

**Community Health Needs Assessment  
Sonoma County 2008–2011**

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## Executive Summary

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### ***What is the Community Health Needs Assessment 2008?***

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The Needs Assessment 2008 is a collaborative effort by Sutter Medical Center of Santa Rosa, St. Joseph Health System – Sonoma County, Kaiser Permanente Medical Center – Santa Rosa and the Sonoma County Department of Health Services to spotlight the health, well-being and future of the children of Sonoma County. These partners have joined forces in the past in their joint needs assessments to address a number of significant community health issues – prevention of dangerous falls by seniors, the lack of diversity in the health care workforce, and the need for immunization clinics. As these needs assessments have highlighted important issues in the past, Needs Assessment 2008 searches out “Windows of Opportunity” to prevent serious children’s health problems and to bring the community together to envision and realize a “Lifetime of Health” for our children.

### ***Why focus on children’s health?***

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Children are the treasure and the responsibility of our entire community. Through providing health care services to children in Sonoma County and working with community efforts to address children’s health issues, the hospitals have become increasingly concerned by several problems that appear to threaten the future of our community and our children. These are the epidemics of children’s oral disease, childhood overweight and obesity, and alcohol and other drug use by teens and pregnant women. Shining a spotlight on issues that keep our children from reaching optimal health and taking steps together to improve children’s lives are common goals shared by the region’s hospitals and the Sonoma County Department of Health Services.

The Assessment’s theme - *Windows of Opportunity, a Lifetime of Health* - embraces the notion that there are multiple opportunities to intervene and make positive change to address problems that affect children. But this requires taking action during windows of opportunity – the unique times in life when children are growing and their brains and bodies are developing. By seizing these opportunities, the whole community benefits as children become healthy community members, workers and parents of the future. It is by giving children what they need now to live healthy, productive lives, we steer the future of Sonoma County onto a steady course.

### ***What is the role of the region’s hospitals in improving children’s health?***

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The hospitals and health department are uniquely positioned to bring a public focus to children’s health issues as a result of their central position in the community health network and their access to the media and policy makers. When they provide leadership and engage in collaborative efforts, better and faster progress can be made on children’s health.

There is effective collaboration happening right now in our community. Everyday, groups are making inroads on difficult child health problems. It is the hope of the Needs Assessment partners that the data and suggestions in this Needs Assessment can contribute to the efforts to find solutions to these child health problems.

### ***What are the underlying themes of the Needs Assessment?***

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**Promoting prevention.** The health problems raised in the Needs Assessment are preventable with concerted action on the part of partners and the community. To this end, the Needs Assessment employs *The Spectrum of Prevention* – “a fundamental model in public health, [which] acknowledges that a broad range of factors play a role in health. Policies, legislation and organizational practices are all powerful influences in shaping an individual’s attitudes”<sup>1</sup> and the environment that determines the way people live. The Needs Assessment suggests actions that can be taken on each issue at multiple levels including policies, programs, individual and organizational practices.

**Reducing health disparities.** Without question across the nation and in California, communities of color and low-income families and individuals suffer disproportionately from lack of access to health care and myriad health problems. Children are no strangers to the “health disparities” linked to socio-economic status and race/ethnicity. Of the issues raised in this Needs Assessment, this disparity is most evident in the areas of oral health and overweight/obesity. The Needs Assessment tries, where possible, to highlight the health disparities and propose actions that can begin to alleviate them.

**Fostering understanding.** There is a lack of understanding among the public about the connection between childhood dental disease, obesity, and teen and prenatal AOD use and the long-term health of children and teens. Improving the public’s understanding of these child health issues necessitates the collection of accurate data now and into the future. In developing this Assessment, dozens of people working hard on these issues contributed their data and expertise. In the “Indicators” sections, the Needs Assessment proposes a handful of data indicators, which can be used to measure the community’s progress in improving these child health issues. This Assessment aims, through continued collection of data and by educating the public, to increase the community’s understanding of the link between these particular child health issues and overall child health and well-being.

**Leveraging opportunities.** The Needs Assessment is a critical planning document for the hospitals, and also a call to action for the entire community on children’s health. The hospitals have a large role to play. But, every individual and organization in our community can contribute to turning the curve on these and other child health issues.

The Needs Assessment points to some of the many important efforts already underway in our community to address child health – Healthy Kids, The Pediatric Dental Initiative, the Community Activity and Nutrition-Coalition, the State Incentive Grant Program to reduce teen drinking risk in Rohnert Park, Petaluma, and Cotati, among others. These are spotlighted for a reason – to provide an opportunity for those in the community who want to support this work to do so. It will take a groundswell of commitment from individuals and organizations, adding their resources and strength to these local efforts, if we are to be successful in making critical shifts in children’s health in our community. Every individual and organization can do something – they can look to *The Spectrum of Prevention* sections throughout this Needs Assessment and find a way to join the work to improve children’s health in our community.

### ***Major Findings of the Needs Assessment***

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**Dental Health.** Most children in Sonoma County enjoy good oral health with only infrequent need for interventive treatments. But for a significant number of children poor oral health is a painful and ongoing problem. These children are affected unnecessarily by this preventable disease, falling behind in school and social development, and suffering painful bouts of toothache and infection. Low-income children suffer the most tooth decay. Fortunately, oral disease can be avoided by using a combination of strategies. With a focus on prevention and more access to care, all Sonoma County children can experience optimum oral health.

- Tooth decay, both treated and untreated, is rampant in children.
- Low-income children and Hispanic/Latino<sup>2</sup> children experience much higher levels of treated and untreated decay than other children.
- Children do not have access to fluoridated public water, the most effective public health measure to prevent oral disease.
- Children are not getting needed preventive dental visits.
- The need for immediate dental care to treat urgent problems from Early Childhood Caries is high.
- Children are not receiving protective dental sealants in sufficient numbers.
- Many children do not have dental insurance, an important determinant of good oral health.

**Overweight and Obesity.** Childhood overweight is an urgent health crisis with no easy solution. Preventing childhood overweight is a collective responsibility requiring individual, family, community, health care, business, and governmental commitments to address both sedentary behavior and unhealthy diet.

- Overweight and obesity are increasing in Sonoma County.
- Low-income children in Sonoma County are at higher risk for overweight and obesity.

- Sonoma County children are not consuming the daily recommended five servings of fruits and vegetables.
- Physical activity positively contributes to preventable illnesses.
- Food insecurity, defined as limited or uncertain access to nutritious foods, is linked to overweight.
- Sonoma County schools must be part of the solution to solving overweight and obesity, through education, physical activity programs and established nutritional standards for foods offered in school.

**Teen Alcohol, Tobacco and Other Drug (ATOD) Use.** Alcohol, tobacco and other drug use among Sonoma County teens is a major public health concern. The dangers of alcohol and drug use are extensive, pervasive and lasting for teens and yet the social pressures for teens to drink and use drugs are enormous. The media makes it seem sexy, TV and magazine advertising promote alcohol and tobacco products, and other teens make it seem “cool.” Community factors such as permissive attitudes, behaviors, and easy availability from commercial and social sources play a huge role in contributing to underage drinking and drug use.

- Alcohol is the leading drug used by Sonoma County youth.
- More young people reported using marijuana than tobacco in the past 30 days.
- Tobacco use increases for the first time in six years.
- Methamphetamine is a serious problem for some Sonoma County youth.
- Sonoma County teens exceed the state average with high-risk behaviors associated with alcohol.
- Motor vehicle crashes are the leading cause of death among teenagers. Alcohol use is a major contributor.
- Sonoma County needs more AOD treatment programs for youth.

**Prenatal Alcohol and Other Drug (AOD) Use.** Women want to do the best they can for their babies. But through lack of knowledge or because of dependence or abuse, many women expose the fetuses they carry to alcohol and other drugs. Pregnancy is a unique time when women, even habitual AOD users, are open to making changes in their lives for the sake of their future children. Remarkable progress is being made in Sonoma County to reach AOD using pregnant women and help them eliminate substance abuse and find treatment.

- Each year, roughly 600 children are born exposed to alcohol and other drugs in Sonoma County.
- Between 10% and 14% of pregnant women in Sonoma County use alcohol and other drugs (exclusive of tobacco).

- Drug use by pregnant women in Sonoma County is a major problem on a par with or greater than the national average.
- Alcohol is the most frequently used substance by pregnant women in Sonoma County.
- Marijuana is the illicit drug used most often by pregnant women in Sonoma County.
- Tobacco use during pregnancy is widespread – roughly one-fifth of pregnant women in Sonoma County smoke.
- AOD use is linked to child neglect and abuse, and child mortality.
- Sonoma County teens are at high risk for giving birth to a substance-exposed child.

*“Water and soil themselves don’t create a beautiful garden. We’ve produced individual flowers, but not a beautiful garden... We need to move from isolated success stories to systematic, sustained successes.”* Dr. Charles Homer, President and CEO, National Initiative for Children’s Healthcare Quality

With the completion of the Needs Assessment, several key learnings stand out. These will inform our work on children’s health.

- **The cost benefit of prevention.** Preventing problems before they arise is a particularly powerful tool in child health. Taking logical steps now, when children are young, can set children up for a lifetime of good health. These prevention efforts will result in a dramatic cost savings and reduction in social problems to our community.
- **The need for more and better local data.** The data gathered in this Needs Assessment is a patchwork from many different sources. The data often lack consistency over time, are difficult to compare from year to year, and frequently do not tell the complete story. If our community is to mobilize to make improvements in children’s health, one of our most powerful tools is accurate local data. There are opportunities to make significant improvements in gathering and tracking local data on all of these issues, but particularly on the issues of oral health and prenatal alcohol and drug use.
- **The critical role of environment in health.** The environment where we live, work and play, what foods are available, the quality of the air we breathe, the water we drink, opportunities for exercise, the impacts of advertising on our consumer choices – all of these have an impact on our health. While individual education and behavior change are important to improving health, the real power in making progress on health is in changing the environment and systems that structure and affect our world.
- **The tremendous power of collaboration.** Collaboration holds the promise of allowing progress on issues that any one or two parties alone could never budge. A remarkable local example of the power of collaboration is Sonoma County Healthy Kids. As a result of the determined efforts of dozens of public and private community partners, this collaboration has taken great steps toward solving the problem of uninsured children in Sonoma County. This example of collaboration should be a model on which to base future efforts in children’s health improvement.

***Where do we go from here?***

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The future of any society depends on the ability to foster the health and well-being of the next generation. Failure to provide children with what they need puts our future at risk. To make progress we must look for the right balance between individual and shared responsibility for child health, accept our individual and institutional roles in making change and put in place systems to monitor changes over time. In this spirit, the next assessment – Community Health Needs Assessment 2011 – will track and report on progress made on these issues over the next three years.

# Community Health Needs Assessment Sonoma County 2008

## *Windows of Opportunity, a Lifetime of Health*

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For those who call Sonoma County home, the health and wellness of the community is considered essential to the vitality and the future of the region. The possibilities for a healthy lifestyle unfold amidst gentle mountains, winding trails, bountiful harvests, a good climate, and the benefits of a strong local economy. Here, health is a core value.

For nearly a decade, Sonoma County's three major hospitals, Sutter Medical Center of Santa Rosa, St. Joseph Health System – Sonoma County, and Kaiser Permanente Medical Center – Santa Rosa have collaborated with the Sonoma County Department of Health Services to create the Community Health Needs Assessments. The assessments provide a guide for the hospitals' community benefit planning, which focus resources to most benefit the health of the community.

The Community Health Needs Assessment for 2008 shines a spotlight on children's health. There is good reason for this. New research continues to show that what we do for our children in their first days and early years of life can have significant impact on their development and long term health.

Experts on brain development have cited an “explosion of research” in neurobiology that shows the extent to which genetics and early experience build a child's brain. Brains are built “from the bottom up,” over time, with simple circuits providing the base needed for more advanced circuits. These growing connections are affected and changed by many stimuli. It is our responsibility, as a community, to make sure that the stimuli affecting our children are optimal for their growth and development. Our community requires a highly skilled workforce and healthy adult population to meet the challenges of a global society. Creating the right conditions for early childhood development and health is the key to our successful future.

This report is a tool to inform the community's work on child health issues. Each section of this report contains recommendations for positive change along *The Spectrum of Prevention*. Improving the health of a community must be part of a broader effort addressing the problem from many different angles. The Assessment searches for the windows of opportunity in our community and encourages us all to focus on our children.

## ***A Comprehensive Effort to Improve Community Health***

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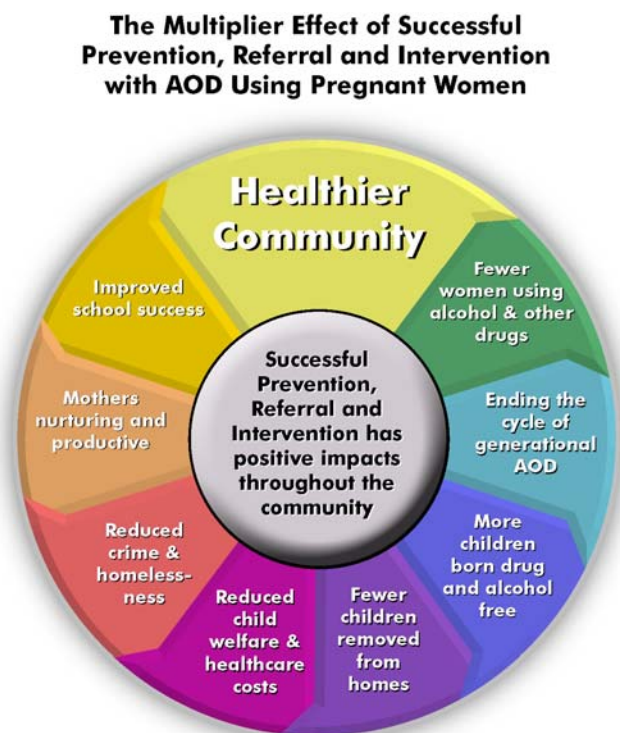
The **Spectrum of Prevention**, “a fundamental model in public health, acknowledges that a broad range of factors play a role in health. Policies, legislation and organizational practices are all powerful influences in shaping an individual’s attitudes about drinking, for example, as well as that person’s drinking behavior. Therefore, strengthening someone’s skills and knowledge alone may not be sufficient to prevent unhealthy, disease-causing behavior. In other words, public health activities that focus exclusively on individual behavioral change isolated from broader community factors will have limited success. Any effort to improve the health of a community must be part of a comprehensive, coordinated effort that addresses many aspects, including policies, programs, and organizational practices.”<sup>3</sup>

### **The Spectrum of Prevention**



## Healthier Community

Avoiding long-term health problems for children by implementing prevention activities at the earliest possible time produces numerous positive impacts for children and families and for society in general. The ultimate result of effective prevention is a healthier community. The graphic below shows the positive impacts of successful prevention and intervention with AOD using pregnant women.



## *The History and Future of the Community Health Needs Assessment*

State Senate Bill 697 requires not-for-profit hospitals in California to assess community health every three years and to use that assessment as the basis for community benefit planning. The Sonoma County Health Alliance was formed in 2000 with the goal of improving the health of Sonoma County through collaboration among the many health systems and providers in the county. Toward that end, the Alliance formed its Community Health Improvement subcommittee and charged it with the mission of *fostering community health improvement through collaborative planning, investment, and action*. The subcommittee is made up of representatives of the three large hospitals, Sutter, Memorial and Kaiser, as well as a representative from Sonoma County's Health Department.

Previous to the development of the Sonoma Health Alliance, the hospitals and the health department enjoyed a productive collaboration around community benefit planning and programming since 1996 under the auspices of the former Health Care Leadership Council. Over the last 11 years, this group has led a number of important community health improvement projects, including education in early childhood development, bicycle safety, annual countywide flu clinics and a flu vaccine task force, supporting workforce development efforts and efforts to prevent dangerous falls by our senior citizens.

Through the Community Health Improvement subcommittee, the Sonoma County Department of Health Services, Sutter Medical Center of Santa Rosa, St Joseph's Health System-Sonoma County, and Kaiser Permanente's Santa Rosa Medical Center joined forces and began collaborating on a Community Health Needs Assessment in 2001.

**Community Health Needs Assessment 2001** was a broad-based overview of demographic, economic, health and environmental factors that affect both community and individual health. It analyzed the community's status on a wide range of issues, including the availability of childcare, access to health services, public safety, HIV/AIDS, unintentional injuries, food-borne illnesses and mortality due to specific diseases. This broad assessment painted a picture of health status in Sonoma County.

Major issues identified by the 2001 Assessment were community concerns about access to health services and the need for diversity in the health care workforce. Over the course of the next several years, the subcommittee focused on establishing a robust, ethnically diverse workforce pipeline from within Sonoma County by reaching out to minority high school students and creating opportunities for careers for these students in healthcare. This work resulted in the Healthcare Workforce Development Roundtable and a partnership with Santa Rosa Junior College to offer ongoing educational, scholarship and training programs that are changing the face of the healthcare workforce in Sonoma County.

The data collected in the 2001 Assessment also raised concerns about the safety of Sonoma County's senior citizens. In collaboration with the Area Agency on Aging, the committee decided to focus a large part of the 2005 Assessment on senior issues.

**Community Health Needs Assessment 2005** analyzed a broad spectrum of community health issues, focusing in particular on the needs of a rapidly growing senior population. The findings of this report spurred the subcommittee to address a variety of senior needs, particularly prevention of unintentional injury due to falls. The Sonoma Health Alliance established the Senior Safety Task Force. It implemented a senior fall prevention program called "Step Wise." The program offers free classes and workshops developed by the Home Safety Council to help seniors learn how to avoid falls, reduce the fear of falling, and improve safety and activity levels. Seniors who complete the program state that they are 10 to 50% less concerned about falls interfering with normal social activities with family, friends, neighbors or groups.

**Community Health Needs Assessment 2008** shifts the focus from our oldest community members to our youngest. The partners of the subcommittee believe that children are a litmus test for the healthiness of our society. These partners have long been concerned that a number of very serious children's health issues are not receiving the attention they need. Fundamental issues like access to dental care, childhood overweight and the impacts of substance abuse on child and teen development are a common interest among the committee members and issues that are of great concern to the public. The partners believe that their research and collaboration on these issues will assist government and other local efforts in creating positive change on children's health.

**How the hospitals will use the Assessment.** Each hospital will use the data and suggestions for action in developing its own community benefit plan for the next three years. In addition, the hospitals will use the Assessment findings to drive their work on collaborative projects.

**How the community will use the Assessment.** Every individual and organization in our community can contribute to turning the curve on critical child health issues. The Assessment points out some of the numerous efforts already underway to address child health – Healthy Kids, The Pediatric Dental Initiative, the Community Activity and Nutrition-Coalition, the State Incentive Grant Program to reduce teen drinking, and many others. The Assessment highlights these so that individuals and organizations concerned about children's health can join and support these efforts. It will take a strong commitment from all of us if we are to be successful in making critical shifts in children's health in our community. Every individual and organization has a role to play. Each can look at *The Spectrum of Prevention* sections throughout this Needs Assessment and find a way to join in the work of improving children's health in our community.

**Looking to the future.** Because children's health needs are such a critical part of the overall health of our community, the subcommittee has decided to extend this focus beyond the next three years. The **Community Health Needs Assessment 2011** will follow progress on issues discussed in this report.

### ***Sonoma County Demographic and Health Status Information***

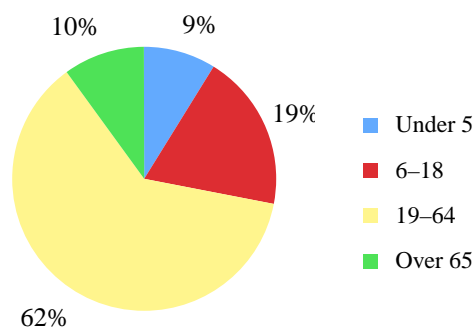
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Before considering health issues in Sonoma County, it is important to understand who lives in this community. In 2006, Sonoma County had the 17th largest county population of the 58 counties in California, with 480,000 residents, with 110,000 children ages 0 to 17. Santa Rosa, the county seat and largest city, has one-third of the total population of Sonoma County and ranks as the 30th largest city in the state.

