Health Action:

Planning for a Healthy Sonoma County

Sonoma County Health Snapshot

This document presents a preliminary review of socio-demographic, health status, and health care delivery system data to assist Health Action members in identifying health priorities for action in Sonoma County.

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INTRODUCTION

Overview of Health Action

In August 2007 the Sonoma County Board of Supervisors authorized the Department of Health Services to convene a health planning council to work on improving health and health care for all Sonoma County residents. *Health Action* convened for the first time in October 2007. The mission of *Health Action* is to improve the health of Sonoma County residents by mobilizing community resources to focus on selected priorities for action. *Health Action* facilitates collaboration and partnerships among health care providers, community organizations, businesses, and community members to benefit the community by concentrating resources where they are most likely to improve health status.

Purpose of this Data Profile

This data profile presents a preliminary review of socio-demographic, health status, and health care delivery system data to assist *Health Action* members in identifying health priorities for action in Sonoma County. Indicators included in this profile come from a variety of sources and reflect an initial attempt to highlight issues that should be considered when planning for community health improvement.

UNDERSTANDING AND IMPROVING HEALTH

> *"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."*
>
> *~ Preamble to the Constitution of the World Health Organization*

Health is influenced by many factors outside the healthcare system. These factors, known as the *determinants of health*, include genetics, behaviors, social circumstances, environmental exposures, and access to health care. Research to quantify the impact of these determinants on preventable death and illness has found that some 40 percent of all deaths are caused by behaviors that could be modified by preventive interventions. The impacts of the other determinants on preventable death and illness have been quantified as follows: 30% for genetic predisposition, 15% for social circumstances, 5% for environmental exposure, and 10% for shortfalls in medical care.[1]

Recognizing the importance of these varied determinants of health, the U.S. Department of Health and Human Services (DHHS), in its publication *Healthy People 2010*, specified a systematic approach to health improvement in the United States using two overarching *goals*: 1) to increase the quality and years of healthy life, and 2) to eliminate health disparities.[2] (A health disparity is a gap in the health status of different groups of people, in which one group is healthier than the other group or groups.) These goals serve as a guide for developing specific *objectives* that address the *determinants of health*, described above. Ultimately, measurements of *health status* are used to assess the effectiveness of health improvement efforts.

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[1] J. Michael McGinnis, Pamela Williams-Russo, and James R. Knickman, "The Case For More Active Policy Attention to Health Promotion," *Health Affairs* (2002): Volume 21, Number 2: 78-93.

[2] These two goals are supported by 467 objectives in 28 focus areas. For details see www.health.gov/healthypeople/document/tableofcontents.htm.

The following sections present a summary of socio-demographic, health status, and healthcare delivery system data to begin the process of identifying health priorities for action in Sonoma County.

SOCIO-DEMOGRAPHIC DATA

Population

Sonoma County has a population that is approaching one-half million residents (Table 1). Between 2000 and 2007, the population grew 5%, with the highest growth rates in Cloverdale, Cotati, and Windsor. In general, Sonoma County residents are older than residents of California as a whole (median age 38.4 years compared to 35.4 years).[3] Demographic projections for the two decades from 2000 to 2020 indicate that the over-60 population will increase from 16% to 27% of the Sonoma County population. The fastest growing age group in Sonoma County is expected to be those ages 65-84, with projected growth going from 50,040 in 2000 to 127,256 in 2050, an increase of 154%.[4] This older adult population experiences high rates of chronic illness and disability, and will create an increased demand for health and supportive services in the county.

Table 1: Sonoma County Population by City, 2000 and 2007

	2000	2007	% Change
Santa Rosa	147,595	157,985	7.0%
Petaluma	54,548	56,996	4.5%
Rohnert Park	42,236	42,959	1.7%
Windsor	22,744	26,432	16.2%
Healdsburg	10,722	11,706	9.2%
Sonoma	9,128	9,945	9.0%
Sebastopol	7,774	7,760	0.0%
Cloverdale	6,831	8,517	24.7%
Cotati	6,471	7,535	16.4%
Unincorporated Area	150,565	151,600	1.0%
Total	**458,614**	**481,765**	**5.0%**

Source: California Department of Finance, City/County Population Estimates, 2000 and 2007.

Although its racial/ethnic composition is changing, Sonoma County is still substantially less diverse than the state as a whole, with over two-thirds of the population being White, non-Hispanic (Figure 1). The Hispanic population is expected to be the fastest-growing ethnic group in Sonoma County, projected to increase by almost 60% from 107,832 in 2007 to 168,306 in 2020.[5]

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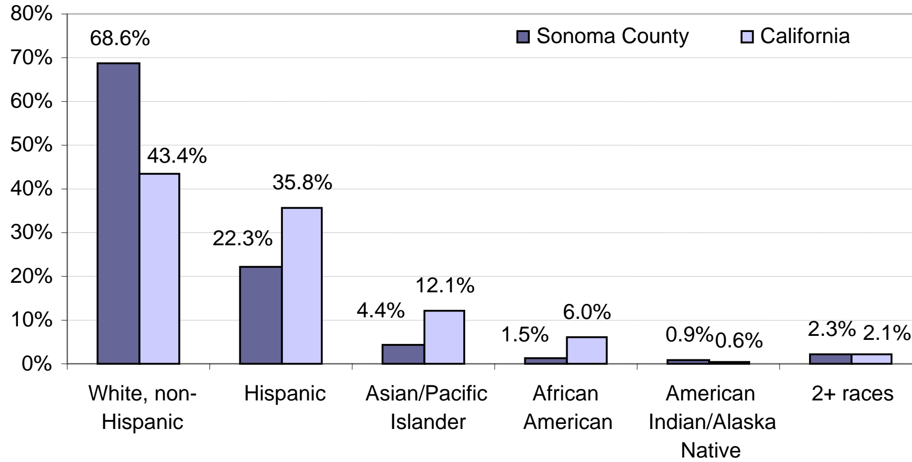
[3] California Department of Finance, County Population Estimates by Age and Sex, May 2004.
[4] Ibid.
[5] California Department of Finance, Race/Ethnic Population with Age and Sex Detail, 2000-2050, July 2007.

