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*california  
health  
interview  
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*Nearly 2.9 million children and adults with asthma experience asthma symptoms at least once a year.*

## Asthma in California in 2001: High Rates Affect Most Population Groups

E. Richard Brown, Ying-Ying Meng, Susan H. Babey, and Elizabeth Malcolm

**A**sthma is a serious and growing health problem both in the United States and worldwide. In California, 11.9% of the population – an estimated 3.9 million adults and children – report that they have been diagnosed with asthma at some point in their lives (called “lifetime asthma prevalence”). The national lifetime asthma prevalence is 10.1%, and California’s lifetime asthma prevalence is higher than the national average for most population groups. In California, 8.8% of the population (nearly 3 million persons) experience asthma symptoms at least once a year (called “asthma symptom prevalence”), and one in four of those persons (nearly three-quarters of a million) experiences such symptoms every day or every week.

The data on asthma prevalence and asthma symptoms presented in this policy brief are based on the 2001 California Health Interview Survey (CHIS), a new survey of California’s population to assess its health and access to health care. This study examines the prevalence of asthma in California and its severity as a clinical and public health problem (for information on CHIS, see Data Sources below).

### LIFETIME ASTHMA PREVALENCE VARIES WITHIN CALIFORNIA

Lifetime asthma prevalence varies in terms of several significant characteristics such as race/ethnicity, age, and gender. Among American Indians and Alaska Natives in California, one in four children and one in five adults report that they have been diagnosed with asthma. Among African Americans, one in five children and one in six adults have been affected by asthma. Rates for American Indians and Alaska Natives and African Americans are far higher than those for Latinos, Asian Americans, and whites. Among Native Hawaiians and other Pacific Islanders, one in five children and one in five adults have been diagnosed with asthma (their small sample precludes comparisons with other groups) (Exhibit 1).

Asthma disproportionately affects school-age children and young adults. Lifetime asthma prevalence is high among children ages 6-11 (13.7%), adolescents ages 12-17 (16.3%), and young adults

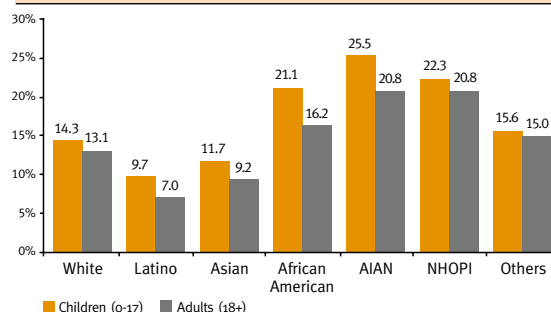
ages 18-24 (14.4%). Young children ages 0-5 have a lifetime asthma prevalence of 8.8%, and adults over age 25 have a rate of 11.1%. Among children under age 18, lifetime asthma is more prevalent among boys than girls (14.7% vs. 11.0%), but among adults ages 18 and above, it is more prevalent among women than men (13.0% vs. 10.0%).

### INADEQUATE CONTROL OF ASTHMA

Asthma is a chronic illness that can have serious health, quality of life, and economic consequences for patients, families, and society. However, it can be controlled with effective treatment and management. People with asthma have more frequent symptoms if they are exposed to environmental “triggers” such as certain air pollutants, outdoor allergens, tobacco smoke, cockroaches, dust mites, furry pets, mold, and viral respiratory infections. They will also have more symptoms if they do not take appropriate or adequate medications. Frequent asthma symptoms can be a sign of inadequate medical control and persistent exposure to environmental triggers as well as greater severity of the disease.

A significant number of Californians experience frequent asthma symptoms: 2.9 million children and adults with asthma reported experiencing asthma symptoms at least once in the past 12 months – an overall asthma symptom prevalence of 8.8%. An

**Exhibit 1**  
Lifetime Asthma Prevalence  
by Race/Ethnicity, 2001



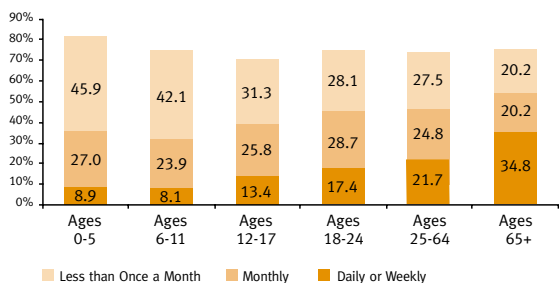
Note: American Indian and Alaska Native is abbreviated AIAN. Native Hawaiian and Other Pacific Islander is abbreviated NHOPI. Source: 2001 California Health Interview Survey

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**Exhibit 2**

Asthma Symptoms in the Past 12 Months by Age, Persons Who Have Been Diagnosed With Asthma, 2001



Source: 2001 California Health Interview Survey

estimated 1.7 million children and adults with asthma experience symptoms at least every month, including 744,000 who experience symptoms every day or every week.