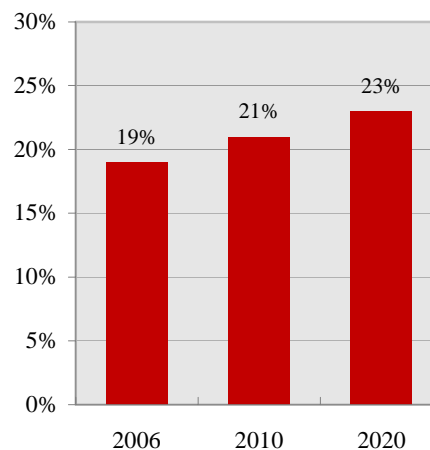
**Demographics.** Almost one-quarter of Sonoma County's population is under 18-years old, one-third of whom are younger than school-age (0- to 5-years old). More than 10% are 65-years and older, and the remainder (62%) is between 19- and 64-years old.<sup>4</sup> Although its racial/ethnic composition is changing, Sonoma County is still substantially less diverse than the state as a whole: 71% of Sonoma County residents are white and 19% are Latino. The Latino population in Sonoma County is the fastest growing ethnic group, projected to increase to 21% of the

population by 2010, and to 23% by 2020.<sup>5</sup> The total Latino population is projected to increase 300% by 2050 — from 80,742 in 2000 to 250,692 in 2050.<sup>6</sup>

Sonoma County Residents by Age



Latino Population Growth



**Birthrates.** The overall Sonoma County birth rate did not change significantly from 2000 to 2003, although there were significant differences in birth rates among racial/ethnic groups. Hispanics had the highest birth rate of any racial/ethnic group in Sonoma County (24.3/1,000), followed by Asian/Pacific Islanders. Together, they account for more than twice the birth rate of white, non-Hispanic women in the county.<sup>7</sup> In 2005, 40.2% of births were to foreign-born mothers, with the majority of foreign-born mothers coming from Mexico (77%). Almost 66% of the births to foreign-born mothers were funded by Medi-Cal.<sup>8</sup>

**Children in school.** During the 2006-2007 school year, 71,412 students enrolled in Sonoma County public schools. Throughout the 1990s, enrollment in Sonoma County public schools rose steadily, by about 2 percent annually on average. In 2001, the trend shifted downward and we are now firmly in an era of declining enrollment. Today, our local schools are educating the most ethnically and linguistically diverse youth population in the county's history. Thirty-three percent of the public school students are Latino, up from 15.5% in 1993-94.<sup>9</sup> Latinos make up 52% of elementary students in Santa Rosa schools and 31% of high school students. They constitute 43% of Sonoma Valley's students, 38% of Windsor students, 27% of Cotati-Rohnert Park students and 23% of Petaluma students.<sup>10</sup> With this population shift has come greater language diversity. A decade ago, 2 percent of our students were English-language learners, compared to 22 percent today. It is also striking that almost two-thirds of the 23,000 Latino students now in public schools are not proficient in English.

**Children living in poverty.** In 2001, one in five (22%) white, non-Hispanic households and almost half (49%) of Hispanic households in Sonoma County had annual incomes less than \$30,000. In 2005, approximately 12,445 children and 9,800 families were living under 100% of the Federal Poverty Level (FPL).<sup>11</sup> In 2006-07, 35% of all Sonoma County students were eligible for the Free and Reduced Meal Program (a common indicator of low-income). Districts with

extremely high eligibility rates include Bellevue Union (89%) and, Roseland (83%) in south Santa Rosa, Monte Rio in the Russian River (77%), Santa Rosa Elementary District (76%), Petaluma Elementary (69%), and Sonoma Valley Elementary (69%).<sup>12</sup> Sonoma County's poorest children live primarily in a small number of low-income neighborhoods clustered along the Highway 101 corridor and in the Sonoma Valley, with smaller numbers residing in the Russian River and North Coast areas.

**Special needs.** In 2006, the Sonoma County public school system identified 9,288 young people 0- to 22-years old as having special needs, with Individualized Education Plans (IEP's). As of December 1, 2006, these young people constituted 13% of the school population.<sup>13</sup> This includes all 13 federal categories of qualification, including mental retardation and emotional disturbance. African Americans have a somewhat higher percentage of IEPs (17%) than whites or Hispanics (14%). Among the largest age cohort of children with IEPs – 8 to 11 year olds – 35% are Hispanic (compared to 33% of the school age population), and whites are 58% (compared to 56% of the school population.).<sup>14</sup>

**Health insurance.** Due to the success of the Healthy Kids Sonoma County or “the Children’s Health Initiative” (CHI), insurance coverage among children has increased dramatically in the last several years. Before CHI started, 12,169 children were enrolled in Medi-Cal; as of January 2007, 22,400 are covered, an increase of 84%.<sup>15</sup> Fewer than 3,000 children were enrolled in Healthy Families before CHI. As of May 2007, total enrollment is 10,063, an increase of 233%.<sup>16</sup>

**Services available for low-income and uninsured.** In Sonoma County, there are eight community health center organizations operating multiple health care sites throughout the county, including mobile health and dental services, as well as two school-based children’s health centers. In addition, there are tribal health services and several free clinics. These facilities provide the majority of health services to children and youth on Medi-Cal and Healthy Families, and those who are uninsured. Health care coverage for low-income children is provided through the countywide Healthy Kids Program through two publicly funded health insurance programs – Medi-Cal and Healthy Families; and three privately funded health insurance programs – Kaiser Child Health Plan, California Kids, and Healthy Kids Partnership Health Plan. A noteworthy gap in services for low-income children is the lack of access to specialty care.

## Children's Oral Health

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***“A silent epidemic of oral disease is affecting our most vulnerable citizens — poor children, the elderly, and many members of racial and ethnic minority groups.”***

*Oral Health in America: A Report of the Surgeon General (2000)*

A mouth free of cavities, gum disease and injury is critical to children's healthy development and key to their success in school and in life. Good oral health is linked to a child's ability to engage in an active social life, and to attend and concentrate in school. It is linked with a child's overall health and promotes normal development of a child's language and communication skills. A healthy mouth allows a child to eat a nutritious diet and to grow strong. Sadly, for many children in Sonoma County who are not reaping the benefits of good oral health, their future overall health and success will be compromised.

According to the Surgeon General, “tooth decay is the single most common chronic childhood conditions – 5 times more common than asthma and 7 times more common than hay fever.” Parents in Sonoma County rank “access to dental care” as the third highest priority need of children.<sup>17</sup> In fact, tooth decay affects Sonoma County children at epidemic levels. Twenty-eight percent (28%) of California's elementary school children have untreated decay.<sup>18</sup> For these children, the consequences of poor oral health can have life-long implications.

The good news is that this disease – the most prevalent of all childhood diseases – is entirely preventable. With good oral hygiene, regular visits to the dentist, access to optimum levels of fluoride in the water supply and proper nutrition, most children can achieve good oral health. There is a window of opportunity to educate parents and children about the importance of oral health, and promote better access to regular dental care and oral hygiene. These actions coupled with good hygiene practices and nutrition at home are the key to improving the oral health of children in Sonoma County.

### ***Children's Oral Health Defined***

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Oral health involves the structures of the mouth, which include the teeth, gums, palate, tongue, inside of the cheeks, bones and supporting tissues. These structures help children to smile, speak, sigh, taste, chew, swallow, kiss, smell, and cry. With these structures children are able to show their feelings and interact with the world through facial expressions. Taking good care of the mouth's structures can prevent disease in the mouth and disease throughout the body.

**Standard of Practice.** The American Academy of Pediatric Dentistry recommends that, by 12 months of age, every child be seen by a dentist, have a dental home and receive regular preventive checkups.<sup>19</sup>

**Dental Disease.** Tooth decay or “caries,” is the most common form of oral disease. This disease process starts with bacteria in the mouth, which metabolize the carbohydrates children eat. The

resulting acids eat away at the tooth's surface, eventually creating caries. Dental disease can be passed from one person to another, for example a mother to a child, through the spread of a bacteria (*Streptococcus Mutans*). If untreated, dental disease can become so severe and infection so rampant that the infection can spread to other parts of the body and, in rare cases, cause death.

**Early Childhood Caries (ECC).** ECC, also known as Baby Bottle Tooth Decay, is defined as tooth decay in the primary teeth of children under 6-years old. This disease forms a “distinctive pattern of severe tooth decay.” Five to ten percent of preschool aged children<sup>20</sup> or an estimated 1,700 to 3,400 preschool aged children in Sonoma County suffer from ECC<sup>21</sup>. These children need aggressive intervention to treat the infection and restore the teeth to a functioning state. Very often, the treatment for ECC is extensive and requires sedation, often in a hospital or surgery center setting.

**Major Findings and Themes from *Oral Health in America: A Report of the Surgeon General*<sup>22</sup>**

- Oral health is more than healthy teeth.
- Oral diseases and disorders in and of themselves affect health and well-being throughout life.
- There are profound and consequential oral health disparities within the U.S. population.
- Lifestyle behaviors that affect general health – such as tobacco use, excessive alcohol use, and poor dietary choices – affect oral health as well.
- Safe and effective measures exist to prevent the most common dental diseases—dental caries and periodontal (gum and tissue) diseases.

### ***The Consequences of Poor Oral Health***

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***“Kids can't study when they hurt. They can't sit still, they can't focus. They are victims of the single most widespread disease among children in California: tooth decay.”***

*Dave Perry, DDS, Chair, Dental Health Foundation*

### **Impacts of Tooth Decay and the Resulting Infection**

Untreated oral disease can have devastating health, developmental and social consequences for children. Even mild tooth decay can cause severe pain; infected or abscessed teeth can be excruciating. Many children have learned to live with pain that most people would find unbearable. Often children do not understand that teeth are not supposed to hurt. They have never known anything different.

- **Compromised physical development.** Children with dental pain from infected teeth and gums often do not get the nutrition they need to grow because pain keeps them from eating fresh, healthy foods. Tooth loss can also keep children from eating healthy fruits and vegetables. The resulting poor nutrition can slow physical growth.
- **Effects on social development.** Untreated dental disease can cause tooth loss, which may make it hard to establish normal speech patterns and may delay social development. The embarrassment of brown, missing and decaying teeth can exaggerate the normal shyness of childhood and negatively affect self-esteem.
- **Impacts on school success.** Children suffering from the pain of untreated decay often miss many days of school, and even when in school, may have trouble paying attention, relaxing and participating. Pain from toothache can also cause sleep deprivation and interfere with concentration, and may derail a child's success in school.
- **Early and long term impacts on health.** There is a strong connection between oral health and overall health, starting even before birth. Bacteria from oral disease in pregnant women can cause slow fetal growth and low birth weight in infants, and may increase poor birth outcomes and neonatal mortality. Reservoirs of infection in a child's mouth from untreated decay can make a child vulnerable to ear and sinus infections. Chronic untreated dental disease in children and the resulting infection is linked with chronic health problems later in life such as diabetes, heart and lung conditions, and osteoporosis.<sup>23</sup>

### ***Scope of the Problem***

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The Surgeon General has declared tooth decay a “national epidemic.” The evidence is clear – children across the country and particularly in California are suffering from tooth decay in vast numbers and this decay is taking its toll on their lives and futures. The Dental Health Foundation, in its recent California Smile Survey 2006, calls tooth decay, “the number one health problem for California’s kids.” Twenty-eight percent (28%) of school children in California have untreated decay and by 3<sup>rd</sup> grade, over 70% of children have a history of tooth decay.<sup>24</sup> Of states surveyed, only Arkansas ranked below California in the number of children with a history of decay.<sup>25</sup> Roughly 25% of California children have not been to a dentist in the last year<sup>26</sup> and 17% of California kindergarteners have never been to a dentist.<sup>27</sup> These problems are worse for low-income children in California, one third of whom have untreated decay.<sup>28</sup>

The evidence suggests that in many respects the epidemic of tooth decay may be even worse in Sonoma County. While better data on general oral health is needed in Sonoma County, data collected by local dental programs indicates that a very serious problem exists in this county.

**Key Findings on Children's Oral Health in Sonoma County**

- **Tooth decay is rampant in Sonoma County children.** Seventy-six percent (76%) of Sonoma County school children assessed by the Mighty Mouth Program over three years had a history of decay.<sup>29</sup> This exceeds the state average of 70% of children with a history of decay.<sup>30</sup>
- **Untreated decay is a serious problem for Sonoma County children.** Thirty-nine percent (39%) of Sonoma County school children assessed by the Mighty Mouth Program over three years had untreated decay. Of these, 19% had emergent needs and 20% had urgent needs.<sup>31</sup> Of Santa Rosa children preparing to enter kindergarten assessed in 2007, 52% had untreated caries, 40% had emergent needs and 12% had urgent needs.<sup>32</sup> Thirty six percent (36%) of parents of preschoolers and 3<sup>rd</sup> graders screened in Sonoma County reported their children had cavities or pain.<sup>33</sup>
- **Children do not have access to fluoridated drinking water.** Fluoridated drinking water has proven to be the most effective public health measure for prevention of oral disease. Though a large number of Americans, 67%, receive fluoride through the public water supply,<sup>34</sup> the vast majority of Sonoma County residents do not have access to fluoridated drinking water. Only 3% of the public water supply in Sonoma County is fluoridated.<sup>35</sup> Those living outside the cities may draw their drinking water from private wells and may not fluoridate the water they draw. In addition, most bottled drinking water is not fluoridated.
- **Low-income children have high levels of untreated decay.** Sixty percent (60%) of low-income and predominantly Hispanic children screened over three years at Give Kids a Smile Days (GKSD) had untreated tooth decay. Of pre-kindergarten children screened in 2007 in the Roseland School District, a predominantly low-income and Hispanic community in Santa Rosa, 69% had untreated caries.<sup>36</sup>
- **Children are not getting needed preventive dental care.** Local screening data from preschools and elementary schools found that 13% of children had never been to a dentist. Another 23% had not been to a dentist for over one year.<sup>37</sup>
- **Children are not getting urgent care for serious conditions such as ECC.** Seven percent (7%) of children surveyed by the Mighty Mouth Program had ECC, needing immediate care. The state average is 4%.<sup>38</sup> Twelve percent (12%) of children screened prior to entry into kindergarten in Santa Rosa in 2007 had urgent dental needs.<sup>39</sup>
- **Children are not receiving dental sealants in sufficient numbers.** Mighty Mouth Program Data shows that only 17% of children surveyed had sealants to protect their permanent teeth from cavity-causing bacteria. Only 3% of children in Sonoma County enrolled in Medi-Cal in 2003 had sealants applied to their first permanent molars.<sup>40</sup> The California Smiles Survey, 2006 found that 28% of California children had sealants.

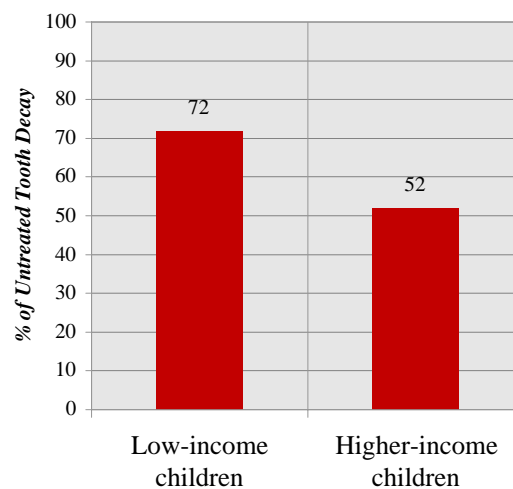
- **Many Sonoma County children do not have dental insurance.** Sonoma County ranks in the bottom third of California counties for the number of children without dental insurance - 44th out of the 58 counties.<sup>41</sup>

### ***The Story Behind the Problem***

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A confluence of economic, social, infrastructure and other factors has led to a situation where poor oral health is a common occurrence in Sonoma County's children.

*Low-income children in California experience much higher levels of untreated decay than do other children.<sup>42</sup>*



***“Poor children and children of color are much more likely to have tooth decay and suffer the consequences of untreated disease.”*** *The California Smile Survey, 2006*

**Poverty.** While children from across the socioeconomic spectrum experience tooth decay, the majority of dental disease is found in low-income and minority children. Studies find a striking correlation between tooth decay and poverty. Poor children suffer many more dental caries than their more affluent peers, and their disease is more likely to be untreated. Poor children have nearly “12 times more restricted activity days because of dental-related illness than children from higher-income families.”<sup>43</sup> One reason for the disparity is that low-income families have difficulty paying for dental care. According to the CHIS 2003 survey, 18% of Sonoma County families responded that they could not afford dental treatment needed by their children.

**Race.** In California, Hispanic children are three times more likely to be poor than white children<sup>44</sup> and children living in poverty are more likely to suffer from poor oral health.<sup>45</sup> Importantly for Sonoma County, where the Hispanic population is the fastest growing demographic group, Hispanic children experience more tooth decay, more untreated tooth decay

and more urgent dental care needs than any other group. The California Smiles Survey found that 72% of Hispanic children had a history of tooth decay as compared to 48% of white children. Hispanic children also had higher levels of untreated tooth decay – 33%, compared to 20% in white children. Hispanic children were more than twice as likely as white children to need urgent dental care. As the population in Sonoma County becomes increasingly Hispanic, oral health disparities will continue to grow.

***The Case for Dental Insurance***

***23% of California families have no dental insurance for their children.***<sup>46</sup>

**Uninsured children are:**

- Two-and-a-half times less likely than insured children to receive dental care.<sup>47</sup>
- Twice as likely as privately insured children to have never visited a dentist.<sup>48</sup>
- Twice as likely as privately insured children to have untreated decay.<sup>49</sup>

**Dental insurance.** Good dental insurance correlates strongly with children receiving preventive dental care and achieving good long-term oral health. In California, only 21% of privately insured children had unmet dental needs but nearly 40% of uninsured children had unmet dental needs.<sup>50</sup> Many families struggle to pay for dental insurance for their children. Hispanic children are more likely to be uninsured. One in five (20%) Hispanic children in Sonoma County is uninsured.<sup>51</sup> A local

survey of predominantly low-income, Hispanic children found that, of children assessed between 2005 and 2007, 82% were uninsured and only 18% reported having dental insurance.<sup>52</sup>

**Access to dental care.** Children who depend on public health insurance experience major barriers to receiving dental care. Many dentists will not accept patients with public health insurance because of low-reimbursement rates and administrative red tape. For these children, simply getting in to see a dentist can be a struggle. Receiving orthodontia, dental surgery or dentistry under anesthesia, which is often needed to treat ECC, can be impossible.

**Fluoride policy.** Children in Sonoma County are not receiving the well-documented benefits of fluoridated public water. Policy makers seeking to fluoridate the public water supplies have repeatedly met with the barriers of a small but vocal public opposition, cost and infrastructure challenges.

### ***The Economics of Dental Disease and Fluoridation***

- Californians spend \$4 billion annually on dental care, with \$700 million paid by taxpayers for publicly funded dental programs.<sup>53</sup>
- Nationally, more than 51 million school hours are lost each year to dental-related illness.<sup>54</sup>
- Every dollar spent on community water fluoridation saves between \$7 to \$42 in treatment costs, depending upon the size of the water system.<sup>55</sup>

**The expenditures necessary to fund comprehensive prevention programs and fluoridate water supplies can realize huge benefits in savings over the long term.**

**Parental knowledge and practices.** Possibly the most important factor in determining a child's oral health is their parent's knowledge about good oral health, dental hygiene, nutrition and how to access dental care. Many parents do not understand the strong connection between oral health and overall health. Parents, especially recent immigrants, may never have learned how important it is to begin taking care of children's teeth early. Unfortunately, many children are put to bed with sugary liquids in a bottle – which causes ECC – and many children are not taught how to brush and floss teeth. Families, even those with dental insurance, may not understand the necessity for regular dental checkups or how to use dental insurance to access care.

### ***What Our Service System Offers and Where the Gaps Are***

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#### **Resources**

Many children in Sonoma County, both with and without dental insurance, have annual or biannual visits to the dentist, get a check up and cleaning and, if necessary, restorative treatments. Currently, ten pediatric dentists and many more general dentists care for children in their Sonoma County practices. Staying on track with regular preventive dental visits is much more likely if a child has good dental insurance. By most accounts, there is no lack of access to general dental services for children with private dental insurance or whose families can afford care.