Figure 1: Population distribution by race/ethnicity, Sonoma County and California 2007



Source: CA Dept of Finance, Race/Ethnic Population with Age and Sex Detail, 2000-2050 July 2007.

Socioeconomic Status

Research shows that people with low socioeconomic status have higher mortality rates and poorer health status than the general population. People further down the social ladder usually run at least twice the risk of serious illness and premature death as those near the top, and these effects are not just confined to the poor. The "social gradient" in heath runs through all levels of society, so that even among middle-class office workers, lower-ranking workers experience significantly more disease and earlier death than higher-ranking staff. Having relatively low income, poorer education, insecure employment, insecure food, and poor housing are social conditions that are often concentrated on the same people and their effects accumulate during life. The longer people live in stressful economic and social conditions, the greater physiological wear and tear they suffer, thereby reducing their chances of health and well being.[6]

Income: While Sonoma County median income suggests that it is one of the wealthiest counties in California ($60,821 in 2006 compared with $56,645 for the state overall[7]), there are significant disparities by type of household. For example, an analysis of income data from 2001 found that only one in five (21.7%) White non-Hispanic households had annual incomes less than $30,000, while nearly half (48.7%) of Hispanic households were in that income category. [8]

Using Federal Poverty Level guidelines[9], the poverty rate in Sonoma County has risen from 7.6% in 1989 to 9.9% in 2006. In spite of this increase, the poverty rate in Sonoma

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6 World Health Organization, 2003, Social Determinants of Health: The Solid Facts, WHO Regional Office for Europe, Copenhagen, Denmark.

7 U.S. Census Bureau, 2006 American Community Survey (http://factfinder.census.gov)

8 County of Sonoma Economic Development Board. *Sonoma County Economic and Demographic Profile, 2004.*

9 The Federal Poverty Level is determined by a set of income thresholds that vary by family size and composition. In 2004 a family of four was considered to be in poverty if their income was less than $19,157.

County is still below the California average of 13.1%.[10] The highest rate of poverty in Sonoma County is found among families with a female head of household and no husband present) (15.2%). The poverty rates are even higher for those female-headed families with children under 18 (21.5%) and under 5 years of age (44.7%).

Despite higher incomes and a lower poverty rate when compared with statewide averages, a family in Sonoma County may not be as well off as a family in other parts of the state or nation, due to the higher costs of living in Sonoma County. A recent study by the California Budget Project stated that the Federal Poverty Level, as a national standard, does not take into account that the estimated minimum costs to "make ends meet" for a family living in Sonoma County (two working parents and two children) was $77,069, which is 4 times higher than the FPL.[11] Thus the "real" poverty rate in Sonoma County is likely significantly higher than the official statistics indicate.

Education: Educational attainment is an important factor in helping to assure that Sonoma County residents can achieve economic stability and contribute to the economic, social and cultural life of the community. Approximately 71,413 students (K-12) were enrolled in Sonoma County public schools in 2006-2007.[12] While this number is projected to decline gradually over the next 10 years, the ethnic diversity among students is increasing. Ten years ago almost three-quarters of Sonoma County public school students were White. In 2006, that percentage had dropped to 56, with Hispanic students now comprising one-third of the student population.[13] With this demographic shift, has come the challenge of teaching English and core academics to a student population that is less proficient in English. Over the past decade, the percent of English language learners in Sonoma County public schools has increased from 12 percent to 22 percent today,[14] which creates great challenges for these students and their teachers.

While statewide statistics show that educational achievement in Sonoma County is higher than statewide averages, there are significant disparities that need to be addressed. On average, only about three-quarters of the county's ninth graders actually graduate from high school four years later, but the high school completion rate is significantly lower for Hispanic students. For the Class of 2006, the completion rate for Hispanic students was 62 percent, compared to 78 percent for White students.[15] Even smaller percentages of students graduated having completed the requirements for college admission. Just 18 percent of Hispanic students who graduated in 2006 completed the required courses for University of California/California State University admission, compared to 41 percent of the White graduates.[16] Addressing the disparities in educational attainment between White and Hispanic students in Sonoma County will become increasingly important as Hispanics continue to represent a growing share of the Sonoma County school population and workforce.

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[10] U.S. Census Bureau, 2006 American Community Survey (http://factfinder.census.gov).
[11] California Budget Project, *Making Ends Meet: How Much Does It Cost to Raise a Family in California?* October 2007.
[12] Sonoma County Office of Education, *Education Facts 2007: Sonoma County Schools.*
[13] Sonoma County Office of Education, Data Trends: Making Sense of Sonoma County's Enrollment and Achievement Numbers, *SCOE Bulletin*, April 2007.
[14] Ibid.
[15] Ibid.
[16] Ibid.

Employment: Job security increases health, well-being and job satisfaction. Higher rates of unemployment lead to more illness and premature deaths.[17] Sonoma County has traditionally had a diverse economy, which helps minimize the effects of downturns in certain sectors on the economy as a whole. In 2005, the two largest industry sectors in Sonoma County were manufacturing and retail trade, each employing just under 13% of the County workforce. Manufacturing, which includes wine and food production, is the county's single largest industry sector.[18] Since 1990, Sonoma County unemployment rates have been consistently lower than California rates, however this difference has been decreasing in recent years. In 2006, the unemployment rate in Sonoma County was 5.7% compared to 6.6% for the state of California.[19]

Food Security: Food security, which refers to the availability of nutritionally adequate and sufficient food, is a contributing factor to the overall health of a population.[20] A 2002 Redwood Empire Food Bank study of emergency food recipients found that the high cost of living in Sonoma County leaves many residents struggling to put food on the table.[21] As the conditions of poverty limit access to nutritious food, the health impacts are of particular concern for certain vulnerable populations, such as families with children and older adults. In 2005, there were an estimated 23,000 people in Sonoma County who reported being food insecure (i.e., not being able to afford enough food), with about 8,000 reporting very low food security (i.e., multiple indications of disrupted eating patterns and reduced food intake).[22] Individuals in food-insecure household are more likely than others to delay needed medical care. For individuals with chronic illnesses, such as diabetes or asthma, this can result in increased complications, hospitalizations, and emergency room visits.[23]

