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California Health Interview Survey

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**December 2004**



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The views expressed in this report are those of the authors and do not necessarily represent the National Adolescent Health Information Center, the Regents of the University of California, the Public Health Institute, the California Department of Health Services or the Sierra Health Foundation.

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# California's Adolescents

## Health Profile of California's Adolescents

### Overview

#### CALIFORNIA'S ADOLESCENTS: A DIVERSE, GROWING POPULATION

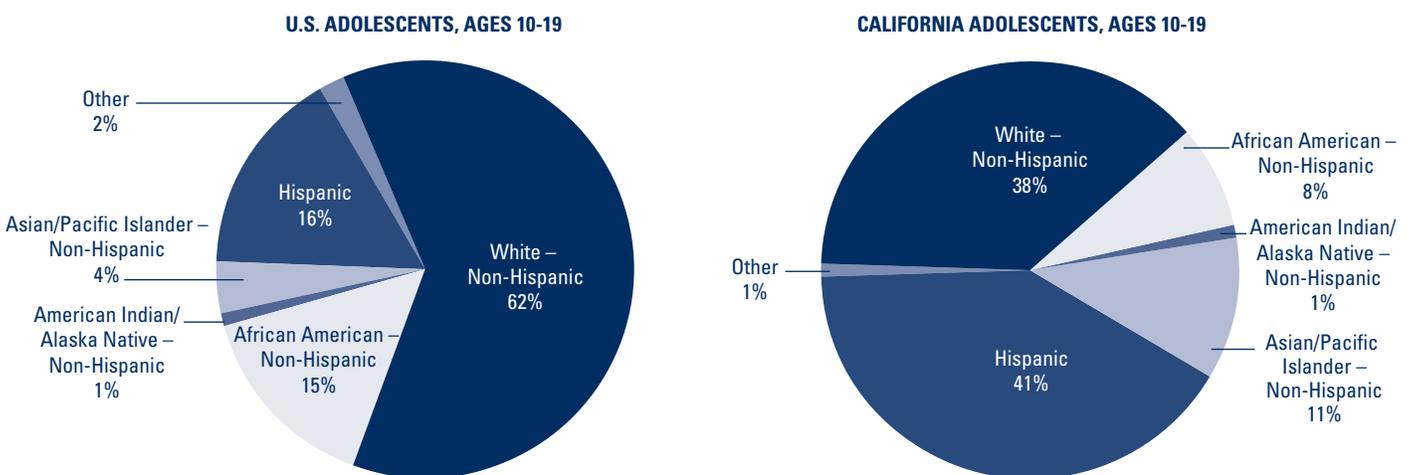
The health and well-being of California's adolescents have a major impact on the overall social and economic health of our state. Today's adolescents are tomorrow's workforce, parents and leaders; and their future is shaped by the opportunities we create for them today. It is important to focus on this age group, as the number of adolescents living in the state has grown dramatically: from four million in 1990 to 4.9 million in 2000, a 23% increase, compared to a 17% increase nationally. One out of every eight adolescents in the U.S. lives in California (U.S. Census Bureau, 2000). Projections indicate that the growth of California's adolescent population will continue to exceed that of the nation.<sup>1</sup> California's racial and ethnic profile differs substantially

from the U.S. as a whole, with larger Latino and Asian/Pacific Islander populations and a substantially smaller White population (U.S. Census Bureau, 2000, Exhibit 1).

### Adolescence Matters

Adolescence represents a period of significant physical, cognitive and psycho-social development that brings with it special challenges and opportunities. Adolescents face choices about their health, safety and well-being in areas such as driving habits, substance use, sexuality, physical exercise and diet. The attitudes and health practices developed in adolescence continue into adulthood and play a major role in the development of adult health problems.<sup>2</sup> Improving adolescent health is a complex endeavor requiring changes in individual behavior as well as the creation of environments that foster healthy decision-making. Environmental factors,

EXHIBIT 1. ADOLESCENT POPULATION: U.S. AND CALIFORNIA, 2000



Source: U.S. Census Bureau, 2000

1 Clayton SL, Brindis CD, Hamor JA, Raiden-Wright H, Fong C. Investing in Adolescent Health: A Social Imperative for California's Future. San Francisco: University of California, San Francisco, National Adolescent Health Information Center. 2001.

2 Ozer EM, Park MJ, Paul T, Brindis CD, Irwin CE, Jr. (2003). *America's adolescents: Are they healthy?* San Francisco: University of California, San Francisco, National Adolescent Health Information Center.

including adult supervision and parental monitoring, influence the health of adolescents.<sup>3,4</sup> The health care system can also play an important role in improving adolescent health. Adolescents present a unique constellation of health care needs and face special barriers in accessing care. In addition to treating health problems, health care visits present the opportunity for providers to offer preventive services that encourage healthy behaviors among adolescents.<sup>5</sup>

## Background

This report presents information about the health of California's adolescents, ranging from contextual factors – such as adult supervision and parental monitoring – to specific adolescent health behaviors, and their access and utilization of health care. Together, this information provides a comprehensive look at key issues that influence adolescent health and the subsequent health of adults. We begin with background information about the California Health Interview Survey (CHIS). We then discuss findings from CHIS 2001 in our major topic areas: adult supervision and parental monitoring; risky and protective behaviors; and health care access and utilization. We conclude with policy implications. For each of these major topic areas, we highlight significant disparities among different groups of adolescents, including differences by gender, income and race/ethnicity. These disparities are important to note because, although often interrelated, race/ethnicity and income exert independent influences on adolescent health measures.<sup>6,7</sup> Reflecting the important changes

that accompany adolescent development, data are also presented by age, differentiating younger (ages 12-14) from older adolescents (ages 15-17).

## The California Health Interview Survey

The findings in this report are based on analysis of data from the 2001 California Health Interview Survey (CHIS). CHIS is the largest state health survey conducted in the United States. The first survey, CHIS 2001, collected information from 55,428 households randomly selected from every county in the state. The random-digit-dial telephone results include interviews with 5,801 adolescents ages 12-17 years in these households. CHIS will be conducted every two years, providing trend data on adolescent health. The CHIS 2001 sample and questionnaires were designed to include all of California's main racial and ethnic groups, and American Indian/Alaska Natives. The questionnaires were translated into six languages, and cover a range of health topics including nutrition, physical activity, health care utilization, health insurance, risky behaviors and adult-child relationships. In creating this profile, CHIS addresses some of the shortcomings of current adolescent health research and monitoring. For example, over the past decade research has advanced our ability to measure environmental factors, such as parental supervision and its influence on adolescent health. However, no ongoing national or state surveys monitor these measures over time. CHIS is one of the few surveys that jointly examines traditional health markers – such as risky behaviors and health care access – and newer concepts, such

3 Fletcher AC, Darling N, Steinberg L. (1995). Parental monitoring and peer influences on adolescent substance use. In J.McCord (Ed.), *Coercion and punishment in long term perspectives*. (pp.259-271). New York: Cambridge University Press.

4 Galambos M, Maggs J. (1991). Out-of-school care of young adolescents and self-reported behavior. *Developmental Psychology*, 27 (4), 644-655.

5 Ozer EM, Macdonald T, Irwin CE, Jr. (2002). Adolescent health care in the United States: Implications and projections for the new millennium. In JT Mortimer and RW Larson (Eds.), *The changing adolescent experience: Societal trends and the transition to adulthood*. (pp. 129-174). New York: Cambridge University Press.

6 Newacheck PW, Hung YY, Park JM, Brindis CB, Irwin CE, Jr.(2003). Disparities in adolescent health and health care: Does socioeconomic status matter? *Health Services Research*, 38 (5), 1235-1252.

7 Ozer EM, Park MJ, Paul T, Brindis CD, Irwin CE, Jr. (2003). *America's adolescents: Are they healthy?* San Francisco: University of California, San Francisco, National Adolescent Health Information Center.

as environmental influences on health. This report presents CHIS 2001 data that have been weighted to the 2000 Census to adjust for sampling error and to provide population estimates. Unless otherwise indicated, group differences described in the text are based on statistical significance at the  $p < .05$  level or less.