For uninsured children or children with public insurance, the primary source of dental services is the community health center network. The community health centers are the primary medical home to more than 27,000 Sonoma County children. Fortunately, in Sonoma County, our health care network has five dental clinics in health centers throughout the county (Alliance Medical Center, Alexander Valley Medical Center, St. Joseph's Dental Clinic and Cultivando la Salud Mobile Dental Program, Petaluma Health Center and Russian River Health Center). In total, there are 26 dental chairs in the community clinics that serve children. Indian Health Services in Santa Rosa has an additional 13 dental chairs and provides roughly 3,000 dental visits to children each year.

## **Gaps**

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There are many children who do not have regular access to dental care either because they do not have dental insurance or because their parents cannot afford to pay for dental care. For these children, access to dental care is limited. Since few private practice dentists accept public health insurance, the community health centers are often the only choice for these families.

All of the community health centers accept public health insurance and payment on a sliding scale. In spite of the work of the community health centers, there are still gaps in service. Low-income children living in Sonoma Valley are at a disadvantage as there is currently no dental clinic in that community, although dental services are provided to clinic patients through a contract with another provider. At some of the community health centers, new pediatric patients must wait weeks or even months for an appointment. There is a need to expand capacity in the community health center dental clinics and to add a clinic in Sonoma Valley.

There are some oral health services that the community health centers are not able to offer. Dental clinics typically do not provide root canals, oral surgery, tooth replacements, or orthodontia. When families need these services and cannot pay for them, they may seek treatment by a volunteer dentist, often through the Kids Net program, which matches volunteer dentists with children in need. In addition, there is a documented need for additional dental services for children with special needs requiring special care or sedation to receive dental treatments.

## ***Examples of Innovation***

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### ***The Sonoma County Oral Health Access Coalition***

*A community-wide approach to addressing oral health.*

The Dental Health Connection project of Community Action Partnership Sonoma County (CAP) is tackling children's oral health problems in Sonoma County and forging new partnerships that can make a difference. Through its Kids' Net program, CAP is filling part of the gap of children's urgent dental care needs by matching volunteer dentists with low-income children who need care. The program provides training to childcare providers and family outreach workers on oral health prevention. The program also helps primary health care providers integrate oral health prevention into well-child medical check ups, such as providing fluoride varnishes to children during well-child checkups and conducting dental screenings.

A new collaborative, the Sonoma County Oral Health Access Coalition (SCOHAC) has grown out of these efforts. SCOHAC is made up of general and pediatric dentists, hygienists, community agencies, public health officials and individuals who want to improve the oral health system in Sonoma County. SCOHAC is working on several fronts to spread the word about the need for good oral health and the effects of dental caries in children. It is fostering connections

between dental and medical providers to improve the integration of oral health prevention strategies into primary care settings. It is increasing treatment and access opportunities for low-income and uninsured children through the Save Our Smiles campaign, which provides dental screenings for soon-to-be kindergartners. Finally, SCOHAC is positioning itself as a strong voice in advocacy for public policies that can improve access to dental care.

***The Pediatric Dental Initiative***

*Solving the treatment dilemma for children with severe dental disease.*

The Pediatric Dental Initiative (PDI), a local non-profit organization, was created in 2001 to address the growing unmet need for treatment for ECC and other severe oral health problems in the north coast region of California. An increasing number of children suffer from advanced dental disease that cannot easily be treated in a dentist's office. PDI estimates that over 20,000 children in the north coast are in need of treatment for ECC and advanced dental disease.

It is very difficult for families of uninsured children or those with publicly funded health insurance to find treatment under sedation and general anesthesia for their children. Very often, even if they find a facility, families must travel hundreds of miles from home and may have to make multiple visits to get the care their children need. As a result, thousands of children are not receiving the dental care they need and living with extreme cases of decay and infection.

To solve this problem PDI built a comprehensive program including a dental surgery center located in the Town of Windsor. PDI provides prevention education to families to help improve oral hygiene practices at home and reduce the need for future dental surgeries. PDI works with families through its case management staff to coordinate care, assist in the billing process, provide interpretive services and transportation, and assist with a host of other obstacles that keep children from receiving treatment. The surgery center focuses on the oral health needs of children and is a permanent resource for children living in Northern California. The PDI facility opened in October 2007, and treats about 1,500 children each year.

***The Case for Fluoride – An Opportunity to Make Positive Change***

***“The most effective strategy to improve oral health in Sonoma County is to fluoridate the public water supply.”*** *Mary Maddux-Gonzalez, M.D., Health Officer, County of Sonoma*

Sonoma County children are not getting the fluoride they need to keep their teeth healthy. Fluoride is the single most effective public health measure to reduce tooth decay. A naturally occurring element found in trace amounts in untreated water, fluoride is proven to inhibit and even reverse the progression of tooth decay. Optimal levels of fluoride added to public water supplies reduces cavities in children by 29 percent.<sup>56</sup> Since community water fluoridation benefits everyone – young and old, low and high income – it is an especially effective prevention tool.

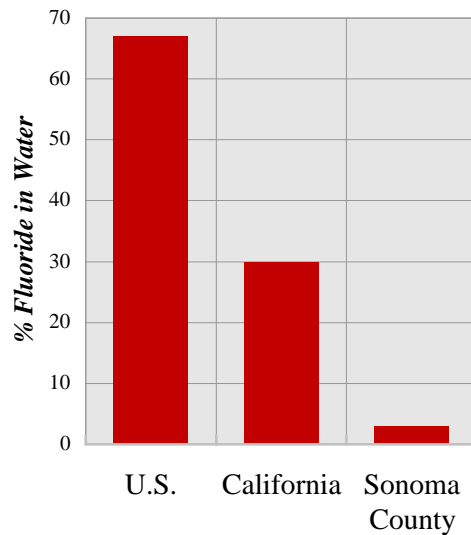
In addition to fluoridated water, we can get fluoride in:

- Toothpaste
- Fluoride rinses, mouthwashes, supplements or gels
- Treatments at the dentist and doctor such as fluoride varnishes.

Sonoma County pediatric dentists and public health officials consider the lack of fluoride to be a primary reason for the high levels of tooth decay in children. Most Americans (67%) receive fluoride in their public water.<sup>57</sup> But that number drops to 30% in California and a mere 3% in Sonoma County.

***“Fluoride in the public water supply is hugely important to the oral health of children. We perform many more restorative procedures in California than are necessary due to lack of water fluoridation.”***

*Martin Steigner, DDS, Petaluma pediatric dentist, immediate past President California Society of Pediatric Dentistry*



**Key Indicators to Track – How We Might Measure Progress**

<b>Indicator</b>
The percentage of kindergarten and 3rd graders with untreated tooth decay in primary or permanent teeth.
The percentage of low-income children with emergent or urgent (Class II or III) dental needs.
The percentage of children aged 2 years and older who have not seen a dentist in the previous 12 months.
The percentage of children with dental sealants.
The percentage of children with dental insurance.
The percentage of children with access to fluoridated public water.

**What would it take to make progress on children's oral health?**

The Surgeon General has “called upon policymakers, community leaders, private industry, health professionals, the media, and the public to affirm that oral health is essential to general health and well-being and to take action.”<sup>58</sup> No one should suffer from oral diseases or conditions that can be effectively prevented and treated. The suggested steps below are opportunities for change and can take Sonoma County a long way toward better oral health for children.

**Spectrum of Prevention**

<b>Strategies</b>	<b>Activities</b>
<b>Influencing policy and legislation</b>	<ul style="list-style-type: none"> <li>• Advocate for fluoridation of public water supplies.</li> <li>• Advocate for increased funding for children's dental services at community health centers.</li> <li>• Advocate for expansion of dental insurance programs and improved provider networks.</li> <li>• Commission a countywide survey every three to five years on progress toward improving children's oral health.</li> </ul>
<b>Mobilizing neighborhoods and communities</b>	<ul style="list-style-type: none"> <li>• Identify common goals and a set of community indicators for children's oral health.</li> <li>• Local government can establish community advisory groups on dental health to advise policy makers.</li> </ul>
<b>Changing organizational practices</b>	<ul style="list-style-type: none"> <li>• Promote efforts to establish a dental home for every child.</li> <li>• Encourage health care providers to detect dental caries as a primary health care prevention strategy.</li> </ul>

<b>Fostering coalitions and networks</b>	<ul style="list-style-type: none"><li>• Support the Sonoma County Oral Health Access Coalition and other networks of dental providers.</li><li>• Encourage childhood obesity, nutrition and oral health coalitions to understand the linkage between their respective issues and to work together.</li></ul>
<b>Educating providers</b>	<ul style="list-style-type: none"><li>• Conduct an education campaign to change the medical system's and public's knowledge and perception of oral health and disease – make oral health an accepted part of overall health care and services.</li></ul>
<b>Promoting community education</b>	<ul style="list-style-type: none"><li>• Educate and train teachers, nurses, childcare providers and all other program staff who serve children about children's oral health issues.</li><li>• Program providers can integrate oral health messages into communications with children and families at all service sites.</li></ul>
<b>Strengthening individual knowledge and skills</b>	<ul style="list-style-type: none"><li>• Program and medical providers can educate parent recipients of public health insurance about the importance of using dental insurance and early periodic dental visits for children.</li><li>• Expand education programs for families about oral health and hygiene.</li></ul>

## Childhood Obesity, Nutrition, and Fitness

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***“Obesity constitutes one of the most important medical and public health problems of our time.” Philip James, M.D. Chairman, International Obesity Task Force***

Childhood overweight and obesity has reached such epidemic levels that the Surgeon General compared it to the threats of bioterrorism and smallpox, calling it “the fastest-growing, most threatening disease in America today.”<sup>59</sup> Obesity rates have more than tripled among children and adolescents, making today’s youth the most inactive generation in American history. This generation could be the first to have a shorter life expectancy than their parents due to the rapid rise in childhood overweight.

The growing number of obese children has focused concern on this serious health issue, which comes with health risks and high costs. Children and youth who are overweight are at risk for developing Type 2 diabetes, asthma, hypertension and orthopedic problems; they are more likely to have risk factors for heart disease such as high blood pressure and cholesterol; they are more likely to suffer from psychosocial problems, including low self-esteem, poor body image, suicide and suicide ideation, and symptoms of depression.<sup>60</sup> Obesity-related chronic diseases, which were previously almost unseen in children, are now becoming common in the young. Overweight children are more likely to be obese as adults, putting them at greater risk for heart disease, stroke and diabetes later in life.

Sonoma County children are disproportionately affected by obesity and overweight. Obesity is a condition that cuts across all socio-economic levels. However, it is most prevalent in low-income communities where families confront challenges that contribute to poor nutritional status, low fitness levels and reduced access to preventive health care. These conditions compound the environmental factors in many low-income communities where fast food outlets and corner stores – offering high-fat, high-sugar convenience foods and few fresh fruits and vegetables – are sometimes the only shopping choices. Options for regular physical activity for children are also more limited in low-income areas, because of safety concerns and poorly designed neighborhoods with limited opportunities for recreation.

The past 30 years have seen many dramatic changes in the way Americans work, live, and eat.<sup>61</sup> Complex biological, social and environmental conditions contribute to the challenges our children face in making healthy decisions about eating and physical activity. Many underlying factors have been linked to the increase in obesity, such as increasing portion sizes; eating out more often; increased consumption of sugar-sweetened drinks; increasing television, computer and electronic gaming time; and fear of crime which prevents outdoor exercise.

Experts agree that childhood obesity is a *preventable* public health crisis, a crisis that can be stopped only by changing children’s food and activity options and the surroundings in which they live. The Surgeon General’s Call to Action to Prevent and Decrease Overweight and

Obesity (2001) addresses head-on one of the key misconceptions about the obesity epidemic: "Many people believe that dealing with overweight and obesity is a personal responsibility. To some degree they are right, **but it is also a community responsibility.**" Much research has focused on educating children and changing their behavior, but these approaches have had limited success.<sup>62</sup> Changing the *environments* in which children live, eat and play is now seen as an essential strategy in fighting the obesity epidemic. Communities, schools, workplaces and homes can influence people's health decisions, and all must be part of the solution.

### ***Overweight and Obesity Defined***

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Overweight and obesity are complex issues related to lifestyle, environment, and genes. At its most basic level, a body becomes overweight (weighing more than is considered healthy) when there is an imbalance between the amount of calories consumed and the amount of physical activity used to burn those calories.

Overweight and obesity are generally defined by using the Body Mass Index (BMI) calculation. A BMI of 25 is considered overweight, 30 or more is considered obese.

- Overweight for children and adolescents is defined as being at or above the 85th percentile and obesity as being at or above the 95th percentile of BMI.
- The American Obesity Association (AOA) uses the 95th percentile as a criterion for obesity because it:
  - Is recommended as a marker for when children and adolescents should have an in-depth medical assessment.
  - Identifies children who are very likely to have obesity persist into adulthood.

### ***The Consequences of Poor Nutrition, Overweight and Obesity***

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***"The consequences of ignoring obesity are increasing levels of serious illness and rising health costs."*** *The International Obesity Task Force*

As the prevalence of overweight and obesity continues to rise, the long-term health and economic consequences will be staggering. This increase represents a major public health concern with the potential for future health risks and growing burdens on the healthcare system. Many health conditions once thought applicable only to adults are now being seen in children and with more and more frequency. Children are also more vulnerable than adults to a unique set of obesity-related health problems because their bodies are growing and developing.<sup>63</sup>

- **Preventable deaths.** Lack of physical activity and poor nutrition account for approximately 300,000 preventable deaths each year in the United States, making these risk factors second only to tobacco use as causes of preventable death.<sup>64</sup>

- **Increased risk for developing chronic health conditions.** Unless trends change, one in three children born in the year 2000 will develop Type 2 diabetes. One in two children of color born in 2000 will develop the disease.<sup>65</sup>
- **Increased risk for other health problems.** Excess body weight increases the risk of many health conditions, including: asthma, sleep apnea and respiratory problems, orthopedic conditions, and high blood pressure.
- **Impact on social and emotional development.** Children who are overweight may suffer from social stigmatization, discrimination, lowered self-esteem and depression.<sup>66 67</sup> They tend to participate in fewer activities, to withdraw from social situations, and to be less physically active than their normal-weight peers.
- **Increased risk for injuries.** Injuries seem to occur more often in overweight individuals, likely due to decreased flexibility and lower bone density. Efforts to promote optimal body weight may not only reduce the risk of chronic diseases but also the risk of unintentional injury among overweight and obese individuals.<sup>68</sup>
- **School days missed due to overweight.** Overweight students miss, on average, one day of school per month. Absenteeism among overweight students is six times higher than that of their peers.<sup>69</sup>
- **Long term impact.** Overweight adolescents have a 70% chance of becoming overweight or obese adults. This increases to 80% if at least one parent is overweight or obese.<sup>70</sup>

#### ***High Costs and Financial Barriers of Obesity and Overweight***

- Medical costs associated with obesity are greater than those associated with both smoking and problem drinking.<sup>71</sup>
- Treating chronic diseases resulting from overweight as well as other weight-related health conditions currently costs California \$7.7 billion annually and is often shouldered at the local level.<sup>72</sup>
- Absenteeism among overweight children costs the average California school district \$160,000 per year per district.<sup>73</sup> With 40 school districts in Sonoma County, that could mean \$6.4 million in lost funding for our schools.

#### ***Scope of the Problem***

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The increase in the percentage of overweight children in our community is a result of two significant changes in childrearing during the past 30 years. Our children have less unhealthy diets and lower levels of physical activity.

***“We need to return to the days when our public schools were special places, commercial-free zones that fed our children nutritious food, and saw to it that recess and physical education were a part of every school day. Schools should be a sanctuary, not just another marketplace hawking junk food and sugary sodas.”*** U.S. Senator Tom Harkin, (D) Iowa

### ***Key Findings on Childhood Obesity, Nutrition and Fitness in Sonoma County***

- **Overweight and obesity are increasing in Sonoma County.** Over the past three decades, the prevalence of overweight has doubled among preschool aged children and adolescents, and the prevalence has increased threefold among children 6- to 11-years old. In Sonoma County, in 2004, 42% of 5- to 20-year olds were overweight or at risk of overweight.<sup>74</sup> There was a slight decrease among this same age group in 2005 (40.9%), though still remaining of significant concern.<sup>75</sup> In 2006, 50% of 5th graders in Santa Rosa schools were overweight or at risk of overweight.<sup>76</sup> According to the 2005-06 California Physical Fitness Report, 30.9% of Sonoma County 7th graders failed the Aerobic Capacity Test.<sup>77</sup>
- **Low-income children in Sonoma County are at highest risk for overweight and obesity.** The highest rates of obesity occur among population groups with the highest poverty rates. According to the annual pediatric nutrition surveillance data collected for low-income children in Sonoma County, one in three (33%) 2- to 4-year olds are overweight or at risk of becoming overweight. This rate is higher (40%) for 5- to 19-year olds.<sup>78</sup> In 2002, 33% of all low-income children in Sonoma County were overweight.<sup>79</sup> By 2005, the percentage had grown to 43%.<sup>80</sup>
- **Higher rates of overweight and obesity are reported among Hispanic children.** In 2005, Sonoma County’s Hispanic children and teens represent higher rates of overweight and obesity than their white non-Hispanic counterparts.<sup>81</sup>
  - 20 % Hispanic children (5-14) are overweight and 25% were obese.
  - 18% White non-Hispanic children (5-14) were overweight and 20% were obese.
- **Sonoma County children are not consuming the five daily recommended servings of fruits and vegetables.** The recommendation to consume vegetables and fruits for protection from chronic diseases is based on studies linking higher consumption of vegetables and fruits to lower rates of cancer, cardiovascular diseases, and other chronic diseases.<sup>82</sup> Current recommendations are to consume at least five servings of vegetables and fruit each day. The percentage of Sonoma County teens meeting this recommendation fell from 48 % in 2003 to 31% in 2005.<sup>83</sup>
- **Physical activity positively contributes to preventable illnesses.** Regular physical activity in childhood and adolescence improves strength and endurance, helps build healthy bones and muscles, helps control weight, reduces anxiety and stress, increases self-esteem, and may improve blood pressure and cholesterol levels.<sup>84</sup> Each year students in the 5th, 7th and 9th

grades are evaluated for six basic fitness areas. In 2005-2006, only 35% of Sonoma County 7th graders met the basic fitness standards.<sup>85</sup>

- **Food insecurity is linked to overweight.** Low income children, generally living in poor neighborhoods, with limited access to adequate food, are at particular risk for obesity at the same time they are at risk for food insecurity. Food insecurity can have grave consequences including poor dietary intake and nutritional status, poor health, increased risk for the development of chronic diseases, and devastating effects on cognitive and social development and academic achievement.<sup>86</sup>
- **Anemia is prevalent among low income children.**<sup>87</sup> Sonoma County ranks among the top-five counties in California with the highest prevalence of anemia, a condition that can cause delays in infant and child development. In 2005, the prevalence of iron deficiency among children under age 5 was 18%. Among children 5 to 19, the rate was 13%.<sup>88</sup>
- **There are no easy solutions.** Key to controlling the development of obesity lies in uniting public and private sectors behind the message that healthy weight is critical to long-term health. Healthy weight can generally be achieved and maintained through moderate daily exercise with a well-balanced, portion-controlled diet. Community leaders need to provide enough resources toward maintenance of parks, playgrounds, community centers, and physical education opportunities. Insurers and health plans must partner with employers, patients and physicians to both prevent obesity and build integrative care systems for overweight and obese individuals, incorporating dietitians, health therapists and exercise specialists. And the media and entertainment industries need to show that physical activity is healthful and fun. Nothing short of a team approach will meet the challenges this critical issue presents.
- **Sonoma County schools must be part of the solution to solving overweight and obesity.** The Surgeon General's 2001 "Call to Action to Prevent and Decrease Overweight and Obesity" identifies changing the school environment as a key strategy to address this national health crisis. Schools, preschools, and after-school programs play a unique and critical role in shaping children's eating and activity behaviors. In schools, children learn significant and lasting lessons about nutrition and physical activity, both from the curriculum and physical education programs and from the examples of their teachers and peers. The influence of schools cannot be overstated.