Housing: Unaffordable housing and poor living conditions are other layers of social stress than can negatively impact health status. The U.S. Department of Housing and Urban Development defines affordable housing as housing where renters pay 30% or less of their income on rent. Using this definition, Sonoma County ranks as one of the least affordable in the nation. Almost 50% of the county's renters pay more than 30% of their income on housing.[24]

HEALTH STATUS

Leading Health Indicators

Healthy People 2010 identified Leading Health Indicators that reflect the major public health concerns in the U.S. These indicators were chosen based on their ability to

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[17] World Health Organization, 2003, Social Determinants of Health: The Solid Facts, WHO Regional Office for Europe, Copenhagen, Denmark.
[18] Sonoma County Economic Development Board, *2007 Sonoma County Indicators: Assessing our County's Competitive Position*, January 2007.
[19] U.S. Census Bureau, 2006 American Community Survey (http://factfinder.census.gov).
[20] Center on Hunger and Poverty, Food Insecurity Institute. Hunger and food security in the 50 states: 1998-2000.
[21] Redwood Empire Food Bank. Understanding the economics of hunger in Sonoma County: A study of emergency food recipients, March 2003.
[22] California Health Interview Survey, 2005.
[23] UCLA Center for Health Policy Research, "Food Security Among California's Low-Income Adults Improves, But Most Severely Affected Do Not Share in Improvement," *Health Policy Research Brief*, June 2007.
[24] California Association of Realtors (www.car.org)

motivate action, the availability of data to measure their progress, and their relevance as broad public health issues. The following table compares Sonoma County Leading Health Indicator results with the Healthy People 2010 targets and comparison data for the United States and California.

Leading Health Indicator	Healthy People 2010 Indicator	2010 Target	US Baseline	California	Sonoma County
Physical Activity	Proportion of adolescents who engage in vigorous physical activity that promotes cardio-respiratory fitness 3 or more days per week for 20 or more minutes per occasion	85%	68.7%[25]	66.5%[26]	72.3 %[27]
	Proportion of adults that participate in no leisure-time physical activity	20%	23.7%[28]	26%[29]	17.1%[30]
Nutrition and Overweight	Proportion of children (ages 6-11) who are obese (BMI >=95th percentile)	5%	18.8%[31]	28.1%[32]	27%[33]
	Proportion of children (ages 12-19) who are obese (BMI >= 95th percentile)	5%	17.4% [34]	18.9% [35]	21.3% [36]
	Proportion of adults who are obese (BMI >= 30)	15%	24%[37]	21.2%[38]	24.2%[39]

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[25] Centers for Disease Control Surveillance Summaries, June 9, 2006. MMWR 2006; 55 (No SS-5) Table 52.
[26] California Health Interview Survey, 2005.
[27] California Health Interview Survey, 2005.
[28] Behavioral Risk Factor Surveillance System, 2004.
[29] California Health Interview Survey, 2005.
[30] California Health Interview Survey, 2005.
[31] National Health and Nutrition Examination Survey, 2003-2004.
[32] California Center for Public Health Advocacy, The Growing Epidemic, 2005. Data retrieved September, 2007. www.publichealthadvocacy.org/policy_briefs/changes.pdf
[33] Santa Rosa Schools 5th Grade Assessment, 2005-2007. Data are collected for 5th grade students enrolled in schools within Santa Rosa City Schools districts and may not be representative of all children ages 6-11.
[34] National Health and Nutrition Examination Survey, 2003-2004.
[35] California Health Interview Survey, 2005.
[36] Pediatric Nutrition Surveillance, 2005. Data are collected for low-income children enrolled in the Childhood Health and Disability Prevention program only and may not be representative of the entire population of teens ages 12-19.
[37] Behavioral Risk Factor Surveillance System, 2005.
[38] California Health Interview Survey, 2005.
[39] California Health Interview Survey, 2005.

Leading Health Indicator	Healthy People 2010 Indicator	2010 Target	US Baseline	California	Sonoma County
	Proportion of persons ages 2 and older who consume at least 3 daily servings of fruit and 2 daily servings of vegetables	Fruit 75% Veg. 50%	Fruit 32.6% [40] Veg. 27.2%	48.7% [41]	55.6% [42]
	Proportion of children (ages 1-2) with iron deficiency anemia - Ages 1-2 - Ages 3-5	5% 1%	15.4% [43] 9.9%	14.6% [44] 10.2%	22.3% [45] 13.7%
Tobacco Use	Proportion of adolescents who smoked one or more cigarettes in the past 30 days	16%	23%[46]	11.5%[47]	15%[48]
	Proportion of adults who smoked one or more cigarettes in the past 30 days	12%	20.5%[49]	15.2%[50]	14.4%[51]
Substance Abuse	Proportion of adolescents not using alcohol or any illicit drugs during the past 30 days	89%	95%[52]	64%[53]	55%[54]
	Proportion of adolescents engaging in binge drinking (5+ drinks in a row) in the past month	2%	10.3%[55]	13%[56]	19%[57]
	Proportion of adults engaging in binge drinking of alcoholic	6%	31.8%[58]	17.6%[59]	20.4%[60]

40 Behavioral Risk Factor Surveillance System, 2005.
41 California Health Interview Survey, 2005. Proportion of persons who eat 5 or more fruits or vegetables per day.
42 California Health Interview Survey, 2005. Proportion of persons who eat 5 or more fruits or vegetables per day
43 Pediatric Nutrition Surveillance System, 2005. Data are for low-income children.
44 Pediatric Nutrition Surveillance System, 2005. Data are for low-income children.
45 Pediatric Nutrition Surveillance System, 2005. Data are for low-income children.
46 Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance, United States, 2005. Surveillance Summaries, June 9, 2006. MMWR, 2006; 55, No SS-5.
47 California Healthy Kids Survey (average of 9th grade and 11th grade rates), 2006.
48 California Healthy Kids Survey (average of 9th grade and 11th grade rates), 2006.
49 Behavioral Risk Factor Surveillance System, 2005.
50 California Health Interview Survey, 2005.
51 California Health Interview Survey, 2005.
52 National Household Survey on Drug Abuse, 2006.
53 California Healthy Kids Survey (average of 7th, 9th and 11th grade rates), 2006.
54 California Healthy Kids Survey (average of 7th, 9th and 11th grade rates), 2006.
55 National Household Survey on Drug Abuse, 2006.
56 California Healthy Kids Survey (average of 9th grade and 11th grade rates), 2006.
57 California Healthy Kids Survey (average of 9th grade and 11th grade rates), 2006.
58 National Household Survey on Drug Abuse, 2006.
59 California Health Interview Survey, 2005.
60 California Health Interview Survey, 2005.