### The Findings: What Does CHIS 2001 Tell Us About California’s Adolescents?

#### ADULTS MATTER: ADULT SUPERVISION AND PARENTAL MONITORING

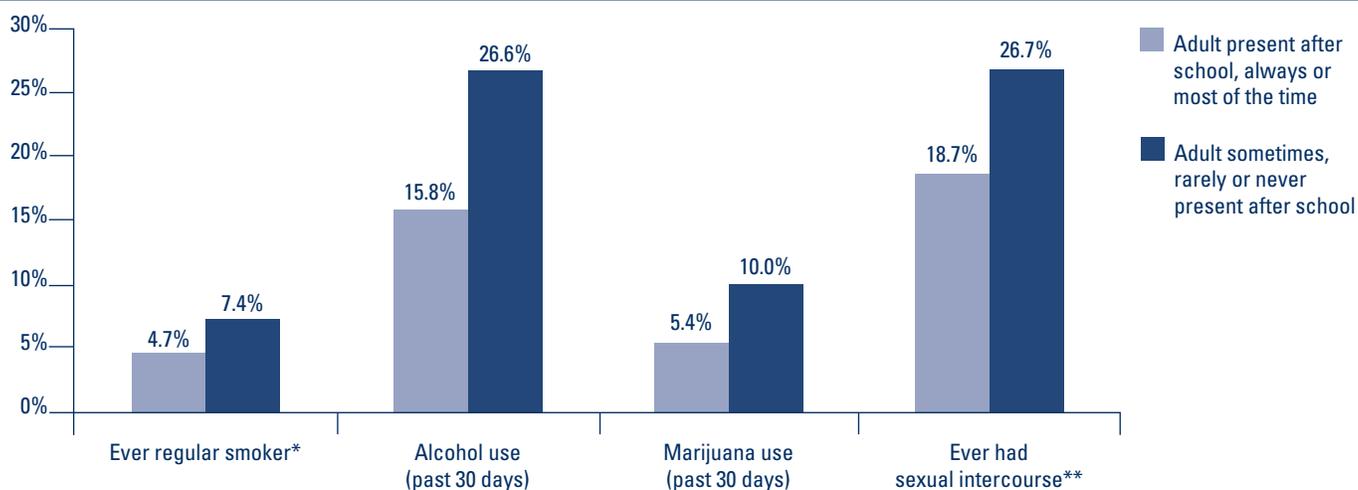
A growing body of research on adolescent risk-taking behavior suggests that several environmental factors – including families, communities and schools – contribute to adolescent resiliency. Therefore, adolescent behavior should be considered within the context of these social and cultural environments. For example, adolescents are less likely to engage in risky behaviors if they have healthy, positive connections with adults and if they are

monitored and supervised by adults.<sup>8,9</sup> The central role of adults, especially parents, suggests the importance of programs and policies that facilitate and strengthen positive adult involvement in adolescents’ lives.

#### Adult Supervision

CHIS 2001 asked adolescents about their perceptions of adult involvement in their lives. The results are generally encouraging. Most adolescents (81%) report having an adult present in the after-school hours, a figure that varies little by gender, age, race or ethnicity. About four in five adolescents report that parents know their whereabouts in the afternoon (81%) and at night (79%). Adolescents who report less adult presence are more likely to engage in risky behaviors, including sexual activity, recent alcohol and marijuana use. For example, 16% of adolescents who have the presence of an adult after school hours reported drinking alcohol in the past 30 days, compared to 27% of adolescents who lacked such adult supervision (Exhibit 2).

EXHIBIT 2. ADOLESCENT RISKY BEHAVIOR BY AFTERNOON SUPERVISION



\* Difference not statistically significant

\*\* Ages 14-17 only

Source: 2001 California Health Interview Survey

8 Fletcher AC, Darling N, Steinberg L. (1995). Parental monitoring and peer influences on adolescent substance use. In J.McCord (Ed.), *Coercion and punishment in long term perspectives*. (pp.259-271). New York: Cambridge University Press.

9 Resnick MD, Bearman PS, Blum RW, Bauerman KE, Harris KM, Jones J, et al. (1997). Protecting adolescents from harm: Findings from the National Longitudinal Study on Adolescent Health. *Journal of the American Medical Association*, 278 (10), 823-832

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### *Parental Monitoring*

CHIS 2001 also asked adolescents about parental monitoring, specifically whether their parents knew about their risky behaviors (or lack thereof).

Adolescents' perception of adult awareness has important consequences. Not surprisingly, adolescents who engaged in risky behaviors felt that their parents were less aware of their alcohol use and sexual activity than teens who did not engage in those risky behaviors.

The extent to which adolescents thought that their parents knew about their behavior varied considerably by gender and the behaviors themselves. Males who were sexually experienced reported low parental knowledge of their sexual activity (19%). Males reported that their parents were more likely to know if they had consumed alcohol in the past month (35%) or had ever smoked (59%). Adolescent females reported that their parents were about equally likely to know if they were sexually experienced (37%) or had recently used alcohol (38%), and most likely to know about tobacco use (51%). The age of the teen also made a difference in terms of parental knowledge of alcohol use. Younger adolescents reported that their parents were more likely to know about their alcohol use than older teens (51% vs. 32%).

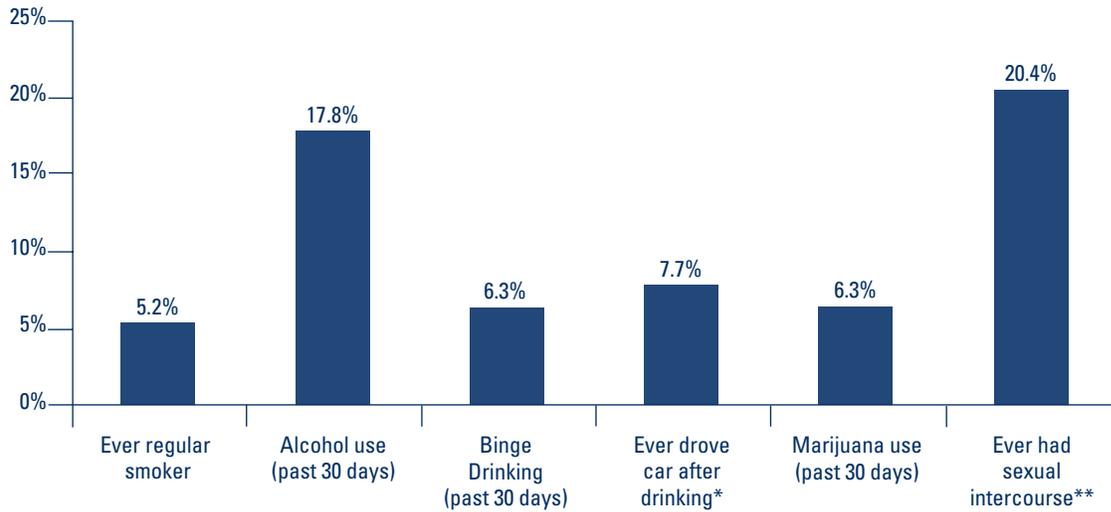
CHIS 2001 results underscore the critical role of adult supervision and adult monitoring in helping build resilient youth. CHIS 2001 data also show that a substantial number of adolescents (one in five) lacked adequate monitoring and parental supervision. (Adequate supervision means an adult is always present or present most of the time after school.) Families, school staff and other community stakeholders need to consider how to make viable alternatives more available. Examples include after-school programs, mentoring and academic opportunities for young people, especially those 17 and under. Given the economic realities of parental employment, policy makers need to consider alternatives

that increase the level of constructive adult supervision available to young people. Adult-adolescent connectivity has increasingly emerged as a viable strategy to prevent or reduce the likelihood of adolescents' engaging in risk-taking behaviors. Fortunately, as noted in CHIS 2001 data, adolescents' report of strong parental supervision presents a stable platform upon which additional efforts can be built. In addition, a factor that must be considered in adults' knowing about adolescents' tobacco and alcohol use is the availability of both substances in the home. Other research has noted the increased use of tobacco and alcohol among adolescents if these substances are readily available in the home, with the implied likelihood that parents are aware of their children's use.<sup>10</sup>

Adolescents' perceptions about their parents' knowledge of their behaviors differ by both gender and age. CHIS 2001 findings point to the importance of developing efforts to improve parent and child communication regarding the pressures adolescents face to engage in risky behaviors, and the need adolescents have to develop effective decision-making and negotiation skills. While parents receive substantial information regarding child rearing, much of the traditional focus has been on healthy pregnancy outcomes and early childhood development between the ages of 0-5; for example, the California Prop 10 Commission's "First 5" focus. Effective parenting skills particularly geared to supporting parents as their children transition into the middle-childhood years (6-10), then adolescence and into young adulthood are often lacking. The central role of adults, especially parents, suggests the importance of institutions supporting effective parenting, including increasing parents' understanding of the importance of developmental phases.

10 Resnick MD, Bearman PS, Blum RW, Bauerman KE, Harris KM, Jones J, et al. (1997). Protecting adolescents from harm: Findings from the National Longitudinal Study on Adolescent Health. *Journal of the American Medical Association*, 278 (10), 823-832.

### EXHIBIT 3. RISKY BEHAVIORS



\* Ages 16-17 only

\*\* Ages 14-17 only

Source: 2001 California Health Interview Survey

#### Risky and Protective Behaviors

Adolescence is a time of experimentation and increasing independence, and represents an opportunity for parents to discourage risky behaviors and promote a lifetime of healthy habits. As adolescents are more likely to engage in risky behaviors as they get older, it is clear that age-appropriate strategies are needed. Furthermore, although some experimentation is a normal part of adolescence, risky behaviors can also have negative consequences for them as adolescents and, ultimately, for them when they become adults. Promoting protective behaviors among adolescents has the potential to yield benefits, not only in costs avoided, but in increased productivity and well-being.

Highlighted in this section are the CHIS 2001 findings on adolescent behavior and behavior-related outcomes in four areas: safety, substance use, sexual behavior, and diet and physical activity. These four areas figure prominently within the health priorities identified by the National Initiative to Improve Adolescent Health (Centers for Disease Control and Prevention, Health Resources and Service Administration, and National Adolescent Health Information Center, 2004). This Initiative focuses on achieving the “21 Critical Health Objectives” from *Healthy People 2010*. These objectives represent expert consensus about the most important health areas affecting youth.<sup>11</sup> One of the two overarching goals of *Healthy People 2010* is “to eliminate health

11 Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Adolescent and School Health (CDC-DASH); Health Resources and Services Administration, Maternal and Child Health Bureau (HRSA-MCHB), Office of Adolescent Health; National Adolescent Health Information Center (NAHIC), University of California, San Francisco. (2004). *Improving the Health of Adolescents and Young Adults: A Guide for States and Communities*. Atlanta, GA: Centers for Disease Control and Prevention.

disparities among different segments of the population.” Wherever possible, we present information on disparities among different groups of adolescents. We also compare data on California’s adolescents to national data, where appropriate.<sup>12</sup> Exhibits 3 and 4 provide a summary of CHIS 2001 findings on risky and protective behaviors.