Control of asthma symptoms varies by age. The proportion of people with asthma who experience symptoms less than once a month declines with increasing age, whereas the proportion with daily or weekly symptoms rises with age (Exhibit 2).

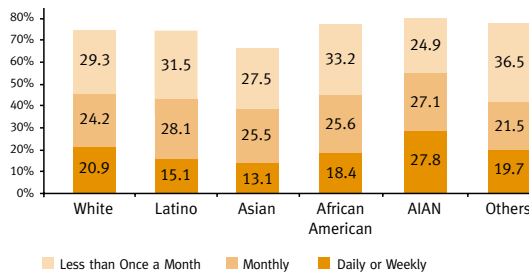
Asthma symptom prevalence varies across California counties, ranging from 5.7% of residents in Monterey and San Benito Counties and 6.7% in San Mateo County to 13.4% in Fresno County and 14.1% in Solano County<sup>1</sup> (Exhibit 3, map).

The proportion of people who experience frequent asthma symptoms varies across racial and ethnic groups. Among people with asthma, one in four American Indians and Alaska Natives (27.8%) experiences daily or weekly asthma symptoms compared to one in five whites (20.9%) and African Americans (18.4%), one in six Latinos (15.1%), and one in seven Asians (13.1%, Exhibit 4). (The number of Native Hawaiians and other Pacific Islanders in the sample is too small to calculate estimates for asthma symptoms.)

Asthma symptom control also differs according to income and geographic region. Persons with low incomes or who live in rural areas do not, on average, report higher lifetime asthma prevalence, but they are more likely to experience frequent asthma symptoms. Adults with asthma with family incomes below the federal poverty level are nearly twice as likely to experience symptoms every day or

**Exhibit 4**

Asthma Symptoms in the Past 12 Months by Race/Ethnicity with All Ages Combined, Persons Who Have Been Diagnosed with Asthma, 2001



Note: American Indian and Alaska Native is abbreviated AIAN. The sample size of Native Hawaiian/Other Pacific Islander is not large enough to report estimates for asthma symptoms.  
Source: 2001 California Health Interview Survey

every week as those with incomes three times the poverty level (Exhibit 5).<sup>2</sup> For adults, the rates of frequent symptoms decline with increasing income. Low-income children are slightly more likely to experience frequent symptoms than more affluent children, but the difference is not as great as it is for adults. Children and adults with asthma who live in rural areas have high rates of weekly or daily asthma symptoms (17.0% and 27.0% respectively, Exhibit 6). This greater frequency of asthma symptoms suggests that those with asthma who have low incomes or who live in rural areas experience more exposure to environmental triggers and less adequate medical management.

Uncontrolled asthma affects children's school attendance and physical activities. In California, nearly 136,000 adolescents (ages 12-17) who experienced asthma symptoms missed one or more days of school per month. More than half (54.0%) the adolescents with daily or weekly asthma symptoms missed one or more days of school per month compared to one in three (32.8%) of those with symptoms less than once a month. In addition, nearly 158,000 children (ages 0-11) with asthma symptoms limited their physical activities due to asthma. Among these children, more than half (54.3%) with daily or weekly asthma symptoms limited their physical activities due to asthma at least some of the time compared to 18.0% for those with occasional symptoms.

*Asthma symptom prevalence varies across California counties, ranging from 5.7% to 14.1%.*

*Persons with low incomes or who live in rural areas...are more likely to experience frequent asthma symptoms.*

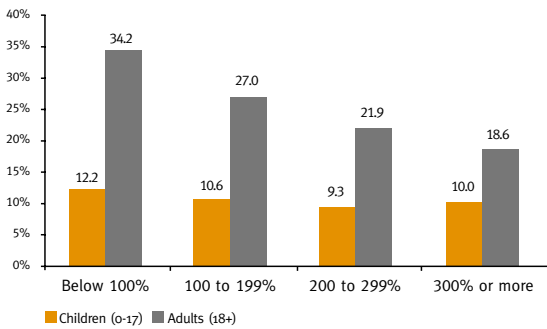
*Uncontrolled asthma affects children's school attendance and physical activities.*

<sup>1</sup> For information about the asthma symptom prevalence rates and confidence intervals for each county or county group, please visit the CHIS Web site: [www.chis.ucla.edu](http://www.chis.ucla.edu).