Leading Health Indicator	Healthy People 2010 Indicator	2010 Target	US Baseline	California	Sonoma County
Sexual Behavior	Proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active	95%	82.6%[61]	Not Available	77.0%[62]
Mental Health	Proportion of adults with recognized depression who receive treatment[63]	50%	Not Available	44.8%[64]	55.5%[65]
	Suicides (deaths per 100,000 population)	5	10.9[66]	9.4[67]	12.8[68]
Injury and Violence	Deaths caused by motor vehicle crashes (deaths per 100,000 population)	9.2	14.9[69]	12.1[70]	13.2[71]
	Homicides (deaths per 100,000)[72]	3.0	5.9[73]	6.7[74]	3.8[75]
Immunization	Proportion of kindergarten children with recommended vaccinations by age 24 months[76]	90%	80.4%[77]	79.5%[78]	76.0%[79]

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[61] Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance, United States, 2005. Surveillance Summaries, June 9 2006. MMWR, 2006: 55, No SS-5. Based on sum of adolescents who have not had sexual intercourse plus those who were sexually active who used condom at last intercourse.

[62] California Healthy Kids Survey, 2005-2006. Average of 7th, 9th, and 11th graders who reported no sexual intercourse or condom use at last intercourse.

[63] Depression is defined as a major episode in the past year. Treatment is defined as treatment in the past year for psychological problems or e motional difficulties at a mental health clinic or by a mental health professional on an outpatient basis or treatment for psychological or emotional difficulties at a hospital overnight or longer.

[64] California Health Interview Survey, 2005. Defined as the proportion of adults who reported needing help for mental/emotional problems who saw a mental health professional (not directly comparable to the HP2010 objective since definitions are different).

[65] California Health Interview Survey, 2005. Defined as the proportion of adults who reported needing help for mental/emotional problems who saw a mental health professional (not directly comparable to the HP2010 objective since definitions are different).

[66] National Vital Statistics System, Mortality Data, 15 leading causes of death, 2004. http://www.cdc.gov/nchs/products/pubs/pubd/hestats/finaldeaths04/finaldeaths04_tables.pdf#2

[67] California Department of Health Services, County Health Profiles, 2006. http://www.dhs.ca.gov/hisp/chs/OHIR/reports/healthstatusprofiles/2006/profiles.pdf

[68] California Department of Health Services, County Health Profiles, 2006. http://www.dhs.ca.gov/hisp/chs/OHIR/reports/healthstatusprofiles/2006/profiles.pdf.

[69] Centers for Disease Control and Prevention. WISQARS Injury Mortality Reports, 2002-2004.

[70] California Department of Health Services, County Health Status Profiles 2006.

[71] California Department of Health Services, County Health Status Profiles 2006.

[72] Age adjusted to the 2000 standard population.

[73] National Vital Statistics Reports: Deaths Final Data for 2004.

[74] California Department of Health Services, County Health Status Profiles 2006.

[75] California Department of Health Services, County Health Status Profiles 2006.

[76] Recommended vaccines include: 4 DTaP (diptheria-tetanus-acellular pertussis), 3 polio, 1 MMR (measles-mumps-rubella).

[77] Centers for Disease Control and Prevention, National Immunization Survey, 2005.

[78] Centers for Disease Control and Prevention, National Immunization Survey, 2005.

[79] California Department of Public Health, Expanded Kindergarten Retrospective Study, 2005.

Leading Health Indicator	Healthy People 2010 Indicator	2010 Target	US Baseline	California	Sonoma County
	Proportion of noninstitutionalized adults age 65+ who are vaccinated against pneumococcal disease	90%	65.5% [80]	65.7% [81]	63.5% [82]
Access to Care	Proportion of persons with health insurance (under age 65)	100%	83.6% [83]	85% [84]	89.8% [85]
	Proportion of persons (all ages) who have a specific source of ongoing care	96%	86.3% [86]	87.8% [87]	93.4% [88]

Leading Causes of Death

The leading causes of death are frequently used as a measure of health status. Over the past 100 years, there has been a major shift in the leading causes of death. At the beginning of the 1900s, infectious diseases topped the leading causes of death. A century later, with the control of many infectious agents and the increasing age of the population, chronic diseases top the list.

The ten leading causes of death, as recorded on death records, accounted for almost three-quarters of all the deaths in Sonoma County from 2002 to 2004 (Table 2). Five chronic diseases (cancer, heart disease, stroke, chronic lower respiratory disease, and diabetes) accounted for almost 60% of deaths. The top three underlying factors that contribute to these chronic diseases are smoking, an unhealthy diet and sedentary lifestyle, and alcohol use.[89]

Table 2: Leading Causes of Death in Sonoma County, 2002-2004	
Cancer	23.9 %
Heart Disease	17.3 %
Stroke	9.1 %
Chronic Lower Respiratory Disease	5.6 %
Unintentional Injuries	4.3 %
Alzheimer's Disease	3.6 %
Pneumonia/Influenza	2.9 %
Diabetes	2.5 %
Suicide	1.7 %
Chronic Liver Disease	1.4 %
Source: California Department of Health Services, Death Records 2002-2004.	