### Safety

Injury, both intentional and unintentional, represents a major health problem for adolescents. Motor vehicle accidents (MVAs) are the leading cause of death for adolescents nationally and in California. MVAs and other unintentional injuries, along with intentional injuries (e.g., homicide and suicide) together account for about 77% of deaths among California’s adolescents and 71% of all adolescent deaths nationally.<sup>13</sup> In addition, injuries represent a major cause of hospitalization. About one in 13 adolescents in the CHIS 2001 sample (8%) reported going to the Emergency Room for an injury in the past year. Older adolescents (9%) and males (10%) were more likely to report an ER visit for injury. The highest-income adolescents were more likely than the lowest-income adolescents to report an ER visit for injury.

### Reducing Unintentional Injury

Adolescence presents a time to encourage healthy behaviors with regard to unintentional injury. The good news is that CHIS 2001 shows a high level of seat belt use among California’s adolescents. About four in five

teens (80%) reported always wearing a seatbelt. Group differences in seat belt use are small and rarely reach statistical significance. By contrast, only a third of adolescents reported always wearing a bicycle helmet. Older adolescents (24%) and males (26%) were least likely to always wear a helmet. Of particular concern is the low rate among older males: only one in five (20%) reported always wearing a helmet. Adolescents in higher-income families were more likely to always wear a helmet than adolescents from moderate income, near-poor and poor families<sup>14</sup> (40% vs. 25%, 22% and 19%, respectively). These findings suggest the need to focus efforts on increasing helmet use in populations most at risk, as well as eliminating economic barriers to purchasing protective head gear.

Other good news from CHIS 2001 is that driving after drinking is relatively rare among California’s adolescents. According to CHIS 2001 data, one in 13 adolescents (8%) reported engaging in this behavior – a behavior that increases the risk of motor vehicle accidents in general and fatal accidents in particular.<sup>15</sup> Disparities in this area are small and none reaches statistical significance. A large proportion of adolescents have widely adopted two protective behaviors – seat belt use and not mixing drinking and driving. Numerous policies in California, including the establishment of a graduated driver’s license that delays when adolescents’ can drive with other adolescents in the same vehicle, as well as

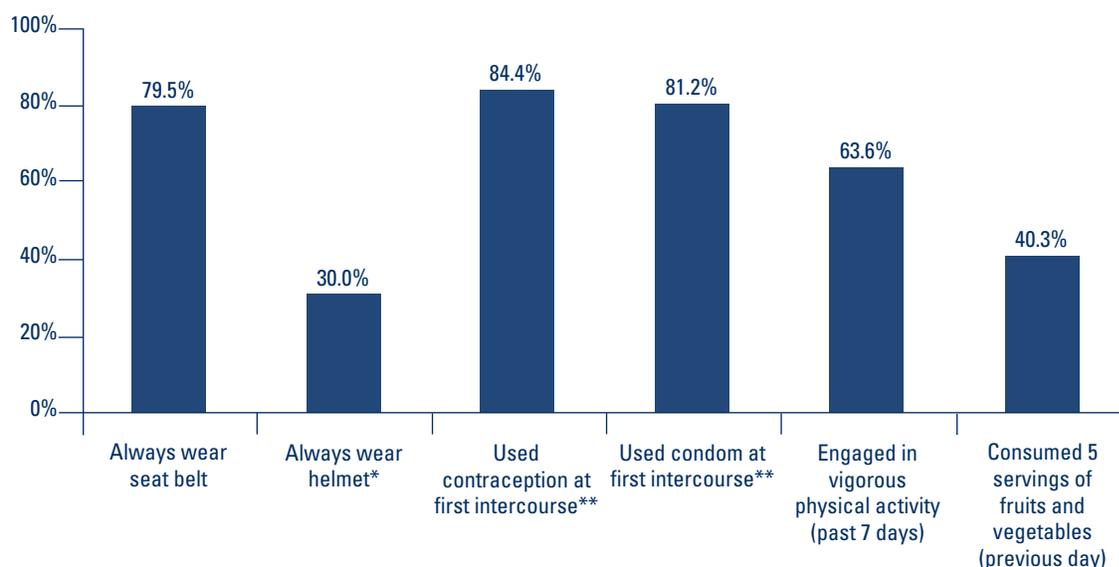
12 Available data sources represent a variety of research methodologies, each having its advantages and disadvantages. Research from household, in-person-identified surveys often yields lower estimates of particular behaviors compared to estimates from anonymous surveys. Caution is warranted in comparing data from different sources. See, for example, Pirkis J, Irwin CE, Jr, Brindis CD, Patton GC, Sawyer MG. (2003). Adolescent substance use: Beware of international comparisons. *Journal of Adolescent Health*, 33 (4), 279-286.

13 National Center for Injury Prevention and Control [NCIPC]. (2004). *Mortality reports database*. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Retrieved August 4, 2004, from <http://www.cdc.gov/ncipc/wisqars/>

14 Family income categories are defined in this report as percentages of the federal poverty level (FPL). Poor households are those with incomes below 100% FPL; near poor: 100-199% FPL; moderate income: 200-299% FPL; and higher income: 300%+ FPL. U.S. Census Bureau, CPS 2004.

15 National Highway Traffic Safety Administration [NHTSA]. (2001). *Traffic safety facts 2000: A compilation of motor vehicle crash data from the fatality analysis reporting system and the general estimates system*. Washington, DC: National Highway Traffic Safety Administration, National Center for Statistics and Analysis, U.S. Department of Transportation. Retrieved August 4, 2004, from <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSFAnn/TSF2000.pdf>

#### EXHIBIT 4. PROTECTIVE BEHAVIORS



\* Among those who ride bikes (79% of the CHIS sample)

\*\* Among those ages 14-17 who have had sexual intercourse (20.4% of the CHIS sample)

Source: 2001 California Health Interview Survey

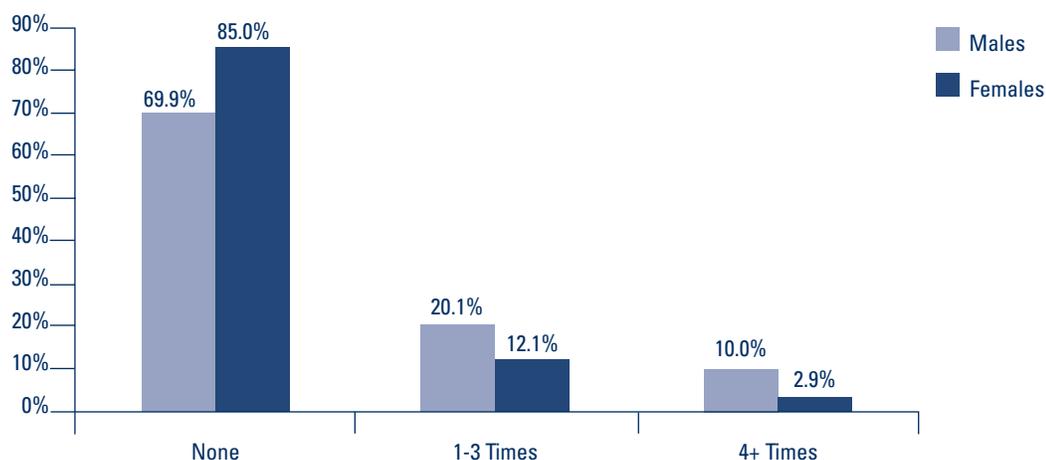
community and state efforts to change social norms regarding drinking and driving, have all had a positive impact on unintentional injury. Still, the large proportion of morbidity and mortality due to unintentional injury needs our continued attention if the health status of adolescents is to improve in California.

#### *Reducing Intentional Injury*

Intentional injury and violence also affect adolescents' health and safety. Bullying, including being personally threatened, is increasingly seen as an important precursor to victimization. CHIS 2001 data documents

that a substantial proportion of male and female teens have experienced being threatened, with males more likely to report this behavior. About 20% of the males and 12% of the females report being threatened during the last 12 months between one and three times, while an additional 10% of males experienced threats four or more times, in comparison to 3% among females (Exhibit 5). Being threatened was almost as likely to occur among younger, as compared to older teens. There were also few differences in the proportion of teens experiencing threats among different economic groups. Among racial and ethnic groups, Asians were

**EXHIBIT 5. NUMBER OF TIMES ADOLESCENTS WERE THREATENED DURING PAST 12 MONTHS, AGES 12-17**



Source: 2001 California Health Interview Survey

less likely to be threatened than Whites and African Americans (Exhibit 6). They were also far less likely to make threats compared to all other ethnic groups.