<sup>2</sup> In 2001, the federal poverty threshold was \$9,044 for one person, \$11,559 for a family of two, \$14,129 for a family of three, and \$18,104 for a family of four.

### Exhibit 5

Persons with Daily or Weekly Symptoms by Federal Poverty Level, Persons Who Have Been Diagnosed with Asthma, 2001



Source: 2001 California Health Interview Survey

### MISSED OPPORTUNITIES TO PREVENT ASTHMA EPISODES

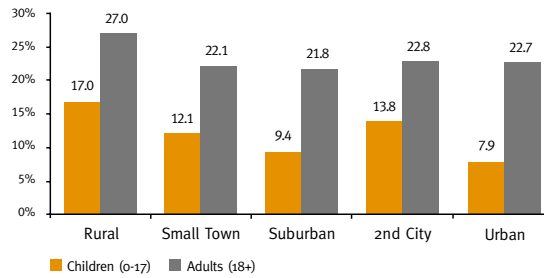
The National Heart, Lung, and Blood Institute (NHLBI) recommends that persons with asthma receive education on how to manage their asthma and to avoid exposure to environmental factors that trigger asthma episodes. However, 19.4% of California adults and 25.1% of adolescents with daily or weekly symptoms reported not receiving information from their health care providers on how to avoid those things that make asthma worse or how to recognize an asthma attack. And 21.2% of adults with daily or weekly symptoms are current smokers — a common trigger for asthma.

The NHLBI also recommends that persons with persistent asthma take medications daily and visit a clinician at least twice a year. However, about 14.9% of adults and 18.2% of children in California who experience daily or weekly symptoms — over 115,000 in all — are not currently taking any medications to control their asthma. Furthermore, 15.2% of adults who experience daily or weekly symptoms visited a doctor only once or not at all in the past year, missing the opportunity for effective medical management of their condition.

Uncontrolled asthma can add to the already high medical costs incurred by families and individuals, employers, and the government. Nationally, asthma is the most frequent cause of children's emergency room visits. In California, 11.4% of children and 7.2% of adults with asthma — more than 300,000 in all — reported that they visited an emergency room

### Exhibit 6

Daily or Weekly Symptoms by Area of Residence, Persons Who Have Been Diagnosed with Asthma, 2001



Note: Classification is based on the population density of the zip code in which the respondent lives. For example, *second city* refers to a zip code with a population density between 1,000 and 4,150 persons per square mile. *Rural* refers to a zip code with a population density equal to or less than 210 persons per square mile.

Source: 2001 California Health Interview Survey

during the previous year because of their asthma. Among people with asthma, 15.5% of American Indians and Alaska Natives, 12.9% of Latinos, and 12.1% of African Americans also reported visiting an emergency room for their asthma (compared to 7.9% of Asians and 6.4% of whites). Many of these trips to the emergency room could have been avoided with effective medical management and control of environmental triggers.

Lack of health insurance and low income are critical reasons why asthma sufferers do not receive medical management for their asthma: health care can quickly become unaffordable. In California, an estimated 374,000 children and nonelderly adults with asthma have no health insurance at all; 44,000 of them reported delaying or not getting prescriptions filled or other care they needed specifically for their asthma. Among adults with asthma, 9.4% of those with family incomes below 200% of the federal poverty level also delayed or did not receive care they needed for asthma, one-and-a-half times the rate of those with family incomes above that level (6.2%). Among children with asthma, 4.9% of those with low income delayed or never received needed asthma care, twice the rate for those with incomes at least 200% of poverty.