[80] Behavioral Risk Factor Surveillance System, 2005.
[81] California Health Interview Survey, 2005.
[82] California Health Interview Survey, 2005.
[83] Health Insurance Coverage: Estimates from the National Health Interview Survey, 2004
[84] California Health Interview Survey, 2005.
[85] California Health Interview Survey, 2005.
[86] National Health Interview Survey, 2006. http://www.cdc.gov.nchs/data/nhis/earlyrelease/200709_02.pdf
[87] California Health Interview Survey, 2005.
[88] California Health Interview Survey, 2005.
[89] J. Michael McGinnis and William H. Foege, "Actual Causes of Death in the United States," *Journal of the American Medical Association*, 270 (1993): 2207-2212.

While chronic diseases are the leading causes of death for those ages 45 and older, a comparison of leading causes of death by age group shows that unintentional injuries are the leading cause of death for those ages 1 – 44 (Table 3).

Table 3: Leading Cause of Death by Age Group, Sonoma County, 2002-2004

Age	Cause 1	Cause 2	Cause 3
< 1	Perinatal conditions	Congenital malformations	Sudden infant death syndrome
1 – 14	Unintentional injuries	Cancer	Disease of the nervous system
15 – 29	Unintentional injuries	Suicide	Homicide
30 – 44	Unintentional injuries	Cancer	Drug-related deaths
45 – 64	Cancer	Heart disease	Unintentional injuries
65 – 84	Cancer	Heart disease	Stroke
85 +	Heart disease	Stroke	Cancer

Source: California Department of Health Services, Death Records 2002-2004.

Years of Potential Life Lost

Years of potential life lost before age 75 (YPLL-75) are those years lost when a person dies prematurely, such as from preventable diseases or unintentional injuries. YPLL-75 calculations assume all people should be able to live to age 75. Diseases that lead to disproportionate mortality in younger age groups and those that affect large numbers of people have higher YPLL-75 values. [90] YPLL aids in understanding the burden of disease and injury in Sonoma County. In 2000-2002 the leading causes of YPLL-75 for the population as a whole were cancer and unintentional injuries (Table 4), with YPLL due to unintentional injury being significantly higher for Hispanics and American Indian/Alaska Natives.

Table 4: Leading Causes of YPLL-75 by Race/Ethnicity, Sonoma County 2000-2002

	White, non-Hispanic	Hispanic	African American	Asian/ Pacific Islander	American Indian/ Alaska Native	Total
Cancer	**1621.0**	617.9	**1886.3**	**941.7**	727.0	**1456.7**
Unintentional injuries	752.9	**1374.1**	977.0	164.9	**2157.8**	**843.6**
Heart disease	773.2	521.4	884.2	336.2	916.5	769.1
Drug-related deaths	312.0	298.0	547.9	-	746.3	308.9
Suicide	289.4	69.2	118.9	-	-	244.3
Liver disease	182.8	104.7	284.5	-	197.2	172.0
Stroke	158.4	218.2	144.6	204.9	198.2	168.8
Chronic low respiratory disease	139.6	16.3	123.6	-	282.3	119.1
AIDS	121.8	85.5	450	-	-	116.6
Diabetes	107.9	62.7	459.3	126.8	-	107.2
Pneumonia/ influenza	54.9	72.4	212.2	221.1	-	65.6

** Rate is per 100,000 population.*
Source: California Department of Health Services, Vital Statistics Death Records, 2000-2002.

[90] Centers for Disease control and Prevention. Premature Mortality in the United States: Public Health Issues in the use of Years of Potential Life Lost. MMWR Supplements, Dec 1986, Vol. 35 (2s).

Hospitalizations

In 2002, unintentional injury (such as falls and automobile crashes) was a leading cause of hospitalization in Sonoma County for those age five and older, with the rate per 10,000 population dramatically increasing with age. Mental disorders were the leading cause for those age 15-44 and heart disease was the leading cause for adults age 65 and over (Table 5).

Table 5: Top Three Leading Causes of Hospitalizations by Age Group, Sonoma County, 2005

	Rates per 10,000 population						
	0 – 4	**5 – 14**	**15 – 24**	**25 – 44**	**45 – 64**	**65 – 84**	**85 +**
Unintentional injuries		21.8	55.2	76.4	119.5	379.1	816.2
Heart disease					113.4	499.3	853.9
Mental disorders		13.2	79.1	90.8	70.7		
Cancer						176.5	
Pneumonia/flu	40.2						355.2
Perinatal period	106.9						
Appendicitis		13.9	16.8				
Acute bronchitis	37.2						
Back disorders				19.0			

Source: California Office of Statewide Health Planning and Development, Hospital Discharge Data, Sonoma County 2002.

Over half of all hospitalizations due to unintentional injury were due to falls (52.4%), with two-thirds occurring in older adults ages 65 and over. Motor vehicle collisions represent the next most frequent cause of hospitalization (14.7%), with the distribution spread a bit more evenly between the different age groups (Table 6).

Table 6: Leading Causes of Non-Fatal Unintentional Injury Hospitalization in Sonoma County, 2003-2005

	Age Category					**Total**	
	0-14	**15-24**	**25-44**	**45-64**	**65+**	**Number**	**Percent**
Falls	240	158	396	956	3,373	5,123	52.4
Motor Vehicle Collisions	57	341	467	385	186	1,436	14.7
Poisoning	38	39	125	188	182	572	5.9
Overexertion	9	14	58	103	116	300	3.1
Struck by Object	40	41	75	63	38	257	2.6
Other Transportation	25	53	79	65	39	261	2.7
Natural Environment	28	27	54	85	54	248	2.5
Cut/Pierce	11	36	94	69	21	231	2.4
Bicyclist, Other	36	33	40	55	10	174	1.8
Burn	24	12	37	24	27	124	1.3

Source: California Office of Statewide Health Planning and Development hospital discharge data, Sonoma County 2003 - 2005.

Summary

Addressing these health status issues must take into consideration the changing demographics of Sonoma County, in particular the special needs of a growing population of older adults and residents of Hispanic origin, and the socioeconomic conditions that contribute to health disparities. Further review of the specific factors that contribute to these health issues across the different subpopulations and communities in Sonoma County is necessary in order to develop a strategic approach to health improvement.

