | 06/07 White Raw YPLL | 06/07 YPLL White vs. Black (CI - 95% ) |
|---|---|---|---|---|
| **All Cancer** | 10,467.0 | 1.49 *(1.46 - 1.52)* | 14,940 | 1.1 *(1.07 - 1.10)* |
| Lung Cancer | 1,790.0 | 4.90 *(4.67 - 5.13)* | 1,677 | 0.7 *(0.70 - 0.77)* |
| Breast Cancer | 1,119.0 | 1.71 *(1.61 - 1.82)* | 1,504 | 0.9 *(0.82 - 0.91)* |
| Colon, Rectum, Anal Cancer | 923.0 | 1.90 *(1.78 - 2.02)* | 1,197 | 1.1 *(1.00 - 1.12)* |
| **All Cardiovascular** | 7,001.8 | 2.07 *(2.02 - 2.12)* | 9,738 | 0.7 *(0.70 - 0.73)* |
| Acute myocardial infarction | 1,786.0 | 2.67 *(2.55 - 2.80)* | 2,102 | 0.9 *(0.87 - 0.95)* |
| Heart failure | 266.0 | 1.72 *(1.52 - 1.94)* | 331 | 0.5 *(0.46 - 0.57)* |
| Atherosclerotic Cardiovascular Disease | 788.0 | 3.73 *(3.48 - 4.01)* | 839 | 1.0 *(0.91 - 1.04)* |
| **Injury and Violence** | | | | |
| Homicide | 3,153.0 | 0.60 *(0.58 - 0.62)* | 6532 | 0.5 *(0.49 - 0.52)* |
| Suicide | 4,282.0 | 1.77 *(1.72 - 1.83)* | 5655 | 1.5 *(1.48 - 1.56)* |
| MVA | 6,467.0 | 0.51 *(0.49 - 0.52)* | 17,443 | 4.9 *(4.84 - 4.99)* |
| **All Respiratory** | 3,527.4 | 1.69 *(1.64 - 1.75)* | 4619 | 0.7 *(0.71 - 0.75)* |
| Pneumonia | 1,085.0 | 1.54 *(1.45 - 1.63)* | 1499 | 1.2 *(1.17 - 1.29)* |
| **Alzheimer's disease** | 82.0 | 20.02 *(15.92 - 24.85)* | | |
| **Diabetes** | 1,690.0 | 1.50 *(1.43 - 1.57)* | 2247 | 0.7 *(0.69 - 0.75)* |
| **All Deaths** | 68,247.1 | 1.01 *(1.00 - 1.02)* | 114,762 | 1.0 *(0.97 - 0.98)* |

*Source: Central Valley Health Policy Institute. California State University Fresno (2010)*

**A rate of 1.00 = no difference; < 1.00 = Hispanics/Blacks have lower rates; >1.00 = Hispanics/Blacks have higher rates*

## Mental Health

The World Health Organization has declared that mental disorders have "staggering economic and social costs,"[3] yet they remain a low priority for public financing in health systems, globally as well as in California.[4] This low priority contradicts public opinion. Nearly all Americans (96%) think health insurance should include coverage for mental health treatment, and the vast majority of Americans (89%), regardless of political affiliation, want to end insurance discrimination against people with mental health disorders.[5] Mental disorders cost more than $150 billion annually from loss of productivity and the direct and indirect costs of health care. Yet with proper treatment, 75% of people with mental disorders recover completely, surpassing the 50% recovery rate for other medical problems.

As part of this project, the CVHPI conducted focus groups in the four counties (one in each county and two in Madera County). Community leaders, providers, stakeholders, and residents discussed the magnitude, suffering and burden of behavioral and mental health for children and their families in terms of the staggering costs of disability and human and monetary costs for individuals, families, schools, the healthcare system, and the communities.