## ***The Story Behind the Problem***

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***“As kids are exercising less and eating more, health care and policy experts see a perfect storm ahead.”***<sup>89</sup> *Childhood Obesity Special Report, UCSF, Kaiser Permanente, UCSF, and UCLA Healthcare, January 2006.*

The obesity epidemic is the result of complex and intertwined factors, including: the built environment/community planning, diet, sedentary lifestyles, genetics, cultural issues, access to healthy foods, media and nutritional literacy, the availability of relatively few medical interventions, and competition for scarce public dollars.

### **Contributing Factors**

#### ***Poor Nutrition***

- An imbalance between the calories consumed and the calories used
- Limited access to healthy, affordable foods in low-income neighborhoods
- Fewer family meals eaten together
- Prevalence and consumption of inexpensive, high-calorie, fast foods that are high in calories, fat and salt, and low in fiber
- Trend to larger portions of restaurant and fast-foods
- Extensive advertising and marketing of unhealthy food products targeted toward children and youth

#### ***Sedentary Lifestyle***

- Increased use of electronic media – television, video and computer games - at the expense of outdoor play
- Fewer children and youth spend time outside of school in physical activities
- Neighborhoods with limited infrastructure for physical activity and recreation
- Community design which emphasizes car travel and discourages physical activity
- Inaccessible child activity programs due to cost or transportation
- Eliminated or severely curtailed physical education during school time

***“The modern America of obesity, inactivity, depression and loss of community has not ‘happened’ to us. We legislated, subsidized, and planned it this way. In 1973, 66% of kids either walked or biked to school. In 2000, only 13% did. As strapped as we are in California for educational funds, we are now spending more than a billion dollars a year on school buses to do what kids’ legs used to do.”*** *Dr. Jackson, former director of the National Center for Environmental Health at the Centers for Disease Control and Prevention*

The conditions fueling these problems are a combination of policy, environment, social, cultural and individual factors that have been building over time.

**Policy.** Well-designed communities and built environments are essential to ensuring that children achieve optimal health and development. And yet, policy makers have inadvertently fueled the obesity epidemic. Many common pediatric conditions, such as obesity, are associated with risk factors linked to the environment in which children live, yet parents, community leaders, and policy-makers do not always make the connection between access to parks and recreational facilities, safe streets, and bike lanes with child health.

School systems have contributed to the current condition in both their food and fitness policies. Schools have relied upon vending and a la carte programs that sell foods and beverages high in calories and low in nutrients. With decreased funding, and increased pressure to improve test scores, many schools have eliminated physical education, despite data showing that physical activity improves learning for most children.

**Societal factors.** A dizzying change has occurred in American society over the past few decades. Adults are working harder, traveling farther to work, and becoming more and more dependent on automobiles for transportation. Neighborhoods have fewer recreational options and are increasingly separated from commercial centers. Increased safety concerns discourage parents from sending their children unattended out to play. Children's lives are packed full of extra-curricular activities to which they must be driven because of distance and safety concerns. Children are eating too much fast food and soda and are immersed in sedentary technology rather than vigorous outdoor play. Advances in our culture have brought with them many positive changes, but have also brought with them the "perfect storm" of childhood obesity.

**Socioeconomic factors.** Low-income families are especially vulnerable to poor nutrition and overweight. For low-income families, poor access to nutritious and affordable food, along with restricted opportunities for physical activity, contributes to and aggravates obesity and overweight.<sup>90</sup> The flight of supermarkets to the suburbs, inadequate public transportation, and a paucity of healthy foods at corner stores are all factors that contribute to the lack of healthy food access in low-income neighborhoods.<sup>91</sup> A report issued in 2002 by the Urban and Environmental Policy Institute revealed that middle- and upper-income neighborhoods have more than twice as many supermarkets as low-income neighborhoods.<sup>92</sup> Low-income residents are often at the mercy of corner grocery stores, which serve as outlets for alcohol, cigarettes and convenience foods and offer few nutritious choices. Families in these communities are left with few resources for healthy food.

**Calorie consumption.** A changing environment has broadened food options and eating habits. Super-sized portions in America are becoming the norm, particularly in restaurants and fast-food establishments. People are eating more during meals and snacks because of larger portion sizes and as a result are consuming more calories.<sup>93</sup> Grocery stores stock their shelves with a greater selection of pre-packaged and processed foods products. While such foods are convenient, they also tend to be high in fat, sugar, salt and calories.

**Good nutrition begins in infancy.** There is overwhelming scientific evidence that breast milk is the optimal food for infants. The Center for Disease Control and Prevention lists increasing breastfeeding as one of its obesity prevention strategies for children. Children who are breastfed are less prone to overweight, asthma, and some childhood infections. According to the Sonoma County Public Health Annual Report, in 2005, 34% of children ages 2-5 enrolled in the Women's Infant and Children's Program (WIC) were overweight or at risk of becoming so.

However, only 22 % of the same age group who were breastfed for 27 to 52 weeks are overweight or at risk of overweight.<sup>94</sup>

Now 70% of women with young children work outside of the home and two-thirds return to work within 6 months after giving birth. Women who return to work soon after giving birth breastfeed for a shorter period than other women or not at all.<sup>95</sup>

***“Kids imitate parents. Parents have power, and carry weight. With kids, parents are the voice of authority and permission. With administrators and school boards, they’re the voice of the taxpayer. It only makes sense for us to try to engage parents in our efforts.”*** Katie Bark, Montana State University Nutritionist

**Parental knowledge and practices.** Engaging and supporting parents and other caregivers is a crucial link to success in addressing childhood overweight. Parental beliefs, perceptions and role modeling about healthy eating and levels of physical activity play a large part in directing and supporting children’s choices. Additionally, parents influence the nature and amount of physical activity in which their children engage and may not recognize the importance of this in reducing the potential of obesity.<sup>96</sup>

**Advertising and food choices.** There is a link between food and beverage advertising and rising childhood obesity rates. Scientific research shows that advertising influences children’s preferences and purchase requests. Children under 8-years old do not understand the persuasive intent and biased nature of advertising.<sup>97</sup> Research suggests that the mere appearance of a television or movie character with a product can significantly alter a child’s perception of that product.<sup>98</sup>

## ***What Our Service System Offers and Where the Gaps Are***

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### **Resources**

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**BMI screenings and counseling.** Community health centers in Sonoma County are shifting toward routine assessment and monitoring of children’s nutrition and weight. They are institutionalizing BMI screening as a vital sign at routine medical visits. They are providing staff training on effective communication and interventions to sensitively counsel patients who are at risk for or are overweight. Kaiser Permanente offers an online tutorial for working with children and their families on the subject of pediatric weight management.

**School Wellness Policy.** In recognizing the critical role of schools in promoting student health, the U.S. Congress passed legislation requiring all school districts with federally funded school meals programs to develop and implement wellness policies that address nutrition and physical activity by the start of the 2006-2007 school year. The legislation places the responsibility of developing a wellness policy at the local level and requires active involvement of parents, and

students in designing the district policies. According to the requirements for the local wellness policy, school districts set goals for nutrition education, levels of physical activity, nutritional quality of food provision, fund raising and other school-based activities that promote student wellness.

**California Children’s 5 a Day—Power Play! Campaign.** 5 a Day is a statewide social marketing initiative, which uses a multi-channel, community-based approach to encourage 9 to 11 year olds from low income households to eat at least 5 servings of fruits and vegetables and to participate in at least 60 minutes of activity every day. The campaign promotes its message in schools, after-school programs, media, farmers’ markets, restaurants, and grocery stores. Sonoma County coordinates the North Coast Regional campaign, which reaches over 5,000 children each year.

**Women Infants and Children (WIC) program.** WIC is a nutritional program that provides pregnant women, new mothers and young children (up to age 5) with food vouchers and nutritional counseling about eating well and staying healthy. Sonoma County has three WIC programs serving more than 8,000 low-income mothers, infants and children.

**The Sonoma County Breastfeeding Coalition.** Sonoma County’s Breastfeeding Coalition was formed in 1996, with a mission to educate and empower women to breastfeed; to encourage breastfeeding-friendly attitudes, policies, and images in the community; to promote unity among breastfeeding professionals and advocates; and to increase public awareness of the value of breastfeeding. The coalition includes representatives from the hospitals, community health centers, private physician offices, WIC and the County Health Department.

## Gaps

*“Many people have begun to draw analogies between preventing obesity and smoking cessation. Clearly, both are broad public health problems that require an integrated medical and public health approach. But obesity has its own unique set of issues. The sooner we begin to define those issues and start effectively helping people achieve a healthy body weight, the better.”* George Isham, MD, Medical Director/Chief Health Officer, HealthPartners, Minnesota

**Comprehensive, public health approach.** Many obstacles impede the management of childhood overweight and obesity. Approaches limited to medical settings will not be effective without reinforcing strategies in schools, communities and at home. Collaboration among community leaders and government, health care providers, schools, and families is critical to helping families and children adopt and maintain healthier lifestyles. School and community programs must continue to address the availability of junk food, make school meals more nutritious, address sedentary behaviors and increase daily exercise.

**Competing priorities in schools.** Meeting strict academic requirements imposed by the ‘No Child Left Behind Act’ is today’s top priority for school district superintendents. Most school leaders accept the belief that healthy students learn better. However, many school leaders do not feel they can elevate school wellness to the top of their list given other pressing priorities, such as: raising academic outcomes, closing achievement gaps, hiring and retaining quality staff, insuring school safety and budget constraints.

A report from the U.S. Surgeon General on physical activity and health describes school-based interventions for youth as particularly promising, not only for their potential scope - almost all young people between the ages of 6 and 16 years attend school - but also for their potential impact. Nearly half of young people 12-21 years of age are not vigorously active; moreover, physical activity sharply declines during adolescence. Childhood and adolescence may thus be pivotal times for preventing sedentary behavior among adults by maintaining the habit of physical activity throughout the school years. School-based interventions have been shown to be successful in increasing physical activity levels. With evidence that success in this arena is possible, every effort should be made to encourage schools to require daily physical education in each grade and to promote physical activities that can be enjoyed throughout life.

**Limited health insurance coverage.** Overweight and obesity still remain an ‘excluded benefit’ for many insured patients. Most insurance carriers do not reimburse medical providers for incorporating universal screening and nutrition and physical activity education into regular preventive health care visits. Most interventions that are covered under insurance are at the end of the obesity spectrum such as surgical interventions for the morbidly obese. Improved treatment will depend on the development of interventions that can be applied effectively and efficiently in primary care settings and must include appropriate reimbursement for the care that is given.

**Inconsistent support to ensure successful breastfeeding.** There is a lack of consistent and accurate knowledge about breastfeeding among health care professionals and the general population. Hospital feeding schedules, lack of ‘rooming-in’ facilities, early discharge of mothers and babies without time to establish breastfeeding, and discharging mothers with formula packets and advertising can all interfere with establishing exclusive and sustained breastfeeding in the immediate postpartum period. Lack of a support network during the critical postpartum period frequently lead mothers to abandon their plan to breastfeed.

**Scarcity of clinical data, research and evidence based best practices.** There is a scarcity of clinical data and research available on the subject of overweight and obesity. The epidemic’s rapid rise over the past three decades has left researchers scrambling. While the federal government has lately placed greater emphasis on funding studies relating to childhood obesity, answers about effective prevention and treatment protocols remain elusive.<sup>99</sup> A number of projects, such as Healthy Living Active Living (see below) are in the early stages of developing best practices for addressing childhood overweight and obesity.

## ***Examples of Innovation***

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**Community Activity and Nutrition-Coalition.** In 1998, Sonoma County formed the Family Activity and Nutrition Task Force (FANTF) to address child overweight. Renamed in 2005, the Community Activity and Nutrition-Coalition's (CAN-C) mission is to promote optimal health for the general population with a focus on nutrition and physical activity, and to promote access to treatment for children who have nutritional needs. In January 2006, CAN-C was one of three collaboratives awarded a Kaiser Permanente Healthy Eating Active Living (HEAL) grant. This grant provides funding to effect changes in social and physical environments, and public policy and organizational practices, to increase access to affordable, healthy food and increase opportunities for physical activity in South East and South West Santa Rosa. Residents and other stakeholders in the community are guiding the initiative.

**Megan Furth Harvest Pantry.** The Furth Family Foundation established the Megan Furth Harvest Pantry to combat childhood anemia and obesity among low-income children in Sonoma County. This mobile "farmer's market" provides nutritious, iron rich food, especially fresh fruit and vegetables, to families with young children in targeted neighborhoods where high anemia rates are found.

**The School Garden Network.** The Network is a collaboration of garden coordinators, classroom teachers, parent volunteers and community partners dedicated to the creation and support of sustainable garden and nutrition based learning programs for Sonoma County students. The network provides opportunities for students to establish a life-long dedication to the environment and their communities, to develop a healthy understanding of nutrition, and to further their academic achievement through hands-on learning. Since its inception late in 2003, participation has increased to 21 schools in six cities.

## ***Key Indicators to Track – How We Might Measure Progress***

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**Overweight and Obesity.** Promote good nutrition and healthier weight.

<b><i>Indicator</i></b>
The percentage of 6 to 19 year olds who are overweight or obese.
The percentage of mothers who breastfeed their babies for 6 to 9 months.
The percentage of children in Sonoma County who eat five servings of fruits and vegetables daily.
The percentage of 6 to 19 year olds whose intake of meals and snacks at schools contributes to good overall dietary quality.

**Physical Activity.** Promote regular physical activity.

<i>Indicator</i>
The percentage of students who participate in moderate or vigorous physical activity for at least 20 minutes, three or more days per week.
The percentage of children and adolescents who engage in more than three hours daily of sedentary activity, such as TV, computer and video games.

***What would it take to make progress on childhood overweight and obesity?***

***“The leaders of Sonoma County will be the main drivers in stopping the childhood obesity epidemic. Although there are significant challenges in Sonoma County, there are also great strengths. We look forward to partnering with the community on this very important mission.”***

*Scott Gee, MD pediatrician and Director for Prevention and Health Information for The Permanente Medical Group in Northern California*

The dramatic increase in the number of overweight and obese children in Sonoma County is a community health crisis that requires immediate action. Given the complex nature of this health crisis, interventions and solutions cannot be solely dependent upon individual behavior change. Experts agree that the children themselves, and their families, cannot adequately address the problem. Change will take the determination and commitment of our entire community – health care and other service providers, educators, policy makers and community leaders.

**Spectrum of Prevention**

<i>Strategies</i>	<i>Activities</i>
<b>Influencing policy and legislation</b>	<ul style="list-style-type: none"> <li>• Advocate for local planning departments to develop planning tools to support a built environment that promotes healthy eating and active living.</li> <li>• Advocate for health insurance to cover nutrition and physical activity counseling.</li> <li>• Advocate for businesses to stop advertising unhealthy foods to children.</li> </ul>
<b>Mobilizing neighborhoods and communities</b>	<ul style="list-style-type: none"> <li>• Encourage community projects/development to increase parks and park programming, trails, and bike lanes to schools.</li> <li>• Make school buildings available for physical activity during and outside of school hours.</li> <li>• Organize communities to advocate for greater availability of fresh foods and reduction of fast food outlets.</li> </ul>

Strategies	Activities
<b>Changing organizational practices</b>	<ul style="list-style-type: none"> <li>• Promote the measurement of Body Mass Index (BMI) as a clinical vital sign.</li> <li>• Encourage culturally appropriate and sensitive patient education about the importance of healthy weight to long-term health.</li> <li>• Advocate for the food industry to serve reasonable portion sizes.</li> <li>• Continue to improve hospital practices that promote and support breastfeeding.</li> </ul>
<b>Fostering coalitions and networks</b>	<ul style="list-style-type: none"> <li>• Support comprehensive nutrition and physical education/activity programs in preschools, schools and communities.</li> <li>• Encourage networking of organizations working to reduce food insecurity such as emergency food and meal programs, community-supported agriculture and others.</li> </ul>
<b>Educating providers</b>	<ul style="list-style-type: none"> <li>• Educate health professionals, and health educators to sensitively communicate with families regarding overweight and health-related problems, physical activity and healthy eating practices.</li> <li>• Promote family participation in well-baby checkups as important strategies to address cultural norms that support unhealthy eating patterns.</li> </ul>
<b>Changing school practices</b>	<ul style="list-style-type: none"> <li>• Encourage schools to actively implement their school wellness policy and participate in the school lunch program.</li> <li>• Ensure daily quality physical education for all children in grades K-12.</li> <li>• Provide culturally appropriate education about nutrition and physical activity in schools.</li> <li>• Promote active ways of getting from school to home - safe walking and biking routes to school.</li> </ul>
<b>Strengthening individual knowledge and skills</b>	<ul style="list-style-type: none"> <li>• Promote healthier food choices, including at least 5 servings of fruits and vegetables each day, and reasonable portion sizes at home, in schools, and in the community.</li> <li>• Help families and individuals to develop the skills for effective weight management.</li> <li>• Promote American Academy of Pediatrics' recommendation to limit children's total daily media time to no more than one to two hours of quality programming.</li> <li>• Fund media campaigns that promote healthy eating and physical activity.</li> </ul>

## Youth Alcohol, Tobacco, and Other Drug Use

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***“Alcohol remains the most heavily abused substance by America’s youth. We can no longer ignore what alcohol is doing to our children.”*** Rear Admiral Kenneth Moritsugu, MD,  
*Acting Surgeon General*

Alcohol and other drug (AOD) use among Sonoma County teens is a major public health issue. The dangers of alcohol and drug use are extensive, pervasive and lasting for teens and yet the social pressures for teens to drink and use drugs are enormous. The media makes it seem sexy, TV and magazine advertising promote alcohol and tobacco products and other teens make it seem “cool.” Community factors such as permissive attitudes, adult behaviors, and easy availability from commercial and social sources play a huge role in contributing to underage drinking and drug use.

In a recent survey, Sonoma County youth identified alcohol as *the leading health problem for teens*, with more than 40% noting the widespread availability of alcohol. These teens said that the prevalence of alcohol and drugs made the county an “unhealthy place to live,” and local statistics appear to prove them right:<sup>100</sup> Sonoma County teens exhibit higher rates of alcohol risk and high risk behaviors than their state counterparts. Given the high rate of AOD use, Sonoma County faces increasing teen health problems arising from alcohol and other drug abuse unless prevention efforts are aggressively implemented.

Alcohol use causes *immediate problems* for youth. It plays a role in many of the leading causes of death for teens: motor vehicle accidents, injuries, violence and suicide. Other risk-taking activities – such as dangerous driving, other drug use, and sexual activity – happen more often when alcohol is involved. Research shows that teens who have been drinking experience more life-threatening and life-altering injuries.

AOD use can also cause *long-term problems*. Alcohol has profound permanent effects on teens’ developing brains, causing damage to memory and learning; inhibiting decision making and judgment affecting school performance; and intensifying depression, suicidal thoughts and violence. The brain does not finish developing until the early 20s. One of the last regions to mature is intimately involved with the ability to plan and make complex judgments.<sup>101</sup> Young people who start drinking before they are 15-years old are five times more likely to have alcohol-related problems later in life.<sup>102</sup>

Increasing the percentage of children and youth who reach adulthood without using alcohol, tobacco or other drugs is an important national health goal. Environmental prevention and policy changes are key to reaching that goal. Strengthening the skills needed to reject all substances is a critical component of prevention because these skills and attitudes can carry on into adulthood, long after family constraints and other influences have lost their effectiveness. Some of the best prevention approaches work on multiple levels, combining interventions that strengthen youth resiliency and influence individual behavior and attitudes with interventions that change

environments by controlling the availability of harmful substances. Many communities have enacted ordinances to increase awareness and accountability around sales of alcohol and tobacco and have increased enforcement of these laws. We have the knowledge to make prevention work and a large window of opportunity for improvement on this critical community health and safety issue.

### ***Youth Alcohol, Tobacco and other Drug Abuse Defined***

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Drug dependence is “a state in which the individual has a need for repeated doses of the drug to feel good or to avoid feeling bad.”<sup>103</sup> Drug abuse is defined as “persistent or sporadic excessive drug use inconsistent with or unrelated to acceptable medical practice.”<sup>104</sup> Many teens experiment with and use alcohol, cigarettes, household chemicals (inhalants), prescription and nonprescription medications, and illegal drugs (most commonly marijuana).

Alcohol and other drugs tend to loosen inhibitions and alleviate social anxiety, increasing their appeal for shy teenagers. Teens are often risk-takers, and they may take drugs or drink because it seems exciting. Some teens experiment with drugs or alcohol only a few times, but experimentation can become substance abuse and lead to serious problems.