ACCESS TO HEALTH CARE SERVICES

Access to high-quality health care is an important determinant of health identified in *Healthy People 2010.* Expanding access to quality health care is seen as necessary to eliminate health disparities and increase the quality and years of healthy life for all people. This requires that there be an adequate supply of primary and specialty care providers to support healthy behaviors, provide preventative care, and address acute and emergency health care needs in a timely manner. Strong predictors of access to quality health care include having health insurance, a higher income level, and a regular primary care provider or other source of ongoing health care.[91]

Health Insurance

An important measure of access to health care is health insurance coverage. Uninsured people are less likely than insured people to receive appropriate preventive care. Lack of health insurance also affects access to care for serious medical conditions. Evidence suggests that lack of insurance over an extended period significantly increases the risk of premature death.[92] The *Healthy People 2010* goal is to have 100% of the population covered by health insurance.

About one in ten Sonoma County residents under age 65 were uninsured in 2005, with children under 18 much more likely to be covered (Table 7). The low rate of uninsured children in Sonoma County reflects the efforts of local leaders who have organized and supported a health insurance program for low-income children who do not qualify for other public insurance (Healthy Kids). Although the overall uninsured rate in Sonoma County is lower than the rate for the state of California, it is still significantly less than the *Healthy People 2010* goal of universal coverage.

Table 7: Uninsured Population by Age Category, Annual Average, Sonoma County* and California, 2005

	Sonoma County		California	
	Number	Percent	Number	Percent
Total population < age 65	42,000	10.2 %	4,856,000	15.0 %
Children < age 18	3,000	2.5 % *	628,000	6.4 %
Adults age 18 – 64	39,000	13.0 %	4,227,000	18.8 %

**Sonoma County rates unstable due to small numbers.*
Source: 2005 California Health Interview Survey.

In 2005, the majority of Sonoma County adults under age 65 had employment based-health insurance coverage. Only about 10% reported privately-purchased individual health insurance (Table 8). A significant concern is the high uninsured rate among Latino adults, with nearly 40% reporting no health insurance in 2005. This problem has

[91] Healthy People 2010: Understanding and Improving Health http://www.healthypeople.gov/document/pdf/uih/2010uih.pdf

[92] U.S. Department of Health and Human Services. Healthy People 2010. 2nd ed. Access to Care. Washington, DC: U.S. Government Printing Office, November 2000.

significant implications for access to high-quality care for this growing segment of the Sonoma County population.

Table 8: Adults Age 18-64, by Source of Insurance Coverage, Sonoma County*, 2005				
	All Adults		**Latino Adults**	
	Number	**Percent**	**Number**	**Percent**
Private, through employer	197,000	65.5 %	22,000	52.9 %
Private, individual	30,000	10 %	2,000	4.9 % *
Medi-Cal	27,000	9.1 %	1,000	3.5 % *
Other**	7,000	2.5 %		
Uninsured	39,000	13.0 %	16,000	38.7 %
Total	300,000		41,000	100 %

** Sonoma County rates unstable due to small numbers.*
*** Healthy Families/CHIP and other public insurance*
Source: 2005 California Health Interview Survey.

In 2005, approximately 90% of Sonoma County older adults (age 65+) supplemented their Medicare insurance with Medi-Cal or other health insurance coverage.[93] Only about 4,000 (6.5%) older adults had Medicare as their only source of health insurance.

Ongoing Source of Primary Care

Assuring access to high-quality primary care is a key strategy for improving health system functioning in the U.S. and Sonoma County. Benefits of primary care include:

- better management of chronic diseases (reducing costs and disability and improving health status and quality of life);
- increased use of preventative services and education such as screening, immunizations, diet and lifestyle counseling;
- improved access to and coordination with other health providers and services;
- reduction in use of expensive emergency department services.

Improving primary care access depends in part on ensuring that people have a usual source of care (i.e., a usual place to go when sick or in need of health advice). The Healthy People 2010 goal is for 96% of the population to have a source of ongoing care. In 2005, 93.4% of Sonoma County residents reported that they had a specific source of ongoing care (Table 9), however there were significant differences between various demographic subgroups. Adolescents (ages 12-17) and adults (ages 18-64) were significantly less likely to have a usual source of care than children (ages 0-11) and adults 65+ years. Hispanics and those with lower incomes were also significantly less likely to have a usual source of care than White or higher income persons.

In order to preserve and expand access to care, Sonoma County needs a sufficient number of primary care providers (family medicine physicians, internists, pediatricians and obstetricians) to meet the needs of the population. Primary care providers offer patients a "medical home" where their medical records are kept, their care can be coordinated, and they can receive preventative services and education.

[93] California Health Interview Survey, 2005.

Table 9: Proportion of persons (all ages) with a usual source of health care, Sonoma County	
All (2005)	95.5%
Gender*	
Male	88.0%
Female	95.5%
Age*	
0-11 yrs	98.1%
12-17 year	86.4%
18-64 years	89.8%
65+ years	97.8%
Race/ethnicity*	
White, non-Hispanic	93.2%
Hispanic	83.1%
Poverty level*	
< 100% FPL	83.1%
100-199% FPL	88.4%
200-299% FPL	84.5%
300+% FPL	95.5%
** 2003/2005 pooled data Source: California Health Interview Survey, 2003-2005.*	

While Sonoma County has a higher ratio of primary care providers than many counties, there is concern that many physicians in the county are nearing retirement and/or plan to leave the area. [94] Recruitment of new primary care physicians or retention of newly trained physicians is difficult due to inadequate reimbursement and high cost of living in Sonoma County. The county benefits from having residents in the Family Medicine program available to provide primary care to low-income people. The program helps to provide a supply of well-trained primary care physicians to the community.

For uninsured and publicly-funded patients, including Medi-Cal and CMSP[95], Sonoma County has a strong network of community health centers that provide care to 80,000 patients annually and over 250,000 visits per year. These clinics have successfully competed to receive federal grants that support operations. As "federally qualified health centers," they also receive preferential, cost-related Medi-Cal reimbursement, which allows them to offer heavily discounted charges to clients on a sliding fee scale for uninsured patients. However, community clinics are not able to meet the increasing demand for outpatient services. Most clinics have long waits for routine appointments for new patients. The clinics also struggle to provide in-house specialty care or to refer their patients into the busy practices of local specialists.