A notable consensus among all regarding shortages and the dire need to expand services was reached. "Children and their families impacted by mental health problems have multiple risk factors, including family violence, substance abuse, health issues and poverty, which contribute to family dysfunction," one of the participants noted. However, there was a clear and unequivocal message that because mental health has been neglected for too long, no one organization can make an impact alone, and that there needs to be major investment at the local and state levels to encourage collaborative investments. The following mental health data is taken from a report by Capitman & Nyandoro.[7]

Table 18 uses data from the Central Valley Health Policy Institute to calculate the number of seriously mentally ill homeless persons in these four counties. According to the table, approximately 7,494 homeless people are in Fresno; of these, 1,559 suffer from serious mental illness. A conservative estimate of the homeless population was achieved using national data and a study from Los Angeles to estimate the proportion of homeless persons with SED/SMI.[13] The table also reflects that approximately 13,693 persons in all four counties are homeless, and 20.8%, or 2,849 of them, are seriously mentally ill.

### Table 18 –Homeless population with serious mental illness

| County | Total Population | Homeless Percentage | Homeless Population | SEM/SED Percentage | SED/SMI Homeless Population |
|---|---|---|---|---|---|
| **Fresno** | 749,407 | 1% | 7,494 | 20.8% | 1,559 |
| **Kings** | 129,461 | 1% | 1,295 | 20.8% | 270 |
| **Madera** | 123,104 | 1% | 1,231 | 20.8% | 256 |
| **Tulare** | 368,021 | 1% | 3,680 | 20.8% | 766 |
| **Total** | 1,369,993 | 1% | 13,693 | 20.8% | 2,849 |

Table 19 uses data from the Mental Health Services Act (MHSA) plan for the four counties to provide high and low estimates of the SED/ SMI population and psychiatric caseloads. [11, 12] The potential number of additional psychiatrists who may be needed to meet the needs of un-served SED/SMI population groups are noted. For example, Table 19 suggests that between 19.8 and 24.7 new FTE psychiatrists serving the SED and SMI population groups are needed in Fresno County, and between 66.0 and 84.4 are needed for the four-county region as a whole. Additional staff needed for a BHSC that cares for the entire un-served SED/ SMI population group could be computed in the same manner. Though not exact, these figures give an idea of the potential size and scope of the possible regional Behavioral Health Services Center.

### Table 19 –Full-time equivalent (FTE) psychiatrist needs by county

| County | SED/SMI Served | FTE Psychiatrists | Caseload | SED/ SMI Un-served Low | SED/ SMI Un-served High | Need Range for FTE Psychiatrists |
|---|---|---|---|---|---|---|
| **Fresno** | 21,157 | 14.0 | 1,511 | 29,976 | 37,302 | 19.8-24.7 |
| **Kings** | 3,439 | 3.0 | 1,146 | 5,178 | 7,172 | 4.5-6.3 |
| **Madera** | 2,842 | 6.3 | 451 | 4,924 | 7,415 | 10.9-16.4 |
| **Tulare** | 8,619 | 9 | 958 | 14,721 | 19,014 | 15.4-19.8 |
| **Total** | 36,057 | 32.3 | 1,116 | 54,799 | 70,903 | 49.1-63.5 |

## Summary: Hospital Use and Mortality Findings

Table 20 provides a summary of the findings from the analyses of hospital use and mortality data for the four-county service area. The findings are summarized from three perspectives:

1. **Place** (comparison of morbidity and mortality for the four counties to California as a whole and the San Joaquin Valley (eight counties).
2. **Time** (changes in morbidity and mortality during 1999-2007 compared to California as a whole).
3. **Disparity** (differences in morbidity and mortality between racial/ethnic groups).

Overall, these comparisons suggest several clear findings.