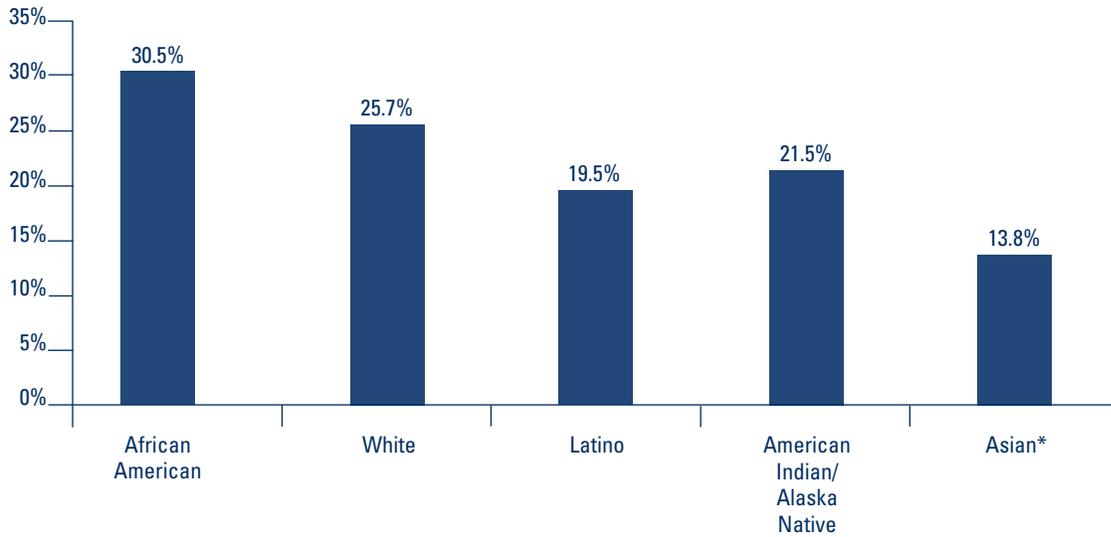
About one in five adolescents (19%) reported being in a physical fight in the last year. Males were more than twice as likely to be in a fight as females (26% vs. 12%). Fighting was most common among African-American adolescents, compared to their peers in other racial/ethnic groups, with one-third (34%) reporting being involved in a fight in the past year (Exhibit 7). This is consistent with national data and suggests the

need to tailor violence prevention activities for males most at risk, regardless of socio-economic level. Successful programs that reduce the incidence of bullying consider the ecology of school bullying by using comprehensive prevention approaches that involve students, teachers, administrators, counselors, parents and community members.<sup>16</sup> A recent federal campaign on bullying prevention represents one step towards paving the way for changes in social norms regarding this behavior, a significant factor contributing to the reduction of inter-personal violence among children and adolescents.<sup>17</sup>

16 Whitaker DJ, Rosenbluth B, Valle LA, Sanchez A. (2004). Expert respect: A school-based intervention to promote awareness and effective responses to bullying and sexual harassment. In Espelage DL and Swearer M (Eds.,) *Bullying in American schools: A social perspective on prevention and intervention.* (pp 327-350). Mahwah, NJ: Lawrence Erlbaum Associates.

17 Nansel TR, Overpeck M, Pilla RS, Ruan WJ, Simons-Morton BG. (2001). Bullying behavior among the U.S. youth: Prevalence and association with psychological adjustment. *Journal of the American Medical Association*, 285, 2094 -2100.

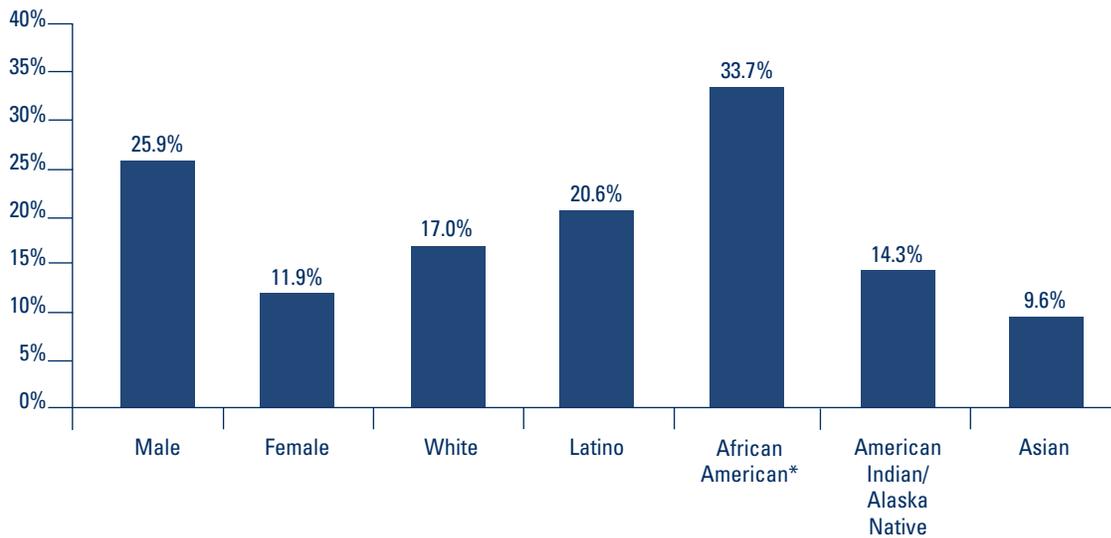
**EXHIBIT 6. EVER BEEN THREATENED DURING PAST 12 MONTHS, BY RACE/ETHNICITY, AGES 12-17**



\* Significantly lower than White and African Americans

Source: 2001 California Health Interview Survey

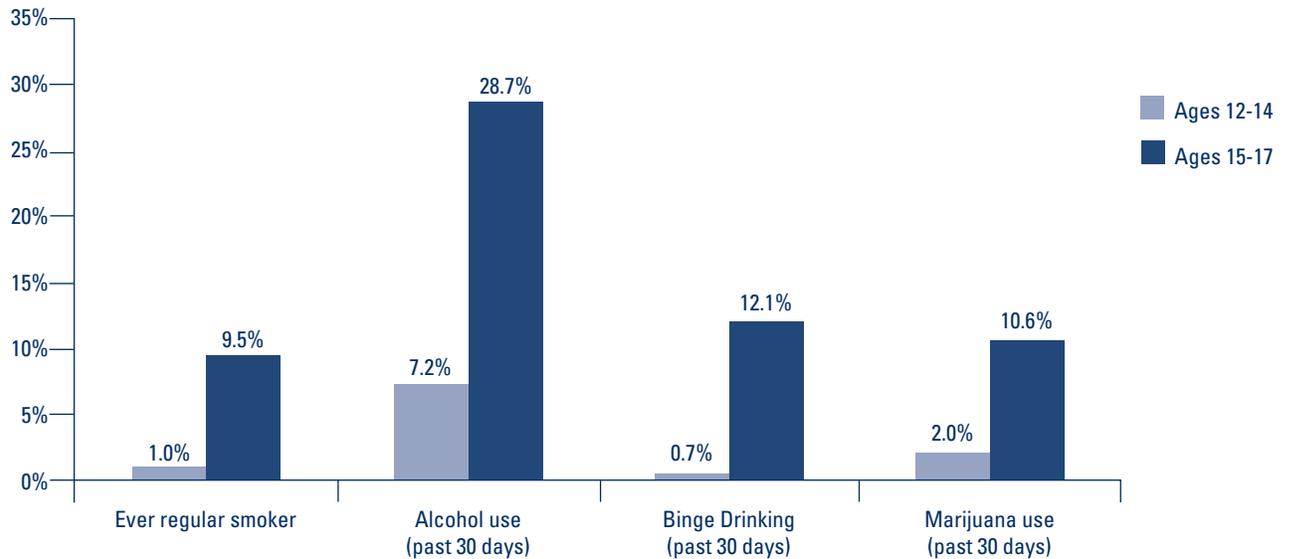
**EXHIBIT 7. FIGHTING BY GENDER AND RACE/ETHNICITY, PAST MONTH**



\* Significantly higher than all other categories

Source: 2001 California Health Interview Survey

## EXHIBIT 8. SUBSTANCE USE BY AGE



Source: 2001 California Health Interview Survey

### Substance Use

The teenage years are a critical time for initiating tobacco, alcohol and drug use. For some teens, experimentation with alcohol and drugs leads to negative consequences including direct physiological harm, impaired judgment leading to risk-taking and violence, and disengagement from school.<sup>18, 19, 20</sup> Long-term use of tobacco, alcohol and other drugs can lead to serious illness and death, increased medical care utilization, and

higher health care costs.<sup>21</sup> Alcohol plays an important role in fatal motor vehicle crashes, with nearly a fifth of these fatal crashes among adolescents (ages 15-20) involving alcohol-impaired drivers.<sup>22</sup>

Overall, CHIS 2001 results parallel findings from comparable national surveys. This is particularly true for group differences in adolescent substance use, with CHIS 2001 and national surveys finding the following:

18 Anderson RN. (2002). Deaths: Leading causes for 2000. *National Vital Statistics Reports*, 50, 1-85. Retrieved September 3, 2003, from <http://www.cdc.gov/nchs/products/pubs/pubd/nvsr/50/50-16.htm>

19 National Center for Injury Prevention and Control [NCIPC]. (2004). *Mortality reports database*. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Retrieved August 4, 2004, from <http://www.cdc.gov/ncipc/wisqars/>

20 National Highway Traffic Safety Administration [NHTSA]. (2001). *Traffic safety facts 2000: A compilation of motor vehicle crash data from the fatality analysis reporting system and the general estimates system*. Washington, DC: National Highway Traffic Safety Administration, National Center for Statistics and Analysis, U.S. Department of Transportation. Retrieved August 4, 2004, from <http://www.nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSFAnn/TSF2000.pdf>

21 Aarons GA, Brown SA, Coe MT, Myers MG, Garland AF, Ezzet-Lofstrom, et al. (1999). Adolescent alcohol and drug abuse and health. *Journal of Adolescent Health*, 24, 412-421.