Specialty Care

Specialty care is another important component of access to high-quality care. Many specialty areas of medicine are in short supply in Sonoma County and are difficult to access. [96] Even patients with insurance can wait weeks for an appointment with an urologist, ear, nose and throat specialist, orthopedist, gastroenterologist or neurologist. There is concern that the aging population and the projected reductions in Medicare

[94] Cynthia Melody, Access to Sonoma County Physicians, Sonoma Physician, Vol. 57, No. 2, Spring 2006.
[95] County Medical Services Program (CMSP) is a county operated health care safety net for medically indigent adults.
[96] Cynthia Melody, Access to Sonoma County Physicians, Sonoma Physician, Vol. 57, No. 2, Spring 2006.

reimbursement rates will place increasing demands on the limited supply of specialists in Sonoma County. Access to specialists is even more limited for patients with Medi-Cal, or without insurance. A survey of local physicians cited that low reimbursement rates and the high cost of living in Sonoma County are the primary challenges for recruiting and retaining physicians in this community.[97] Medicare reimbursement rates in Sonoma County, which are used as a benchmark by private insurers, are among the lowest in the state and are lower than in Marin and Napa counties.

Hospitals

Sonoma County currently has seven hospitals with a total of 943 licensed beds including acute, psychiatric, rehabilitation and skilled nursing beds. The majority of these beds are located in three large Santa Rosa hospitals. Memorial Hospital has 345 beds located in three separate facilities. Sutter Medical Center has 238 licensed beds, though 62 acute beds at Sutter Warrack and 30 psychiatric beds at Norton Center are not currently in use. Kaiser Hospital has 117 acute beds. More specific detail on licensed beds and bed type for Sonoma County are available through the Statewide Office of Health Planning and Development at http://www.oshpd.ca.gov or at https://www.alirts.oshpd.ca.gov/AdvSearch.aspx (search for each hospital by name). Sutter and Memorial together account for 58% of total hospital use in Sonoma County. Fifty-three percent of patients at Memorial and Sutter come from Santa Rosa, while 47 percent come from elsewhere, including 10 percent from outside Sonoma County. [98]

Memorial Hospital provides a full range of inpatient, outpatient and emergency department services, operates at about 60 percent occupancy (licensed), and earned a positive operating margin in 2005. Sutter Medical Center of Santa Rosa, formerly Community Hospital, the County's public hospital, provides a full range of inpatient, outpatient and emergency department services, operates at about 50 percent occupancy (licensed) and experienced a negative operating margin (deficit) in 2005. Sutter Hospital is proposing to close and transfer all inpatient care to other hospitals in the County.[99]

Kaiser Hospital is part of a larger health maintenance organization (HMO) that provides both primary and specialty hospital care for a significant number of Sonoma County residents. Kaiser physicians provide a medical home to its members. This system has been able to recruit new specialists to the region and has a system for referring patients to specialists in other regions when necessary.

Four district hospitals (Petaluma Valley, Sonoma Valley, Palm Drive, and Healdsburg) provide access to emergency care and other hospital services to outlying areas of the county. In 2006, the district hospitals provided approximately 23% of inpatient surgeries, 30% of outpatient surgeries, and 33% of emergency department visits reported to the State.[100] Although hospital district voters have approved parcel taxes to support operations, these hospitals are financially fragile. In 2006, none of them covered

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[97] Cynthia Melody, Access to Sonoma County Physicians, Sonoma Physician, Vol. 57, No. 2, Spring 2006.

[98] Elinor Hall and Lucy Johns, Sutter Medical Center of Santa Rosa and Santa Rosa Memorial Hospital Proposed Transaction: Assignment of the Health Care Access Agreement: A Preliminary Study for the Sonoma County Department of Health Services, April 17, 2007.

[99] Ibid.

[100] California Office of Statewide Health Planning and Development, 2006 Hospital Annual Disclosure Reports (9/21/06 data extract).

operating costs with operating revenues, and all are struggling to redesign services in order to meet community needs and develop a financially sustainable delivery model.[101]

Emergency Services

Pre-hospital emergency medical services (EMS), poison control centers (PCCs), and hospital-based emergency departments (EDs) are the most commonly sought sources of emergency care. In Sonoma County, Sutter Hospital, Kaiser, Petaluma Valley and Sonoma Valley Hospitals operate “basic” EDs with an EMS physician on staff 24 hours a day. Memorial Hospital operates a Level II Trauma Center, which requires that it have an appropriate number of surgeons and anesthesiologists on call, 24 hours a day. Palm Drive and Healdsburg District Hospitals have standby emergency services, which require an EMS physician to be on call when not on site.[102] Each year these EDs provide first-contact care for many Sonoma County residents regardless of their socioeconomic status, age, or special need. Within the current health care delivery system, EDs are the only institutional providers required by Federal law to evaluate anyone seeking care. [103] They are expected to stabilize the most severely ill and injured patients, and they provide walk-in care for persons who face financial or other barriers to receiving care elsewhere.

Alcohol and Other Drug (AOD) Abuse Treatment

The AOD treatment system is significantly under-funded due to reductions in Federal and state funding and the lack of insurance coverage parity with other health services. Given this lack of funding, it is estimated that on any given day over 400 Sonoma County residents may be seeking-publicly funded alcohol or other drug (AOD) treatment that is not available.[104] Recognizing that treatment is more cost-effective than incarceration, state and local officials, including the Sonoma County Board of Supervisors, have funded numerous initiatives that provide AOD treatment and recovery options to affected individuals involved in the criminal justice system. However, these recent gains have not benefited everyone in Sonoma County. Less than 10% of the current number of residential treatment beds are available to those who are either unable to pay or not involved in the criminal justice system.

Mental Health Services

The system of care for those suffering from mental illness is a patchwork of diverse providers with varying degrees of expertise, professional backgrounds and charges for service. While the public sector has historically been the provider of care for clients with serious and persistent mental illness, the private sector has typically treated the less seriously ill clients. In Sonoma County, the availability of private mental health practitioners is above the national or state per capita average, but access to these providers depends greatly upon insurance status or ability to pay. Private health insurance is generally more restrictive in coverage of mental illness than is coverage for other health services. As a result, individuals often pay more out-of-pocket for mental health services than for physical health services.