- The four-county area seems to be losing more residents to cardiovascular and respiratory diseases than California.
- While the four-county area experienced a slight reduction in respiratory disease death during the time between 1999-2000 and 2006-2007 (8%), California had a much higher reduction (22%).
- For the four-county service area, the San Joaquin Valley and California, Latinos experience lower overall mortality and lower overall hospital use than do whites.
- Latinos experience more diabetes, more hospitalizations and greater mortality than whites.
- African-Americans are experiencing higher hospital use and/or death rates for cancer, cardiovascular, and diabetes than whites.
- Collectively, the four counties have higher deaths from motor vehicle accidents, homicide and suicide than California as a whole. These rates are rising faster than in California as a whole. Latinos and African-Americans face higher risks than whites.

## Table 20 – Summary of Hospital Use and Mortality Findings

| Condition | Place | Time | Disparity |
|---|---|---|---|
| Cancer | **Hospital**<br>Similar to SJV.<br>Slightly lower than CA.<br>**Mortality**<br>Similar to SJV and CA. | **Hospital**<br>Slight Reduction.<br>Similar to CA.<br>**Mortality**<br>Similar reduction (~10%) to CA. | **Hospital**<br>Much lower for Latinos.<br>Much higher for African-Americans.<br>**Mortality**<br>Much lower for Latinos.<br>Similar for African-Americans. |
| Cardiovascular | **Hospital**<br>Similar to SJV.<br>Slightly higher than CA.<br>**Mortality**<br>Slightly lower than SJV.<br>Higher than CA (~13%). | **Hospital**<br>Slight reduction.<br>Less reduction than CA.<br>**Mortality**<br>Large reduction (~18%).<br>Similar reduction to CA. | **Hospital**<br>Much lower for Latinos.<br>Slightly higher for African-Americans<br>**Mortality**<br>Much lower for Latinos.<br>Much higher for African-Americans. |
| Diabetes | **Hospital**<br>Slightly lower than SJV (8%) and CA (4%).<br>**Mortality**<br>Slightly lower than SJV.<br>Much higher than CA. | **Hospital**<br>Slight increase. Similar to CA.<br>**Mortality**<br>Slight reduction.<br>Similar to CA. | **Hospital**<br>Higher for Latinos. Lower for African-Americans.<br>**Mortality**<br>Much higher for Latinos and African-Americans. |
| Respiratory | **Hospital**<br>Lower than SJV (8%) and higher than CA (18%).<br>**Mortality**<br>Lower than SJV and Higher than CA. | **Hospital**<br>Reduction of 13%. Less than CA (28%).<br>**Mortality**<br>Slight reduction (8%).<br>Higher reduction for CA (22%). | **Hospital**<br>Lower for Latinos. Higher for African-Americans.<br>**Mortality**<br>Much lower for Latinos and African-Americans. |
| Mental Health | **Hospital**<br>Lower than SJV (16%).<br>No comparison data for CA. | **Hospital**<br>Slight reduction. | **Hospital**<br>Lower for Latinos.<br>Much lower for African-Americans. |
| Injury/Accidents | **Hospital**<br>Lower than SJV (9%) and CA (10%).<br>**Mortality**<br>Higher than SJV and CA. | **Hospital**<br>Slight reduction. Similar to CA.<br>**Mortality**<br>Higher increase than CA | **Hospital**<br>Lower for Latinos. Much higher for African-Americans.<br>**Mortality**<br>Higher for Latinos and African- Americans for motor vehicle, homicide, and suicide |
| Avoidable Hospitalization | **Hospital**<br>Lower than SJV (5%). | **Hospital**<br>Reduction for SJV (22%). | **Hospital**<br>Much lower for Latinos.<br>Lower for African-Americans**.** |

# County Health Rankings

The preceding summaries of demographic, healthcare access, chronic disease and risk behavior characteristics of the four-county service area focus on characterizing the counties in relationship to each other and California as a whole. Mortality and hospital use data was also examined for the four counties, the region and California as a whole. But the number of different factors considered may make it difficult to get a broad perspective on the region's health. The University of Wisconsin Population Health Institute provides county health rankings based on a set of Community Health Status Indicators drawn from nearly 200 sources, including national surveillance systems and surveys. Counties are ranked relative to the health of other counties in the same state.