### ***The Consequences of Youth Alcohol, Tobacco and Other Drug Use***

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***“The adolescent brain is a ‘work in progress.’ Alcohol, however, can disrupt the adolescent brain’s ability to learn life skills.”*** Peter M. Monti, Professor of Medical Sciences and Director of the Center for Alcohol and Addiction Studies, Brown University

**Alcohol and other drug use impacts communities.** High rates of alcohol use and associated risky behaviors have negative consequences for our communities. The pervasiveness of teenage alcohol misuse is particularly worrisome given the association of teen drinking with injuries due to car crashes, vandalism, property damage, violent behavior, assaults, and emotional problems. These problems create significant trauma for youth and families and drain public resources through increased calls for police service, emergency medical services, health care costs, criminal justice costs, substance abuse treatment, mental health care services and use of other community services.<sup>105</sup>

**Alcohol and other drug use affect the growing adolescent brain.** The brain goes through dynamic change during adolescence, and alcohol and other drug use can seriously damage long- and short-term growth processes. Young brains are built to acquire new memories and are “built to learn.”<sup>106</sup> For teens, given the consequences on their developing brain, there is no such thing as ‘risk free’ experimentation. Adolescents need only drink half as much to suffer the same negative brain effects as adults.<sup>107</sup>

**Alcohol, tobacco and other drug use among young people impacts health.** Substance use is associated with increased risk for chronic disease, unsafe health behaviors such as high-risk sexual practices, unintentional injury, mental health problems, and poor oral health. The earlier teens start drinking and using drugs, the greater the harm and the health risks. Active smoking by young people is associated with health problems during childhood and adolescence and with increased risk factors for health problems in adulthood. Cigarette smoking during adolescence appears to reduce the rate of lung growth, and the level of maximum lung function that can be achieved, with young smokers less likely to be physically fit than young nonsmokers.<sup>108</sup>

**Alcohol and other drug use impacts the future.** For teens, their prospects for future success are diminished with the many problems associated with adolescent substance abuse, including absenteeism from school, academic difficulties, poor peer relationships, impact on self esteem, poor judgment, problems at home, and lasting medical and legal consequences.

*Scope of the Problem*

**“Underage alcohol use is more likely to kill young people than all illegal drugs combined.”**

*Morbidity and Mortality Weekly Report*<sup>109 110</sup>

The consequences of the use of alcohol, tobacco and other drugs extend far beyond the individual and are not restricted simply to the lives of people who might be labeled alcoholics or addicts. For some youth, alcohol use alone is the primary problem. For others, drinking may be only one of a number of complex high-risk behaviors.

**Key Findings on Youth Alcohol, Drug and Tobacco Use in Sonoma County**

**Alcohol is the leading drug used by Sonoma County youth.** According to the 2006 California Healthy Kids Survey, the rate of alcohol use continues to rise and remains higher than the state average. Thirty three percent (33%) of Sonoma County (SC) 9<sup>th</sup> graders versus 28% of California (CA) students and 50% of SC 11<sup>th</sup> graders versus 37% of CA students reported using alcohol in the past 30 days.

Table 1. Alcohol and other Drug use	Comprehensive Schools						Alternative Schools		
	Grade	County			State			County	State
		7 <sup>th</sup>	9 <sup>th</sup>	11 <sup>th</sup>	7 <sup>th</sup>	9 <sup>th</sup>	11 <sup>th</sup>		
Alcohol (whole drink) in past 30 days		13%	33%	50%	13%	28%	37%	65%	55%
Marijuana in the past 30 days		4%	16%	29%	4%	12%	16%	57%	42%
Tobacco in the past 30 days		3%	11%	19%	4%	5%	14%	48%	38%
Methamphetamine in the past 30 days		n/a	2%	3%	n/a	2%	2%	10%	10%

*Source: 2005-06 California Healthy Kids Survey*

**More young people reported using marijuana than tobacco in the past 30 days.** In Sonoma County in 2005-06, more youth reported they had smoked marijuana than tobacco in the past 30 days.<sup>111</sup> Students in alternative schools, often specifically for youth with multiple risk factors and in need of special services, reported higher rates of use (65% report use of alcohol, 57% report use of marijuana and 48% report use of tobacco within the past 30 days).<sup>112</sup>

**Tobacco use increases for the first time in six years.** Survey results show that Sonoma County students are using tobacco at similar or higher rates than their peers throughout California. Following six years of steadily declining usage rates, Sonoma County high school students now report an increase in regular tobacco use. For example, 9% of eleventh-graders say they are regular smokers, compared to 6% in 2004. Daily tobacco use also increased among ninth-graders and more students at all grade levels say they have used tobacco while on school grounds. Student perception that frequent use of tobacco is harmful dropped slightly among students in grades 7 and above, although they still believe that tobacco is more harmful than marijuana.<sup>113</sup>

Experimentation with tobacco rises sharply as Sonoma County students move through middle and senior high school, almost doubling between the seventh and ninth grades. Among Sonoma County students in alternative education schools, tobacco use in the past 30 days is 10% higher than the state average. These findings indicate that students in alternative school settings may need intensified intervention and support for cessation.

**Methamphetamine is a serious problem for some Sonoma County youth.** Methamphetamine is a highly addictive drug and can be a problem even with nominal use. In 2005-06, 2% percent of Sonoma County 9<sup>th</sup> graders and 3% of 11<sup>th</sup> graders report having used methamphetamine one or more times. Thirty-six percent (36%) of students in alternative high schools (i.e. court and continuation schools) reported having used methamphetamine one or more times and 10% reported having used methamphetamine in the past 30 days.<sup>114</sup>

**Sonoma County teens exceed the state average with high risk behaviors.** Of particular concern are the high risk behaviors that can occur in association with teen alcohol use. Sonoma County students exceed statewide averages in all areas of high-risk behavior. In 2005-06, for example, over half of all eleventh-graders (54%) and 77% of alternative school students report getting very drunk or sick from alcohol, as compared to 41% of their state peers. Forty six percent (46%) of 11 graders report being high on drugs, 34% report binge drinking in the past 30 days and 18% report binge drinking three or more days in the past month, which suggests a regular pattern of risky drinking.

Table 2. High Risk Behaviors		Comprehensive Schools						Alternative Schools	
		Sonoma County			State			County	State
% of students who report...	Grade	7 <sup>th</sup>	9 <sup>th</sup>	11 <sup>th</sup>	7 <sup>th</sup>	9 <sup>th</sup>	11 <sup>th</sup>		
		Being very drunk or sick from drinking	8%	30%	54%	9%	25%		
Being high on drugs	7%	25%	46%	8%	20%	31%	76%	66%	
Binge drinking in the past 30 days	4%	19%	34%	4%	13%	21%	51%	39%	
Binge drinking three or more times in the past 30 days	2%	8%	18%	2%	6%	10%	34%	24%	
Drinking and driving (or riding in a car driven by someone who has been drinking)	44%	20%	35%	n/a	22%	30%	62%	48%	

*Source: 2005-06 California Healthy Kids Survey*

**Motor vehicle crashes are the leading cause of death among teenagers. Alcohol use is a major contributor.** In 2005, 45% of traffic fatalities in Sonoma County were alcohol-related, while 13% of traffic injuries were alcohol-related.<sup>115</sup> In 2005-06, 20% of Sonoma County 9th graders, 35% of 11th graders and 62% of alternative school students reported drinking and driving, or riding in a car driven by someone who had been drinking. Forty four percent (44%) of 7<sup>th</sup> graders reported being a passenger in a car driven by someone who had been drinking alcohol.<sup>116</sup>

**Sonoma County needs more AOD treatment programs for youth.** In 2004, a total of 2,613 Sonoma County youth under 18 were arrested on various felony and misdemeanor charges. Over one-fourth of all youth felony and misdemeanor arrests were for alcohol and other drugs. And yet the number of treatment admissions for youth is very small: fewer than 100 youth were admitted for treatment of marijuana, alcohol and methamphetamine use in 2004 (see table below).<sup>117</sup> Alcohol is the second most reported drug problem in terms of Sonoma County youth admitted for AOD treatment, as seen in table below. Not all of these teens require treatment but treatment services are limited relative to the need.

Table 3. Treatment Admissions by Primary Drug of Choice, <18, Sonoma County, 2001-2004				
Year	2001	2002	2003	2004
Marijuana	53	60	59	54
Alcohol	28	24	26	34
Methamphetamine	13	13	12	10

*Source: California Department of Alcohol and Drug Programs, CADDs*

## ***The Story Behind the Problem***

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### ***“Too many Americans consider underage drinking a rite of passage to adulthood,”***

*Rear Admiral Kenneth Moritsugu, MD, Acting Surgeon General*

National research and local data have identified community factors that contribute to underage drinking and illegal drug use: easy availability of alcohol from both commercial and social sources; permissive attitudes, behaviors, and community norms; weak law enforcement and inconsistent merchant compliance with underage drinking laws; and exposure to alcohol advertisements and promotion.

**Availability of alcohol from social and commercial sources.** The availability of alcohol and the means by which young people access it are critical factors in determining the extent to which high risk drinking occurs. The majority of Sonoma County high school students (83% of 11th graders), report that it is “very easy” or “fairly easy” to obtain alcohol.<sup>118</sup> Private parties are one of the most frequently reported avenues for access to alcohol either provided directly by parents, older siblings, or older friends. Drinking games are reported to be a common feature of private parties, encouraging over-consumption of alcohol.<sup>119</sup> The lack of clear standards and policies regarding retail alcohol sales and access to alcohol at public events contribute to higher rates of consumption.

**Community norms.** The social norms of a community play a significant role in the acceptability of underage and high-risk consumption of alcohol and other drugs. Adolescents respond to adult messages and are more apt to use substances within the context of permissive attitudes and community norms. The wine industry is a major employer and economic force. The industry actively promotes wine consumption by adults. Community sponsored events and activities where alcohol is promoted and readily available contribute to social norms that support broad use across the population and may influence youth behaviors by encouraging experimentation and underage use. Similarly, permissive norms related to marijuana and other drug use create a high-risk environment for Sonoma County teens.

**Family influences.** Factors such as family history of substance abuse, parental drug use, and favorable attitudes towards underage use contribute to increased risk for alcohol and substance abuse. Teens at great risk for developing serious alcohol or drug problems include those whose family members have problems with substance abuse.

**Individual and peer factors.** Many factors may influence a person’s initial alcohol use, though numerous studies show that peer influence – both active and passive – is the single greatest contributor to teen drinking.<sup>120</sup> Teens may use alcohol to relax, have fun, to be part of a group, out of curiosity, and to escape. Contributing factors may also include academic failure, school related problem behaviors, peer rejection, favorable attitudes toward drug use, and early initiation of drug use.<sup>121</sup>

**Enforcement and compliance issues.** Students surveyed in 2005, as part of a community prevention program, appeared to have little trouble buying alcohol. Cotati-Rohnert Park 11<sup>th</sup> graders report that youth who drink alcohol can also “buy it themselves at a store.” These students report that most of the students in their grade who buy alcohol usually buy it at a convenience store or mini-market (45%), liquor store (23%), or drug store/other retail store (4.5%).<sup>122</sup> These results are similar to those from students surveyed in West Sonoma County.

Statistics from 2001 to 2006 show that the majority of disciplinary actions filed against stores, bars and restaurants in Sonoma County were related to either selling alcohol to minors, employing a minor or allowing minors on the premises.

**Alcohol and tobacco advertising and promotion.** Advertising content often glamorizes drinking and reinforces the idea that alcohol is intrinsic to social interaction. Recent studies conclude that exposure to alcohol advertising contributes to an increase in underage drinking;<sup>123</sup> Seventh graders who viewed more television programs containing alcohol commercials were more likely to drink in the 8th grade;<sup>124</sup> and exposure to and positive attitudes towards alcohol advertisements affect youth decisions about alcohol use.<sup>125</sup>

The positive imagery of smoking in movies and advertisements also contributes to encouraging tobacco use as well as the perception by some that the problem of smoking has been solved.<sup>126</sup> The onset of tobacco use occurs primarily in early adolescence. Very few people begin to use tobacco as adults; almost all first use has occurred by the time people graduate from high school. The earlier young people begin using tobacco, the more heavily they are likely to use it as adults, and the longer potential time they have to be users.<sup>127</sup>

### ***The Costs of Teen Alcohol and Other Drug Use***

Underage drinking is estimated to cost the nation about \$62.6 billion each year in deaths, injuries, property damage and related economic and productivity losses.<sup>128</sup> Nearly half of all teen automobile crashes and more than half of all suicides are linked to underage drinking.<sup>129</sup>

The magnitude of the costs is exemplified in a 2001 study by the National Center on Addiction and Substance Abuse at Columbia University estimating that in 1998, California spent \$10.4 billion addressing AOD problems (for both adults and teens). This represented 15.2% of the entire State budget—a tax burden of \$310 for each Californian. Of that amount, only \$12 was directed toward AOD prevention and treatment, the remainder paid for AOD impacts in health, law enforcement, and impacts in prisons, schools, and business.<sup>130</sup>

***“In addition to taxes, California residents pay for these costs through higher insurance premiums and higher costs for goods and services. A less tangible price is paid in terms of fear, violence and social disorder. The users and their families pay the highest price of all.”***

*George Isham, MD, Medical Director and Chief Health Officer, HealthPartners, Minnesota*

## ***What Our Service System Offers and Where the Gaps Are***

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As the field of AOD prevention evolves, efforts to combat the problem are increasingly focused on shifting policies and community and social norms as an effective way to reduce youth AOD use. Environmental prevention strategies recognize and work to address the powerful influence that ready access to alcohol and permissive attitudes toward AOD have on youth. There is a plethora of diverse local efforts currently underway in specific Sonoma County communities doing very good work. The challenge of addressing youth AOD use as a countywide problem is to maintain these effective local efforts while building a more systematic county-wide approach to youth AOD use.

### **Resources**

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**The Drug Abuse Alternative Center (DAAC).** DAAC is the largest provider of youth substance abuse prevention and treatment in Sonoma County. DAAC provides teen services including outpatient drug-free treatment and school-based services, outreach, education and prevention efforts, assessment, individual, and family, and group counseling. DAAC can provide no-cost services through Minor Consent Medi-Cal. Yet in the current system, those services often go unused because there is no reliable identification and referral system in place.

**R House.** The only certified residential alcohol and other drug treatment facility for youth (boys and girls ages 14-18) in Sonoma County. The Adolescent Treatment Program provides 90 days of residential services for approximately 6 to 8 clients. Services are provided within a therapeutic model and include individual counseling, development of a positive support system and planning for the transition to outpatient treatment and the community.

**Clean and Sober School Program.** The Sonoma County Office of Education (SCOE) operates Clean and Sober School programs in Petaluma and Santa Rosa. The program provides safe and supportive environments for students in grades 9-12 who are struggling with recovery from drug and alcohol abuse. The program recognizes that students who have started rehabilitation often need to change their environment to be successful in overcoming substance abuse and that they benefit from an educational environment where all students are committed to being alcohol and drug free. The county's drug treatment court, school districts, probation department, and parents make referrals to the program. This voluntary program serves approximately 50 students each year.

**Countywide Planning.** The Department of Health Services Division completed a yearlong community planning process to assess alcohol and other drug (AOD)-related prevention needs and resources in Sonoma County. DHS facilitated this planning process by assessing Sonoma County's AOD-related problems and enlisting community participation in identifying factors that contribute to these problems. The recent assessment, *Planning for Community-Based Prevention*

*of Alcohol and Other Drug-Related Problems in Sonoma County*, identified strategies to change community conditions that contribute to AOD related problems.

**Environmental Prevention and Planning Coalitions.** Coalitions throughout Sonoma County are working to identify local priority problems related to high-risk drinking and to plan for evidenced-based environmental strategies to address these problems. In south county, efforts include collaboration with Sonoma State University and in Rohnert Park, Cotati, and Petaluma to identify priority issues related to high-risk drinking. In west county, the coalition is addressing ways to reduce the availability and consumption of alcoholic beverages by youth in rural communities. Environmental prevention opportunities have recently expanded to Healdsburg, Santa Rosa, and Sonoma Valley to further investigate AOD problems at the local level.

**AOD Prevention Curriculum.** A growing number of Sonoma County school districts are implementing AOD prevention curriculum as a part of their ongoing classroom education for students. For instance, eighteen school districts in Sonoma County have adopted Project Alert, an evidence-based AOD prevention curriculum for middle school students.

Santa Rosa has dedicated significant Measure O gang activity prevention funds toward AOD prevention and early intervention programs. Other Sonoma County cities offer a range of educational and counseling programs through their recreation and police departments, including School Resource Officers, counseling, and participation in educational programs such as “Every 15 Minutes” and “Alive at 25.”<sup>131</sup>

## **Gaps**

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**Need for a coordinated, comprehensive and systemic approach to addressing youth alcohol and other drug abuse.** Currently, AOD using youth in Sonoma County, may or may not find their way to the treatment programs that can help them improve their chances for a future free of addiction. County early intervention and support services are described as “fragmented and under-funded.” While DAAC has the ability to provide services through Minor Consent Medi-Cal, these services are under-utilized because there is not a reliable identification and referral system in place. Exacerbating the lack of a referral system, the availability of treatment slots for youth in Sonoma County is limited. The public community schools (alternative schools) no longer offer a certified drug treatment program. R House and DAAC are the only treatment programs certified or licensed to treat youth. Further, teens without private resources have limited access to local residential treatment. Youth with private insurance have some options, but there are very few residential treatment beds available within the county. These conditions result in the current situation – where many youth continue to use AOD for years and simply fall through the cracks, never reaching a program that can offer them services.

Given the relatively small population of Sonoma County, creating a comprehensive program that seeks out AOD using youth and refers them to appropriate services would be the most effective

means to have an impact on reducing youth AOD use. Such a program should bring together the various local efforts, treatment programs and the schools and integrate them into a coordinated system for identification, referral and treatment of youth AOD users.

**Expand and sustain the capacity of parents and communities to promote healthy development of youth.** Efforts to address underage drinking, tobacco and substance use must include a focus on adults and the community at large. Most adults express concern about youth drinking and drug use and support public policy actions to reduce youth access to alcohol. Nonetheless, youth obtain alcohol from adults. Parents tend to dramatically underestimate underage drinking generally and their own children's drinking in particular.<sup>132</sup> Parents must be collaborative partners in prevention efforts and in developing prevention messages.

### ***Examples of Innovation***

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#### ***The Petaluma Coalition to Prevent Underage and High-Risk Drinking***

The Petaluma Coalition to Prevent Underage and High-Risk Drinking is a local community group working to prevent underage drinking and reduce problems associated with heavy drinking among young people 12 – 25 years of age. The Coalition is responding to this problem by implementing a Parent/Community Pledge (English or Spanish), facilitating passage of a Social Host Ordinance, and collaborating with local businesses and city government to pass an Alcohol Beverage Sales (ABS) Ordinance.

The Parent/Community Pledge is part of a bigger picture to create a community-wide change in the way people think about teen drinking. Making the Pledge will reduce the likelihood of teens having access to alcohol in Petaluma homes. As increasing numbers of community members join the Pledge campaign, youth binge drinking rates and the corresponding impact on teen health and social problems will decrease.

The Pledge is also linked to a broader policy strategy that includes a Social Host Ordinance (became law in Petaluma in 2007). This ordinance holds the adult host(s) of teen parties accountable for nuisance behavior resulting from underage drinking parties occurring on their property. The ordinance levies fines or jail time for adults who condone or allow underage drinking in their homes. The measure is expected to help combat the unusually high rate of underage drinking in Petaluma. It has the potential to significantly boost prevention efforts in Petaluma and reduce alcohol-related problems.<sup>133</sup>

#### ***The Alcohol Reduction Initiative***

*A collaborative effort toward prevention and intervention*

The Sonoma County Office of Education (SCOE) in partnership with the Petaluma Joint Union High School District, West Sonoma County Union High School District, Petaluma People's Services, West County Community Services, and Sonoma County Department of Health

Services will address the serious problem of alcohol abuse by high school youth in Sonoma County through the Alcohol Reduction Initiative (ARI).