[101] Hall and Johns, op cit.
[102] Hall and Johns, op cit.
[103] Josiah Macy, Jr. Foundation. “The role of emergency medicine in the future of American medical care: Summary of the conference.” *Annals of Emergency Medicine* 25:230-233, 1995.
[104] Sonoma County Health Partnership, Focus on Alcohol and Other Drug Treatment: Can We Close the Gap? Policy Brief, Spring 2002.

In Sonoma County, the public mental health system is funded almost entirely by State sales tax and small grants. Recent expansions of Mental Health Services Act (MHSA) programs will increase the number and variety of community-based mental health services in Sonoma County. County emergency mental health services have also expanded recently. While the closure of the psychiatric inpatient unit operated by the County in conjunction with Sutter Hospital has created pressure on remaining inpatient beds, recent data suggest that the need for mental health inpatient treatment may be decreasing, perhaps due to the success of supportive mental health programs such as housing, crisis residential, client drop in centers, and the expansion of homeless shelter beds in the community.[105] Memorial Hospital continues to operate its psychiatric acute inpatient unit.

Oral Health Services

Oral health care is an often neglected component of total health care. Dental caries is the single most common chronic disease of childhood, occurring five to eight times as frequently as asthma, the second most common chronic disease in children.[106] Although appropriate home oral health care and population-based prevention are essential, professional care is necessary to maintain optimal oral health. Bi-annual dental visits, beginning at age 1, provide an opportunity for the early diagnosis, prevention, and treatment of oral diseases and conditions for persons of all ages, as well as for the assessment of self-care practices.[107] According to the California Health Interview Survey, approximately 17,000 Sonoma County children (19%) did not have dental insurance in 2005.[108] Even families who have private dental insurance often face barriers to receiving care, such as long waits for preventive care appointments, expensive co-pays, limited coverage, difficulty finding approved dental providers, and lack of transportation. In 2003, 13% of Sonoma County residents (all ages) reported not being able to afford needed dental care.[109]

Several local initiatives are working to fill the gaps in dental services for low-income families. These include St. Joseph's dental clinic and mobile dental clinic, and dental clinics at Alliance Medical Center, Petaluma Health Center, Russian River, and Alexander Valley. Community Action Partnership is mobilizing community efforts with private practice providers through Kids Net. This program coordinates the annual *Give Kids a Smile Day* and dental screenings for Kaiser Permanente's Neighbors in Health fair. Both are all-day events that give children from low-income families free dental screenings and check-ups from dentists who volunteer their time and will treat children with urgent needs. The Pediatric Dental Initiative (PDI) is opening its new dental surgery center in Windsor in January 2008, providing dental surgery under anesthesia to children under age 6, and to children and adults with disabilities, along with dental education and outreach.

Summary

[105] Personal communication with Art Ewart, Director, Mental Health Division, County of Sonoma Department of Health Services, November 2007.
[106] U.S. Department of Health and Human Services (HHS). Oral Health in America: A Report of the Surgeon General. Rockville, MD: HHS, National Institutes of Health, National Institute of Dental and Craniofacial Research, 2000.
[107] Healthy People 2010: Objectives for Improving Health. Chapter 21: Oral Health.
[108] California Health Interview Survey, 2005.
[109] California Health Interview Survey, 2003.

The health care delivery system in Sonoma County has a number of assets that contribute to good health outcomes. These positive features should be preserved and enhanced. However, Sonoma County fully experiences and is impacted by all of the problems besetting our national and local health care systems including problems relating to access, affordability, and quality. In addition to these larger system issues, local delivery system issues to resolve are:

- *Expanding insurance coverage*, including coverage for preventive services, especially for vulnerable populations that exhibit higher rates of health problems and poorer health status.

- *Expanding access to a "medical home"* for all Sonoma County residents, in order to: reduce the use of expensive emergency department services; manage chronic diseases, increase use of preventative services and education, and improve access to and coordination with other health providers and services.

- *Recruitment and retention of a culturally competent healthcare work force*.

- *Planning for availability of emergency and hospital services* to meet community needs within a financially sustainable delivery model.

- *Expanding coverage and capacity for mental health and alcohol and other drug treatment.*

- *Expanding access to regular dental services* to provide an opportunity for the early diagnosis, prevention, and treatment of oral diseases.

As members of *Health Action* begin to work collaboratively to identify local solutions to the most pressing health challenges in Sonoma County, efforts will continue at the national and state levels to search for ways to create a better coordinated and sustainable health care delivery system. There is a growing consensus that creating a true healthcare "system" will require the creation of new partnerships and paradigms. The national dialogue offers many innovative models and approaches for improved delivery of health care services. For example, after surveying about 700 healthcare leaders in 27 countries, PricewaterhouseCoopers identified the following seven key areas that must be addressed in developing a sustainable health system[110]:

1. *Quest for common ground:* A vision and strategy for balancing public versus private interests in building an infrastructure and providing basic health benefits.

2. *A digital backbone*: Better use of technology and interoperable electronic networks to accelerate integration, standardization, and knowledge transfer of administrative and clinical information.

3. *Incentive realignment:* Ensure and manage access to care while supporting accountability and responsibility for healthcare decisions.

[110] PricewaterhouseCoopers, Health Research Institute in conjunction with the Montage Group, *Creating a climate of innovation: The health industry's most challenging paradox*.

4. *Quality and safety standardization:* Build consumer trust by establishing and enforcing mechanisms for accountability and enhancing transparency.

5. *Strategic resource deployment:* Balance providing sufficient access to care for most people while appropriately satisfying competing demands on systems to control costs.

6. *Climate of innovation:* Innovation, technology and process changes are a means to continuously improve treatment, efficiency and outcomes.

7. *Adaptable delivery roles and structures:* Flexible care settings and expanded clinical roles help center care on the needs of the patient.

While dealing comprehensively with many of these issues will require action beyond the borders of Sonoma County, these and other system issues should stimulate our thinking as we search for effective and sustainable strategies to improve access to high-quality health care services in our community.