For California, 56 counties are compared on two broad summary measures of Health Outcomes and Health Factors. Health Outcomes are measured as premature mortality (the sum of years of potential life lost before age 75 adjusted for population size) and morbidity (indicators of health-related quality of life and low birth weight infants). Health Factors are thought of as indicators of why a county has the overall health outcomes pattern that it experiences and includes four complex, composite indicators: Health Behaviors, Clinical Care, Social and Economic, and Physical Environment. While the rankings do make it easy to compare counties, they should be viewed with caution because they combine data from many different sources. The underlying data may be flawed, and the combining process may exaggerate such flaws.

The rankings in Table 21 are drawn from the University of Wisconsin reports. More detailed data on each of the counties are available from CVHPI. They show that Fresno, Madera and Tulare rank near the lowest quartile for the state, while Kings is near the middle overall on **health outcomes**. These rankings are driven by overall mortality and premature mortality rates in the middle or bottom quartile, combined with even worse morbidity rankings. The morbidity rankings reflect factors such as the percentage of low birth weight newborns, self-reports of poor health, and days missed from work because of poor mental health.

## Table 21: County Health Rankings

| | Fresno County | Kings County | Madera County | Tulare County |
|---|---|---|---|---|
| **Health Outcomes** | **41** | **31** | **48** | **49** |
| Mortality | 36 | 33 | 31 | 43 |
| Morbidity | 41 | 33 | 56 | 47 |
| **Health Factors** | **53** | **45** | **47** | **56** |
| Health Behaviors | 49 | 37 | 40 | 55 |
| Clinical Care | 38 | 51 | 48 | 47 |
| Social and Economic | 53 | 46 | 49 | 55 |
| Physical Environment | 55 | 27 | 17 | 51 |

*Source: University of Wisconsin population health institute, 2010 county health ranking. http://www.countyhealthrankings.org/.*

The four-county service area as a group has even more negative rankings on the **health factors**, with all four near the bottom of the state. Health Behaviors rankings references rates of smoking, obesity, binge drinking, STD, motor vehicle accident fatalities, and others. All four counties had rates for the majority of these behaviors that were higher than state averages. Clinical care rankings references several factors, including the proportion uninsured, primary care doctor availability, preventable

hospitalization, diabetic screening, and hospice use. All Valley counties have worse scores on most of these factors than the state as a whole, and all but Fresno are in the lowest quartile for the state. Social and economic status ranking considers indicators, such as education, employment, poverty, single-parent households, income inequality, and violent crime. All four counties are in the lowest quintile, reflecting less supportive and more unequal conditions than in the rest of California for most of these indicators. The final rankings are for physical environments, and include days with particulate matter and ozone elevations, liquor store density, and access to healthy foods. While Fresno and Tulare counties are ranked in the bottom quarter on these measures, Kings and Madera counties are ranked more positively.

# Results: Qualitative

**Fresno, Kings, Madera, and Tulare Counties Focus Groups**

Five focus groups were conducted (one in each county and two in Madera County). An average of ten people participated in each focus group representing a cross-section of key community stakeholders, representing school districts, hospitals, clinics, county public health, nonprofit organizations, and funders. Three CVHPI staff members were present to conduct each focus group: one leading the group process, and two note takers to capture participant comments. Findings from the focus group sessions provide valuable insight in identifying key challenges and opportunities that the region faces, which will be instructive to hospitals as they prepare to continue/develop programs to address the priority needs.

**Focus Group Process**

Nine areas relevant to community health and well-being were addressed by each group with the following three objectives: 1) to identify conditions and opportunities in each area that supports community health and well-being and respective policies needed to sustain these efforts; 2) to identify conditions and opportunities that inhibit community health and well-being and what policies or practices are needed to change these; and 3) to rank priorities for action.

