

Executive Summary

Asthma is one of the most common chronic diseases and has been recognized as a growing public health concern. The effects of asthma include missed school and work days, disruption of sleep and daily activities, urgent medical visits for asthma exacerbations, and even death. Asthma affects not only those with the disease but also their family members and friends, as well as schools and businesses. There is no cure for asthma, but symptoms can be controlled with access to medical care, appropriate medications, proper self-management, and trigger reduction. When asthma is controlled, people can lead normal lives and achieve their goals.

California's asthma surveillance system uses data from a wide variety of sources to describe the burden of asthma in the state. Surveillance data include, but are not limited to: the number of people with asthma, levels of symptoms, use of routine health care, visits to the emergency department (ED) and hospital, costs of health care utilization, and deaths due to asthma. Using all of the most recent available statewide surveillance data, this report presents a comprehensive summary of the burden of asthma in California.

Approximately five million Californians have been diagnosed with asthma at some point in their lives, and almost three million currently have asthma. Over one in five with current asthma are considered to have very poorly controlled asthma. Asthma results in an estimated 11.8 million days of work/usual activities missed per year among adults and 1.2 days of school/day care missed per year among children. Surveillance data show that there is much room for improvement in routine health care for people with asthma. More than half of adults with current asthma have not had a routine asthma checkup in the past year and only 40% of adults and children with asthma have received a written asthma action plan from their health care provider. More encouraging is that the rates of the most serious outcomes — hospitalizations and deaths due to asthma — have declined. Still, there are about 400 deaths, 35,000 hospital discharges, and 180,000 emergency department visits per year due to asthma. In addition, the costs of asthma hospitalizations are enormous — over \$1 billion in 2010. Proper prevention efforts could reduce many of these poor outcomes and costs. For example, 12% of people who were hospitalized for asthma in 2010 had at least one repeat visit during that year. Intervening to prevent these repeat asthma hospitalizations could potentially have saved \$156 million in medical costs.

Across all measures of asthma burden, there are large disparities by race/ethnicity, income, age, sex, and other characteristics. Blacks have especially disproportionate rates of asthma ED visits, hospitalizations, and mortality. Although people of all incomes have a similar prevalence of asthma, people with lower incomes have more poorly controlled

asthma, higher rates of ED visits and hospitalizations, and are more likely to have repeat hospitalizations. These and other key findings of this report are listed below.

Key Findings

Prevalence

- In 2010, 13.1% of adults and 12.5% of children had been diagnosed with asthma at some point in their lives (lifetime asthma); 7.9% of adults and 7.4% of children had current asthma.
- Each year, there are an estimated 189,700 new cases of asthma in California—approximately 93,150 among adults and 96,550 among children.
- Among adults, both lifetime and current asthma prevalence have increased slightly over time and are similar to prevalence in the U.S. overall.
- Among males with asthma, a higher percentage had their asthma start as a child (69%) than as an adult (31%). Among females with asthma, roughly the same percentage had their asthma start as a child (48%) or as an adult (52%).
- It is estimated that over 974,000 adults in California have asthma that has been caused or aggravated by their work, but work-related asthma (WRA) is often not recognized or diagnosed.

Morbidity and Control

- The majority of adults and children with current asthma (65.9% and 53.7% respectively) had asthma symptoms in the past month.
- Approximately 649,000 adults with current asthma (36.4%) missed work or were unable to carry out their usual activities because of their asthma at some point in the past year. This translates to an estimated 11.8 million days of work/usual activities missed per year.
- Approximately 129,000 children with current asthma (52.3%) missed school or day care because of their asthma at some point in the past year. This translates to an estimated 1.2 million days of school/day care missed per year.
- While most adults and children with current asthma are classified as having well controlled asthma, over one in five are considered to have very poorly controlled asthma.
- Compared to those with well controlled asthma, people with poorly controlled asthma are more likely to miss work or school, have an ED visit for asthma, or be hospitalized for asthma.
- The majority of people with work-related asthma (WRA): (1) cannot do their usual work (56%), (2) report continuing symptoms (56%), and (3) have gone to the ED for their WRA (61%).
- Asthma impact and impairment are greater for adults with WRA than non-WRA.

Routine Health Care

- 19.4% of adults and 4.7% of children with current asthma were uninsured at some point in the past year.
- 11.2% of adults and 9.1% of children with current asthma do not have a usual place for health care.
- About three out of four children have had at least one routine asthma checkup in the past year. Among adults, however, over half have not had a routine asthma checkup in the past year.
- Approximately one quarter of adults and children (27.7% and 24.1%, respectively) used only a rescue medication in the past 3 months (i.e., they did not use any controller medication).
- 88.6% of Medi-Cal Managed Care beneficiaries with persistent asthma receive appropriate medications.
- Flu (influenza) infection can exacerbate asthma symptoms, yet more than one third of children and half of adults with current asthma did not get a flu vaccination in the past year.
- Only about 40% of adults and children have ever been given a written asthma action plan by their health care provider.
- Only 30% of adults and 45% of children have ever been advised to change their home, work or school environment to reduce their asthma symptoms.

Emergency Department Visits, Hospitalizations, and Mortality

- In 2010, there were 179,972 asthma ED visits, or an age-adjusted rate of 46.1 per 10,000 residents.
- In 2010, there were 34,796 asthma hospitalizations, or an age-adjusted rate of 9.0 per 10,000 residents.
- In 2010, of all people who had an asthma hospitalization, 11.6% came back for at least one subsequent asthma hospitalization during that year.
- Asthma hospitalization rates in California have decreased in the past 16 years.
- Asthma ED visits and hospitalizations vary consistently by season, with lower numbers in the summer.
- In 2009, there were 415 deaths due to asthma, or a rate of 11 per million residents. These deaths corresponded to 7,038 years of potential life lost or 17 years lost per person.
- The rate of asthma deaths in California has been decreasing from 2000 to 2009, similar to national trends.

