Technical Notes — County Asthma Profiles

Asthma Prevalence

Lifetime asthma prevalence is the proportion of people in the population who have ever been diagnosed with asthma by a healthcare provider. Active asthma prevalence is the proportion of people who have ever been diagnosed with asthma by a healthcare provider *and* report that they still have asthma and/or had an episode or attack within the past 12 months. These data are obtained from the California Health Interview Survey (CHIS). CHIS is a statewide telephone survey administered to over 50,000 households each year by the UCLA Center for Health Policy Research. Adults and teens (ages 12–17 years) are asked, "Has a doctor ever told you that you have asthma?" and "During the past 12 months, have you had an episode of asthma or an asthma attack?" Asthma prevalence for children (ages 0–11 years) is obtained from their parent/guardian using the questions, "Has a doctor ever told you that your child has asthma?" and "During the past 12 months, has {he/she} had an episode of asthma or an asthma attack?" Information about CHIS methodology and data can be found at http://healthpolicy.ucla.edu/chis.

Asthma Management Plans

National guidelines recommend that healthcare providers give patients with asthma a written self-management plan that includes instructions for 1) daily management and 2) how to recognize and handle worsening asthma. Information about asthma management plans is obtained from CHIS. Respondents with lifetime asthma are asked, "Has a doctor or other health professional ever given you an asthma management plan [for child]?"

Asthma Risk Factors

Smoking

Many studies have shown smoking to worsen asthma. Information about smoking is obtained from CHIS. Adults who report that they smoke every day or some days are considered to be current smokers.

Obesity

Obese adults are more likely to have asthma. Obesity is determined by an individual's body mass index (BMI), a measurement used to determine the weight status of a person accounting for his/her height. An adult is considered obese if his/her body mass index (BMI) is 30 or higher. The equation for calculating BMI is:

$$BMI = \left(\frac{Weight\ in\ pounds}{(Height\ in\ inches)^2}\right) \times 703$$

Poverty

Conditions of poverty are associated with adverse asthma outcomes. Information about poverty in each county is obtained from the U.S. Census Bureau's American Community Survey (ACS) for 2011–2015 (5-year estimates). The census classifies individuals as living below the Federal Poverty Level if their household income is less than the poverty threshold specified for family size, age of household resident, and number of children in the household (https://www.census.gov/programs-surveys/acs/). The census does not determine poverty status for institutionalized people (e.g., people in military group quarters, dormitories, or prisons) and individuals aged 15 years and under. These groups are excluded from the

numerator and denominator when calculating the percent of persons below the poverty level. The 2015 annual average unemployment rate for each county is obtained from the State of California Employment Development Department Labor Market Information Division (http://www.labormarketinfo.edd.ca.gov/). The unemployment rate is not seasonally adjusted.

Asthma Deaths

Asthma deaths are presented as counts and rates (number of deaths per million residents). Because asthma deaths are relatively rare events, data are combined for the years 2014–2016. Asthma death data are from the California Death Statistical Master Files, which contain information collected from death certificates. These data are provided by the California Department of Public Health, Center for Health Statistics. For analysis, we selected all deaths for which asthma was coded as the underlying cause of death (ICD10-CM code J45 or J46). Rates are calculated using yearly population estimates from the California Department of Finance (CA DOF) and are age-adjusted to the 2000 U.S. standard population (U.S. Census Bureau).

Asthma Emergency Department Visits and Hospitalizations

Hospitalization and emergency department (ED) visit data include counts, rates (number per 10,000 residents), average charges, and the expected source of payment. ED visits include those that resulted in a hospital admission. Data are from Emergency Department and Patient Hospital Discharge Databases provided by the California Office of Statewide Health Planning and Development (OSHPD). These databases contain information for each patient admitted to an ED or discharged from a licensed acute care hospital. Asthma hospitalizations and ED visits are identified by principal diagnosis codes (before October 1, 2015: ICD9-CM code 493; October 1, 2015 and after: ICD10-CM code J45). Rates are calculated using yearly population estimates (CA DOF). All rates are age-adjusted to the 2000 U.S. standard population (U.S. Census Bureau).

Average Charges per Hospitalization

This measure is the average charge reported by hospitals for asthma hospitalizations (charges are not available for ED visits). Hospitalization charge data are presented for adults and children. It is important to note that not all hospitals report charges to OSHPD (e.g., Kaiser Foundation and Shriner's Hospital are exempt from reporting charges). Hospitalization charges are one of the few indicators available for assessing the direct costs of asthma in California counties. However, hospitalization charges do not include many other costs associated with asthma, nor do they represent the final payment received by the hospital.

Expected Source of Payment

Insurance status or expected source of payment indicates the source from which hospitals expect to receive payment for charges incurred from asthma hospitalizations or ED visits. This measure is presented for all ages. For the purpose of this analysis, sources of payment are grouped into the following four categories:

1) Medicare = Medicare (including HMO/PPO)
2) Medi-Cal = Medi-Cal (including HMO/PPO)

3) Private Insurance = private insurance company (e.g., HMO, PPO, Blue Cross/Blue Shield)
4) Other = workers' compensation, county indigent program, charity care, self-pay, other governmental sources, etc.

Healthy People 2020

Healthy People 2020 (HP2020) advances national health promotion objectives developed by the U.S. Department of Health and Human Services for achievement by the year 2020 (https://www.healthypeople.gov/). Objectives related to asthma include reducing asthma deaths, hospitalizations, ED visits, activity limitations, and school/work days missed, as well as increasing asthma education and proper asthma care. Of these, only the HP2020 objectives for asthma hospitalizations and ED visits can be accurately measured in California using currently available surveillance data. All rates are age-adjusted to the 2000 U.S. standard population (U.S. Census Bureau).

Suppressed Data

In all tables, counts of 1–5 (or counts that allow calculation of those cells) are suppressed for privacy. These cells are marked as <#. Statistically unstable estimates are also suppressed and indicated with dashes. CHIS estimates are determined to be statistically unstable if relative standard error is 50 or greater. For asthma ED visit, hospitalization, and death data, rates are considered statistically unstable if based on fewer than 12 events. In the disparities and HP2020 graphs, missing bars indicate that numbers are too small to calculate stable rates. For counties where most of the data are suppressed because of small numbers, charts are excluded from the profile.

For some counties with small populations, CHIS data are only available as aggregated data for county groups. These groups include:

1) Alpine, Amador, Calaveras, Inyo, Mariposa, Mono, and Tuolumne (Eastern Counties)
2) Del Norte, Lassen, Modoc, Plumas, Sierra, Siskiyou, and Trinity (Northern Counties)
3) Colusa, Glenn, and Tehama

Race/Ethnicity Categories

Race/ethnicity groups for which asthma data are presented include Non-Hispanic White, Non-Hispanic Black, Hispanic, and Non-Hispanic Asian/Pacific Islander. Other is also included in the county demographics table. Data are only presented by race/ethnicity for hospitalizations and ED visits because cell sizes are too small for other measures. Data on American Indians/ Alaska Natives are not included because of small cell size and unreliability of this categorization in OSHPD datasets.