A major aim of the Alcohol Reduction Initiative is to reduce alcohol use and abuse, and influence attitudes about heavy use of alcohol among high school youth by using strategies that are appropriate to each district and school. ARI will address two important gaps in the community: the lack of a coordinated, comprehensive and systemic approach to addressing youth alcohol abuse; and the low rate of referrals by schools and general counseling agencies to treatment services. These positive systems changes are expected to result in significant reduction of alcohol consumption by youth in Sonoma County.

### ***Screening, Brief Intervention, Referral and Treatment (SBIRT)***

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SAMHSA's<sup>134</sup> Center for Substance Abuse Treatment (CSAT)<sup>135</sup> has developed a brief intervention and referral tool to use with individuals who consume more than medically accepted limits of alcohol and other substances but are not yet dependent. Known as Screening, Brief Intervention, Referral, and Treatment (SBIRT), this intervention rejects the notion that only people with serious levels of abuse or dependency need targeted interventions. SBIRT assumes that everyone, regardless of current level of alcohol or drug consumption, can benefit from learning the facts about safe consumption and knowing how their own usage compares to accepted limits.

California is testing the model by integrating uniform alcohol and drug abuse screening services into 16 emergency rooms, trauma centers, and health clinics in San Diego County. CASBIRT staff conducts a private interview with every patient who arrives at these facilities provides each person with an individualized intervention appropriate to the level of risk for abuse. Positive results are suggesting that the medical encounter offers an important opportunity to deliver a prevention message.

### ***Key Indicators to Track – How We Might Measure Progress***

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#### ***What Is an Indicator in the Context of Teen AOD Use?***

The foundation for meaningful action to address any public health problem is information. However, AOD abuse and dependence are not directly observable and are difficult to quantify in their entirety. Stigma, shame, denial and illegality work together to conceal AOD use and dependence.

While difficult to observe directly, the use of AOD creates ripples throughout society and its institutions. Indicators are the measurements of these ripple effects. Not every alcoholic is arrested for DUI. Not every heroin addict overdoses. Until individuals show up on the 'radar screen' of law enforcement, the health system, a treatment program, or in some other institutional setting, they are statistically invisible even though they have long made their impact felt in other ways.

## Alcohol and Drug Use

<b><i>Health Indicators</i></b>
The percentage of youth alcohol use in past 30 days.
The percentage of adolescents (age 12-17) who engaged in binge drinking in the past 30 days.
The percentage of adolescents who report that they rode, during the previous 30 days, with a driver who had been drinking alcohol.
The percentage of adolescents who remain alcohol and drug free.
The percentage of adolescents who perceive great risk associated with substance abuse.

### ***What would it take to reduce youth alcohol, tobacco, and drug use?***

Everyone in the community has a role to play in preventing the harm that results from Alcohol Tobacco and Other Drugs (ATOD) misuse and abuse. Intervention approaches may fall into two distinct categories: (1) environmental-level interventions, which seek to reduce opportunities for underage drinking, and reduce community tolerance for alcohol, tobacco and other drug use by youth; and (2) individual-level interventions, which seek to change knowledge, attitudes, and skills so that youth are better able to resist the pro drinking and other drug influences and opportunities that surround them.

### **Spectrum of Prevention**

<b><i>Strategies</i></b>	<b><i>Activities</i></b>
<b>Influencing policy and legislation</b>	<ul style="list-style-type: none"> <li>Advocate for and support policies – including municipal ordinances – that restrict the availability, accessibility, affordability, placement, and promotion of alcohol.</li> </ul>
<b>Mobilizing neighborhoods and communities</b>	<ul style="list-style-type: none"> <li>Convene community conversations that engage youth, parents, schools, communities, all levels of government and all social systems that interface with youth, in a coordinated effort to promote healthy development of youth and prevent and reduce drinking and drug use and its consequences.</li> </ul>
<b>Changing organizational practices</b>	<ul style="list-style-type: none"> <li>Implement responsible beverage sales and service practices for events and establishments that sell or serve alcohol, including fairs and festivals, bars, restaurants, and retail outlets.</li> </ul>
<b>Fostering coalitions and networks</b>	<ul style="list-style-type: none"> <li>Engage the community and other stakeholders in identifying key community alcohol, tobacco and other drug issues and developing solutions.</li> </ul>

<i>Strategies</i>	<i>Activities</i>
<b>Educating providers</b>	<ul style="list-style-type: none"> <li>• Offer training and technical assistance to providers for preventing ATOD problems and making appropriate referrals.</li> </ul>
<b>Promoting community education</b>	<ul style="list-style-type: none"> <li>• Increase public awareness of the harmful effects of ATOD use and abuse.</li> <li>• Promote and support media campaigns that are effective in educating the community about how to reduce ATOD use and adult behaviors that encourage such use.</li> </ul>
<b>Strengthening individual knowledge and skills</b>	<ul style="list-style-type: none"> <li>• Increase the ability of youth to make informed decisions about substance use by increasing knowledge and understanding of the physical changes substances cause and how these changes can affect their health and behavior.</li> <li>• Promote youth involvement in addressing their own health needs and creating appropriate intervention strategies and services.</li> <li>• Promote media literacy education to counter the impacts of marketing to teens of alcohol, tobacco, and other drugs.</li> <li>• Promote discussions and support for social ordinances and parent pledges for reducing the availability of alcohol, tobacco and other drugs to youth.</li> </ul>

## Prenatal Substance Use – Alcohol and Other Drugs

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***“Pregnant women want to do the best they can for their babies; their baby is often what inspires them to make a positive change.”***

*Rita Scardaci, Director, Sonoma County Department of Health Services*

***“Every individual woman has a different road to follow on her path to recovery.”***

*Michael Spielman, Executive Director, Drug Abuse Alternatives Center*

Pregnancy is normally a time charged with the excitement of new life; a time of opportunity for mothers- and fathers-to-be to look to the future for themselves and their babies. But for some pregnant women, the anticipation of the future is overshadowed by use of alcohol, tobacco and other drugs that can have serious consequences for their babies. Prenatal alcohol exposure is the leading cause of birth defects and mental retardation in the United States.<sup>136</sup> Heavy use of AOD during pregnancy can lead to fetal death or serious birth complications and can result in life-long debilitating physical and neurological damage to children. Even moderate use of AOD during pregnancy is proven to impair brain development and affect children’s health.

The rate of substance use during pregnancy is significant in Sonoma County. As many as 14% of pregnant women use AOD during pregnancy, a rate higher than both the state and national averages. By conservative estimates, a minimum of 600 babies are born AOD exposed each year in Sonoma County. Experts estimate that 70 to 80% of children in California placed in foster care are there because of parental AOD use.<sup>137</sup> Because of these trends, preventing prenatal AOD use was identified as one of the top five priorities in a recent comprehensive Maternal and Child Health needs assessment conducted by Sonoma County.<sup>138</sup> Similarly, First 5 Sonoma County, a commission dedicated to improving the lives of children 0 to 5, has made prenatal AOD treatment a major priority.

Fortunately, there is reason for optimism. While substance use rates are high, health officials and treatment providers are working together to create a network to intervene with substance-using pregnant women. Due to these collaborative efforts, women are being screened for AOD use during pregnancy and significant numbers are getting help. Many women are discovering the joy of a pregnancy free from alcohol and other drugs. As one mother put it, *“treatment has given me my life back and made me an honest, willing, respectful person. It has also given me a drug-free baby.”* The growing understanding of the dramatic impacts of maternal AOD use on the developing fetus and young children has sparked a concerted effort in our community to educate women about the dangers of substance use and to provide more preventive services and treatment opportunities.

## ***Prenatal Substance Use Defined***

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If a pregnant woman drinks alcohol, uses drugs or smokes cigarettes, so does her fetus. These substances cross the placenta freely; there is no “safe” dose. Prenatal AOD exposure occurs when a mother has consumed alcohol or used drugs during the course of her pregnancy. Estimates of AOD use during pregnancy vary. Most reliable statistics show that a minimum of 10% of women in the United States have substance abuse problems during pregnancy.<sup>139 140</sup> Roughly 11% of women smoke at some point during pregnancy.<sup>141</sup>

**Moderate and accidental exposure.** Many women unknowingly expose their fetus to drugs, alcohol or tobacco before they realize they have become pregnant and may abstain from use as soon as they learn they are pregnant. Other women continue to use or smoke into and throughout pregnancy, either because they are unaware of the risks or because they have not received the support necessary to stop.

**Substance Abuse.** Some women are habitual AOD abusers. Many are “polydrug users” – using a variety of substances, including alcohol and many illicit drugs. Abuse of legal, prescription drugs is also common. Women who use alcohol and other drugs are also likely to smoke during pregnancy. These women, who typically are not fully aware of the damage AOD use can have on the fetus, often need intensive interventions and treatment in order to stop using.

## ***The Consequences of Prenatal Substance Use***

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High rates of alcohol, drug and tobacco use by pregnant women is putting the future health of many Sonoma County children at risk.

### **Alcohol Use**

**The harmful impact of alcohol exposure on infants and children is well documented.** While there is still debate about the effects of light alcohol consumption on the developing fetus, the research is clear that moderate to heavy use of alcohol during pregnancy has very serious physical and neurological consequences. Alcohol is most damaging in the early stages of pregnancy when the fetus is highly vulnerable but can cause damage at any stage in pregnancy. The physical, cognitive and behavioral effects of prenatal AOD use are life-long.

**Alcohol use during pregnancy is the “leading known cause of mental retardation and birth defects in the United States.”**<sup>142</sup> Fetal Alcohol Syndrome (FAS) is a serious condition caused by exposure to alcohol during gestation and is characterized by a number of symptoms: specific facial characteristics; growth deficits; mental retardation; heart, lung, and kidney defects; hyperactivity; behavioral and memory problems; poor coordination and motor skill delays; and central nervous system abnormalities. FAS is estimated to occur in 1 to 3 out of every 1,000 live births in the United States each year.<sup>143 144</sup> Many more children are not classified as having FAS,

but have some of the characteristics of FAS and will suffer the consequences of prenatal exposure to alcohol throughout their lives.<sup>145</sup>

**The Surgeon General has determined that no amount of alcohol use during pregnancy is safe.**<sup>146</sup> The Surgeon General has issued an opinion advising women to abstain entirely from alcohol use during pregnancy. The American Academy of Pediatrics takes the same position.<sup>147</sup>

### **Drug Use**

The implications of prenatal exposure to both illicit drugs and non-therapeutic prescription drugs used during pregnancy vary widely from “almost imperceptible problems discovered throughout development to devastating birth defects, mental retardation, or even death.”<sup>148</sup> Birth complications attributable to drug use can include pre-term delivery, low birth weight, smaller than normal head size, miscarriage, genital and urinary tract deformities, and nervous system damage.

#### **Risks associated with specific drugs:**

- Marijuana - slow fetal development and low birth weight.
- Cocaine - birth defects (urinary tract and heart defects), neonatal stroke and heart attack, placental abruption, feeding difficulties, sleep disturbances, physical and mental delay, extreme irritability and possible reduction of child IQ levels.
- Heroin and other opiates - newborn withdrawal, miscarriage and premature birth, increased risk of low child IQ, physical and mental retardation, behavior problems and increased risk of Sudden Infant Death Syndrome.
- Amphetamines (including methamphetamine) - birth defects, pregnancy complications, slow fetal growth, premature delivery and possible increase in congenital heart defects.

### **Tobacco Use**

- **Women who smoke or who are exposed to “second hand smoke” when they are pregnant subject their children to significantly increased health risks.** Smoking during gestation reduces the supply of oxygen and nutrients to the fetus and is associated with low-birth weight, poor birth outcomes, including poor fetal growth and premature delivery. Both of those contribute to infant illness and death. Pregnant women who smoke are more likely to have ectopic pregnancies (pregnancies outside of the uterus) and their babies are more likely to die from sudden infant death syndrome (SIDS).<sup>149</sup> Children whose mothers smoked during pregnancy are more likely to be affected by colic, asthma and childhood obesity.<sup>150 151</sup>
- **The American College of Obstetricians and Gynecologists (ACOG) recommends that perinatal providers uniformly counsel pregnant women to abstain from smoking during pregnancy.** According to ACOG, “[s]moking is one of the most important modifiable causes of poor pregnancy outcomes in the United States.”<sup>152</sup>

## ***Scope of the Problem***

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Sonoma County women are using AOD during pregnancy in significant numbers, at rates above the national average, making prenatal alcohol and drug use a serious cause for concern. In 2006, the Drug Free Babies Project and Kaiser Permanente surveyed nearly half of pregnant women in Sonoma County to determine if they used AOD during pregnancy. More than a quarter of the women surveyed said they had used tobacco, alcohol or another drug during their pregnancy.<sup>153</sup>

Several factors contribute to the high rate of AOD use in Sonoma County. Sonoma County's place as a hub in the methamphetamine and marijuana distribution networks in Northern California ensures broad access to these and other drugs. In addition, Sonoma County's unique status as a leader in the wine industry supports and promotes social norms that encourage drinking.

### ***A Note on the Lack of Data***

The data on prenatal alcohol and drug use from statewide and local surveys has significant limitations. The last statewide prevalence study – the Vega Study – was conducted in 1992. Though dated, it provides the best statically reliable data on alcohol and other drug use by pregnant women in Sonoma County. This study analyzed maternal urine toxicology. Locally, the Drug Free Babies Project (DFB) screened roughly 20% of pregnant women in Sonoma County in 2006 for substance use, using a screening tool and relying on self-reporting. While these data sets are not entirely comparable, they are the best currently available sources of data.

### ***Key Findings on Prenatal Substance Use in Sonoma County***

- **Between 10% and 14% of pregnant women use alcohol and other drugs (exclusive of tobacco).** The Drug Free Babies (DFB) survey found that 10% reported using alcohol or other drugs during pregnancy.<sup>154</sup> The Vega Study found that 14% of women in Sonoma County used alcohol and drugs during pregnancy.<sup>155</sup>
- **Illicit drug use by pregnant women in Sonoma County is a major problem on a par with or greater than the national average.** The DFB survey found that 4% of women reported using drugs during pregnancy. The Vega Study found 6% of pregnant women in Sonoma County used drugs during pregnancy, while national statistics indicate that roughly 4-5% of women giving birth in the United States use drugs during their pregnancy.<sup>156</sup>
- **Alcohol is the most frequently used substance by pregnant women.** A 2003 statewide maternal and child health study found that alcohol use during pregnancy in the Bay Area region, including Sonoma County, is the highest in the state at 19% - almost twice the national rate.<sup>157</sup> The DFB survey found that 9% of women self-reported using alcohol during pregnancy.

- **Marijuana is the drug used most often, but for pregnant women in treatment, methamphetamine is the primary drug of abuse.** The Drug Free Babies Study found that 7% of the pregnant women surveyed reported using marijuana during pregnancy. The Vega Study found that 21% of women used marijuana. For pregnant Sonoma County women in treatment, methamphetamine is the primary drug of abuse.<sup>158</sup> However, 80% of AOD treatment system admissions are criminal justice referrals and, thus, this data does not reflect the use of methamphetamine by the general population.<sup>159</sup>
- **With roughly one-fifth of pregnant women smoking in Sonoma County, tobacco use during pregnancy is widespread.** DFB data show that 16% of Sonoma County women reported smoking during pregnancy. Vega found that 21% of women smoked.
- **AOD use is linked to child neglect and abuse, and child mortality.** The Sonoma County Department of Health Services estimates that 80% of the high-risk infants and abused children referred to Sonoma County Public Health Nursing come from families involved with substance abuse. Twenty-eight percent (28%) of women whose infants died during pregnancy or early infancy reported heavy drinking and/or use of street drugs between conception and the first prenatal care appointment. An additional 13% reported some alcohol consumption. Twenty percent (20%) reported smoking during pregnancy.<sup>160</sup>
- **Sonoma County teens are at high risk for giving birth to a substance-exposed child.** According to the California Healthy Kids Survey 2004, Sonoma County teens have significantly higher rates of alcohol and drug use than their peers across the state. (See Table 1. Alcohol and Other Drug Use, p. 45). When combined with sexual activity, alcohol and other drug use can result in fetal exposure during unplanned pregnancies.<sup>161</sup>

### ***The Story Behind the Problem***

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***“[D]rug use during pregnancy is a problem that affects all women, not just certain demographic subgroups.”*** *“The Vega Study,” Profile of Alcohol and Drug Use During Pregnancy in California.*<sup>162</sup>

**Ethnicity and socioeconomic circumstances.** Prenatal AOD use cuts across all economic, racial and social categories. In California, prevalence of alcohol consumption during pregnancy is highest in women who are white, older, college graduates and higher income. Women with at least a college degree report the highest rates of drinking alcohol during pregnancy. They are 2 to 5 times more likely than other women to drink during pregnancy.<sup>163</sup> The impact of class and ethnicity on prevalence remains murky but it is clear that efforts to address this problem cannot be focused on any particular racial or social demographic group. Latinas were the second most likely group to drink during pregnancy. Some studies indicate that African-American women give birth to AOD exposed babies at disproportionate rates,<sup>164</sup> while Asian and Hispanic women appear to give birth to exposed babies at lower rates.<sup>165</sup> One study found that low-income women

on Medi-Cal give birth disproportionately to AOD exposed infants.<sup>166</sup> In Sonoma County, 73% of pregnant women in treatment are white, 16% are Hispanic, 5% are Native American, 3% are black, and 2% are Asian/Pacific Islander.<sup>167</sup>

**Connection with mental health disorders.** There is a strong correlation between substance abuse and serious, chronic mental health problems. Individuals who use drugs are 4.5 times more likely to have a mental disorder than those who do not use drugs. Heavy, life-time drug abusers are more than 50% more likely to have a psychiatric disorder than non-users.<sup>168</sup> Among California women utilizing drug services during parole, 45% of women with illicit drug dependence and 31% of women with alcohol dependence have “serious co-occurring mental illnesses.”<sup>169</sup> Given this strong correlation, efforts to identify and treat substance-abusing women of child bearing age should focus on making connections between county and private mental health systems, Maternal and Child Health programs and alcohol and other drug treatment systems.

**Life circumstances.** A woman’s life circumstances play a large role in her prenatal AOD use. Women who are pregnant and who use alcohol and other drugs are more likely to have suffered from emotional, physical and sexual abuse either as children or adults.<sup>170</sup> Importantly, treatment providers and research indicate that men often are involved in introducing women to substances and helping to maintain their chemical dependency.<sup>171</sup> A partner’s involvement in AOD abuse can strongly influence a woman to begin substance use or continue using during pregnancy. Efforts to help women stop using substances during pregnancy must take into account the important role her partner’s addiction plays in her own use.

***The voices of Sonoma County women who have found help...***

“The treatment program has opened my eyes to a bright new world. I actually want to stay clean and sober now. I love my life. I’ve built a family here and it feels great to be able to trust again. I’m never alone and every day I look forward to coming here. Every day is a brand new day. I owe my life to the program because without it, I wouldn’t be here today for myself or my son.”

*Anonymous.*

“Before I came to treatment, I thought I was never going to get off the drugs. But coming here and talking about my feelings was very helpful. I had to face my drug use so that I was doing everything in my power to give my baby the best chance for proper development.”

*Anonymous.*

“I came to treatment because I was pregnant and using the whole time. I finally got clean and I needed help staying clean. Treatment has shown me how to be a productive parent, and how to be present for my baby. I love that I can take my baby to treatment with me. The program has

given me the opportunity to build better relationships with clean and sober women and to receive resources around the community.”

*Brenda T.*

### ***The Costs of Prenatal Alcohol and Other Drug Use***

Exposure to substances during pregnancy takes an enormous toll on families and especially on children, but also creates significant costs to society in general.

- **The cost of Fetal Alcohol Syndrome.** The cost of child exposure to Fetal Alcohol Syndrome on American society is estimated at up to \$9.7 billion.<sup>172</sup>
- **The cost of raising a child with FAS.** Raising a single child with FAS is estimated to cost up to \$1.9 million.<sup>173</sup>
- **The costs of medical treatment for drug exposed infants.** Each child born with cocaine exposure generates an additional \$5,000 in medical costs at birth.<sup>174</sup> The lifetime costs are much greater.
- **The costs of delinquency and criminal activity.** Borderline retardation caused by exposure to alcohol is linked to delinquency and criminal activity which carry large economic and social costs.<sup>175</sup> It is also linked to school failure.
- **The costs to the foster care system.** Many children of alcohol and other drug abusing parents are removed from the home and placed in foster care. The costs associated with out-of-home placement resulting from parental AOD use are enormous.
- **The cost of the repeating cycle of abuse.** Children who were exposed to AOD before birth are more likely to be alcohol and other drug users themselves and perpetuate the cycle of abuse in their children. Their children may, themselves, grow up to be AOD abusers carrying with them the associated costs of foster care, delinquency, incarceration and treatment. Without prevention and intervention, this destructive cycle simply continues.