1. Primary Care/Access to Care
2. Uninsured/Indigent/Implementation new national policy/undocumented, etc.
3. Hospital /Emergency Services
4. Chronic Disease Management
5. Prevention (Services, Policies, Environments)
6. Clean Air/Water
7. Public Safety/Behavioral Health
8. Housing/Transportation/Community development/Economic/Schools/Social Services for children, youth and families
9. Places to Play/Access to Healthy Food

## Summary Findings: Qualitative

Detailed information on focus group findings is available from CVHPI. While there were differences in tone and emphasis across the five focus groups, there was remarkable consensus among all participants around the key challenges and opportunities for improving community health in the four-county area. Across all counties, common themes emerged as the leading opportunities and challenges facing the four-county region.

The following areas represent both the most important challenges as well as greatest opportunity for collaborative action to improve overall community health in the region.

I. **Federal and state policy and access to appropriate care.** The four-county service area faces higher numbers who are uninsured and/or lack a medical home than California as a whole. The new federal healthcare law offers both a challenge and an opportunity. It is likely that the legislation may result in increased access to certain types of funding and the opportunity for residents currently without health insurance to enroll in a program and receive care. The challenge will be to ensure that the healthcare system infrastructure is prepared to respond to the significant growth in the number of insured and continued access challenges for the undocumented. New attention to developing patient-centered medical homes, improving information infrastructure and coordination, and new models of care can all evolve in the region over the next few years in anticipation of full implementation of the Affordable Care Act.

II. **Chronic disease management.** Great strides have been made in increasing awareness about the problems/prevalence of diabetes, chronic disease and obesity. Both hospital and community providers mount programming to assist patients in chronic condition management, but many of these programs are underfunded. The region lags behind in resources and programs to ensure sustained disease management and maintenance. Existing programs may benefit from better integration into care practices. There may be an opportunity for new training/certification programs for community health workers and/or chronic disease management specialists to assist patients with self-care.

III. **Obesity.** Obesity remains a significant health challenge that underlies many chronic diseases. There have been impressive regional achievements in raising awareness of community level policies and practices to support health locally and many organizations have focused on the environment and providing prevention programming in a more coordinated way. Nonetheless, these achievements have been inconsistent across communities and have not been brought to sufficient scale to achieve population-level effects. Beyond these policy initiatives, health system opportunities include improved coordination of programs working on this issue, increased engagement of the employers in the region through work-site wellness programs, and improved patient education and self-management strategies.

IV. **Mental health.** There is a tremendous need to address mental health issues at the family, school and community levels. While significant resources are dedicated to this area, the lack of a system of care continues to be a huge challenge. All counties report excessive use of emergency room and primary care resources by behavioral health patients who are inadequately managed. New collaborative programs among hospitals and community providers are still needed.

V. **Workforce/collaboration capacity.** There continues to be a great need for an adequate number of healthcare providers and specialists. A focused effort on workforce development among all healthcare providers would likely pay huge dividends to the region. Additionally, there likely may be new federal funds available; increased opportunities for hospital/clinic collaboration; increased use of community health workers; and the increased implementation of health information technology (EMR, telemedicine, registries) offers the chance to integrate hospitals, other providers and public health in more efficient and effective system of care.

VI. **Culturally and linguistically appropriate healthcare services.** In the Central Valley, nearly 40% of the population is Latino, and the Hmong population of about 50,000 represents nearly one-half the total U.S. Hmong population. Navigating the complexities of the healthcare system can be a daunting task for anyone. Adding cultural and language limitations to the equation, an individual's ability to competently access health care and properly follow medication directions or manage a chronic illness may be negatively impacted. Specific attention needs to be paid to the healthcare experiences, utilization and outcomes of the Valley's culturally diverse residents. Research reports that the experiences of refugees are more complex and difficult than those of voluntary immigrants because they often have experienced trauma in their own country, combined with the forced evacuation. Voluntary immigrants most often come to this country willingly in search of a better life. Trauma may further complicate acculturation for refugees and their children as they learn practical skills for survival and construct an identity in the host country [Yakushko, Watson & Thompson, 2008]. One weakness of the quantitative data available for this report was the lack of detailed morbidity and mortality information for Hmong and other Southeast Asian groups, making it difficult to address cultural-appropriate care issues.