22 California Highway Patrol. (2004). *2001 Annual Report of Fatal and Injury Motor Vehicle Traffic Collisions*. Sacramento, CA: Department of California Highway Patrol, Business, Transportation and Housing Agency. Retrieved on August 8, 2004 from <http://www.chp.ca.gov/html/switrs2001.html>

use of tobacco, alcohol and marijuana increases with age (Exhibit 8) and there is little gender difference in use of these three substances during high school.

### *Tobacco*

Adolescent smoking has important implications for adult health, as 90% of current adult smokers started smoking during adolescence. Tobacco use is the leading cause of premature death in the U.S.<sup>23</sup> CHIS 2001 data show California's teens are making healthy decisions regarding tobacco, with regular smoking – at least once a day for 30 days – occurring relatively rarely among California's adolescents. Only 5% reported ever having been a regular smoker. This figure varies significantly by age: almost one in ten older adolescents (10%) has been a regular smoker, compared to 1% of younger adolescents. Whites were more likely than Latinos to report being a regular smoker (7% vs. 4%). California's low rates are due in part to the state's significant investment in statewide educational campaigns to reduce adolescent smoking. While social norms regarding tobacco use have changed for adolescents, as well as for adults, these findings point to the importance of continued attention to this issue as the number of adolescents increases in California. CHIS 2001 data point to the importance of incorporating a strong focus on earlier interventions to prevent the adoption of regular smoking as adolescents get older. Furthermore, tailored approaches focusing on prevention efforts aimed at reaching specific sub-groups of adolescents – in this case, White teens who are the most frequent smokers – are needed.

23 U.S. Department of Health and Human Services [USDHHS]. (2004). *The health consequences of smoking: A report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Office on Smoking and Health. Retrieved August 4, 2004 from, [http://www.cdc.gov/tobacco/sgr/sgr\\_2004/chapters.htm](http://www.cdc.gov/tobacco/sgr/sgr_2004/chapters.htm)

### *Alcohol*

California's adolescents reported recent drinking at a rate similar to adolescents nationally. About one in six adolescents (18%) reported having had a drink in the last month, a figure virtually identical to the 2001 national figure of 17%.<sup>24</sup> CHIS 2001 data show that older adolescents were much more likely to report recent drinking than younger adolescents (29% vs. 7%). White adolescents were more likely to report recent drinking (21%) than Asians (11%). By contrast, CHIS 2001 shows that California's adolescents were less likely to binge drink than adolescents in the U.S. as a whole (defined as having five or more drinks on one occasion in the past month). Only one in 16 California teens (6%) reported recent binge drinking, compared to one in ten nationally (11%).<sup>25</sup> Older adolescents were much more likely to binge drink (12%) than younger adolescents (less than 1%).

Patterns of underage alcohol use, including binge drinking, point to the need for continued efforts to assure that environmental approaches – such as restricting the availability of alcohol in homes by parents and peers, enforcing prohibitions on the sale of alcohol to minors by store owners, and restricting media messages directed at adolescents – be adopted. Alcohol, a legal substance for adolescents after age 21, represents a particularly challenging issue because of its wide acceptance. At a minimum, continued reinforcement of messages regarding responsible behavior are needed, such as not drinking and driving, having a designated driver, and having agreements with parents regarding the ability to call home in unsafe circumstances.

24 Substance Abuse and Mental Health Services Administration [SAMHSA]. (2002). *Results from the 2001 National Household Survey on Drug Abuse. Vol. 1. Summary of national findings* (DHHS Publication No. SMA 02-3758). Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies. Retrieved January 2003, from <http://www.samhsa.gov/oas/nhsda.htm#Reports>

25 Ibid.

### *Marijuana*

Use of marijuana in the past month was relatively rare among California's adolescents, according to CHIS 2001. Only 6% reported recent marijuana use, compared to 8% nationally.<sup>26</sup> Older adolescents were five times more likely to report this behavior than younger adolescents (11% vs. 2%). This figure varied little by gender, and estimates for different racial/ethnic groups are too small for reliable comparisons. While the low figures are encouraging, a number of interventions are still needed to reduce this level to less than 1%, the Healthy People Critical Health Objective in this area (26-10B). Similar to tobacco and alcohol use, changing individual behavior needs to be considered within the adolescent's environment. Efforts to restrict access to drugs, constructive parental involvement, viable alternatives to drug use and changing peer norms are important parts of the portfolio of strategies needed to impact individual behavior.

### **Sexual Behavior**

Although sexual development is an integral part of adolescence, sexual activity can have negative consequences, including unintended pregnancy and sexually transmitted infections (STIs). Adolescents who have children, as well as the children themselves, often suffer educational and economic disadvantages that persist into adulthood. Consequences of untreated STIs include pelvic inflammatory disease, infertility, genital cancers and death from AIDS. While there is room for

improvement, CHIS 2001 data show that most California teens are making responsible sexual decisions and protecting themselves.

The prevention of teenage pregnancy has been a major state focus over the past decade. Several state programs, including the Community Challenge Grant and Family PACT program, have contributed to the steep decline in California's teen birth rate. Between 1991 and 2002, this rate fell from 73 to 41 per 1000 adolescent females ages 15-19, a 44% decline, compared to a 30% decline nationally (from 62 to 43).<sup>27</sup>

### *Sexual Experience*

CHIS 2001 data on sexual activity are consistent with other data sources. Among 15-17 year olds, about one in four adolescents has had sexual intercourse (26%). Asians were significantly less likely to report ever having sex (11%) than their peers in other racial/ethnic groups. They were more likely to delay first intercourse to age 15 or older (98%) than peers in other racial/ethnic groups, with the exception of American Indian/Alaska Native youth. CHIS 2001 data indicate that income affects delaying sex, a frequent finding of other national research.<sup>28</sup> Sexually experienced adolescents from higher-income families were more likely to have delayed first intercourse until age 15 (95%), compared to their peers from poor families (88%). Females were more likely to report delaying sexual intercourse than males (94% vs. 89%).

26 Substance Abuse and Mental Health Services Administration [SAMHSA]. (2002). *Results from the 2001 National Household Survey on Drug Abuse. Vol. 1. Summary of national findings* (DHHS Publication No. SMA 02-3758). Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies. Retrieved January 2003, from <http://www.samhsa.gov/oas/nhsda.htm#Reports>

27 California Department of Health Services, Maternal and Child Health Branch (2004). Teenage birth rates in California and the nation. Unpublished Data, Sacramento, California.

28 Miller B. (1998). *Families matter: A research synthesis of family influences on adolescent pregnancy*. Washington, D.C.: National Campaign to Prevent Teenage Pregnancy.

### *Protection Among Sexually Active Adolescents*

CHIS 2001 found that the majority of sexually experienced teens report using some form of contraception at first and most recent intercourse (84% and 84%, respectively). Contraceptive use did not vary by gender, and racial/ethnic and income differences did not reach statistical significance.

The majority of adolescents report using condoms at first intercourse (81%) and at most recent intercourse (74%). Racial/ethnic differences for these figures did not appear to play a role in the use of condoms. CHIS 2001 found that males were more likely to report that they had used condoms at most recent sexual intercourse, compared to the proportion of females who reported condom use by their partners. Thus, 82% of 15-17 year old males reported condom use at most recent intercourse, compared to 63% of females.

As CHIS 2001 data help to document, efforts to support young people's decision to delay sexual intercourse and to be protected against an unintended pregnancy and STI, need to be focused on males and females. These efforts also have to effectively reach different racial and ethnic groups. California's commitment to comprehensive family life education, including messages regarding abstinence, as well as safer sex (e.g. contraceptive use and reduced numbers of partners) and the use of clinical services, has been shown to contribute to the reduction in the number of adolescents who are sexually active. These efforts have also been effective at reducing the number of adolescents at risk of an unintended

pregnancy. Still, there is a substantial number of adolescents who continue to be at risk, requiring a renewed focus on tailoring strategies, such as emphasizing male responsibility. California has implemented groundbreaking programs through the Office of Family Planning's Male Involvement Program, serving approximately 20 communities throughout the state. However, given the aforementioned patterns, wider availability throughout the state of existing programs and the development of additional strategies will be necessary, as every year new cohorts of children become adolescents.<sup>29</sup>

### **Diet and Physical Activity**

Within the U.S., poor diet and physical inactivity are second only to tobacco as preventable causes of death among adults.<sup>30</sup> The increasing incidence of adolescent obesity, resulting from poor nutrition and less physical activity, is likely to result in a higher risk of adult obesity. Other health consequences include a higher likelihood of developing cardiovascular disease, diabetes and hypertension.<sup>31</sup>

CHIS 2001 data indicate that one in eight California adolescents (12%) is overweight,<sup>32</sup> a figure that varies significantly by gender. Males are twice as likely to be overweight as females (16% vs. 8%). This is true for older adolescents (16% vs. 8%) and younger adolescents (16% vs. 8%), (Exhibit 9). African Americans and Latinos report the highest prevalence of overweight, followed by American Indian/Alaska Natives, Whites and Asians. Calculation of the obesity variable shows

29 Brindis CD. (2004). California at the forefront: Building on a history of wise investments in teen pregnancy prevention. In Wilcox D (Ed.), *Reality Check: Teen Pregnancy Prevention Strategies That Work*. (pp. 18-26). Philadelphia: Xlibris Corporation.

30 McGinnis JM, Foege WH. (1993). Actual causes of death in the United States. *Journal of American Medical Association*, 270 (18), 2207-2212.