*...19.4% of California adults and 25.1% of adolescents with daily or weekly symptoms reported not receiving information from their health care providers...*

*Lack of health insurance and low income are critical reasons why asthma sufferers do not receive medical management for their asthma...*

## POLICY RECOMMENDATIONS

This policy brief has identified a number of groups in California that either have a higher prevalence of asthma or higher rates of frequent asthma symptoms. Children and adults who have low incomes and those who live in rural areas have more frequent asthma symptoms. American Indians and Alaska Natives and African Americans have higher reported lifetime asthma prevalence than whites, Asian Americans, and Latinos. Among persons with asthma, one in four American Indians and Alaska Natives experiences daily or weekly asthma symptoms, as do approximately one in five African Americans and whites, and about one in six or seven Latinos and Asians. (Native Hawaiians and other Pacific Islanders have a high prevalence, but their small sample precludes comparisons with other groups.) In addition, American Indians and Alaska Natives, Latinos, and African Americans with asthma reported visiting an emergency room for their asthma at rates higher than the rate for whites. The reported rate for visiting an emergency room for asthma among Asians was not different from most other racial/ethnic groups. Asthma is a complex health problem, the causes of which are not well established. Nevertheless, effective control of asthma is feasible.

**These high rates of asthma highlight the need for targeted interventions and continued surveillance at state and local levels.** Before CHIS 2001, complete statewide or county-level data were available based only on hospital discharges and deaths, and prevalence data were available only at the state level for adults through the Behavioral Risk Factor Surveillance System. Such data are of limited use in planning targeted interventions and monitoring changes in asthma trends. Timely data on asthma at the state and local levels are needed to support the design and implementation of effective public health and clinical interventions. Federal and state agencies call for a systematic local, state, and national system for asthma surveillance.

Asthma is a potentially debilitating but controllable lung disease. Asthma control requires the prevention and management of symptoms such as coughing, wheezing, shortness of breath, and tightness in the chest. **Reducing exposure to environmental triggers such as air pollutants, tobacco smoke, dust mites, furry pets, cockroaches, pollens, and molds can also reduce asthma episodes.**

Environmental prevention requires systematic efforts by individuals and families as well as schools, employers, communities, and government. Effective action can reduce the frequency of asthma episodes. Public policies that improve air quality by reducing ozone and particulate matter will improve outdoor environments. Public policies and private efforts to educate families, schools, and employers to reduce exposures to dust mites and other indoor allergens, to prevent exposures to smoke and chemicals, to prohibit smoking indoors, and to discourage children and adults from smoking can help create asthma-friendly environments.

**Effective control of asthma also requires timely access to comprehensive health care services.** Health insurance coverage with appropriate benefits is essential for people with asthma because it makes getting needed care more affordable. Adults and children with asthma need access to physicians to diagnose their condition and help them medically manage their asthma. Persons with asthma need prescription drug coverage to ensure adequate financial access to the medications needed for long-term control of asthma and for immediate and short-term relief from their asthma symptoms. They need health education and case management, and they need access to advice from a health professional twenty-four hours a day to assist them and their families in managing the condition.