# Definitions

**Age-Adjusted Death Rate (AADR)** – AADR shows the overall likelihood of death controlling for age differences. It allows comparisons of death rates in populations with different underlying age distributions.

**Age-Adjusted Rate –** A measure that controls for the effects of age differences on health event rates.

**Ambulatory-Care Sensitive Conditions (ACSCs) –** ACSCs are conditions for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease.

**Avoidable Hospitalization –** Sometime referred to as **"**ambulatory-care sensitive conditions"

**Birth Defects** – Congenital anomalies, ICD-9 codes: 740-759. ICD-10 codes: Q00-Q99

**Cancer –** Malignant neoplasm, ICD-9 codes: 140-208. ICD-10 codes: C00-C97

**Complications of Pregnancy/Birth –** Low birth weight, short gestation, complications of birth, respiratory conditions (e.g., respiratory distress syndrome, intrauterine hypoxia, and birth asphyxia), and other conditions at the time of birth. Certain Conditions Originating in the Prenatal Period, ICD-9 codes: 760-779. ICD 10 codes: P00-P96.

**Confidence Interval –** If the same population is sampled on numerous occasions and interval estimates are made on each occasion, the resulting intervals would bracket the true population parameter in approximately 95% of the cases.

**Health Fitness Zone FITNESSGRAM –** Established by The Cooper Institute of Dallas, Texas, HFZ represents levels of fitness that offers protection against the diseases that result from sedentary living.

**Heart Disease –** Diseases of the heart, ICD-9 codes: 390-398, 402, 404-429. ICD-10 codes: I00-I09, I11, I13, I20-I51.

**HIV/AIDS –** Human Immunodeficiency Virus (HIV) disease, NCHS codes: *042-*044. Note the asterisks before the category numbers indicate that they are not specified in the ICD-9. ICD-10 codes: B20-B24.

**Homicide** – Assault, ICD-9 codes: E960-E969. ICD-10 codes: *U01-*U02, X85-X99, Y00-Y09, Y87.1.

**Infant Mortality –** Number of deaths of children under one year of age per 1,000 live births.

**Injuries –** All accidents (unintentional injuries) resulting from motor vehicle accidents, other transport accidents and all other nontransport accidents, ICD-9 codes: E800-E949. ICD-10 codes: V01-V99, W00-W99, X00-X59, Y85, Y86

**Late Prenatal Care –** Infants whose mothers did not receive prenatal care in the first trimester of pregnancy.

**Low Birth Weight –** Percentage of infants born at low birth weight, which is defined as less than 2,500 grams.

**Prevention Quality Indicators (PQIs) –** PQIs are measured as rates of admission to the hospital for ambulatory care sensitive conditions in a given population.

**Suicide –** Intentional self-harm, ICD-9 codes: E950-E959. ICD-10 codes: *U03, X60-X84, Y87.0.

**Years of Potential Life Lost –** An estimate of the average time a person would have lived had he or she not died prematurely (before age 65).

## Notes and References


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9. Fresno, Kings, Madera, Merced and Tulare counties MHSA Workforce, Education & Training Plans.

10. Derived by dividing the SED/SMI population by the total number of psychiatrists in each county.

11. Hozler Charles, University of Texas [see David Weikel's PDF document] (4%) of the total county population.

12. Range estimates where extrapolated from county Workforce, Education and Training Plans. Please note that the projected estimates from the WET plans have not been justified by any of the counties. Low range number = (SED/SMI Unserved Low/Caseload); High range number = (SED-SMI Unserved High/Caseload).

13. According to the City of Los Angeles, approximately 20.8 of the homeless suffer from severe mental illness (Fresno MHSA Three-Year Program and Expenditure Plan; Community Services and Supports FY 2005, 2006-07,& 2007-2008).