31 Must A, Strauss RS. (1999). Risks and consequences of childhood and adolescent obesity. *International Journal of Obesity and Related Metabolic Disorders*, 23 (2), S2-11

32 Defined as having a body mass index (BMI) for age at or above the 95% percentile.

## EXHIBIT 9. OVERWEIGHT BY AGE AND GENDER



\* Significant difference

Source: 2001 California Health Interview Survey

significant income disparities: adolescents in poor households are much more likely to be overweight than adolescents in higher-income families (17% vs. 9%, respectively), (Exhibit 10).

### *Diet and Nutrition*

A complex set of factors contributes to overweight status, including excess caloric intake relative to energy expenditure, and unbalanced diet and nutrition. Poor diet also contributes to the incidence of other health problems. Diets that are high in saturated fats and low in vegetables and fruits constitute a significant risk factor for health problems including coronary heart disease, cancer, stroke and diabetes.<sup>33</sup> The California Department of Health Services has led a campaign to encourage the consumption of at least five servings of fruits and vegetables per day. According to CHIS 2001, only two in five California

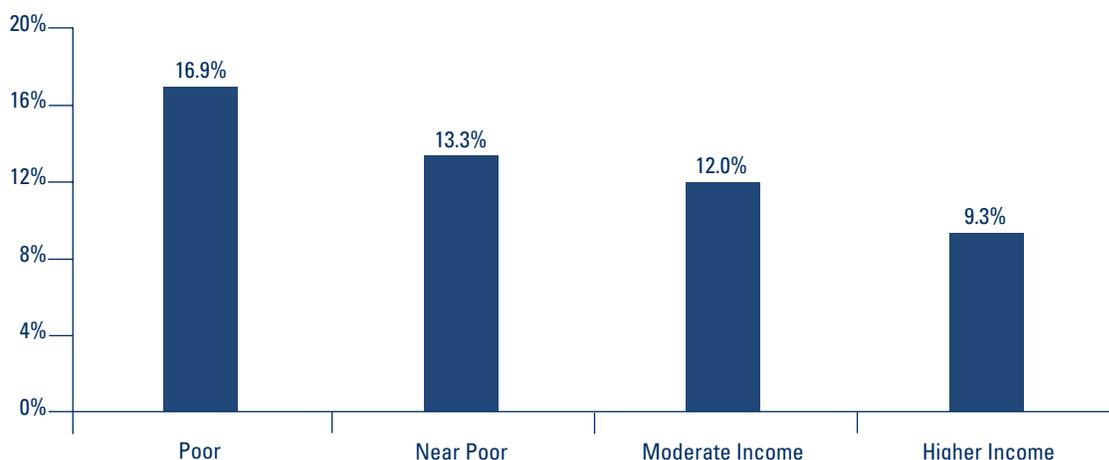
adolescents (40%) consume the recommended five or more servings of fruit and vegetables each day.

National data indicate that milk consumption has decreased as adolescents substitute soft drinks for milk.<sup>34</sup> Analysis of CHIS 2001 data shows that 44% of adolescents reported drinking two or more glasses of milk in the previous day, with males more likely to report this level of milk consumption than females. Milk consumption decreases as adolescents get older, from 49% among younger adolescents to 39% among older adolescents. Older females reported significantly lower milk consumption than younger females (45% to 31%). While there are no national recommendations for milk intake (due to the prevalence of lactose intolerance) the recommended daily intake for calcium is 1300 mg per day, which is equivalent to four glasses of milk.

33 Frazao E. (1999). The high costs of poor eating patterns in the United States. In Frazao E (Ed.), *America's eating habits: Changes and consequences* (pp. 5-32). Washington, DC: U.S. Department of Agriculture, Economic Research Services.

34 Morton JF, Guthrie JF. (1998). Changes in children's total fat intakes and their food group sources of fat, 1989-91 versus 1994-95: Implications for diet quality. *Family Economics and Nutrition Review*, 11 (3), 44-57.

## EXHIBIT 10. OVERWEIGHT BY INCOME



Source: 2001 California Health Interview Survey

Consumption of soft drinks has been implicated in rising overweight, with some schools banning access to soda, or at least promoting alternatives. Nearly three in ten adolescents (30%) reported drinking two or more glasses of soda in the previous day, a figure that differed significantly by age and gender. Overall, older adolescents were more likely to report drinking two or more glasses of soda in the previous day than younger adolescents (33% vs. 27%). Among males, this percentage increased from 30% to 43% with age, however among females, it remained the same (23% to 22%). Asian adolescents (20%) were significantly less likely to drink soda, compared to their White (30%) and Latino (32%) peers. Recognizing the importance of this issue, California legislators passed a law requiring a statewide ban on junk food sold in schools, although this law currently does not include high schools.

### *Physical Activity and Sedentary Lifestyle*

Levels of physical and sedentary activity also influence the obesity rate and contribute to other health problems. Regular physical activity reduces the risk of premature death, physical health problems (e.g., heart disease, hypertension, certain cancers, diabetes), and mental health conditions, such as depression and anxiety. According to CHIS 2001 data, nearly two thirds of adolescents (64%) reported vigorous physical activity in the past week, with males more likely to report this behavior than females (71% vs. 56%). Whites (69%) were more likely to report vigorous physical activity in the past week as compared to Latino (58%) and Asian (58%) adolescents. Poor adolescents were significantly less likely to report vigorous physical activity in the past week than adolescents in higher-income families (59% vs. 69%).

35 U.S. Department of Health and Human Services [USDHHS]. (1996). Physical activity and health: A report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. Retrieved January 2003, from <http://www.cdc.gov/nccdphp/sgr/contents.htm>

A similar disparity exists for time spent in sedentary activity. CHIS 2001 asked adolescents whether they spend three or more hours watching television or playing video games on a typical weekday. About half of California's adolescents (49%) reported this level of sedentary activity. This varied by income, with poor adolescents more likely to report this behavior than adolescents in higher-income families (53% vs. 46%). White adolescents were significantly less likely to report this level of sedentary activity (43%) than their peers in other racial/ethnic groups.

Nationally, as well as in California, the rise in the proportion of adolescents who are obese represents one risk area that is clearly going in the wrong direction, compared to risk behavior trends where important inroads have been made. Issues of gender and economic disparity appear to play an important role in shaping the problem, as well as the solutions. For example, availability of grocery stores with high quality, affordable fruits and vegetables, perceived level of safety that enables young people to exercise outside their homes, as well as the need for viable alternatives to high-caloric fast food, need to be explored. While much attention has been devoted to individually focused solutions, new efforts are directed to recognizing environmental triggers. These include the availability of soda in school vending machines, the lack of clean air that may make physical exertion difficult for children and adolescents with asthma, and extensive television advertisement of fast foods. These all contribute to a social and community context in which it may be difficult for adolescents to adopt healthy food and physical activity habits. Economic disparities in the availability of community resources –

such as safe parks, sports and recreation programs – require that limited state resources be focused on areas of high need if costlier obesity-related problems both in adolescence and adulthood are to be prevented.

## HEALTH CARE ACCESS, UTILIZATION AND HEALTH INSURANCE

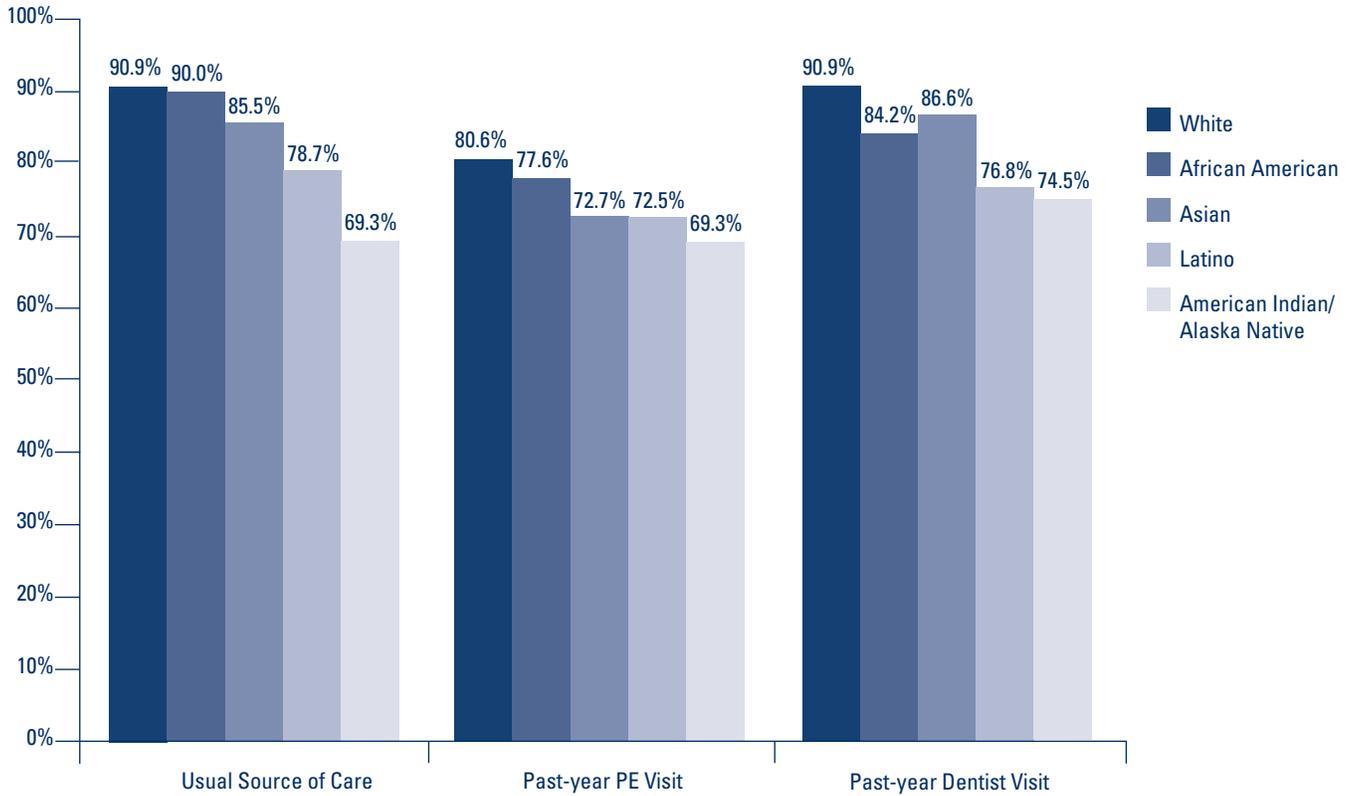
Access to health care plays an important role in the health of adolescents, and health insurance significantly affects access to care. Nationally, the percentage of adolescents with insurance has increased overall since 1995, with decreases in private insurance outpaced by increases in publicly-funded insurance (e.g., MediCal and Healthy Families).<sup>36</sup> In California, 88% of adolescents have health insurance, a comparable proportion to adolescents living in the U.S.<sup>37</sup>