Disparities

- Blacks have the most striking disparity in the burden of asthma. Compared to Whites, Blacks have 40% higher asthma prevalence, four times higher asthma ED visit and hospitalization rates, and two times higher asthma death rates.
- Asthma prevalence among American Indian/Alaska Native (AI/AN) adults is 1.5-2.0 times higher than among White adults (23.3% vs. 15.1% for lifetime asthma and 17.5% vs. 8.9% for current asthma).
- Hispanics have comparatively low asthma prevalence overall, but asthma hospitalization and ED visit rates are higher in Hispanics than Whites, especially among children.
- There are variations in asthma prevalence among Hispanic racial/ethnic subgroups. Lifetime asthma prevalence ranges from a high of 20.6% among European Hispanics to a low of 7.7% among Guatemalans. Similarly, current asthma prevalence ranges from 9.7% among European Hispanics to 4.6% among Guatemalans.
- Pacific Islanders and Filipinos are two subgroups with a high asthma burden; both have high lifetime asthma prevalence, asthma mortality rates, and Medical asthma hospitalization rates.
- The rate of asthma hospitalizations and ED visits is four times higher for people living in areas where the median household income is \$20,000 or less compared to those living in areas where the median household income is more than \$100,000.
- Adults with higher household incomes (over \$50,000) are about 50-60% more likely to have well controlled asthma than adults with lower incomes; adults who report cost barriers to receiving medical care are significantly less likely to have well controlled asthma than those who do not report cost barriers (33.2% vs. 56.7%).
- Asthma affects people of all ages, but asthma prevalence, hospitalization rates, and ED visit rates are higher for children than adults.
- Among adults, the burden of asthma is greater for females; among children, the burden of asthma is greater for males.
- People born in the U.S. are more likely to have asthma than people born outside of the U.S. The disparity is largest for Hispanics and Asians, who are two to three times more likely to have asthma if they were born in the U.S.
- Lesbian and bisexual females have particularly high asthma prevalence—over 24% lifetime asthma prevalence and 14%–17% current asthma prevalence, which is about 70% higher than straight females.

Costs

- Total charges for asthma hospitalizations in 2010 were over \$1 billion (including \$155.6 million for repeat hospitalizations).
- The average charge per asthma hospitalization more than doubled between 1995 (\$13,247 in 2010 dollars) and 2010 (\$33,749). In contrast, the average length of stay for asthma hospitalizations hardly changed (average 3.4 days from 1998-2010).
- Medicare and Medi-Cal covered 65% of asthma hospitalizations and 50% of asthma ED visits in 2010.

Risk Factors

- Almost 12% of adults and teens with current asthma are smokers.
- About 10% of adults with current asthma and 5% of children with current asthma are exposed to secondhand smoke in the home.
- On average, people with asthma are exposed to 2-3 asthma triggers in the home (e.g., mold, cockroaches, rodents, pets, carpeting, wood burning or gas appliances, and tobacco smoke).
- As in the general California population, about 40% of people with asthma are renters, which can impact a resident's ability to reduce exposure to asthma triggers in the home.
- People with work-related asthma (WRA) are most commonly exposed to the following asthma triggers in the workplace: dust, unknown chemicals, cleaning materials, smoke, mold, indoor air pollutants, and paint.
- Outdoor air pollutants are important asthma triggers; their levels vary widely across the state.

Recommendations

To affect changes in asthma outcomes and to increase the effectiveness of prevention efforts, there is a need for systems change in a variety of settings. In a state as large as California, such changes require the participation of many different stakeholders. The California Department of Public Health (CDPH) has created and implemented a Strategic Plan for Asthma in California (SPAC), which allows for facilitation and coordination of asthma activities throughout the state. The SPAC was first developed in 2002, was revised in 2008, and is currently being reviewed to be updated in 2013. Using the SPAC as a guide, the recommendations below are provided as broad goals for asthma-related activities in California.

- Maintain the current asthma surveillance system in California, and address data gaps by expanding current data services, developing new data sources, and making new partnerships with organizations that collect data. Areas with the most significant

data gaps include: doctor's office visits, medications, triggers, costs, and quality of life. There is also a lack of local data for many measures.

- Use surveillance data to inform policy and to help plan, implement, and evaluate interventions, with particular attention to vulnerable populations.
- Improve the quality of asthma prevention, diagnosis, treatment, and management throughout the health care system. Expand access to care and facilitate reimbursement for comprehensive asthma management.
- Establish comprehensive and coordinated policies and procedures in schools and childcare centers to ensure the health and well-being of students and staff with asthma. These policies and procedures should address: improving indoor air quality, educating the public and providers about asthma management, increasing the number of personnel who are knowledgeable and competent around asthma, and minimizing exposure to unhealthy outdoor air.
- Promote asthma-safe healthy housing that minimizes indoor environmental risk factors through home assessments, remediation, and education of tenants, landlords, home owners, and regulators in the housing industry.
- Reduce workplace exposure to asthma triggers and asthmagens (substances documented to be capable of causing new-onset asthma) by evaluating work-sites, promoting prevention efforts within industries, expanding surveillance for work-related asthma, and increasing awareness of the issue among workers, health care providers, and employers.
- Create a safer outdoor environment, with particular emphasis on communities with disproportionate exposure to pollution. Reduce air pollution from sources such as: transportation, freight transport, industry, agriculture, and secondhand smoke.
- Support efforts to reduce the burden of other conditions that affect and/or are affected by asthma. Empower individuals, communities, and institutions to create environments that support healthy lifestyles including living tobacco free, making healthy food and beverage choices, and promoting physical activity.