## ***What Our Service System Offers and Where the Gaps Are***

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### **Resources**

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In Sonoma County, many perinatal providers (health centers, clinics and hospitals) and the AOD treatment system work closely together to identify, screen and treat pregnant women who are using AOD. Medical providers screen and refer women to treatment and the AOD treatment system provides counseling, and intensive perinatal day treatment programs and residential perinatal programs to help pregnant women stop using.

Most pregnant women in Sonoma County get their prenatal care through their primary medical provider, such as Kaiser Permanente a private physician's office, or one of the county's community health centers. Through its Early Start program, Kaiser conducts AOD screening on all pregnant women in their care and refers those who appear to be at risk to an Early Start Specialist. That specialist provides counseling and referral to treatment when indicated. Early Start also offers individual and couples counseling, stress management, parenting information and follow-up care after delivery.

Women receiving perinatal care at community health centers or at private physician's offices that participate in the Drug Free Babies Program (DFB) are screened for AOD use during their perinatal care. Those determined to be at risk are then referred to the program's Perinatal Placement Specialist for a more complete assessment and to receive counseling and support to stop using. They are referred to treatment where it is appropriate. Currently, all of the community health centers and about half of the private providers in Sonoma County are participating in the assessment program.

Gender-specific treatment is crucial to address the unique needs and concerns of pregnant women. Here in Sonoma County, a pregnant woman may attend either a perinatal day treatment program, lasting 180 day sessions over the course of a year, or a 90- or 120-day perinatal residential treatment program. These programs encourage women to achieve and maintain clean and sober living, deliver healthy infants, strengthen family units, and lead productive lives. Many of these programs offer core alcohol and drug treatment, tobacco cessation services, childcare, transportation, parenting skills, child development education, counseling and a variety of other services. The goal is to help a woman abstain from use during pregnancy and continue a clean and sober life after delivery.

## **Gaps**

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A woman's ability to access treatment programs is determined in large part by whether she has medical coverage that pays for treatment – either private insurance or Medi-Cal. Most women with private insurance or the ability to pay for treatment will go to a private treatment program. Unfortunately, none of these programs offer treatment focused specifically on the needs of pregnant women. In addition, some health insurances may limit coverage or offer a sub-optimal level of care to pregnant women. Women with Medi-Cal or women with no insurance coverage, who cannot afford treatment, will have even greater difficulty finding treatment. They may be eligible for a publicly funded treatment slot, but they may have significant wait time.

In Sonoma County, the treatment capacity for women without the ability to pay is limited.

**Residential Treatment Capacity** – Two local residential facilities offer a total of 20 publicly funded perinatal residential treatment beds. Women may bring their children to treatment with them. Occasionally, residential facilities will limit the number or age of children as they reach

their licensing cap for children in residence. These facilities together are licensed to serve an additional 10 women, but currently do not have public or community funding to pay for the additional beds.

**Outpatient and Perinatal Day Treatment Capacity** – There is currently room for a maximum of 33 women at a perinatal day treatment center, which offers childcare and transportation. If women are unable to get into this program due to lack of space, they may attend an outpatient program, which may not be focused solely on treating pregnant women.

Until recently, day and residential treatment capacity has been sufficient to serve pregnant women seeking to enter treatment in Sonoma County. In the recent past, because of lack of funding, and therefore, space for perinatal day treatment, some women have had to accept a less than optimal level of care in an outpatient program until space became available. Both residential and day treatment providers now anticipate that the demand for publicly funded perinatal treatment will soon outstrip capacity as more women are screened, counseled and referred to treatment.

### ***Examples of Innovation***

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#### ***The Drug Free Babies Program***

Through the Drug Free Babies (DFB) Program, Sonoma County has made major advances in the past five years toward creating a network to combat perinatal AOD exposure. That network includes hospitals, private perinatal care providers, community health centers, AOD treatment programs, and the county Department of Health Services. The primary goals of the program are to implement universal screening of all pregnant women in Sonoma County, to ensure that women who need treatment get it regardless of their ability to pay, and to educate the community and particularly pregnant women about the dangers of prenatal exposure.

Prior to 2004 when DFB started, assessment and referral were sporadic and treatment information was not centralized. When a medical provider – either a hospital or physician – identified a woman needing treatment, that provider had to contact multiple programs to find an appropriate placement. Difficulty locating appropriate treatment may have kept some providers from conducting assessments. Centralization of referral and treatment through the DFB's Perinatal Placement Specialist has changed this situation. More than 90% of perinatal care providers in Sonoma County have been trained on best screening practices and how to access the Perinatal Placement Specialist. Currently at least half of the perinatal treatment providers in Sonoma County screen pregnant women for AOD use and refer women to treatment on a regular basis.

In addition to the centralization of resources and referral, DFB is working with hospitals to implement a countywide protocol for evaluating and reporting cases involving possible prenatal AOD exposure. DFB is working to develop reliable local data on the prevalence of AOD use

among pregnant women so that progress on this issue can be tracked. The program has engaged in social marketing activities to spread the word about the dangers of prenatal exposure to AOD. The DFB Program is making a difference in reducing exposure of Sonoma County babies to alcohol, drugs and tobacco before birth and helping women who will soon be mothers to quit smoking and find their way into treatment.

***Kaiser’s Early Start Program***

Offered in conjunction with Kaiser Permanente’s prenatal services, the Early Start Program reduces negative maternal and neonatal outcomes associated with prenatal substance use by making education and early intervention accessible to pregnant women. All soon-to-be mothers are screened by their physicians for tobacco, alcohol and other drug use during routine prenatal visits. Those considered to be at risk of using tobacco, alcohol or other drugs during pregnancy are referred to the program. A licensed counselor, the Early Start Specialist, joins the mother’s prenatal care team. While the patient is receiving prenatal care from Kaiser, the program makes available opportunities for individual counseling, couples and family counseling, stress management, parenting information, and advocacy. The Early Start Specialist provides education to the patient about the impact of tobacco, alcohol and other drug use on the developing fetus and helps her seek special help if she is experiencing difficulty quitting. The Specialist helps the patient develop a plan to stop using substances, and directs patients to in-depth resources at Kaiser Permanent and in the community if necessary. Kaiser has found the Early Start program to be very successful in improving birth outcomes at Kaiser Santa Rosa.

***Key Indicators to Track – How We Might Measure Progress***

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<b><i>Health Indicators</i></b>
The percentage of pregnant women in Sonoma County screened by perinatal providers for alcohol, drug and tobacco use during current pregnancy.
The percentage of women in Sonoma County who report alcohol, drug and tobacco use during current pregnancy at screening.
The percentage of pregnant women in Sonoma County with positive screening who meet the criteria for admission to treatment and successfully complete a treatment plan or leave treatment early with satisfactory progress.
The percentage of babies born in Sonoma County with positive toxicology for fetal AOD exposure.
The number of publicly funded treatment beds and day treatment slots in Sonoma County available to pregnant women and their children.

***What would it take to make progress on prenatal alcohol and drug use?***

Despite the work of the County of Sonoma, providers, Kaiser’s Early Start program and the Drug Free Babies Program, significant improvements can still be made to the system of prenatal AOD screening, referral and treatment that will result in a stronger system with better results for women and children.

**Spectrum of Prevention**

<i>Strategies</i>	<i>Activities</i>
<b>Influencing policy and legislation</b>	<ul style="list-style-type: none"> <li>• Advocate at the state and national level for increased funding for perinatal AOD treatment.</li> <li>• Urge the State Department of Alcohol and Drug Programs to compile statewide prevalence data by updating the 1992 statewide perinatal substance abuse prevalence study.</li> <li>• Urge local policy makers to identify funding for the ten perinatal residential treatment beds that are licensed but not currently funded.</li> </ul>
<b>Mobilizing neighborhoods and communities</b>	<ul style="list-style-type: none"> <li>• Neighborhoods can work to minimize the presence of drug use in their communities through collaborative efforts with law enforcement and community groups.</li> </ul>
<b>Changing organizational practices</b>	<ul style="list-style-type: none"> <li>• Implementing a new universal screening standard of care and referral to ensure that every pregnant and delivering woman in Sonoma County is screened for AOD use. Hospitals can support this standard of care by requesting that prenatal care providers include the DFB screening form in the information sent to labor and delivery.</li> <li>• Hospitals should adopt and implement the proposed countywide protocol for evaluating and reporting cases involving possible perinatal alcohol and other drug exposure.</li> </ul>
<b>Fostering coalitions and networks</b>	<ul style="list-style-type: none"> <li>• Encourage the medical community, the Health Department and medical providers to actively participate in gathering and reporting data on AOD prevalence and assessments. Statistically accurate local data on prenatal AOD use is not yet available<sup>176</sup></li> </ul>

<i>Strategies</i>	<i>Activities</i>
<b>Educating providers</b>	<ul style="list-style-type: none"> <li>• Conduct consistent and ongoing training of the community’s perinatal providers in AOD assessment and referral.</li> </ul>
<b>Promoting community education</b>	<ul style="list-style-type: none"> <li>• Educate and train health care providers and public institutions to raise the awareness of residents to the extent of the problem; encourage pregnant women to abstain from AOD; and increase recognition of addiction as a chronic disease, reducing stigma and encouraging women to enter treatment.</li> </ul>
<b>Strengthening individual knowledge and skills</b>	<ul style="list-style-type: none"> <li>• Expand education to women, families and the general public to understand the full, devastating impacts of alcohol and drug use on the developing fetus. Local collaboratives and providers should continue and step up efforts to spread the word about the dangers of alcohol and drug use during pregnancy.</li> </ul>

## Appendix I: Tables of Indicators

*Children's Oral Health*

#	Indicator	Data	Sources
1	The percentage of kindergarten and 3rd grade children with untreated tooth decay in primary or permanent teeth.	<b>Local:</b> 76% of Sonoma County school children assessed by the Mighty Mouth Program over three years had a history of decay.	Mighty Mouth Program Data, Give Kids a Smile Day Data, California Smiles Survey.
		<b>State:</b> Over 70% of California children have a history of tooth decay. Of the states surveyed by California Smiles Survey, only Arkansas ranked below California in the number of children with a history of decay.	California Smiles Survey, p. 4.
		<b>National:</b> According to the Surgeon General's Report, 52% of American children aged 5-9 have tooth decay.  According to the CDC Trends in Oral Health Status report, 28% of children 2-5 have untreated decay in primary teeth and 59% of 6-11 year olds have untreated decay in primary or permanent teeth.	Surgeon General Report, p. 63.  Centers for Disease Control, Trends in Oral Health Status: United States, 1988-1994 and 1999-2004, Tables 5 and 11.
2	The percentage of low-income children with emergent or urgent (Class II or III) dental needs.	<b>Local:</b> Thirty nine percent (39%) of the school children assessed by Mighty Mouth Program over three years had untreated decay (19% emergent needs, 20% urgent needs). Give Kids a Smile Day found that 60% of low-income children assessed over three years had untreated decay.	Mighty Mouth Program Data, Give Kids a Smile Day Data.
		<b>State:</b> One-third of low income children in California had untreated decay, compared to one-fifth of higher income children.	California Smiles Survey, p. 8.
		<b>National:</b> More than one-third (37%) of low-income children had untreated decay in a primary tooth, compared to 17% of higher income children.	Surgeon General Report, p. 63.

#	Indicator	Data	Sources
		The CDC found that the poorer the child, the higher the likelihood of untreated decay. 54% of very poor children (<100% FPL) had untreated decay, 49% of children living between 100-199% of the FPL had untreated decay. While 32% of children living above 200% of the FPL had untreated decay.	Centers for Disease Control, Trends in Oral Health Status: United States, 1988-1994 and 1999-2004, Table 5.
3	The percentage of children aged 2 years and older who have not seen a dentist in the previous 12 months.	<b>Local:</b> The Children Now Data Book for 2006 reports that 17% of Sonoma County children had not seen a dentist within the last year. Twenty-three percent (23%) of children screened by Family Action and MCAH at twelve preschools and ten elementary school 3rd grade classes in 2002 had not been to a dentist for over one year. Another 13% had never been to a dentist.	Children Now Data Book, Family Action and Maternal Child and Adolescent Health Survey 2002.
		<b>State:</b> The Children Now Data Book for 2006 reports that 20% of California children had not seen a dentist within the last year. CSS reported that 17% of kindergarteners and more than 5% of 3 <sup>rd</sup> graders had never been to a dentist.	Children Now Data Book, California Smiles Survey, p. 8.
		<b>National:</b> In 2004, 23% of children age 2-17 had not seen a dentist within the past year. 25% of minority children entering kindergarten have never visited a dentist.	Child Trends Data Bank, Surgeon General Report, p.252.
4	The percentage of children with dental sealants.	<b>Local:</b> Mighty Mouth Program data over three years shows that 17% of children surveyed had sealants.	Mighty Mouth Data.
		<b>State:</b> CCS found that 28% of California children had sealants.	California Smiles Survey.
		<b>National:</b> Healthy People 2010 reports that in 2002, 23% of children 8-years old have received sealants and 15% adolescents aged 14 years.	Healthy People 2010.
5	The percentage of children <i>without</i> dental insurance.	<b>Local:</b> In 2005, 16% of Sonoma County children had no dental insurance.	California Health Interview Survey, 2005.
		<b>State:</b> In 2005, 17% percent of California children had no dental insurance. CSS reports that 23% of California children had no dental insurance.	California Health Interview Survey, 2005 California Smiles Survey.

#	Indicator	Data	Sources
		<b>National:</b> Nationally, 23% of children are without dental insurance. This is roughly 16.3 million children in the U.S.	Lewis, C. et al., <i>Dental insurance and its impact on preventive dental care visits for U.S. children</i> , Journal of the American Dental Association, Vol. 138, No3, 369-380. <a href="http://jada.ada.org/cgi/content/abstract/138/3/369">http://jada.ada.org/cgi/content/abstract/138/3/369</a>
6	The percentage of children with access to fluoridated public water.	<b>Local:</b> 3% of Sonoma County residents have access to fluoridated public water.	Sonoma County Health Profile 2000.
		<b>State:</b> 30% of California residents have access to fluoridated public water.	Sonoma County Health Profile 2000.
		<b>National:</b> The Surgeon General's Report cites 62% of the U.S. consumes water with optimum fluoride levels. HP2010 reports that in 2002, 67% of the U.S. population had access to fluoridated water.	Surgeon General's Report, p. 161 Healthy People 2010.

### ***Childhood Obesity, Nutrition and Fitness***

**Overweight and Nutrition:** Promote good nutrition and healthier weight.

#	Indicator	Data	Sources
1	The percentage of 6 to 19 year olds who are overweight or obese.	<b>Local:</b> 50% of fifth graders in Santa Rosa schools are overweight or at risk of overweight.	Community Activity and Nutrition Coalition, May 2006.
		<b>State:</b> In 2005, 30.2% of 12-17 year olds were overweight or obese. (The terminology has changed to overweight and obese from at risk and overweight.)	California Health Interview Survey, 2005.
		<b>National:</b> In 2003-04, the most recent NHANES data showed that for children aged 6–11 years and 12–19 years, the prevalence of overweight was 18.8% and 17.4% respectively. These prevalence figures are more than three times the target prevalence of 5% set in Healthy People 2010.	National Health and Nutrition Examination Survey (NHANES).

#	Indicator	Data	Sources
		<b>National:</b> 42% of low-income 5- to 20-year old children are overweight or at risk of overweight.	Pediatric Surveillance Data; Centers for Disease Control, 2004.
2	The percentage of mothers who breastfeed their babies for 6 to 9 months.	<b>Local:</b> In 2004, 94% of Sonoma County women breastfed their babies at the time of hospital discharge. The percentage of women exclusively breastfeeding was 69.7%.	Genetic Disease Branch, Newborn Screening Database, 2004.
		<b>State:</b> 86.5% of young children 0-5 who were breastfed or received breast milk for any length of time.	National Survey of Children's Health, Data Resource Center on Child and Adolescent Health, 2003.
		<b>National:</b> 72.3% of young children 0-5 who were breastfed or received breast milk for any length of time. 41% of white women and 42% Hispanic women were breastfeeding at 6 months. 21% white women, 22% Hispanic women were breastfeeding at 12 months.	CDC Breastfeeding Rates Among U.S. Women, 2005.
3	The percentage of children in Sonoma County who eat five servings of fruits and vegetables daily.	<b>Local:</b> In 2005, 50.8% of children ages 2-11 and 31.3% of youth ages 12-17 reported eating five or more servings of fruits and vegetables.	California Health Interview Survey, 2005.
		<b>State:</b> In 2003, almost one in five (19.2%) adolescents (12-17 yrs) reported eating three or more servings of vegetables the previous day.  Note: In 2001, fewer than half of California's children and adolescents (47 and 40 percent, respectively) meet the CA DHS's goal of consuming five or more fruits or vegetables per day.	California Health Interview Survey, 2003.  (Note CHIS 2001 measured fruit and vegetable intake in combination).
		<b>National:</b> In 2005, 20% of high school students reported eating five or more servings of fruits and vegetables each day.	CDC, Youth Risk Behavior Surveillance—United States, 2005.
4	The percentage of 6 to 19 year olds whose intake of meals and snacks at school contributes to good overall dietary quality.	<b>Local:</b> In 2005, 78.1% of Sonoma County children over 2 through adolescence reported eating no fast food the prior day; 16% reported eating fast food one time.	California Health Interview Survey, 2005.
		<b>State:</b> In 2005, 65.9% of California children reported eating no fast food the day before; 29.3% reported eating fast food one time.	California Health Interview Survey, 2005.
		<b>National:</b> n/a	

**Physical Activity:** Promote regular physical activity.

#	Indicator	Data	Sources
1	The percentage of students who participate in moderate or vigorous physical activity for at least 20 minutes, three or more days per week.	<b>Local:</b> In 2005-2006, 35% of Sonoma County 7th graders met the basic fitness standards.	California Department of Education, Standards and Assessment Division. Va.
		<b>State:</b> Approximately two-thirds (66%) of adolescents (12-17 yrs) engaged in vigorous activity three or more times during the previous week, a level below the HP 2010 objective of 85%.	California Health Interview Survey, 2003.
		<b>National:</b> About two-thirds of young people in grades 9–12 are not engaged in recommended levels of physical activity. Daily participation in high school physical education classes dropped from 42% in 1991 to 33% in 2005. In 2005, 45% of 9 <sup>th</sup> grade students but only 22% of 12 <sup>th</sup> grade students attended physical education class daily.	National Youth Risk Behavior Surveillance Survey: 1991-2005.
2	The percentage of children and adolescents who engage in more than three hours daily of sedentary activity, such as TV, computer and video games.	<b>Local:</b> In 2005, almost 32% of Sonoma County children and teens spent two to three hours per weekday watching television. On the weekend, one in five (20.2%) Sonoma County children and teens spent four or more hours per day watching television.	California Health Interview Survey, 2005.
		<b>State:</b> Rates of watching television are similar to Sonoma County.	Sonoma County Health Profile 2006, DHS.
		<b>National:</b> In 2007, Research shows that American children see 40,000 television commercials per year; 72% are for food, including 32% for candy, 31% for cereal and 9% for fast food. A CDC sponsored study of three cities throughout the U.S. showed that children on average watch 3 hours of television every day, with an additional hour added for video games. Only 30% reported watching less than 2 hours.	CDC Study, March 2007. <sup>177</sup>

#	Indicator	Data	Sources
3	Percentage of students who watched three or more hours per day of TV on an average school day.	In 2005, 37.2 % of students in 9th-12th grades watched three or more hours per day of TV on an average school day.	Youth Risk Behavior Surveillance Survey—United States, 2005.