Although insurance status per se does not always guarantee access, CHIS 2001 found that most adolescents in California have access to health care, although some subpopulations face greater barriers to care than others. Most adolescents in California (85%) reported having a usual source of care, a figure that varies significantly by race/ethnicity and income (Exhibits 11 and 12). White, African-American and Asian adolescents were also more likely to report having a usual source of care than Latinos and American Indian/Alaska Natives. Adolescents from moderate and higher-income families were more likely to report a usual source of care than poor and near-poor adolescents. Thus, continuing to implement strategies that eliminate barriers to health insurance among all adolescents remains an important policy imperative.

36 Newacheck P, Park J, Brindis C, Biehl M, Irwin C. (2004). Trends in private and public health insurance for adolescents. *Journal of the American Medical Association*, 291 (10), 1231-1237.

37 Brown ER, Ponce N, Rice T, Lavarreda S. (2002) *The State of Health Insurance in California: Findings from the 2001 California Health Interview Survey*. Los Angeles: UCLA Center for Health Policy Research.

EXHIBIT 11. HEALTH CARE ACCESS AND UTILIZATION BY RACE/ETHNICITY



Source: 2001 California Health Interview Survey

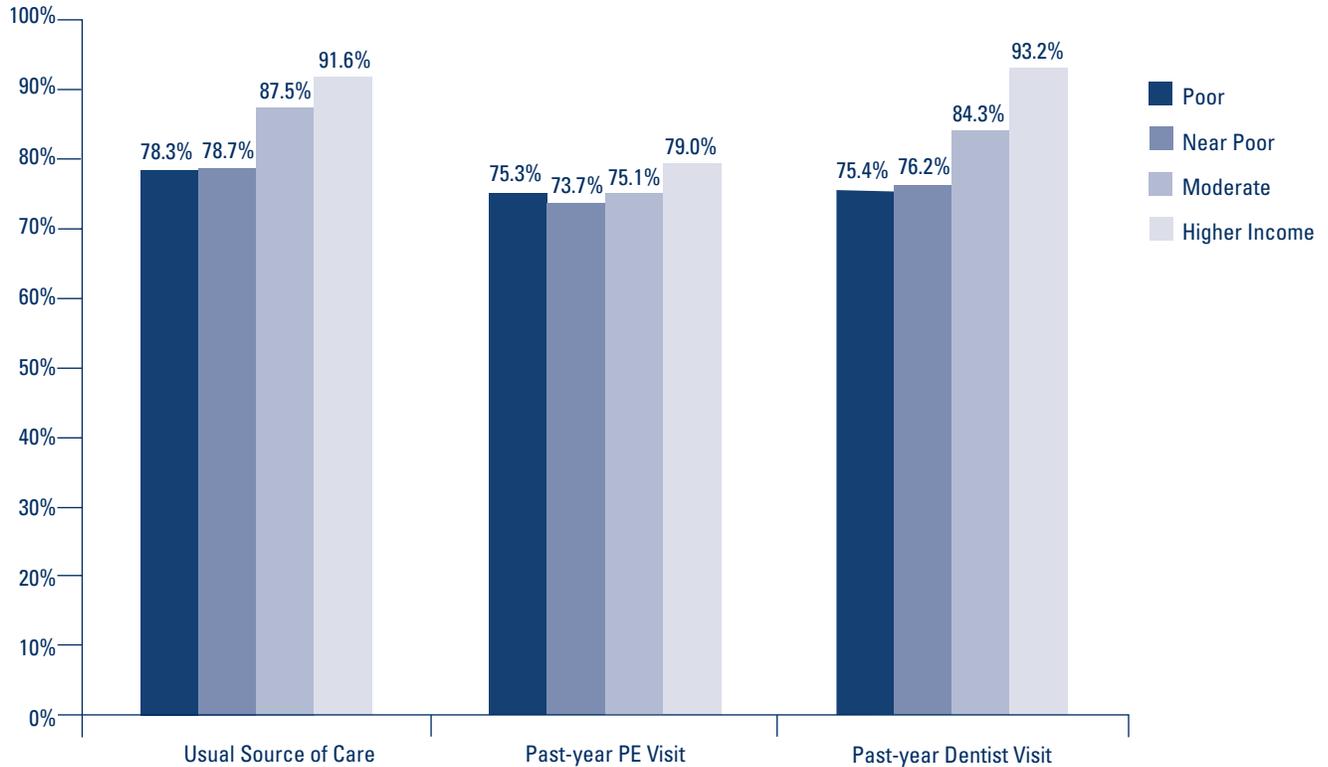
**Utilization of Services**

According to CHIS 2001, about three-quarters of adolescents (77%) reported seeing a doctor for a routine physical exam within the past year. A greater proportion, more than four in five (85%) have seen a dentist in the past year. Race/ethnicity plays a role in access with White (91%), African-American (84%) and Asian (87%) adolescents more likely to have seen a dentist than Latino (77%) adolescents. Income also affects utilization, with adolescents from higher-income families significantly more likely to report a past-year visit to the dentist (93%) compared to adolescents from moderate-income families (84%), near-poor families (76%) and poor families (75%).

About one in five adolescents (21%) reported visiting the emergency room (ER) in the past year, with higher use among older adolescents (25%) than younger adolescents (18%). African-American (29%) and White (25%) adolescents were significantly more likely to report an ER visit than Latinos (17%) and Asians (11%). The American Indian/Alaska Native figure, 23%, did not differ significantly from others. Interestingly, adolescents with health insurance were more likely to use ERs than those without insurance.

The relationship between the availability of health insurance and access to care are clearly reflected in

EXHIBIT 12. HEALTH CARE ACCESS AND UTILIZATION BY INCOME



Source: 2001 California Health Interview Survey

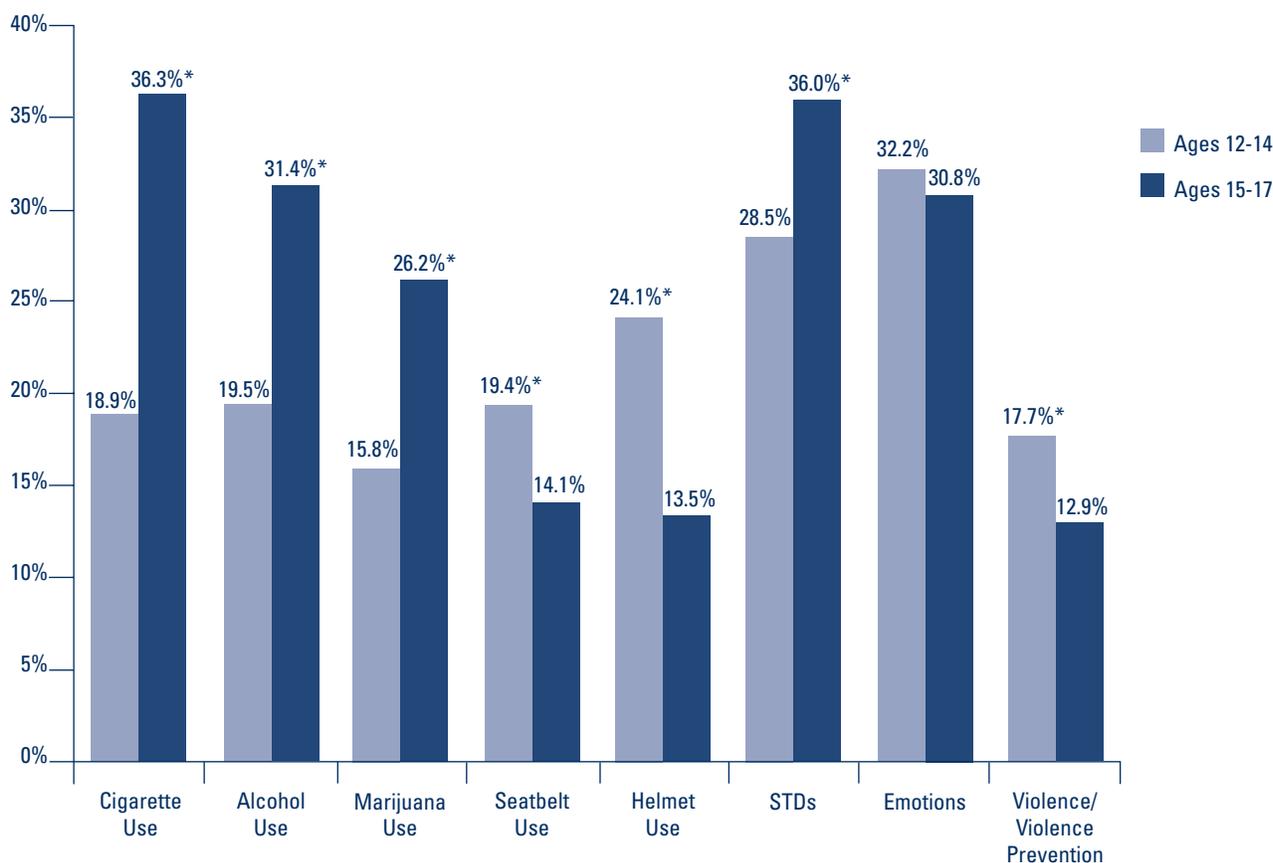
CHIS 2001 data. California’s adolescent health insurance coverage parallels adult patterns, with a substantial proportion lacking health insurance (18%). Federal and state initiatives, such as Healthy Kids and Family PACT have helped to reduce this barrier to care. Still, major economic and racial/ethnic disparities continue to prevent ready access to health services. While health insurance and use of services are only two factors contributing to the health of adolescents, they represent important cornerstones in efforts to improve their health.