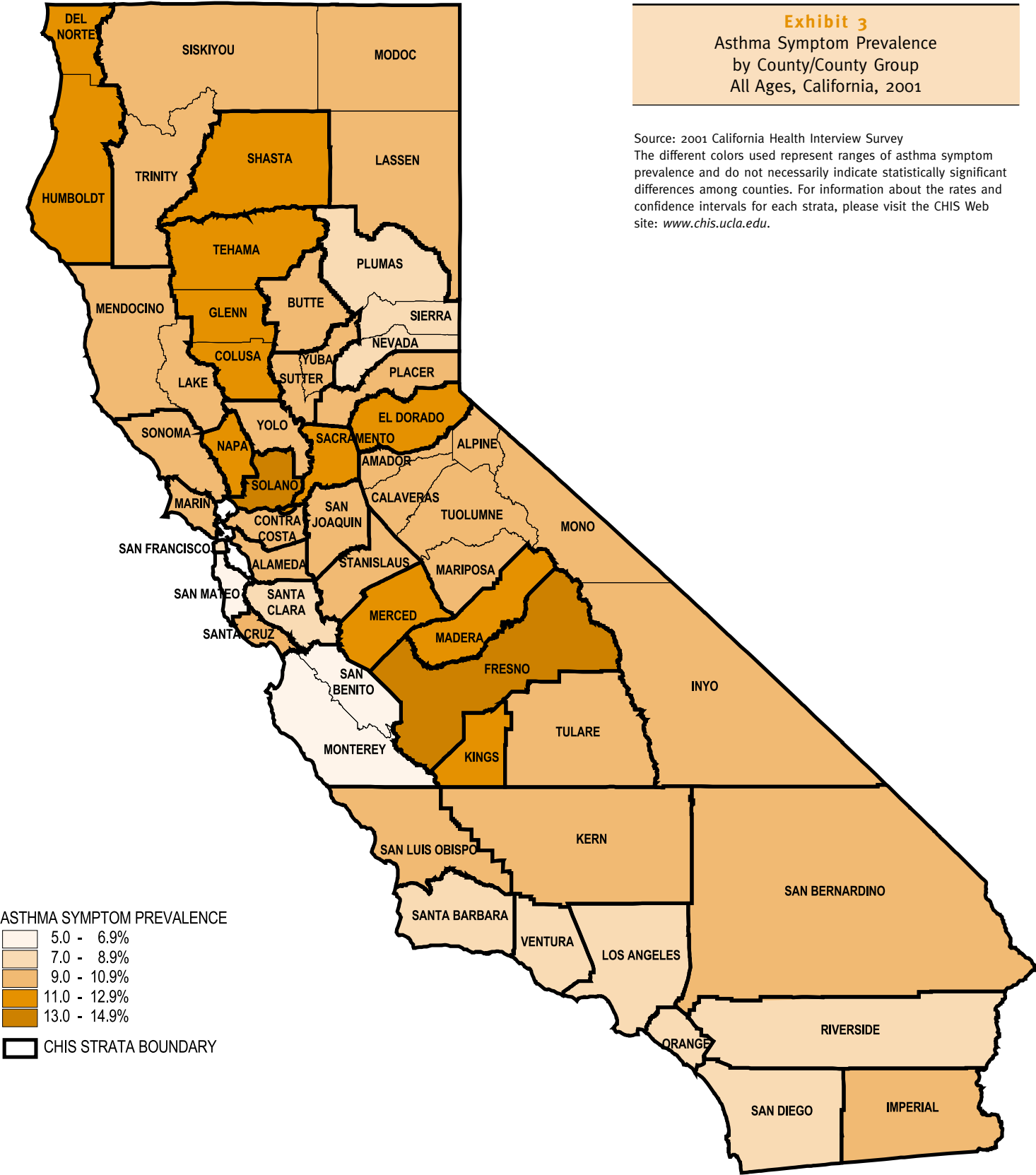
**Better control of asthma in California requires more comprehensive medical care and disease management.** Health plans, state and local health departments, medical professional societies, and other organizations should assist health professionals to improve the quality of their management of asthma, educate families and patients to foster partnerships among the patient, family, and clinicians, and support community-based asthma programs. Parents, school nurses and personnel, and child-care providers should receive appropriate training in the environmental and medical management of asthma, including how to assist children in medically managing their conditions. Programs such as aggressive outreach, school-based interventions, written asthma action plans, case management, and health plan- or community-based disease management should be promoted to reduce asthma severity and symptoms.

Asthma is a chronic disease that can be controlled, but when it is not, individuals, families, employers, and the larger community pay a heavy price.

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**Exhibit 3**  
**Asthma Symptom Prevalence**  
**by County/County Group**  
**All Ages, California, 2001**

Source: 2001 California Health Interview Survey  
 The different colors used represent ranges of asthma symptom prevalence and do not necessarily indicate statistically significant differences among counties. For information about the rates and confidence intervals for each strata, please visit the CHIS Web site: [www.chis.ucla.edu](http://www.chis.ucla.edu).





## DATA SOURCE

This policy brief on asthma in California is the first release of findings from the 2001 California Health Interview Survey (CHIS). CHIS, the largest health survey ever conducted in any state and one of the largest in the nation, covers a broad range of public health concerns, including health status and conditions, health-related behaviors, health insurance coverage, and access to health care services. CHIS 2001 randomly selected 55,428 households drawn from every county in California for its random-digit dial (RDD) telephone survey, providing a sample that is representative of the state's noninstitutionalized population (data were weighted based on the 2000 Census). CHIS interviewed one sample adult in each household. In households with children, CHIS interviewed one adolescent age 12-17 (a total of 5,801), and obtained information for one child under age 12 by interviewing the adult who was most knowledgeable about the child (a total of 12,592). The interviews, available in six languages, were conducted between November 2000 and September 2001.

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The views expressed in this Policy Brief are those of the authors and do not necessarily represent the UCLA Center for Health Policy Research, the California Health Interview Survey collaborators, the Regents of the University of California, The California Endowment, or other CHIS 2001 funding agencies.



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# California Health Interview Survey Policy Brief

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