### ***Youth Alcohol, Drug and Tobacco Use***

#	Indicator	Data	Sources
1	The percentage of youth alcohol use in past 30 days.	<b>Local:</b> In 2005-06, 13% of 7 <sup>th</sup> graders; 31% of 9 <sup>th</sup> graders; 48% of Sonoma County's 11 <sup>th</sup> grade students report drinking a whole drink of alcohol in the past 30 days in Sonoma County.	California Healthy Kids Survey, Sonoma County 2005-06.
		<b>State:</b> In 2005-06, 13% of 7 <sup>th</sup> graders; 28% of 9 <sup>th</sup> graders; 37% of California's 11 <sup>th</sup> grade students report drinking alcohol in the past 30 days.	California Healthy Kids Survey, Sonoma County and California 2005-06.
		<b>National:</b> 43.3% of 9 <sup>th</sup> through 12 <sup>th</sup> graders had at least one drink of alcohol in the past 30 days.	National Youth Risk Behavior Surveillance Survey, 2005
2	The percentage of adolescents (ages 12-17) who engaged in binge drinking in the past 30 days.	<b>Local:</b> In 2005-06, 4% of 7 <sup>th</sup> graders; 19% of 9 <sup>th</sup> graders; 34% of Sonoma County's 11 <sup>th</sup> grade students report binge drinking alcohol in the past 30 days.	California Healthy Kids Survey, Sonoma County and California 2005-06.
		<b>State:</b> In 2005-06, 4% of 7 <sup>th</sup> graders; 13% of 9 <sup>th</sup> graders, 21% of California's 11 <sup>th</sup> grade students report binge drinking alcohol.	California Healthy Kids Survey, Sonoma County and California 2005-06.
		<b>National:</b> Rates of binge alcohol use in 2005 were 2% percent among 12 and 13 year olds, 8% percent among 14 and 15 year olds, and 19.7% among 16 and 17 year olds. Although there were declines in past month and binge alcohol use among youths aged 12 to 17 between 2004 and 2005, overall underage (persons aged 12 to 20) past month and binge drinking rates have remained essentially unchanged since 2002. In 2005, nearly 7.2 million (18.8 percent) persons aged 12 to 20 were binge drinkers.	SAMSHA – Results from the 2005 National Survey on Drug Use and Health: National Findings.
3	The percentage of adolescents who report that they rode, during the	<b>Local:</b> In 2005-06, 44% of 7 <sup>th</sup> graders, 20% of 9 <sup>th</sup> graders and 35% of 11 <sup>th</sup> graders reported drinking and driving or being in a car driven by someone who has been drinking in Sonoma County.	California Healthy Kids Survey, Sonoma County and California, 2005-06.

#	Indicator	Data	Sources
	previous 30 days, with a driver who had been drinking alcohol.	<p><b>State:</b> In 2005-06, 22% of 9<sup>th</sup> graders and 30% of 11<sup>th</sup> graders reported drinking and driving or being in a car driven by someone who has been drinking in California.</p> <p><b>National:</b> In 2005, 28.5 % of 9<sup>th</sup> to 12<sup>th</sup> graders report they rode in a car or other vehicle with a driver who had been drinking one or more times during the 30 days preceding the survey.</p>	<p>California Healthy Kids Survey, Sonoma County and California, 2005-06.</p> <p>National Youth Risk Behavior Surveillance: 1991-2005.</p>
4	The percentage of adolescents who remain alcohol and drug free.	<p><b>Local:</b> In 2005-2006, 81% of 7<sup>th</sup> graders, 51.5% of 9<sup>th</sup> graders and 28% of 11<sup>th</sup> graders reported never having a drink of alcohol during their life. 93% of 7<sup>th</sup> graders, 72.5% of 9<sup>th</sup> graders, and 51.5% of 11<sup>th</sup> graders reported never having smoked marijuana in their life. 88% of 7<sup>th</sup> graders, 70% of 9<sup>th</sup> graders, and 56% of 11<sup>th</sup> graders reported never having smoked a cigarette in their life.</p> <p><b>State:</b> In 2005-06, 78.5% of 7<sup>th</sup> graders, 54% of 9<sup>th</sup> graders and 37% of 11<sup>th</sup> graders reported never having a drink of alcohol in their life. 92% of 7<sup>th</sup> graders, 76.5% of 9<sup>th</sup> graders, and 64% of 11<sup>th</sup> graders reported never having smoked marijuana in their life. 84% of 7<sup>th</sup> graders, 70% of 9<sup>th</sup> graders, and 59% of 11<sup>th</sup> graders reported never having smoked a cigarette in their life.</p> <p><b>National:</b> 74.3% of students had at least one drink of alcohol on &gt;1 day during their life (i.e., lifetime alcohol use). From this we can assume 25.7% are alcohol free.</p>	<p>California Healthy Kids Survey, Sonoma County and California, 2005-06.</p> <p>California Healthy Kids Survey, Sonoma County and California, 2004.</p> <p>National Youth Risk Behavior Surveillance Survey, 2005.</p>
5	The percentage of adolescents who perceive great risk associated with substance abuse.	<p><b>Local:</b> Students demonstrated a dramatic rise in awareness about the harm caused by tobacco use: from 79%, 77% and 80% awareness in 7<sup>th</sup>, 9<sup>th</sup> and 11<sup>th</sup> grades respectively in 2000 to 95%, 94% and 97% in 2005-06. Student awareness of the harms of alcohol was 92% among 7<sup>th</sup> graders, 88% among 9<sup>th</sup> graders, and 91% among 11<sup>th</sup> graders. Student awareness of the harms of marijuana was 93% among 7<sup>th</sup> graders, 85% among 9<sup>th</sup> graders, and 80% among 11<sup>th</sup> graders. Perceived risk of frequent marijuana use decreased with grade level (7<sup>th</sup> grade – 72% extremely harmful, 11<sup>th</sup> grade 37%).</p>	<p>California Healthy Kids Survey, Sonoma County and California 2005-06.</p>

#	Indicator	Data	Sources
		<p><b>State:</b> In 2005-06, student awareness of the harms of tobacco was 95% among 7<sup>th</sup> graders, 94% among 9<sup>th</sup> graders and 97% among 11<sup>th</sup> graders in California and 93% among alternative schools students. In 2005-06, student awareness of the harms of alcohol was 91% among 7<sup>th</sup> graders, 88.5% among 9<sup>th</sup> graders, and 90% among 11<sup>th</sup> graders and 87% among students from alternative schools. In 2005-06, student awareness of harms of marijuana was, 93.5% among 7<sup>th</sup> graders, 89% among 9<sup>th</sup> graders, and 87% among 11<sup>th</sup> graders and 71.5% among students from alternative schools.</p>	California Healthy Kids Survey, Sonoma County and California, 2005-06.
		<p><b>National:</b> Almost four fifths (77.9 %) of youth aged 12 to 17 enrolled in school reported in 2005 they had seen or heard drug or alcohol prevention messages at school in the past year, a percentage similar to the 2004 estimate of 78.2%. Past month use of an illicit drug was lower for youth exposed to such messages in school (9.2 %) than for youth not reporting such exposure (13.2 %).</p>	SAMSHA Results from the 2005 National Survey on Drug Use and Health: National Findings.

### ***Prenatal Substance Use – Alcohol and Other Drugs***

#	Indicator	Data	Sources
1	Percentage of pregnant women in Sonoma County screened by perinatal providers for alcohol, drug and tobacco use during current pregnancy.	<p><b>Local:</b> A total of 46% of pregnant women screened in Sonoma County. DFB Screened 17% of pregnant women in Sonoma County in 2006. Kaiser Permanente screens all women in their care or 29% of women.</p> <p><b>State:</b> n/a</p> <p><b>National:</b> n/a</p>	Drug Free Babies Data 2006, County of Sonoma Data on 2006 Births by Hospital.
2	Percentage of women in Sonoma County who report alcohol, drug and tobacco use during current pregnancy at screening.	<p><b>Local:</b> DFB reports 26% of women screened self-report using any substance (alcohol, other drug, tobacco) during pregnancy in 2006. Ten percent of women screened (10%) report using a substance exclusive of tobacco. Kaiser Permanente reports that 29% of women screened self-report using any substance (alcohol, other drug, tobacco) during pregnancy in 2006.</p>	Drug Free Babies Data 2006, Kaiser Permanente Data 2006.

#	Indicator	Data	Sources
		<b>State:</b> Vega Study reports 14% of California women use a substance exclusive of tobacco in 1992.	Vega Study 1992.
		<b>National:</b> Of pregnant women ages 15 to 44, 11% reported alcohol use in past month and 4.5% reported illicit drug use in the past month in 2004.	NSDUH Report 2004.
<b>3</b>	Percentage of pregnant women in Sonoma County with positive screening who meet the criteria for admission to treatment and successfully complete a treatment plan or leave treatment early with satisfactory progress.	<b>Local:</b> Between 2000 and 2005, 37% of pregnant women who entered treatment in Sonoma County completed treatment or left with satisfactory progress.	California Alcohol and Drug Data System Data for Sonoma County 2000-2005.
		<b>State:</b> Between 2000 and 2005, 37% of pregnant women in California who entered treatment completed treatment or left with satisfactory progress.	California Alcohol and Drug Data System Data for Sonoma County 2000-2005.
		<b>National:</b> n/a	
<b>4</b>	Percentage of babies born in Sonoma County with positive toxicology.	<b>Local:</b> n/a	Data to be developed.
		<b>State:</b> n/a	
		<b>National:</b> n/a	
<b>5</b>	Number of publicly funded treatment beds and day treatment slots in Sonoma County available to pregnant women and their children.	<b>Local:</b> There are 20 funded residential beds at two facilities which allow children to be in residence. There are 33 slots in perinatal day treatment.	Data gathered by DFB Project.
<b>6</b>	Percentage of pregnant women in Sonoma County screened by perinatal providers for alcohol, drug and tobacco use during current pregnancy.	<b>Local:</b> A total of 46% of pregnant women screened in Sonoma County. DFB Screened 17% of pregnant women in Sonoma County in 2006. Kaiser Permanente screens all women in their care or 29% of women.	Drug Free Babies Data 2006, County of Sonoma Data on 2006 Births by Hospital, Kaiser Permanente Data.
		<b>State:</b> n/a	
		<b>National:</b> n/a	

## Appendix II: Glossary of Terms

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### ***General Terms***

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**Individual Education Plan (IEP):** The mandate for an Individualized Education Program or IEP is found in the Individuals with Disabilities Education Act (IDEA). Public schools must have an IEP for students with disabilities who meet the federal and state requirements for special education. The IEP is a written document that constitutes the plan for the child's education program, as well as the education program itself.

### ***Children's Oral Health***

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**Caries:** The condition of having decay – treated or untreated – in the teeth.

**Early Childhood Caries (ECC):** Also known as baby bottle tooth decay, ECC is a serious condition affecting infants and young children which can cause massive decay of primary teeth. If untreated, it can also result in destruction of permanent teeth.

**Child Health and Disability Prevention (CHDP) Program:** CHDP is a preventive health program serving California's low-income children with periodic preventive health assessments. Children who are suspected of having serious health problems are referred for diagnosis and treatment.

### ***Childhood Obesity, Nutrition, and Fitness***

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**Body Mass Index:** Body mass index (BMI) is a measure of weight in relation to height that is used to determine weight status and overweight. BMI is the most widely accepted method used to screen for overweight in children because it is relatively easy to obtain the measurements needed to calculate BMI, measurements are non-invasive, and BMI correlates with body fatness. The Centers for Disease Control (CDC) and the American Academy of Pediatrics (AAP) recommend the use of BMI to screen for overweight in children beginning at 2-years old.

**Built Environment:** The built environment refers to the manmade surroundings that provide the setting for human activity. It encompasses all buildings, spaces and products that are created, or modified, by people. It includes homes, schools, workplaces, parks and recreation areas, greenways, business areas and transportation systems. It includes land-use planning and policies that impact our communities in urban, rural and suburban areas.

**California Food Policy Advocates:** This is a public policy and advocacy organization whose mission is to improve the health and well-being of low-income Californians by increasing their access to nutritious and affordable food.

**California SB 19:** In response to the child obesity epidemic, the California legislature passed Senate Bill 19, titled the *Pupil Nutrition, Health and Achievement Act of 2001*. SB 19 sets

nutritional standards for foods sold outside the federal meal program in elementary schools, and provides pilot program grants to schools to pay for the cost in developing and adopting this policy.

**California SB 12:** This follow-up bill strengthens and implements the food standards set in SB 19, and expands them to all public schools with students in kindergarten to 12<sup>th</sup> grade (K-12).

**California SB 965:** This bill expands the language that currently describes the type of beverages that can be sold in elementary and middle schools to include all K-12 students (including high schools).

**Child Nutrition and WIC Reauthorization Act of 2004:** The U.S. Congress established a new requirement that all school districts with a federally funded school meals program develop and implement wellness policies that address nutrition and physical activity by the start of the 2006-2007 school year.

**Food Insecurity:** Limited or uncertain access to nutritious, safe foods necessary to lead a healthy lifestyle. Households that experience food insecurity have reduced quality or variety of meals and may have irregular food intake.

### *Youth Alcohol, Drug and Tobacco Use*

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**Alcohol and Other Drugs (AOD):** A term that notes the definition of alcohol as a type of drug, due to its connection with addiction and related health problems.

**Adolescent:** Adolescence begins when physiologically normal puberty starts. This period of development corresponds roughly to the period between the ages of 10 and 19 years.

**Alcohol addiction, alcohol dependence, or alcoholism:** A chronic disease characterized by a strong craving for alcohol, a constant or periodic reliance on use of alcohol despite adverse consequences, the inability to limit drinking, physical illness when drinking is stopped, and the need for increasing amounts of alcohol to feel its effects.

**Binge drinking:** Binge drinking is defined as having five or more drinks on one occasion in the past month.

**California Healthy Kids Survey (CHKS):** The California Department of Education sponsors the CHKS, which is a comprehensive youth risk behavior and resilience data collection service available to all California local education agencies. It was administered in Sonoma County schools for the first time during the 1999-2000 school year.

**Resiliency:** Resiliency in youth is defined as the ability to overcome obstacles, to meet the social demands of adolescence, and to build the competencies necessary for success as adults.

**Shoulder tapping:** Shoulder tapping refers to the practice used by minors to obtain alcohol from strangers near off-sale retail outlets.

**National Youth Risk Behavior Survey (YRBS):** The national YRBS monitors priority health risk behaviors that contribute to the leading causes of death, disability, and social problems among youth and adults in the United States. The national YRBS is conducted every two years during the spring semester and provides data representative of 9th through 12th grade students in public and private schools throughout the United States.

### ***Prenatal Substance Use – Alcohol and Other Drugs***

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**Fetal Alcohol Syndrome (FAS):** This term refers to certain birth defects, and serious, life-long mental and emotional impairments that may be suffered by a child as the result of heavy alcohol consumption by its mother during pregnancy. Symptoms of mental and emotional deficits may include significant learning and behavioral disorders (including attention deficits and hyperactivity), poor social judgment, diminished cause-and-effect thinking, and impulsive behaviors. FAS characteristics include dysmorphic facial features, prenatal and postnatal growth abnormalities, mental retardation, microcephaly and behavioral abnormalities.

**Fetal Alcohol Spectrum Disorder (FASD):** An umbrella term describing the range of effects that can occur in an individual whose mother drank alcohol during pregnancy. These effects can include physical, mental, behavioral, and learning disabilities with possible lifelong implications. The term FASD is not intended for use as a clinical diagnosis.

**Fetal Alcohol Effect (FAE):** A term used to describe children who lack the full complement of FAS diagnostic criteria, but demonstrate a variety of conditions thought to be secondary to alcohol exposure in the uterus (including growth deficiency, behavioral mannerisms, and delays in motor and speech performance). Now obsolete terminology, replaced with alcohol-related neurodevelopmental disorder (ARND) and alcohol-related birth defects (ARBD).

**Maternal Alcohol, Tobacco and Illegal Drugs (MATID):** A term used to describe maternal use of alcohol, tobacco and illegal drugs during pregnancy that threatens the well being of the child.

**Sudden Infant Death Syndrome (SIDS):** Unexplained, sudden death of an infant up to one year of age.

## Appendix III: Resources and Information

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Throughout the Assessment there are endnotes that provide sources for the data cited. In addition, we list below websites that can provide additional information on the material covered by this Assessment.

### ***General Information and Demographics***

California Department of Health Services  
<http://www.dhs.ca.gov/>

County of Sonoma Department of Health Services  
<http://www.sonoma-county.org/health/>

California Department of Finance  
<http://www.dof.ca.gov/default.asp>

Healthy People 2010  
<http://www.healthypeople.gov/document/>

California Health Information Survey  
<http://www.chis.ucla.edu/>

U.S. Census Bureau  
<http://www.census.gov/census2000/states/ca.html>

Centers for Disease Control and Prevention  
<http://www.cdc.gov/>

### ***Oral Health***

California Dental Association  
<http://www.cda.org/>

Pediatric Dental Initiative  
[http://www.pedidental.org/html/about\\_us.html](http://www.pedidental.org/html/about_us.html)

California Society of Pediatric Dentistry  
<http://www.cspd.org/>

U.S. Surgeon General  
<http://www.surgeongeneral.gov/library/oralhealth/>

The Dental Health Foundation  
<http://www.dentalhealthfoundation.org/topics/access/>

### ***Overweight and Obesity, Nutrition and Fitness***

American Academy of Pediatrics  
<http://www.aap.org>

Kaiser Permanente On Line Learning on Pediatric Weight Management  
[www.kphealtheducation.org](http://www.kphealtheducation.org)

California Project Lean  
<http://www.californiaprojectlean.org>

UC Berkeley Center for Weight and Health  
<http://nature.berkeley.edu/cwh/>

California Center for Public Health Advocacy  
<http://www.publichealthadvocacy.org/>

USDA  
[http://www.nal.usda.gov/fnic/resource\\_lists.shtml](http://www.nal.usda.gov/fnic/resource_lists.shtml)

California's 5-a-day Program  
<http://www.dhs.ca.gov/ps/cdic/cpns/ca5aday>

***Teen AOD Use***

California Department of Alcohol and Drug Programs <http://www.adp.cahwnet.gov/>

National Youth Violence Prevention Center <http://www.safeyouth.org/>

U.S. Department of Health and Human Services  
Substance Abuse and Mental Health Services  
Administration (SAMHSA) <http://samhsa.gov/>

California Healthy Kids Survey  
<http://safestate.org/index.cfm?navid=254>

U.S. Department of Education  
Education Resource and Information Center  
(ERIC) <http://www.eric.ed.gov>

Keeping Youth Mentally Healthy and Drug Free  
<http://family.samhsa.gov/talk/alcohol.aspx>.

***Prenatal AOD Use***

Children and Families Future  
<http://www.cffutures.org/>

American College of Obstetricians and  
Gynecologists  
<http://www.acog.org/>

National Institutes of Drug Abuse  
<http://www.nida.nih.gov/>

National Organization on Fetal Alcohol Syndrome  
<http://www.nofas.org/>

National Survey on Drug Use and Health  
<https://nsduhweb.rti.org/>

## End Notes

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- <sup>9</sup> California Department of Education, Educational Demographic Unit, County Enrollment, 2006-07.
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- <sup>11</sup> US Census Fact Sheet, Sonoma County, 2005 American Community Survey Data Profile Highlights.
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- <sup>23</sup> Ibid.
- <sup>24</sup> *Mommy It Hurts to Chew*, p.3.
- <sup>25</sup> Ibid., p. 19.
- <sup>26</sup> Ibid., p. 8, 18.
- <sup>27</sup> Ibid., p. 8.
- <sup>28</sup> Ibid.
- <sup>29</sup> Mighty Mouth Program Data compilation Years 2005, 2006, 2007, St. Joseph Health System. Mighty Mouth data likely overstate the level of decay within the school-aged population as a whole, as this program targets schools with a higher percentage of low-income students.
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- <sup>31</sup> Mighty Mouth Program Data compilation Years 2005, 2006, 2007.

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- 36 *Kindergarten Transition Program Dental Exam 2007*.
- 37 Family Action and Maternal, Child and Adolescent Health Survey 2002.
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- 39 *Kindergarten Transition Program Dental Exam 2007*.
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- 46 *Ibid.*, p.17.
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- <sup>74</sup> Pediatric Surveillance Data, Centers for Disease Control, 2004.
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