**Preventive Services**

The ability of an adolescent to access the health care system is the first step towards receiving effective health care. The content and quality of the health care visit then becomes fundamental.<sup>38</sup> Most adolescents who participated in CHIS 2001 go for routine check-ups. Is this visit to their primary care provider utilized most effectively?

38 Ozer EM, Macdonald T, Irwin CE, Jr. (2002). Adolescent health care in the United States: Implications and projections for the new millennium. In Mortimer JT and Larson RW (Eds.), *The changing adolescent experience: Societal trends and the transition to adulthood*. (pp. 129-174). New York: Cambridge University Press.

**EXHIBIT 13. CONTENT OF PHYSICIAN ADVICE FOR ADOLESCENTS DURING ROUTINE PHYSICAL, PAST 12 MONTHS, AGES 12-17**



\*Difference significant

Source: 2001 California Health Interview Survey

As described earlier, the risky behavior of adolescents has turned greater attention to the preventive role of the health care system. To facilitate screening and counseling for risky and protective health behaviors, guidelines specifically targeting the delivery of adolescent clinical preventive services have been developed by several national consensus groups.<sup>39</sup> In general, the guidelines recommend that all teenagers have an annual

visit to their health care provider during which time they are screened for risky health behavior.

CHIS 2001 asked adolescents who had a routine physical exam within the past year about whether their doctor or other health care provider had talked to them about a variety of health topics. These include use of substances (tobacco, alcohol and drugs), wearing seatbelts and helmets, sexual activity, their emotions and violence.

39 Park MJ, Macdonald TM, Ozer EM, Burg SJ, Millstein SG, Brindis CD, et al. (2001). *Investing in clinical preventive health services for adolescents*. San Francisco: University of California, San Francisco, Policy Information and Analysis Center for Middle Childhood and Adolescence and National Adolescent Health Information Center.

Adolescents reported that they were most likely to be asked about their emotions (32%) and about sexually transmitted diseases (32%), and least likely to be asked about seatbelt and helmet use (17% and 19%), and violence (15%). Queries about substance use fall in between. In the majority of risk areas, older teens are significantly more likely to be asked about their behavior than are younger teens (Exhibit 13). When rates for older teens only are examined, providers are about as likely to ask about cigarette (36%) and alcohol use (31%) as they are about STDs (36%) and emotions (31%). Seatbelt use and violence are the only topics that providers are more likely to talk about with younger teens than with older teens.

It is noteworthy that male and female adolescents report similar rates of talking with their health care provider across most risk areas. However, males report higher rates of discussing marijuana use, whereas females report being asked about their emotions more often.

While it is promising that clinicians are integrating some discussion of risky behavior into their primary care visits, these rates are far below the recommended practice guidelines of screening every adolescent. CHIS 2001 is the first statewide data set containing adolescent reports of preventive screening by clinicians in California. The findings are consistent with data collected within specific health care systems<sup>40</sup> and by provider self-report,<sup>41</sup> which also indicate that the delivery of preventive services to

adolescents in California is below recommended levels. These findings point to the need for increased risk and protective behavior screening as part of adolescents' contact with the health care system. Prevention should be integrated throughout the multiple systems that affect the health of adolescents, including their families, schools, community organizations and the media. The health care system is only one important component.<sup>42</sup>

## DISCUSSION: POLICY IMPLICATIONS

CHIS 2001 data offer a profile of the health of California's adolescents. While the information in this report provides only a snapshot of adolescent health, subsequent administrations of CHIS will allow policymakers and health officers to identify areas of improvement, as well as emerging problems. The 2001 CHIS findings indicate that adolescents are doing well in many areas. Most have an adult involved in their lives and report that their parents are aware of their comings and goings. Most have access to needed health care services. California's adolescents also report many healthy behaviors. The majority are wearing seatbelts and few are drinking and driving – behaviors linked to motor vehicle accidents, the leading cause of adolescent death. Regular smoking is reported by only a small percentage of teens. In the area of sexual behavior, most adolescents are choosing abstinence, and many sexually active adolescents are protecting themselves from pregnancy and sexually transmitted diseases.

40 See for example, Ozer EM, Adams SH, Lustig JL, Gee S, Garber A, Rieder Gardner L, et al. (in press). Increasing the screening and counseling of adolescents for risky health behaviors: A primary care intervention. *Pediatrics*.

41 See for example, Ellen JM, Franzgrote M, Irwin CE, Jr, Millstein SG. (1998). Primary care physicians' screening of adolescent patients: A survey of California physicians. *Journal of Adolescent Health*, 22 (6), 433-438.

42 Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Adolescent and School Health (CDC-DASH); Health Resources and Services Administration, Maternal and Child Health Bureau (HRSA-MCHB), Office of Adolescent Health; National Adolescent Health Information Center (NAHIC), University of California, San Francisco. (2004). *Improving the Health of Adolescents and Young Adults: A Guide for States and Communities*. Atlanta, GA: Centers for Disease Control and Prevention.

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While these encouraging findings merit our attention, so do areas that need improvement. Consistent bicycle helmet use remains low, especially among older male adolescents. Levels of sedentary activity and soft drink consumption are unacceptably high. The percentage of overweight adolescents is of particular concern, with CHIS 2001 data revealing several populations at higher risk – males, Latinos, African Americans and poor adolescents. CHIS 2001 data indicate that males and African Americans are disproportionately affected by violence.

These findings suggest an important role for public policy. Improving the health of California’s adolescents requires multi-level strategies that aim to change environments as well as the knowledge, attitudes and skills of individual adolescents.<sup>43</sup> California has a proven track record in adopting such strategies over the past decade, including expanded access to health care, prominent anti-smoking campaigns and multi-faceted approaches to reducing teen pregnancy. More recently, the state and many school districts have taken action to reduce soft drink consumption and promote access to healthier foods, although it is too early to assess the effects of these efforts. State initiatives in these and other specific areas of adolescent health have been documented in detail elsewhere.<sup>44</sup>

While efforts to address specific health areas have been successful, improving adolescent health also requires a

holistic approach to complement categorical approaches. Seemingly isolated adolescent problems are influenced by common antecedent factors – both those that protect and those that can jeopardize health and safety. In particular, families and other adults shape adolescent development and decision-making. CHIS 2001 data indicate that adult supervision and parental monitoring are important factors in adolescents’ lives. These findings suggest the need for policies and programs that support parents as they face the challenges of parenting their adolescents. The findings also point to the need to increase the presence of caring adults in adolescents’ lives. Furthermore, the consistent economic disparities documented in the CHIS 2001 data also suggest that adolescents’ healthy alternatives and options can only be as good as the family and community resources available to them. As part of an effort to reduce these disparities, concerted efforts are needed to create an environment that encourages healthy decisions for California’s lower-income adolescents.

In short, adolescents need multiple support systems to successfully navigate the transition from childhood to adulthood. Addressing health issues requires involvement at multiple levels – parents and other adults, service delivery systems, funding priorities, community resources and supportive environments. Enhancing the involvement of these important stakeholders reflects important next steps.

43 Brindis CD, Irwin C, Ozer E, Handley M, Knopf D, Millstein S. (1998) *Improving adolescent health: An analysis and synthesis of health policy recommendations*. San Francisco: University of California, San Francisco, National Adolescent Health Information Center.

44 Clayton SL, Brindis CD, Hamor JA, Raiden-Wright H, Fong C. (2001). *Investing in Adolescent Health: A Social Imperative for California’s Future*. San Francisco: University of California, San Francisco, National Adolescent Health Information Center.

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## **California Health Interview Survey**

*www.chis.ucla.edu*

## **21 Critical Objectives**

*www.healthypeople.gov/search/stat\_21crobj.htm*

## **California Adolescent Health Collaborative**

*www.californiateenhealth.org*

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## **Data Source**

The findings in this report are based on analysis of data from the 2001 California Health Interview Survey (CHIS 2001).

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